OzFoodNet

Enhancing Foodborne Disease Surveillance Across Australia

NSW FIRST QUARTER REPORT

January – March 2020

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Highlights Quarter 1, 2020

This report describes data for enteric conditions for quarter 1, 2020. The report is divided into four sections: enteric notifiable diseases highlights, *Salmonella* spotlight, foodborne outbreaks and gastroenteritis outbreaks in institutions. Data sources and analytical methods are described at the end of the report. Every endeavour has been made to ensure that the information provided in this document is accurate at the time of writing. However, infectious disease notification data are continuously updated and subject to change.

During the COVID-19 response in 2020 the control guidelines for public health unit management of some enteric conditions were temporarily amended. Therefore some information will not be available during this reporting period.

A total of 5773 enteric conditions were notified to NSW Public Health Units in quarter 1, 2020. The most notable increases above average levels in this quarter were for **shigellosis** (250% increase) and **STEC** (162% increase).

Notifications of **shigellosis** remained above average (250% increase compared to the five year average for the same period), primarily as a result of a change in the national surveillance case definition (from 1 July 2018), which introduced a new 'probable case' for cases with a detection of *Shigella* on nucleic acid testing only (without isolation of *Shigella* species). Of the 316 shigellosis cases notified in quarter 1, 2020, 114 cases met the confirmed case definition (cases where *Shigella* is isolated on culture), which is a 52% increase compared to the 5 year quarterly average for the same period.

Notifications of **STEC** also remained elevated following an increase in quarter 4 2019. Thirty-four notifications were received during quarter 1 2020, 162% above the 5 year quarterly average of 13 for the same period. There was one notification of **Haemolytic Uraemic Syndrome** (HUS) associated with an STEC infection, which is within the usual range for this quarter compared to the 5 year quarterly mean.

Moderate increases in hepatitis E and rotavirus were also observed in quarter 1, 2020 compared to the five year average for the same period. Moderate decreases were noted in cryptosporidiosis, giardiasis, Hepatitis A and paratyphoid. Long term trends are not available for campylobacteriosis, which became notifiable on 7 April 2017, however notifications received in this quarter (n=2703) are slightly below the same quarter in the previous year (n=2741). The long term trends for 13 notifiable enteric conditions in NSW are shown in Figures 1-3.

Typhoid notifications were similar for quarterly 1, 2020 compared to the five-year quarterly average for the same period. Two cases were locally acquired, both had contact with a family member who had travelled overseas.

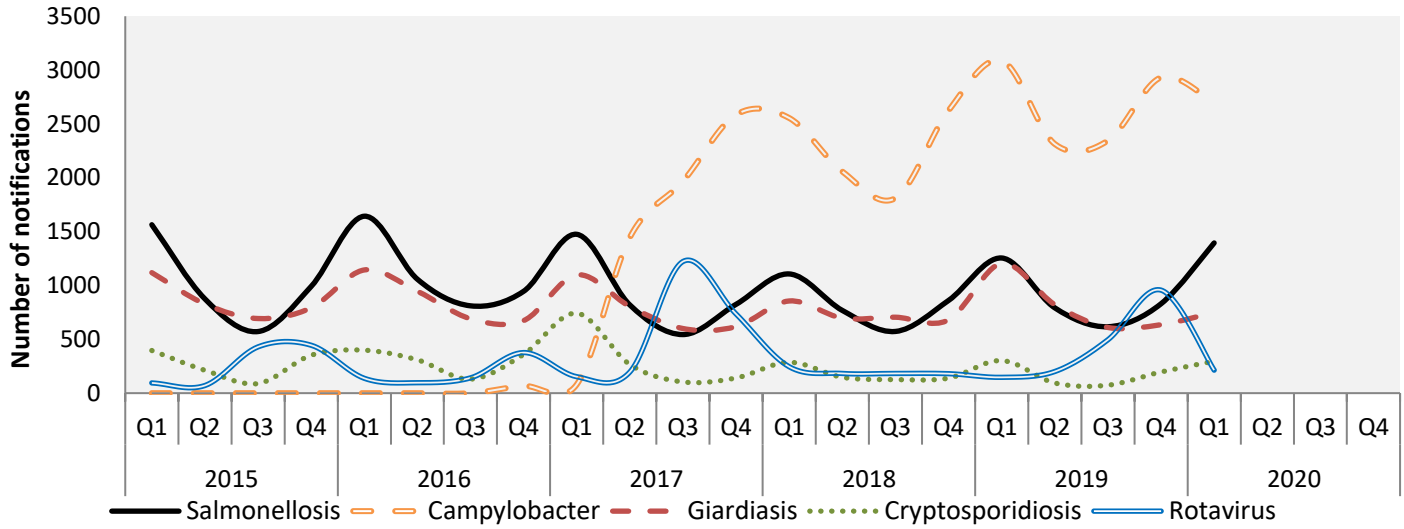
Salmonellosis notifications were similar (1% decrease) for quarter 1 2020 compared to the five-year quarterly average for the same period. *Salmonella* Typhimurium cases (n=491) were up 35% compared to the 5 year quarterly average of 535 cases, primarily due to one large outbreak (see page 8). *Salmonella* Wangata was the second highest notified *Salmonella* serotype in quarter 1, 2020 (n=125).

