



Public Health  
England

Protecting and improving the nation's health

# ***Salmonella* data 2007 to 2016**

## **May 2018**

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-leading 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 Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

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Published: May 2018  
PHE publications  
gateway number: 2018070

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## Key points for 2016

The number of *Salmonella* cases in 2016 was similar to that in 2015, with 8,558 reported cases in 2015 and 8,630 reported cases in 2016.

From 2015 to 2016, there was a decrease in reports of *Salmonella* Enteritidis from 2,495 to 2,356. However, there was an increase in *Salmonella* Typhimurium from 1,702 to 1,770 reported cases.

The region that reported the highest number of *Salmonella* laboratory reports was London with 1,657 reports.

The largest number of laboratory reports were seen in children below the ages of 10.

September was the peak month for *Salmonella* reporting in 2016.

# Salmonella data 2007 to 2016

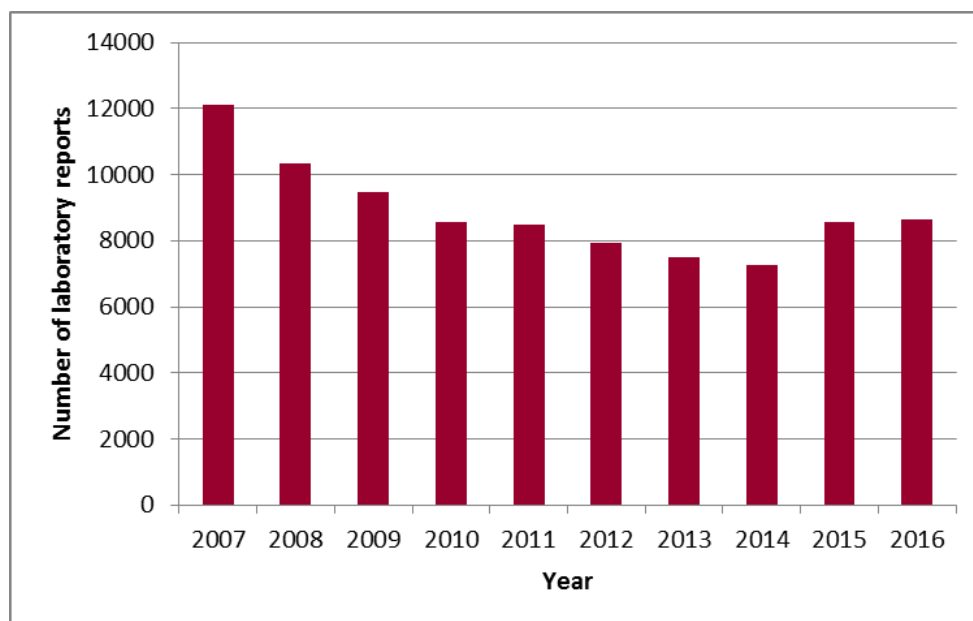
All data presented in this report are correct as of 3 November 2017. This report covers non-typhoidal *Salmonella* serovars; typhoidal *Salmonellae* (*S. Typhoid* and *S. Paratyphoid*) are reported in the [Enteric fever annual report 2016](#).

1. Annual data (2007-2016)
  - a. All non-typhoidal *Salmonella*

**Table 1: Annual laboratory reports of non-typhoidal *Salmonella* in England and Wales (2007-2016)**

Year	Number of laboratory reports	Laboratory reports per 100,000 population
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
2016	8630	14.78

