

## Voluntary surveillance of *Clostridium difficile* in England, Wales and Northern Ireland, 2012

---

### Key Points

- This update describes laboratory reports of *Clostridium difficile* (*C. difficile*) for the period January to December 2012. Reports are made on a voluntary basis to the HPA from laboratories in England, Wales, and Northern Ireland. *C. difficile* is usually identified by detection of *Clostridium difficile* toxin A from diarrhoeal stool specimens, but cases detected using alternative methods such as culture may also be reported to the voluntary surveillance scheme.
- There were 14,910 reports in 2012, comprising 13,352 from England, 969 from Wales and 589 from Northern Ireland. This was an overall 25% decrease in the number of *C. difficile* laboratory reports compared with 2011.
- The reported incidence of *C. difficile* per 100,000 population has decreased since 2011 in England, Wales and Northern Ireland from 33.1 to 25.1, 49.8 to 31.6 and 38.1 to 32.6, respectively.
- Three quarters of reported cases (75.7%) were in the 65 years and over age group.
- The number of laboratories across England, Wales and Northern Ireland (NI) reporting cases of *C. difficile* has decreased by 4.8% from 165 in 2011 to 157 in 2012.

This report covers voluntary laboratory reports of *C. difficile* faecal samples made to the HPA in 2012 for patients of all ages from laboratories in England, Wales, and Northern Ireland. Data were extracted on 22<sup>nd</sup> January 2013 and are provisional, as the number of reports for 2012 may increase due to late reporting.

Rates of *C. difficile* were calculated using Office of National Statistics 2011 mid-year resident population estimates as denominators. Data were analysed and displayed according to current regional HPA boundaries. For data from the mandatory surveillance of *C. difficile* in England please go to: <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/ClostridiumDifficile/EpidemiologicalData/MandatorySurveillance/>

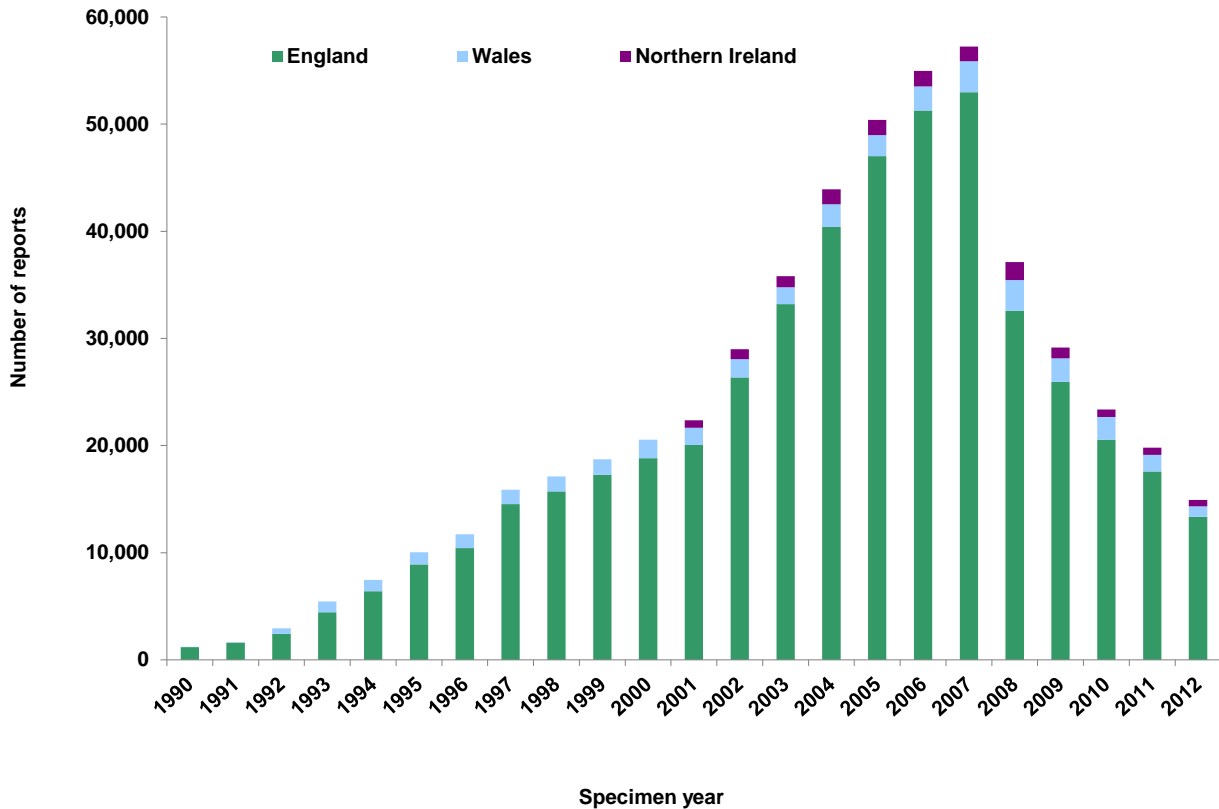
### Laboratory reports received under the voluntary reporting scheme

In 2012, the HPA received 14,910 reports of *C. difficile* positive faecal specimens, a 25% decrease on the 19,807 reports received during 2011 (Figure 1, Appendix Table 1). The 2012 total reports comprised 13,352 from England, 969 from Wales and 589 from Northern Ireland. This reflects a decrease of 24% in England, 36% in Wales, and 15% in Northern Ireland.