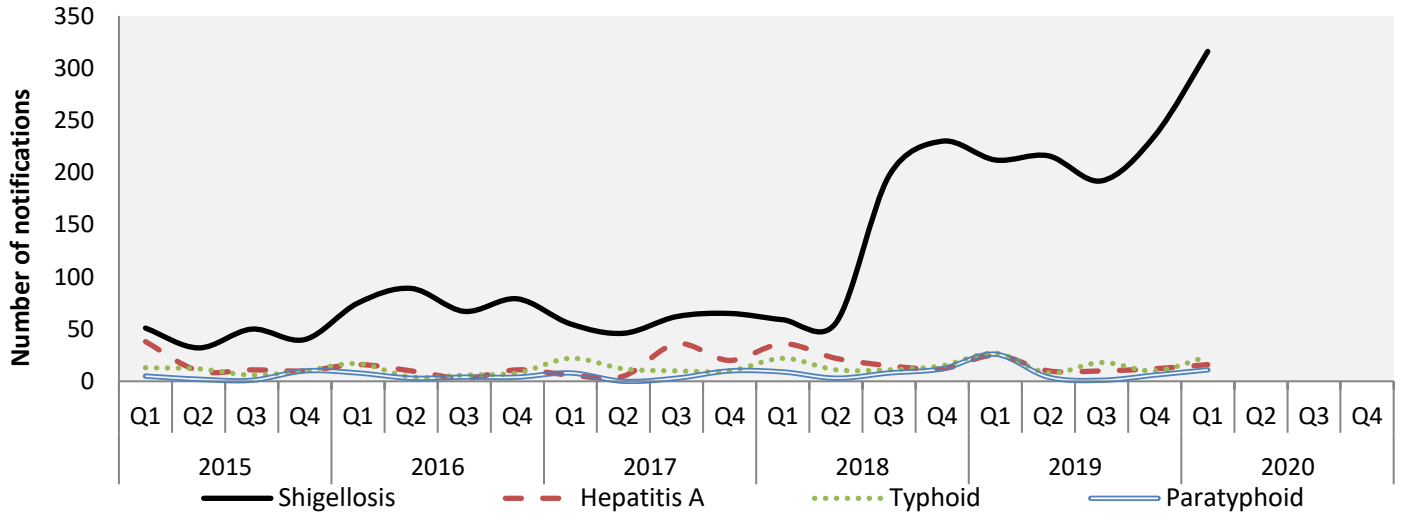
Salmonella Enteritidis notifications accounted for 6% of all salmonellosis notifications in this quarter 1. Forty Five cases (85%) were locally acquired, an 83% increase above the quarterly average for the same period, and the majority continue to be linked to the outbreak strain identified in quarter 3 2018 linked to eggs. The investigation of this outbreak was described in previous reports.

