



Public Health
England

Protecting and improving the nation's health

***Salmonella* data 2006 to 2015**

November 2016

National laboratory data for residents of England and Wales

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health, and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

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Key points for 2015

- The regions that reported the highest number of *Salmonella* laboratory reports were London and the South East with 1,559 and 1,473 respectively.
- The largest number of laboratory reports were seen in children below the ages of ten.
- September was the peak month for *Salmonella* reporting in 2015.
- In the Second Study of Infectious Intestinal Disease in the Community (IID2 Study), it was estimated that for every one case of *Salmonella* identified by national surveillance, there were 4.7 cases in the community (95% confidence interval of 1.2-18.2 cases).^{1,2}

Salmonella data 2006 to 2015

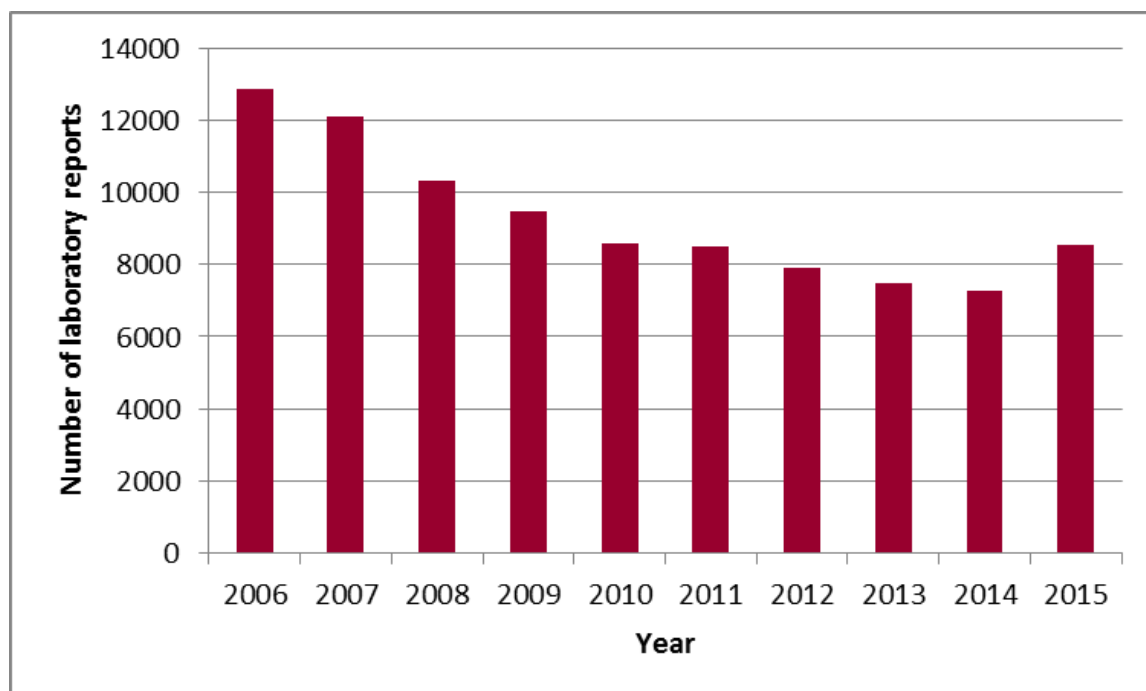
All data presented in this report are correct as of 03 November 2016 and excludes typhoidal salmonella.

1. Annual data (2006-2015)
 a. All *Salmonella*

Table 1: Annual laboratory reports of *Salmonella* in England and Wales.

Year	Number of laboratory reports	Laboratory reports per 100,000 population
2006	12849	23.82
2007	12094	22.24
2008	10321	18.82
2009	9482	17.17
2010	8573	15.39
2011	8492	15.12
2012	7919	14.00
2013	7493	13.16
2014	7250	12.63
2015	8558	14.78

Figure 1: Annual laboratory reports of *Salmonella* in England and Wales.

