

Introduction

Gastrointestinal illness is a common risk for international travellers. However, the incidence of enteric infection in travellers is often not reflected in surveillance programmes. In 2002, 20% of salmonella isolates, submitted to the National Salmonella Reference Laboratory of Ireland from throughout the country, were reported as travel associated¹.

The purpose of this study was to assess the extent that foreign travel contributes to the incidence of salmonellosis in the South Eastern Health Board (SEHB) region of Ireland.

Methods

Microbiological and epidemiological information collected at the time of illness, for surveillance and control purposes, were analysed retrospectively.

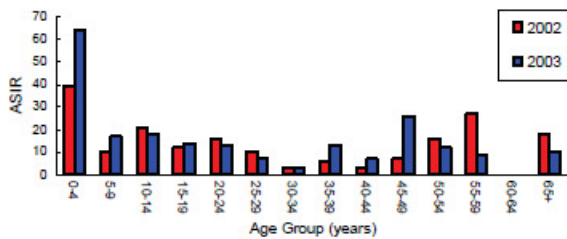
Results

1. Demographics

66 cases (16/10⁵ population) of salmonellosis were reported to the SEHB in 2003 compared with 60 (15/10⁵ population) in 2002.

The male: female ratio was 1.0: 1.0 for both years, with the highest incidence of disease occurring in young children, (Figure 1).

Figure 1: Age-specific incidence rates (ASIR per 100,000 population) for salmonellosis 2002-2003



2 Seasonality

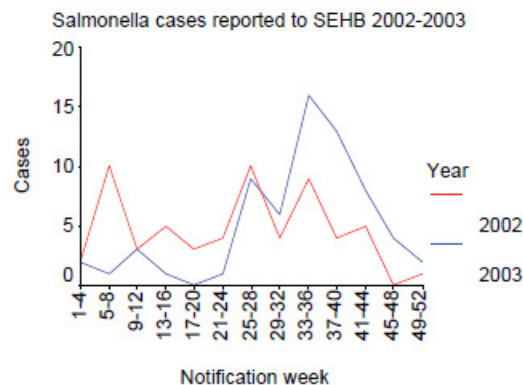
There were striking increases in the number of cases of salmonella notified during the summer months, with peaks occurring in mid/late June and mid/late August.

2002: 45% of cases were reported between mid June (week 25) and late September (week 40).

2003: 66% of cases were reported during the same time period.

2002: two further peaks in salmonella notifications occurred in weeks 5-8 and weeks 13-16. These were due to two outbreaks of salmonellosis in health care settings at that time.

Figure 2



3 Travel Association

2002: 58% (28/48) salmonella cases reported travel outside Ireland in the 2 weeks prior to onset of illness. The predominant destinations were Spain (8), the U.K. (3) and Thailand (3).

2003: 62.5% (35/56) of cases reported travel abroad in the two weeks prior to illness. The predominant destinations were Spain (15), Portugal (7) and Egypt (5).

Seasonal peaks noted in the summer months of 2002 and 2003 coincided with increases in cases reporting foreign travel in the two weeks prior to illness (Figure 3).

Table 1: Serotypes of Salmonella enterica isolated from SEHB cases

Serotype	2002		2003	
	Number	(%)	Number	(%)
<i>S. enteritidis</i>	19	(31.7)	37	(56.1)
<i>S. typhimurium</i>	27	(45.0)	16	(24.2)
<i>S. kentucky</i>	-	-	5	(7.6)
<i>S. angona</i>	2	(3.3)	-	-
<i>S. hadar</i>	2	(3.3)	1	(1.5)
<i>S. virchow</i>	2	(3.3)	1	(1.5)
Other serotypes	8	(13.6)	6	(9.0)

4 Serotype and travel (Table 1)

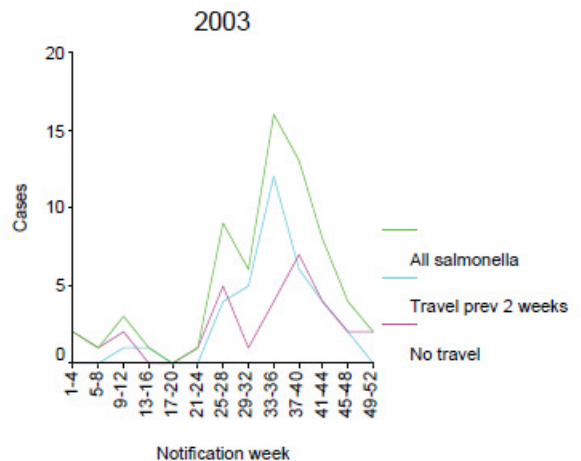
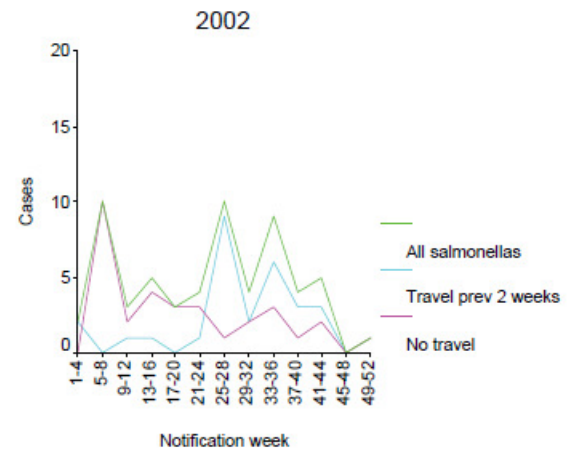
2002: *S. typhimurium* followed by *S. enteritidis* were the predominant serotypes. 79% (15/19) *S. enteritidis* reported travelling outside Ireland in the 2 weeks prior to onset of illness.

2003: *S. enteritidis* replaced *S. typhimurium* as the most common serotype isolated. 62% (23/37) *S. enteritidis* reported travelling outside Ireland in the 2 weeks prior to onset.

Spain and Portugal were the most frequently cited travel destinations.

Only 11% (3/27) and 19% (3/16) of *S. typhimurium* cases in 2002 and 2003, respectively, reported travel abroad in the two weeks before becoming ill.

Figure 3: Salmonella cases associated with travel 2003-2003



Discussion

Between 1998 and 2002, the crude incidence rate of salmonellosis in Ireland has steadily decreased¹. In the SEHB, the crude incidence rate decreased from 1999 to 2001, but against the national trend, the incidence has increased in the past two years.

This data highlights the increasing numbers of salmonella cases who may acquire the infection abroad with up to 50% of cases investigated in 2002 and 2003 associated with foreign travel.

The high proportion of *S. enteritidis* in cases who travelled overseas may well account for the emergence of *S. enteritidis* as the predominant serotype in the SEHB in 2003.

S. enteritidis is commonly associated with poultry and eggs. In Ireland, all poultry farms are tested and monitored for Salmonella, any flocks with confirmed *S. enteritidis* are slaughtered, and eggs produced under the Egg Quality Assurance Scheme are subject to enhanced Salmonella controls. Increased European and international tracking of sporadic travel related cases could be used to assist other countries in improving poultry and egg quality control measures.

Public awareness

This study highlights the need to raise public awareness of the risks of contracting serious infectious gastrointestinal illness while away from home (14% of *E. coli* O157 cases in the SEHB between 1996 and 2002 were travel associated²).

National food safety media campaigns should be expanded to include travel and information on personal and food hygiene when away from one's own environment.

1 Foley B, McKeown P, Cormican M. EPI INSIGHT 2003: 5(2)

2. Communicable Disease Update. 2003 2(2)