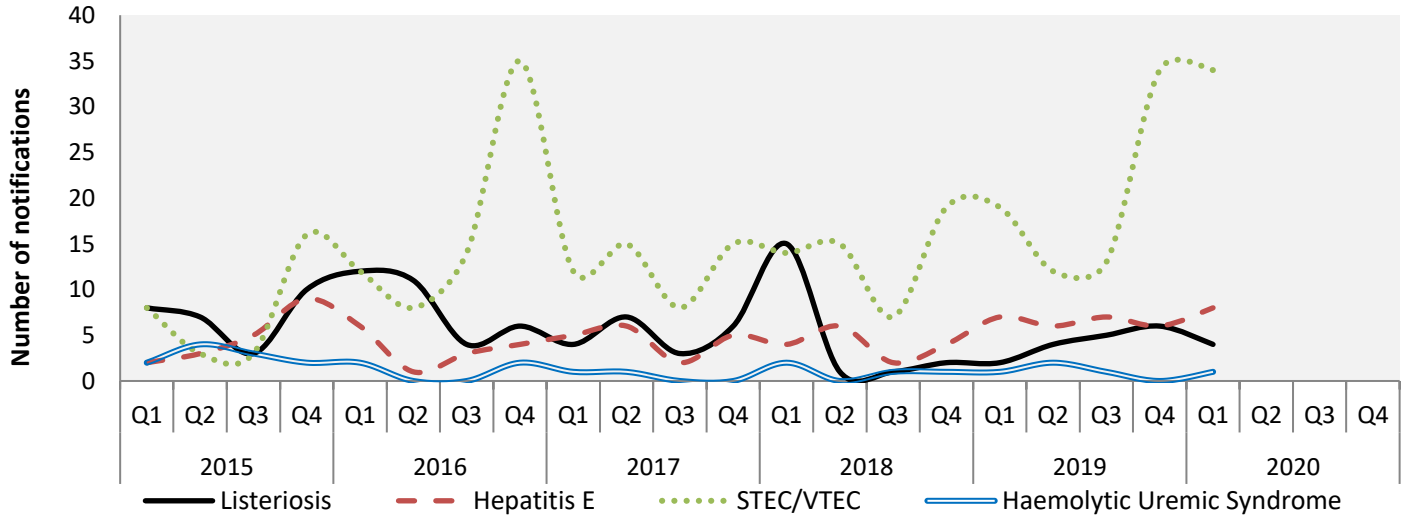
Thirteen **foodborne or suspected foodborne outbreaks** were reported affecting 366 residents of NSW, of whom 33 were hospitalised (Table 3). A causative agent was linked to a food source in 4 outbreaks: scombroid poisoning linked to consumption of Kingfish steaks in one outbreak, *Salmonella* Typhimurium linked to a sandwich wrap in one outbreak and eggs in another outbreak, and Salmonella Bareilly linked to sushi in one outbreak. In three outbreaks a pathogen was found but the food source could not be determined. In six outbreaks the pathogen cause and exact food source were unknown.

Highlights continued

Figures 1-3. Number of notifications by year, quarter and disease, Jan 2015 to Mar 2020[1,2]







[1] Campylobacteriosis became notifiable on 7 April 2017. Data is likely to be incomplete for this quarterly report due to the methods of notification from laboratories.

[2] The shigellosis case definition changed on 1 July 2018 to include probable cases (PCR positive only). The trend number of confirmed cases only, which is more comparable to previous counts of shigellosis prior to the case definition change, is provided by the black dotted line.