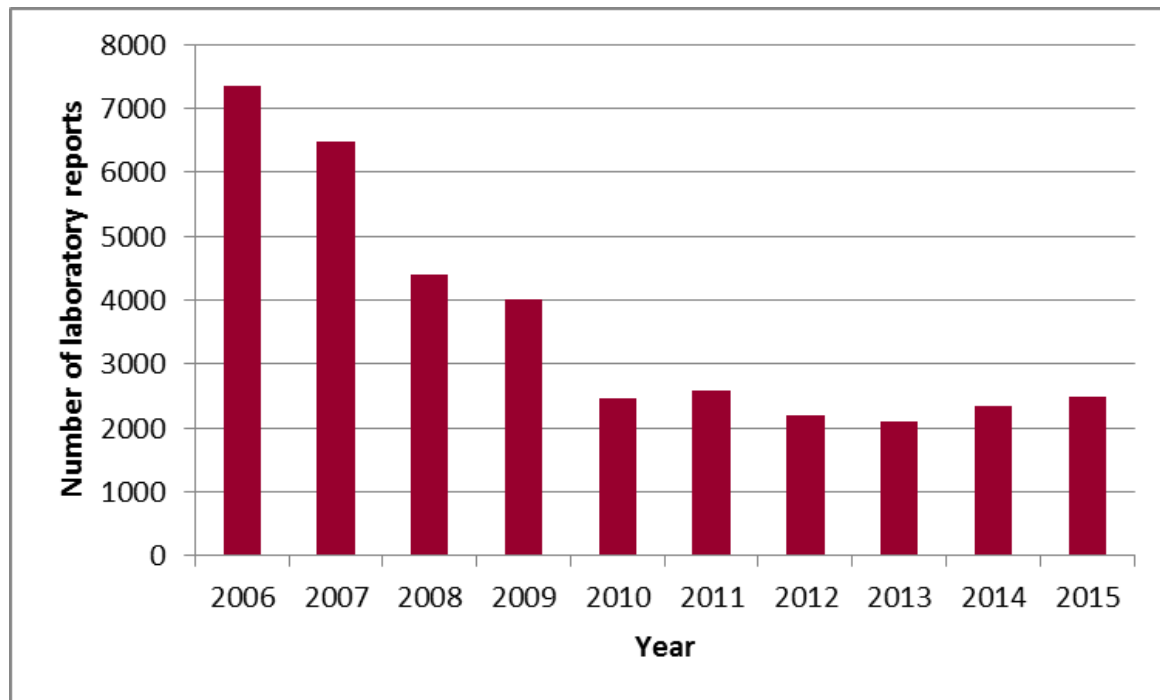


b. *Salmonella* Enteritidis

Table 2: Annual laboratory reports of *Salmonella* Enteritidis in England and Wales.

Year	Number of laboratory reports	Laboratory reports per 100,000 population
2006	7346	13.62
2007	6489	11.93
2008	4387	8.00
2009	4010	7.26
2010	2462	4.42
2011	2582	4.60
2012	2186	3.86
2013	2090	3.67
2014	2331	4.06
2015	2495	4.31

Figure 2: Annual laboratory reports of *Salmonella* Enteritidis in England and Wales.