**Figure 1: Annual laboratory reports of non-typhoidal *Salmonella* in England and Wales (2007-2016)**

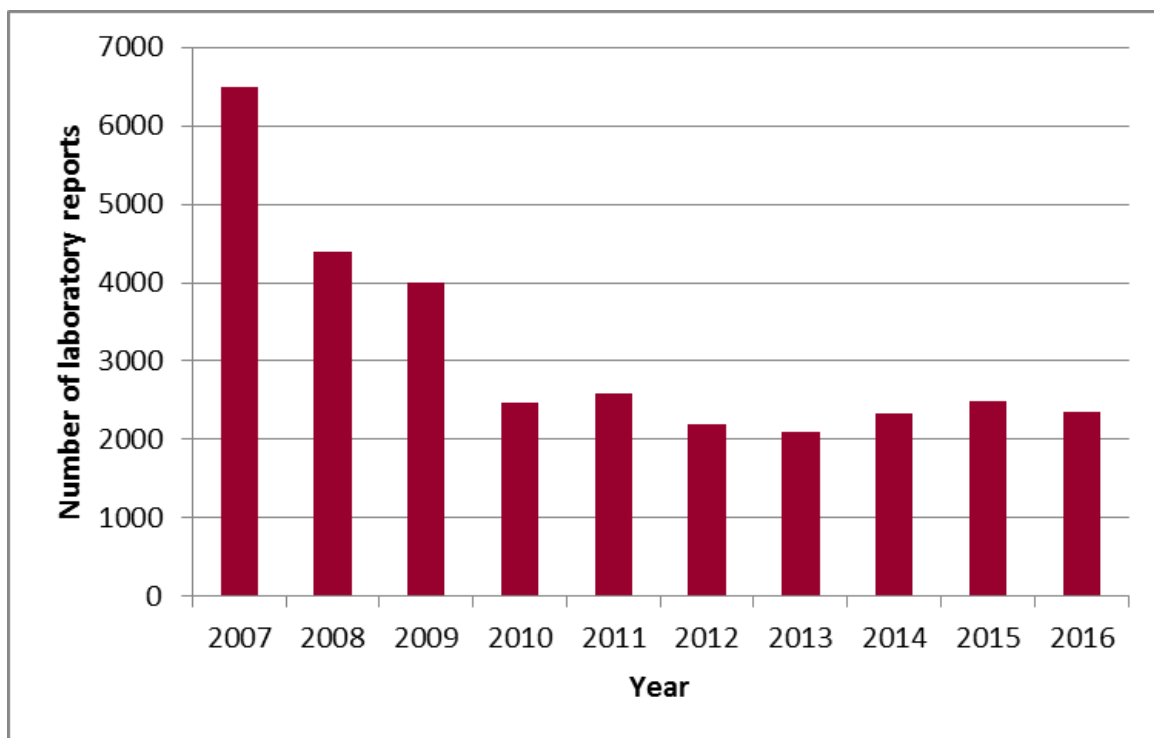


**b. *Salmonella* Enteritidis**

**Table 2: Annual laboratory reports of *Salmonella* Enteritidis in England and Wales (2007-2016)**

Year	Number of laboratory reports	Laboratory reports per 100,000 population
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
2016	2356	4.04