Table 1. Notifiable enteric conditions, quarter 1 2020, by local health district

Notifiable Disease		CC	FW	HNE	IS	M	MNC	NBM	NNSW	NS	SES	SNSW	SWS	Syd	WNSW	WS	NSW[1]
Botulism	Notified, Q1 2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5 y Q1 mean, 2015-2019	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Campylobacteriosis[1,2]	Notified, Q1 2020	114	10	303	146	137	94	119	124	385	377	72	181	168	141	332	2703
	5 y Q1 mean, 2015-2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cryptosporidiosis	Notified, Q1 2020	14	1	27	67	3	15	15	16	31	35	7	24	14	9	18	296
	5 y Q1 mean, 2015-2019	14.6	0.4	52.8	22.2	9.8	10.6	22.2	26.2	64.4	54.8	6.2	40.6	31.4	21.6	47.4	425.2
Giardiasis[3]	Notified, Q1 2020	30	1	96	36	26	18	40	59	114	114	11	57	47	31	69	749
	5 y Q1 mean, 2015-2019	44.6	2.4	135.2	59.4	34.2	29.0	45.6	50.4	181.6	183.6	14.0	73.4	99.6	38.6	92.8	1084.4
Hepatitis A	Notified, Q1 2020	0	0	0	0	1	0	2	0	1	1	0	2	1	0	8	16
	5 y Q1 mean, 2015-2019	0.2	0.4	0.4	1.4	0.6	0.0	1.0	0.0	2.6	2.8	0.0	5.6	2.8	0.8	5.6	24.2
Hepatitis E	Notified, Q1 2020	0	0	0	0	0	0	1	0	0	0	0	1	0	0	6	8
	5 y Q1 mean, 2015-2019	0.0	0.0	0.2	0.0	0.0	0.0	0.6	0.0	0.8	0.6	0.0	0.6	0.4	0.0	2.8	6.0
Listeriosis	Notified, Q1 2020	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	4
	5 y Q1 mean, 2015-2019	0.0	0.0	0.4	0.8	0.0	0.0	0.2	0.4	1.6	1.4	1.0	1.0	0.8	0.2	0.4	8.2
Paratyphoid	Notified, Q1 2020	0	0	0	1	0	0	0	0	1	1	0	2	0	0	6	11
	5 y Q1 mean, 2015-2019	0.2	0.0	0.8	0.2	0.0	0.0	0.8	0.2	1.0	1.2	0.0	1.0	2.0	0.0	3.8	11.2
Rotavirus	Notified, Q1 2020	7	0	10	7	5	3	22	8	33	40	2	35	18	1	23	214
	5 y Q1 mean, 2015-2019	3.2	0.0	9.0	3.2	3.2	0.8	8.0	6.8	25.2	24.6	1.4	22.6	17.6	3.8	26.2	155.6
Salmonellosis	Notified, Q1 2020	68	4	207	46	47	60	75	137	143	128	28	168	94	53	139	1397
	5 y Q1 mean, 2015-2019	67.8	6.0	149.4	67.2	51.6	58.0	54.2	109.4	198.8	183.4	33.4	137.6	109.0	36.0	146.2	1408.8
Shigellosis[4]	Notified, Q1 2020	3	0	22	9	3	2	10	9	51	80	2	26	50	5	44	316
	5 y Q1 mean, 2015-2019	3.4	0.4	4.0	1.4	1.4	1.2	3.2	3.2	11.2	23.0	0.6	5.2	18.6	1.0	12.6	90.4
STEC	Notified, Q1 2020	0	1	1	0	5	0	2	0	1	3	6	1	0	8	6	34
	5 y Q1 mean, 2015-2019	0.2	0.0	2.0	0.4	2.0	0.0	0.2	0.6	0.6	0.2	2.6	0.2	0.6	0.6	2.4	13.0
HUS	Notified, Q1 2020	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
	5 y Q1 mean, 2015-2019	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.0	0.4	1.6
Typhoid	Notified, Q1 2020	0	0	0	0	0	0	0	0	1	2	1	2	4	0	14	24
	5 y Q1 mean, 2015-2019	0.4	0.0	0.6	0.0	0.0	0.0	0.8	0.2	2.2	1.0	0.2	2.8	2.0	0.0	10.0	20.2
Foodborne[5] Outbreaks	Notified, Q1 2020	0	0	0	1	2	0	1	0	0	4	0	0	2	0	1	13
	People affected	0	0	0	9	13	0	7	0	0	20	0	0	62	0	4	366

Legend: Blue shading refers to a 100% or greater increase in the number of notifications compared to the five year quarterly average. Notes: [1] Total NSW numbers may differ to the sum of cases by LHD due to some cases not being attributed to an LHD and/or single outbreaks with cases across multiple LHDs; [2] Campylobacteriosis became notifiable on 7 April 2017, 5 year quarterly average data not available (NA); [3] Data is likely to be incomplete for this quarterly report due to changes in the methods of notification from laboratories; [4] Case definition changed on 1 July 2018 to include 'probable' cases; [5] Foodborne or potentially foodborne outbreaks.

Table 2. Notifiable enteric conditions, quarter 1 2020, by overseas or local acquisition

Notifiable Disease	Place infection acquired	NSW, Q1 2020	5 yr Q1 mean 2015-2019	2020 % change
Enteritidis	Locally acquired	45	24.6	83%
	Overseas acquired	30	30.8	-3%
	Unknown	6	2.4	150%
Hepatitis A	Locally acquired	1	7.4	-86%
	Overseas acquired	15	16.8	-11%
	Unknown	0	0.0	-
Hepatitis E	Locally acquired	0	0.8	-100%
	Overseas acquired	8	3.8	111%
	Unknown	0	0.2	-100%
Paratyphi	Locally acquired	0	0.4	0%
	Overseas acquired	11	10.6	4%
	Unknown	0	0.2	0%
STEC/VTEC	Locally acquired	26	9.8	165%
	Overseas acquired	0	1.0	-100%
	Unknown	8	2.2	264%
Shigellosis[a]	Locally acquired	106	32.6	225%
	Overseas acquired	153	46.4	230%
	Unknown	57	11.4	400%
Typhoid	Locally acquired	2	0.8	150%
	Overseas acquired	22	19.4	13%
	Unknown	0	0.0	-

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

[a] The Shigellosis case definition changed on 1 July 2018 to include probable cases (PCR positive only). As per the NSW Shigellosis Control Guidelines for Public Health Units, place of infection is only investigated for probable shigellosis cases if (a) they meet criteria for "considered to be at greater risk of ongoing transmission", or (b) they subsequently become a confirmed case.

Foodborne and suspected foodborne outbreaks

NSW Health investigates all potential foodborne disease outbreaks. 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. The most notable outbreaks are described on pages 8-9.