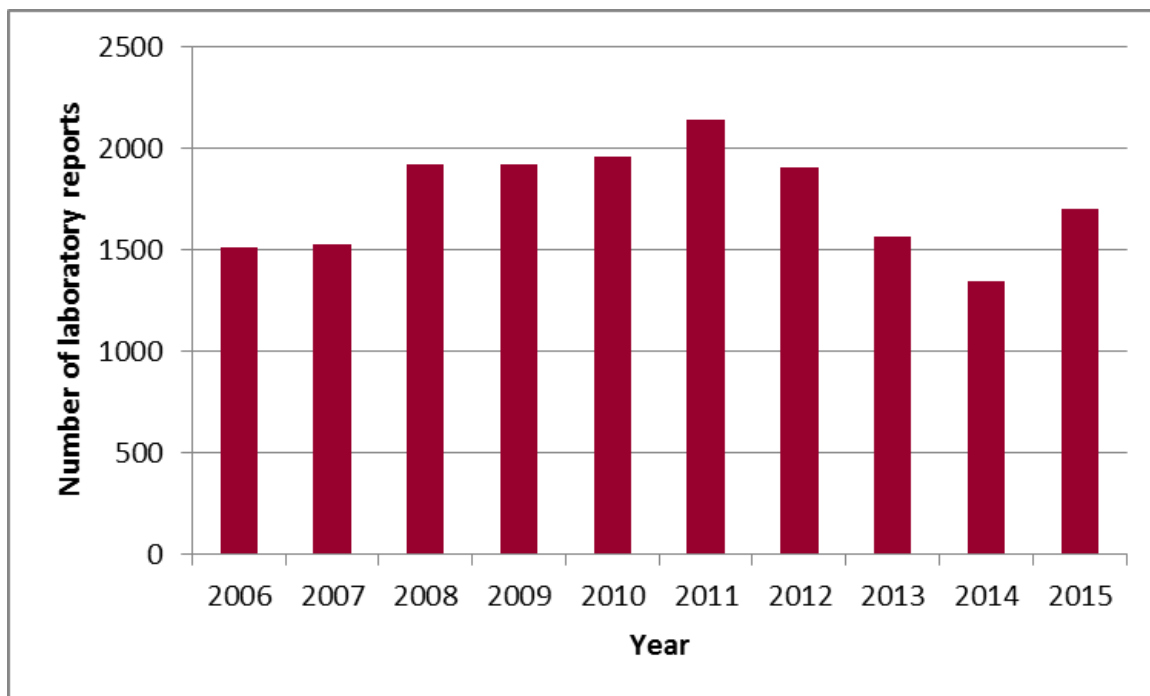


c. Salmonella Typhimurium

Table 3: Annual laboratory reports of *Salmonella* Typhimurium in England and Wales.

Year	Number of laboratory reports	Laboratory reports per 100,000 population
2006	1511	2.80
2007	1528	2.81
2008	1922	3.50
2009	1919	3.47
2010	1959	3.52
2011	2141	3.81
2012	1901	3.36
2013	1561	2.74
2014	1342	2.34
2015	1702	2.94

Figure 3: Annual laboratory reports of *Salmonella* Typhimurium in England and Wales.



2. Regional Data (2015)*

Table 4: Regional distribution of laboratory reports of *Salmonella* in England and Wales.

Country	Region	Laboratory reports
England	East Midlands	657
	East of England	795
	London	1559
	North East	421
	North West	1027
	South East	1473
	South West	771
	Yorkshire and The Humber	692
	West Midlands	790
Wales	Wales	373

Regional classification based on place of residence of laboratory reports and classified using NUTS1 codes.

3. Top 10 *Salmonella* serovars (2015)

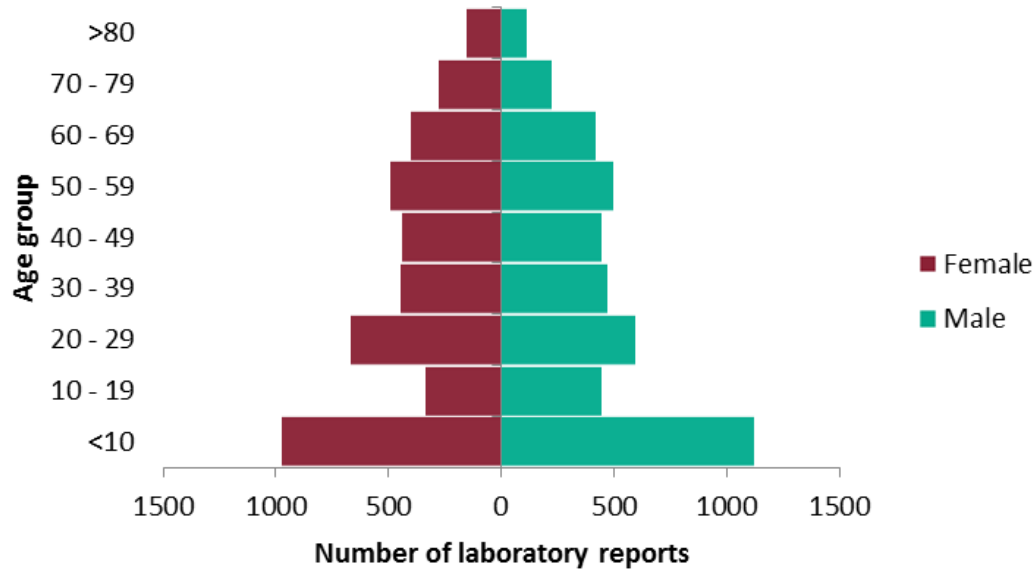
Table 5: List of top 10 *Salmonella* serovars reported in England and Wales