**Figure 2: Annual laboratory reports of *Salmonella* Enteritidis in England and Wales (2007-2016)**

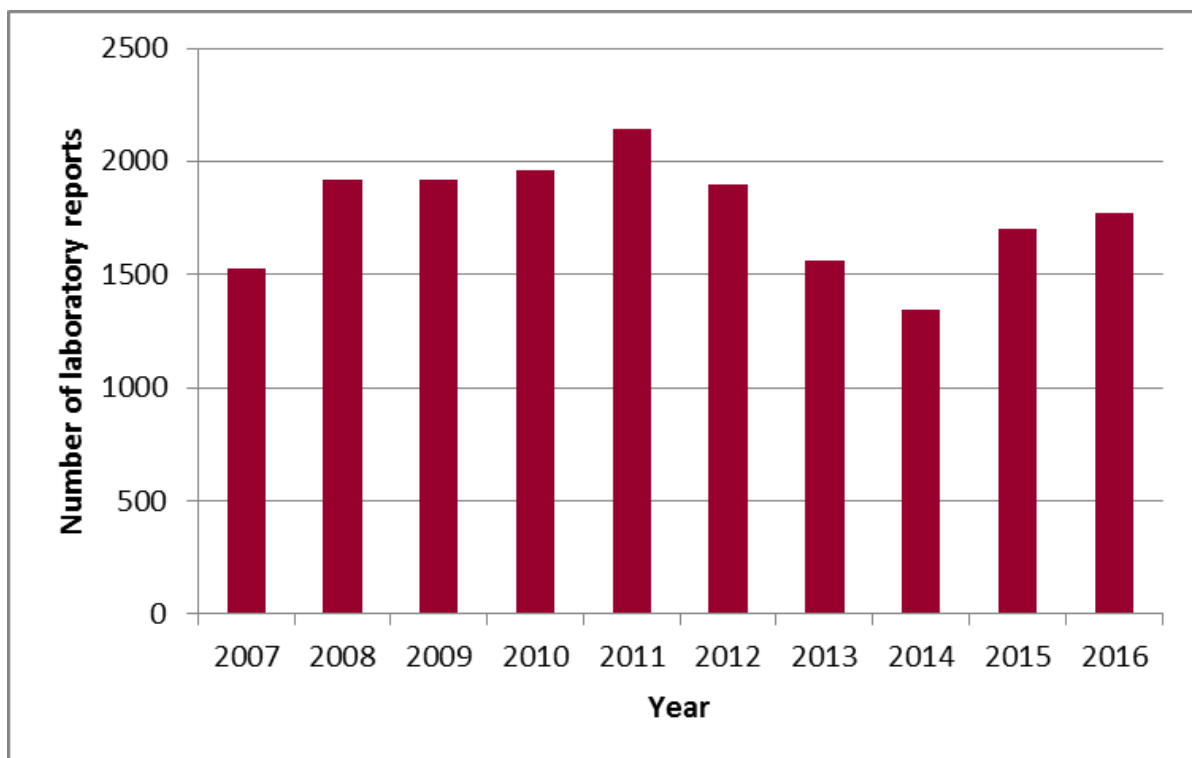


c. *Salmonella* Typhimurium

**Table 3: Annual laboratory reports of *Salmonella* Typhimurium in England and Wales (2007-2016)**

Year	Number of laboratory reports	Laboratory reports per 100,000 population
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
2016	1770	3.03

**Figure 3: Annual laboratory reports of *Salmonella* Typhimurium in England and Wales (2007-2016)**



## 2. Regional data (2016)

**Table 4: Regional distribution\* of laboratory reports of non-typhoidal *Salmonella* in England and Wales (2016)**

Country	Region*	Laboratory reports
England	East Midlands	570
	East of England	865
	London	1657
	North East	429
	North West	1019
	South East	1375
	South West	854
	Yorkshire and The Humber	815
	West Midlands	664
Wales	Wales	382

\*Regional classification based on place of residence of reported cases and classified using NUTS1 codes.

## 3. Top 10 *Salmonella* serovars (2016)

**Table 5: List of top 10 non-typhoidal *Salmonella* serovars reported in England and Wales (2016)**

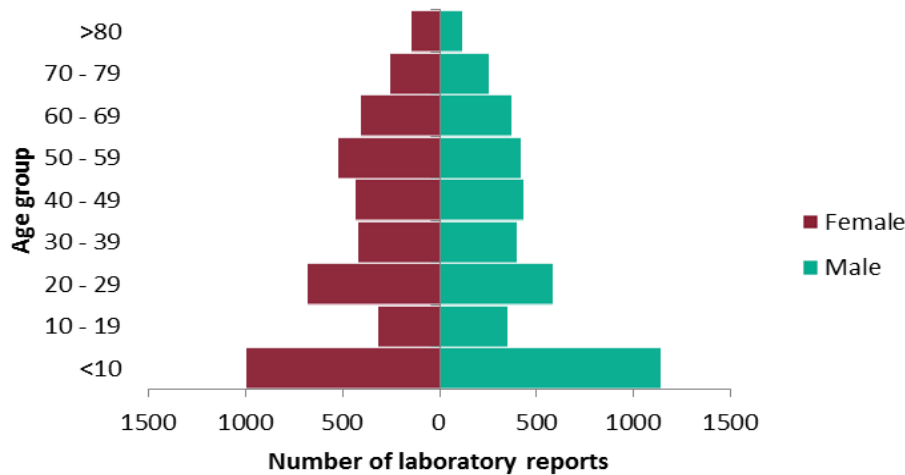
Serovar	Laboratory reports
Enteritidis	2356
Typhimurium	1770
Newport	236
Braenderup	188
Infantis	186
Stanley	154
Agona	148
Kentucky	140
Bareilly	132
Virchow	129