Table 3. Foodborne and potentially foodborne disease outbreaks investigated in NSW, quarter 1 2020

PHU ID	Month[1]	Setting	Agent responsible	No. ill	Lab confirmed	No. Hospitalised	Evidence*	Responsible vehicles	Contributing factors
MJOI2020-01	January	Community	*Salmonella* Typhimurium	230	230	32	D, M	Unknown	Ingestion of contaminated raw products
MLHD202002	January	Private residence	*Salmonella*	11	1	0	D, A	Eggs	Ingestion of contaminated raw products
SES202001	January	Take-away	Scombroid	3	0	0	D	Kingfish steak	Toxic substance or part of tissue
MLHD202001	January	School	*Salmonella* Typhimurium	2	2	Unknown	D, A	Unknown	Other source of contamination
SES202002	January	Childcare	Unknown	8	0	0	D	Unknown	Other source of contamination
SYD202001	January	Restaurant	*Salmonella* Typhimurium	19	4	0	D, A, M	Chicken wrap	Cross contamination from raw ingredients, inadequate cleaning of equipment
IS65571	February	Take-away	Unknown	9	0	Unknown	D	Vietnamese pork and chicken rolls	Cross contamination from raw ingredients, inadequate cleaning of equipment
SES65631	February	Restaurant	Unknown	3	0	0	D	Calamari	Toxic substance or part of tissue
WS65637	February	Restaurant	Unknown	4	0	0	D	Unknown	Cross contamination from raw ingredients
SES65694	February	Restaurant	Unknown	6	0	1	D	Unknown	Cross contamination from raw ingredients

PHU ID	Month[1]	Setting	Agent responsible	No. ill	Lab confirmed	No. Hospitalised	Evidence*	Responsible vehicles	Contributing factors
SYD65730	February	Commercial caterer	Norovirus	43	1	0	D & A	Unknown	Food handler contamination
NSW46-9	February	Take-away	*Salmonella* Bareilly	21	21	UNK	D	Sushi	Unknown

[1] Month of outbreak is the month of onset of first case or month of notification/investigation of the outbreak.
*Evidence: D=Descriptive evidence implicating the suspected vehicle or suggesting foodborne transmission; A=Analytical association between illness and food; M=Microbiological confirmation in the suspected vehicle and cases; AM=Analytical and microbiological evidence.

Notable Foodborne Outbreaks

Key points

- Raw egg use in ready to eat products such as desserts and dressings are a common cause of salmonellosis and can be avoided by using commercially produced products.
- Cross contamination may be prevented by keeping raw meat and poultry away from other foods, and by keeping kitchen equipment and tools clean and dry.
- People experiencing gastro symptoms should not handle or prepare food for others, for up to 48 hours post-symptom resolution.
- Histamine in fish is not destroyed by cooking, therefore the best way to keep histamine at a minimum is to ensure proper temperature control from catch to table. This can be achieved by purchasing from reputable suppliers who store the fish on ice or under refrigeration.

Salmonella Typhimurium linked to a family Christmas lunch (MLHD202002)

An outbreak of *Salmonella* affecting 11 out of 17 people who shared a homemade Christmas lunch was investigated by a regional NSW public health unit in January. The cases developed gastroenteritis symptoms including diarrhoea, with the first case developing symptom onset the morning following the lunch. One case had a stool sample collected and had *Salmonella* Typhimurium isolated.

Foods consumed at the Christmas lunch included a roast chicken purchased from a local supermarket, a homemade Christmas pudding, and a homemade custard using raw egg from the host's backyard chickens. The custard recipe involved the use of raw egg whites which were whipped and then folded into the cooked but cooling custard mixture. The custard was suspected as being the implicated food vehicle due to the use of raw eggs.

The food authority was notified of this outbreak, however no samples were collected owing to the use of private eggs. Advice was provided to the host about safer egg handling practices.

Salmonella Typhimurium linked to a school staff gathering at restaurant venue (SYD202001)

An outbreak of *Salmonella* Typhimurium affecting at least 19 of 106 staff who attended a two-day staff development event was investigated by a metropolitan Sydney public health unit in January. Four of the 19 cases were culture positive with the serotype identified as *Salmonella* Typhimurium. Several household contacts of the staff members also reported illness and it was established that these household members had consumed leftovers of the same foods the staff had eaten at the development day.

The public health unit distributed a survey to all attendees. A total of 73 responses (response rate 69%) were received. Among those who responded, twenty-four (33%) reported developing gastroenteritis symptoms after the event. The onset of symptoms occurred between 4pm 21 January and 8am 31 January. The median time of onset was approximately 4pm on 23 January and median duration of symptoms was 72 hours. Symptoms included headache, diarrhoea, abdominal cramps, nausea, fever, joint pain, vomiting, and lethargy. Ten people reported visiting a doctor for their illness, and five reported attending a hospital Emergency Department (ED). Six cases had tests done to investigate their illness.