Serovar	Laboratory reports
Enteritidis	2495
Typhimurium	1702
Newport	231
Virchow	193
Infantis	168
Stanley	163
Kentucky	139
Agona	136
Braenderup	103
Java	102

4. Age/sex distribution (2015)

a. All Salmonella*

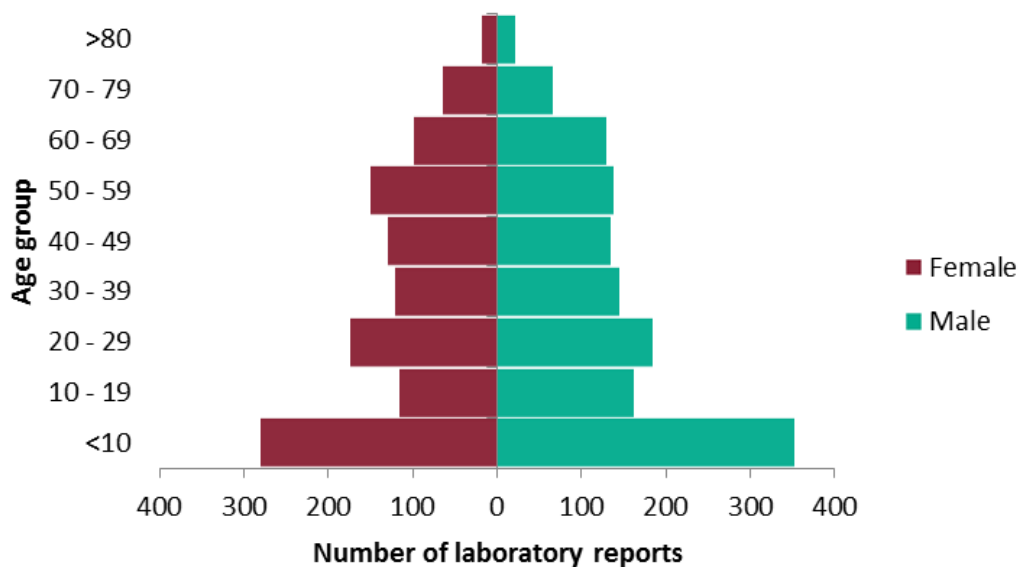
Figure 4: Age/sex distribution of laboratory reports of Salmonella in England and Wales.*