#### 4. Age/sex distribution (2016)

##### a. All non-typhoidal *Salmonella*

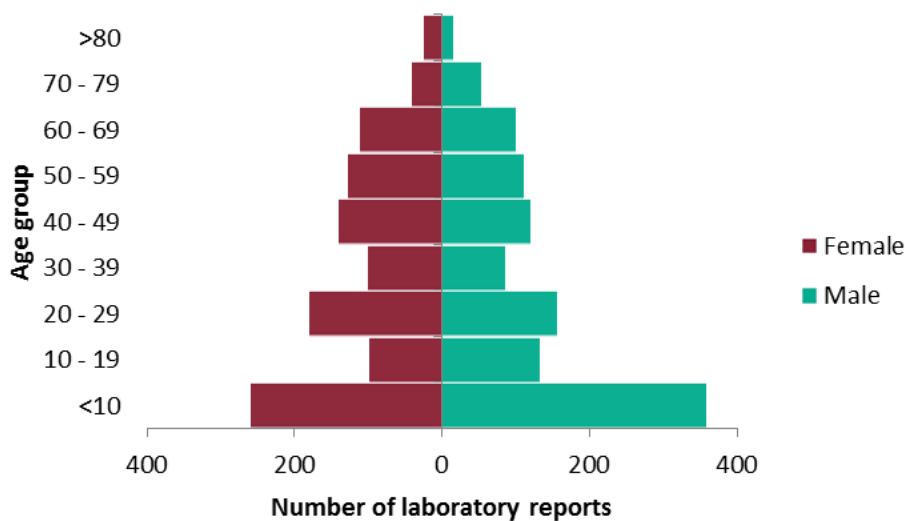
**Figure 4: Age/sex distribution of laboratory reports of *Salmonella* in England (2016)\***



\*Age/sex data not available for all Welsh laboratory reports so are not included. For data from England, 33 laboratory reports with unknown case age or sex recorded.

##### b. *Salmonella* Enteritidis

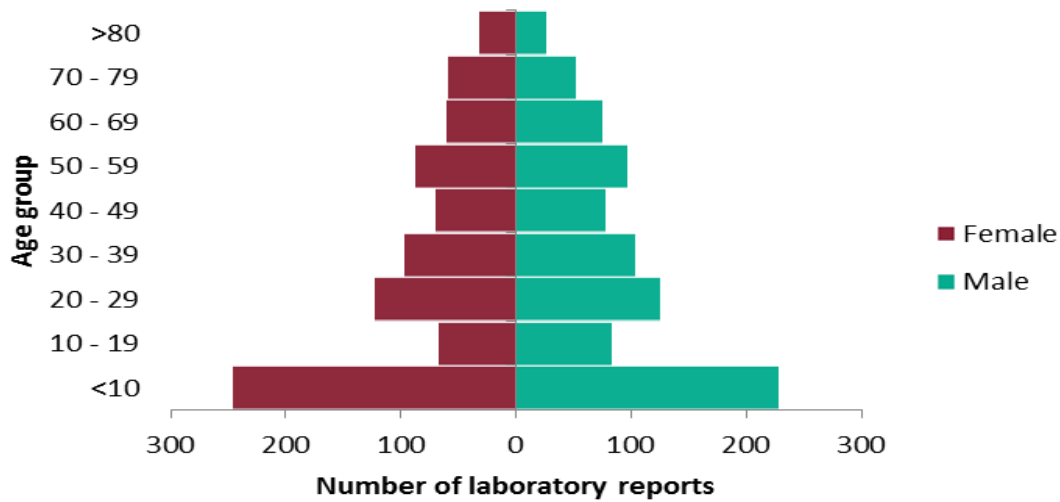
**Figure 5: Age/sex distribution of laboratory reports of *Salmonella* Enteritidis in England (2016)\***



\*Age/sex data not available for all Welsh laboratory reports so are not included. For data from England, 3 laboratory reports with unknown case age or sex recorded.