Analysis of foods consumed demonstrated that sick people were six times more likely to have consumed the chicken wrap on the first day of the staff development day (95% CI, 1.77-20.31, p=0.0039), which is the only food that had a statistically significant result.

The Food Authority was notified and conducted a site inspection at the catering venue, collecting environmental swabs and food samples. Five of the environmental isolates were positive for *Salmonella* Typhimurium, and following genomic sequencing, clustered closely with the four human specimens from culture positive cases. The supplier improved its cleaning and sanitising practices. Enforcement action was also taken. Penalty notices were issued for breaches of the Food Act 2003 (NSW).

Norovirus linked to a function served by a catering company (SYD65730)

An outbreak of norovirus affecting 30 of 50 people who attended a function was investigated by a metropolitan Sydney public health unit in February.

The company which catered the function notified the public health unit that 30 of 50 attendees had developed gastroenteritis symptoms in addition to 13 of the 20 catering staff, following consumption of food served at the function.

The Public Health Unit distributed a survey to attendees and staff to ascertain potentially implicated foods. The survey indicated that one of the catering company's staff members had visited a doctor for the illness and had a stool sample collected which had norovirus detected.

The NSW Food Authority was notified of the outbreak and followed-up with the catering company. It was established that a staff member had been unwell prior to handling food. Food handlers must not work within 48 hours of having a gastroenteritis illness, as there is the risk that the infection can be transmitted from the worker through food to others. The caterer received a fine in relation to this incident.

Three cases of scombroid associated with seared kingfish steaks (SES202001)

Three suspected cases of scombroid were investigated by a metropolitan Sydney public health unit in January. The cases were part of a group of six people who purchased food from a takeaway venue. Of the six people, three had ordered battered fish (flathead) and chips, and three people ordered seared kingfish steaks and chips.

All persons who consumed the kingfish steaks developed symptoms consistent with scombroid poisoning, whilst the three people who did not consume the kingfish remained well.

All cases developed symptoms with 20 minutes of consuming the fish. Symptoms included tongue swelling, facial flushing, increased heart rate, vomiting and severe headache. All three cases presented to the hospital Emergency Department and received antihistamines for treatment, which improved their condition.

The NSW Food Authority was notified of the incident and followed-up with the venue. The kingfish steaks consumed by the cases were established as being from a single fish that was portioned on the premises. The fish was immediately isolated and removed from sale to mitigate ongoing risk. A sample of the fish was collected for histamine testing. Histamine levels were found to be <20 mg/kg, which is within permitted levels (up to 200 mg/kg).

Institutional gastrointestinal outbreaks

From 1 January to 31 March 2020, a total of 188 outbreaks of suspected viral gastrointestinal illness in institutions were reported in NSW affecting at least 1920 people (Table 4). This represents an increase in the number of outbreaks by 7% compared to the average number of outbreaks reported during the same quarter from 2015 to 2019 (n=175), and a decrease in the number of affected people by 18% compared to the mean number of people affected as a result of the gastroenteritis outbreaks during the same quarter from 2015 to 2019 (n=2306).

Of the 188 outbreaks, 149 (79%) occurred in childcare centres, 31 (16%) in aged care facilities, five (3%) in hospitals and three (2%) in other facilities (Table 4). The number of outbreaks in child care centres was 15% higher during quarter 1 2020 than the five-year quarterly average. Outbreaks for all other institution types were below their respective five-year quarterly averages, with outbreaks in hospitals 17% below average, and outbreaks in aged care facilities 21% below average. (Figure 4). The number of outbreaks in child care centres reported during quarter 1 has increased each year since 2014. Part of the increase is thought to be owing to better reporting.

Overall, 7% of staff members and 9% of non-staff became sick during gastroenteritis outbreaks in quarter 1 2020 (Table 5). The highest attack rate for gastrointestinal illness among staff was in hospital (20%) and among non-staff was also in hospitals (21%). Outbreaks lasted ten days on average (Table 5).

One or more stool samples were collected in 40 (21%) of the outbreaks. Norovirus was identified in 14 (35%) of these outbreaks. The results of the other samples were negative, or not reported (Table 5).

Public health units monitor gastroenteritis outbreaks in institutions and provide advice on control measures.