*41 laboratory reports with unknown data recorded

b. Salmonella Enteritidis*

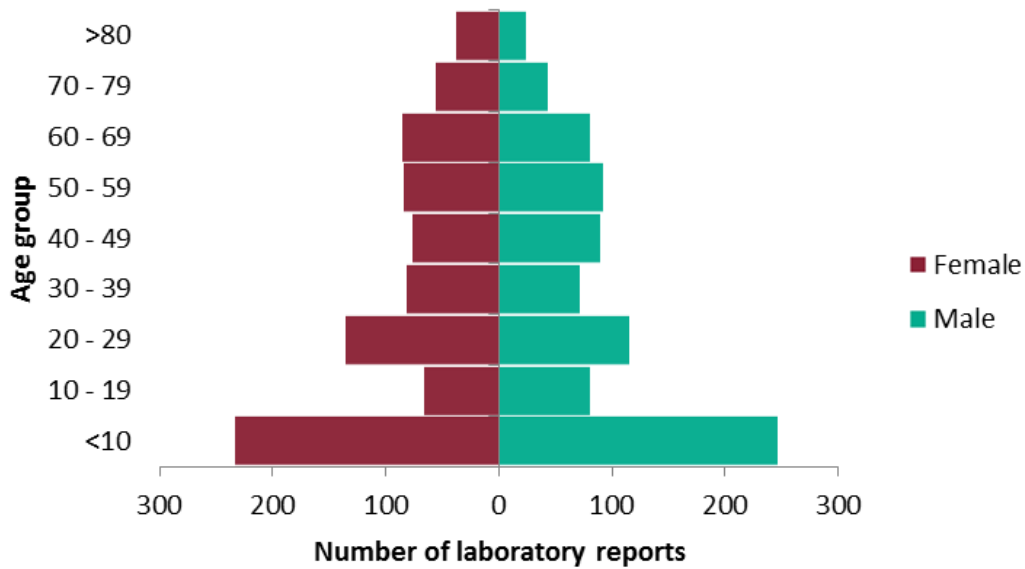
Figure 5: Age/sex distribution of laboratory reports of Salmonella Enteritidis in England and Wales. *



*41 laboratory reports with unknown data recorded

c. *Salmonella* Typhimurium*

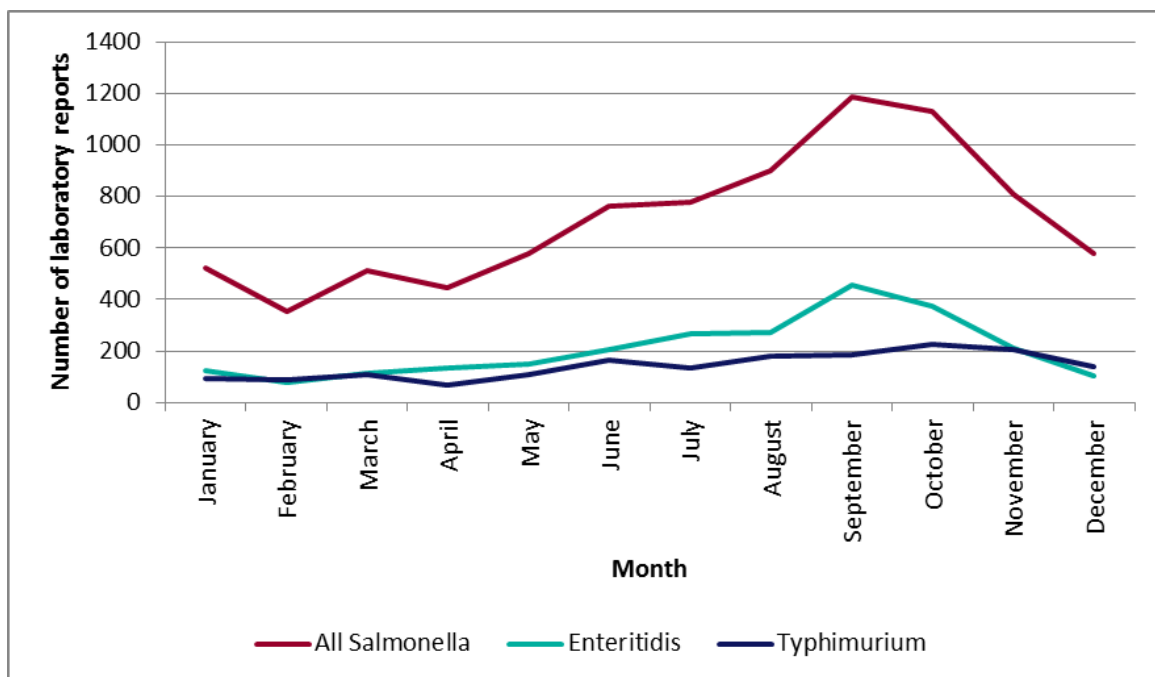
Figure 6: Age/sex distribution of laboratory reports of *Salmonella* Typhimurium in England and Wales.*



*4 laboratory reports with unknown data recorded

5. Seasonal variation (2015)

Figure 7: Seasonality of laboratory reports of all *Salmonella*, *Salmonella* Enteritidis and *Salmonella* Typhimurium in England and Wales.