c. *Salmonella* Typhimurium

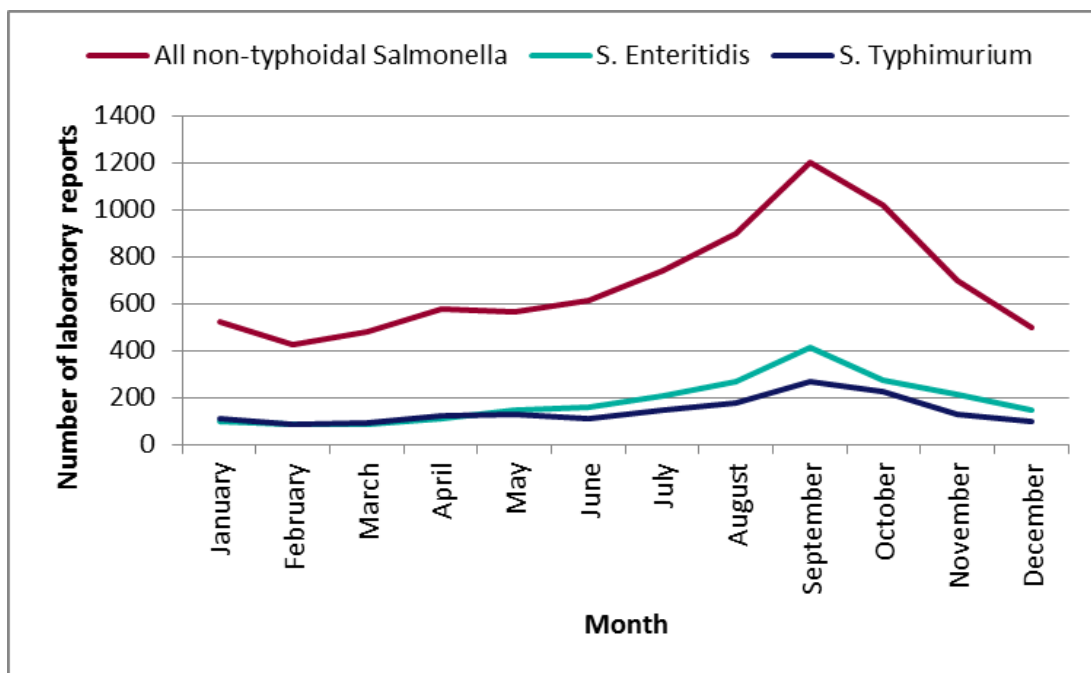
Figure 6: Age/sex distribution of laboratory reports of *Salmonella* Typhimurium in England (2016)\*



\*Age/sex data not available for all Welsh laboratory reports so are not included. For data from England, 2 laboratory reports with unknown case age or sex recorded.

5. Seasonal variation (2016)

Figure 7: Seasonality of laboratory reports of all non-typhoidal *Salmonella*, *Salmonella* Enteritidis and *Salmonella* Typhimurium in England (2016)\*



\*Excludes Welsh data.

## 6. Foodborne outbreak data (2016)

**Table 6: Foodborne outbreaks of non-typhoidal *Salmonella* in England and Wales in 2016**

Agent	Total Affected	Laboratory confirmed	Hospitalised	Deaths	Setting	Food Description
<i>Salmonella</i> Enteritidis	18	18	2	0	Restaurant	Suspected scrambled egg and fried rice balls (arancini)
<i>Salmonella</i> Enteritidis	36	10	0	0	School	Suspected mixed/composite foods
<i>Salmonella</i> Braenderup	20	20	2	0	Bar	Suspected mixed/composite foods
<i>Salmonella</i> Agona	10	10	0	0	Pub	No food identified
<i>Salmonella</i> Enteritidis	4	3	0	0	Pub	Suspected mixed/composite foods
<i>Salmonella</i> Enteritidis	21	13	1	0	Household	Tiramisu made with raw eggs
<i>Salmonella</i> Braenderup	46	46	3	0	Multiple places of exposure in more than one country*	No food identified
<i>Salmonella</i> Enteritidis	90	116	2	0	Multiple places of exposure in more than one country*	Shell eggs
<i>Salmonella</i> Enteritidis	95	95	0	0	Multiple places of exposure in more than one country*	Shell eggs
<i>Salmonella</i> Enteritidis	116	158	14	0	Multiple places of exposure in more than one country*	Shell eggs
<i>Salmonella</i> Enteritidis	32	32	0	0	Retail	No food identified
<i>Salmonella</i> Chester	19	19	0	0	Retail	Bean sprouts

\*Number of cases is only for cases resident in England and Wales.

## Data sources

Public Health England's Second Generation Surveillance System (SGSS). This is a live laboratory reporting system. Therefore, numbers are subject to change. 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).

# Acknowledgements

We are grateful to:

- the microbiologists and local authorities, health protection and environmental health specialists who have contributed data and reports to national surveillance systems
- the epidemiologists and information officers who have worked on the national surveillance of intestinal infectious diseases
- 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 investigations
- we are grateful to all colleagues who have investigated and reported outbreaks to the Electronic Foodborne and Non-Foodborne Gastrointestinal Outbreak Surveillance System (eFOSS)

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 zoonotic disease outbreaks is included in eFOSS, ie non-foodborne outbreaks (mode of transmission covering animal contact, person to person contact and recreational water).