Figure 4. Number of reported outbreaks of gastrointestinal illness in institutions, quarter 1 2020 compared to the 5-year quarterly average, by month and facility type

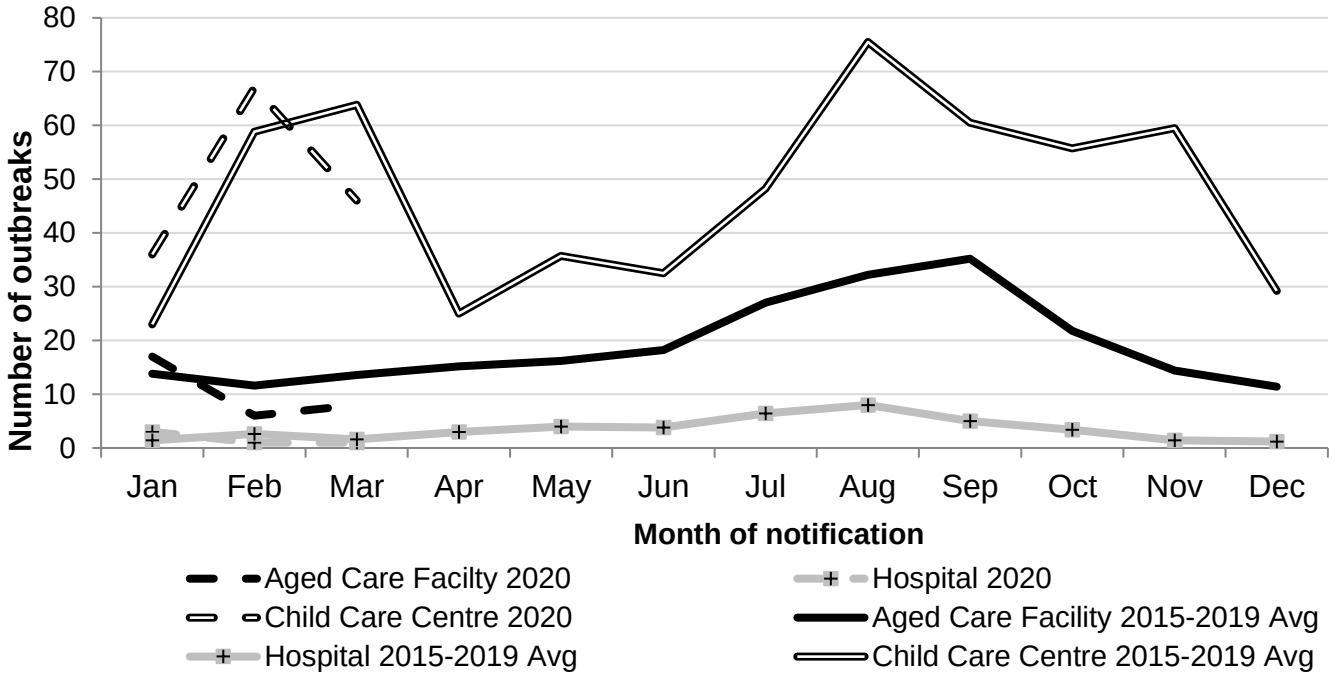


Table 4. Outbreaks of gastroenteritis in institutions reported in NSW, quarter 1 2020, by local health district[2]

Facility type	Q1 2020	FW	HNE	IS	M	MNC	NBM	NS	SES	SNSW	SWS	SYD	WNSW	WS	CC	NSW
ACF	No. of outbreaks	0	5	0	1	0	4	9	3	1	1	1	0	3	3	31
	Staff affected	0	3	0	5	0	9	15	1	1	0	0	0	20	23	77
	Non-staff affected	0	19	0	4	0	34	81	27	6	4	3	0	15	56	249
CCC	No. of outbreaks	0	35	23	4	1	15	5	17	3	3	3	1	22	0	149
	Staff affected	0	81	81	17	0	27	11	28	3	7	0	UNK	40	0	316
	Non-staff affected	0	246	285	63	5	144	32	127	25	16	16	UNK	199	0	1218
Hospital	No. of outbreaks	0	0	0	0	0	0	0	3	0	0	2	0	0	0	5
	Staff affected	0	0	0	0	0	0	0	17	0	0	4	0	0	0	21
	Non-staff affected	0	0	0	0	0	0	0	10	0	0	5	0	0	0	15
Other[1]	No. of outbreaks	0	0	0	0	0	0	1	0	0	1	1	0	0	0	3
	Staff affected	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
	Non-staff affected	0	0	0	0	0	0	6	0	0	4	12	0	0	0	22

[1] Other= university, sport & recreation centre

[2] NNSW did not report any outbreaks of gastroenteritis in institutions in this period