6. Foodborne Outbreak Data (2015)

Table 6: Foodborne outbreaks of *Salmonella* in England and Wales

Agent	Total Affected	Laboratory confirmed	Hospitalised	Deaths	Setting	Food Description
<i>Salmonella</i> Bovis Morbificans	19	19	0	0	Restaurant	Chicken wraps/fajitas
<i>Salmonella</i> Enteritidis PT21	10	3	0	0	Club	No food identified
<i>Salmonella</i> Enteritidis PT21	23	23	0	0	Community	Chicken meat
<i>Salmonella</i> Enteritidis PT4	12	4	1	0	Pub	No food identified
<i>Salmonella</i> Enteritidis PT56	29	17	1	0	Take-away	Mixed foods - sandwiches
<i>Salmonella</i> Enteritidis PT59	3	3	0	0	Hotel	Eggs and egg products
<i>Salmonella</i> Enteritidis PT59	2	2	1	0	Residential institution	Eggs and egg products
<i>Salmonella</i> Kedougou	99	49	0	0	Restaurant	No food identified
<i>Salmonella</i> Typhimurium PT Untypable	31	7	0	0	Caravan park	Pork - hog roast

Data sources

- Public Health England Second Generation Surveillance System (SGSS)
This is a live laboratory reporting system therefore numbers may fluctuate. Data provided in this report are new extractions from this system and provide updated figures to previously published reports. In 2014, PHE upgraded the laboratory reporting system so direct comparisons between data reported from the previous system (LabBase2) and the new system (SGSS) may require cautious interpretation.
- Electronic Foodborne and Non-Foodborne Gastrointestinal Outbreak Surveillance System (eFOSS)

References

1. Tam CC, Rodrigues LC, Viviani L, Dodds JP, Evans MR, Hunter PR, et al. Longitudinal study of infectious intestinal disease in the UK (IID2 study): incidence in the community and presenting to general practice. *Gut*. 2011;61(1):69-77.
2. Food Standards Agency. The second study of infectious intestinal disease in the community (IID2 Study). <https://www.food.gov.uk/science/research/foodborneillness/b14programme/b14projlist/b18021>. Accessed 15 Dec 2015.

Acknowledgements

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We are grateful to our colleagues in the:

- Gastrointestinal Bacterial Reference Unit (GBRU) for providing the Reference Laboratory Services and laboratory surveillance functions and expertise
- PHE Information management Department for maintenance and quality assurance of PHE national surveillance databases used for Gastrointestinal Infections (GI) pathogen surveillance at the national level
- PHE Local Public Health Laboratories and Food Water and Environmental Microbiology Services for providing a surveillance function for GI pathogens and testing of food and environmental samples routinely and during outbreak investigation

Public Health England (PHE) has a statutory obligation to collect and report outbreaks of foodborne disease. This is aligned to the requirements of the Zoonoses directive 2003/99/EC. This directive requires that EU member states investigate and report all foodborne outbreaks to the European Food Safety Authority (EFSA). Additionally, information on other zoonoses outbreaks is included in eFOSS, i.e. non-foodborne outbreaks (mode of transmission covering animal contact, person to person contact, and recreational water).

We are grateful to all colleagues who have investigated and reported outbreaks to the Electronic Foodborne and Non-Foodborne Gastrointestinal Outbreak Surveillance System (eFOSS).

eFOSS-data extracted from PHE, Electronic Foodborne and Non-Foodborne Gastrointestinal Outbreak Surveillance System (eFOSS).

SGSS-data extracted from PHE, Second Generation Surveillance System (SGSS) which manages the flow of reports of infectious diseases from laboratories to Public Health England.