Table 5. Outbreaks of gastroenteritis in institutions reported in NSW, quarter 1 2020, by facility type

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	31	77: 3%	249: 11%	8	23: 74%	6: norovirus
CCC	149	316: 11%	1218: 9%	11	12: 8%	4: norovirus & 1: rotavirus
Hospital	5	21: 20%	15: 21%	7	4: 80%	4: norovirus
Other[1]	3	2: 3%	22: 6%	5	1: 33%	-
Total	188	416: 7%	1504: 9%	10	40: 21%	14: norovirus & 1: rotavirus

[1] Other= university, sport & recreation centre

METHODS

The data in this report are derived from disease surveillance and outbreak investigation activities undertaken by staff from NSW public health units, Communicable Diseases Branch (CDB), Health Protection NSW, OzFoodNet (OFN) staff and the NSW Food Authority (NSWFA).

Notifiable enteric diseases in NSW

Under the Public Health Act 2010 (NSW), the following enteric diseases and conditions are notifiable in NSW: botulism, campylobacteriosis, cholera, cryptosporidiosis, giardiasis, hepatitis A, haemolytic uraemic syndrome (HUS), hepatitis E, listeriosis, paratyphoid, rotavirus, Shiga toxin producing *Escherichia coli* (STEC/VTEC) infections, shigellosis, salmonellosis, typhoid, institutional gastroenteritis in two or more people, and foodborne disease in two or more people. Individual cases of other enteric diseases such as norovirus infection are not notifiable in NSW.

NSW laboratories report cases of notifiable enteric diseases to public health units (PHUs). Outbreaks of foodborne or suspected foodborne illness and institutional gastroenteritis are reportable by doctors, hospitals, child care centres and aged care facilities. Notifiable disease data are routinely entered by public health unit staff into the NSW Notifiable Conditions Information Management System (NCIMS).

Data sources for this report

Data in this report has been extracted from the NSW Notifiable Conditions Information Management System, NSW OFN Outbreak Database and the NSW Gastroenteritis in Institutions Database, all held by Health Protection NSW.

Data for outbreaks of suspected point-source foodborne enteric diseases were collected from the NSW Food Authority Notification of Foodborne Illness Outbreak Form, the Public Health Unit Environmental Request Form and the OFN Outbreak Summary Form and entered into an MS Access database. Data for enteric disease outbreaks in institutions with suspected person-to-person transmission of a viral pathogen were entered directly into NCIMS by public health units.

Methods

Data for all notifiable enteric diseases and conditions was extracted from NCIMS using Secure Analytics for Population Health Research and Intelligence (SAPHaRI)[i] using the calculated date of onset of disease. This is a composite field of the true date of onset provided by the notifying doctor or obtained during case follow-up, the date of specimen collection for laboratory notified cases, the date of notification by the doctor or laboratory, or the date of receipt of notification, whichever is earliest.

The counts of each notifiable enteric disease for Quarter 1 2020 were compared with the average annual count for the same quarter for the years 2015 to 2019 using SAS Enterprise Guide and MS Excel at Health Protection NSW.

Individual factors such as possible risk exposures are reported for cases where that information has been collected by the public health unit. "Unknown" place of acquisition usually indicates that the person was in more than one place during their exposure period, so that the place of acquisition cannot be definitively assigned. Possible risk factors are those reported by the case on questioning, and cannot be attributed as the source unless further investigation is undertaken.

[i] NSW Health Notifiable Conditions Information Management System (NCIMS), Communicable Diseases Branch and Centre for Epidemiology and Evidence, NSW Ministry of Health.

GLOSSARY

ACF	Aged-care facility
CC	Central Coast LHD
CCC	Childcare centre
FW	Far West LHD
HNE	Hunter New England LHD
HUS	haemolytic uraemic syndrome
ICPMR	Institute of Clinical Pathology and Medical Research
IS	Illawarra Shoalhaven LHD
LHD	Local Health Districts
M	Murrumbidgee LHD
MLVA	Multi-locus variable number tandem repeat analysis
MLST	Multi-locus sequence typing
MNC	Mid North Coast LHD
N	Number
NA	Not available
NBM	Nepean Blue Mountains LHD
NNSW	Northern NSW LHD
NS	Northern Sydney LHD
NSW	New South Wales
NSWFA	NSW Food Authority
Q	Quarter
SES	South Eastern Sydney LHD
SNP	single nucleotide polymorphisms
SNSW	Southern NSW LHD
STEC	Shiga toxin-producing *Escherichia Coli*
SWS	South Western Sydney LHD
SYD	Sydney LHD
WNSW	Western NSW LHD
WS	Western Sydney LHD
Yr	Year