There was a 4.8% decrease in the number of laboratories across England, Wales and Northern Ireland reporting cases of *C. difficile*, from 165 in 2011 to 157 in 2012. This may be as a result of laboratory re-organisations.

## Voluntary surveillance of *Clostridium difficile* in England, Wales and Northern Ireland, 2012

Figure 1. Voluntary laboratory reports of *C. difficile* positive faecal specimens: England, Wales and Northern Ireland\*\* 1990 - 2012\*



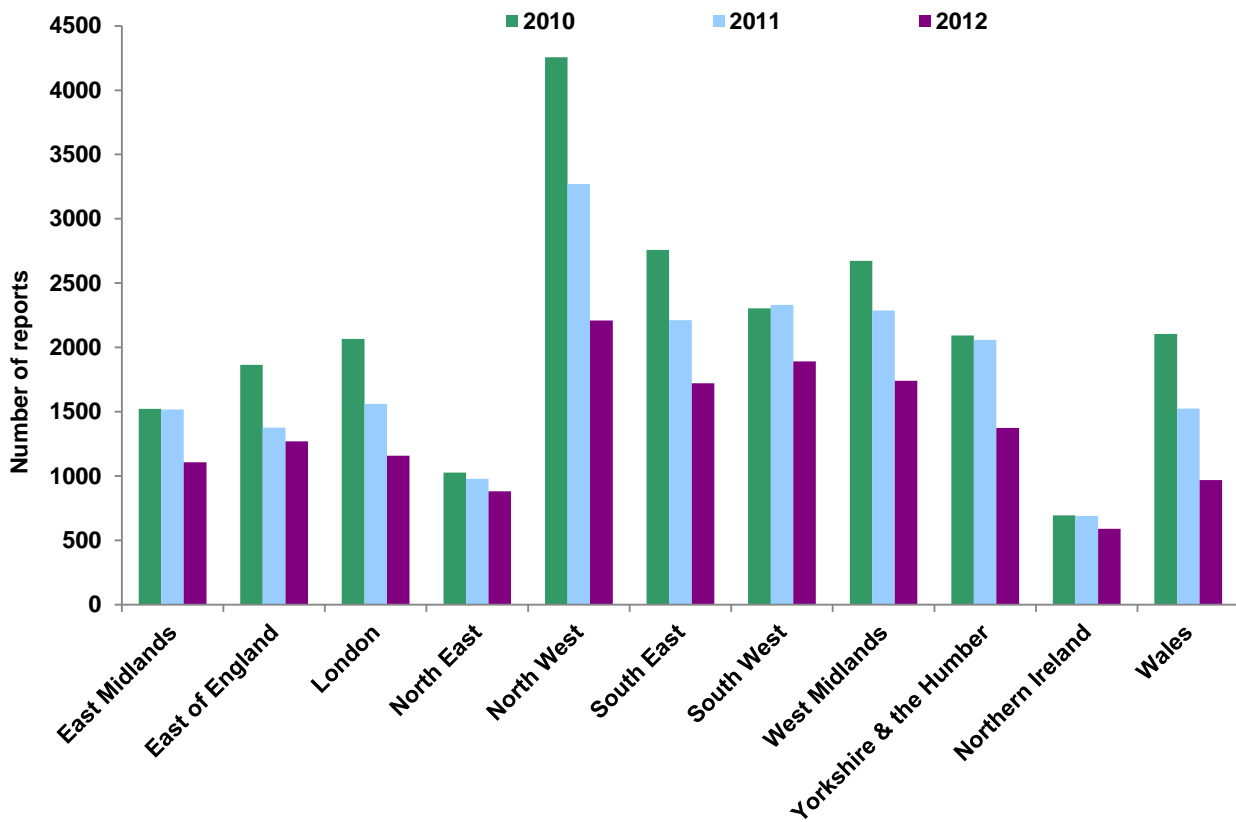
\* Data from 2012 are provisional (data was extracted on 22<sup>nd</sup> January 2013)

\*\* Northern Ireland reports included from 2001

Notably, the number of *C. difficile* reports made to the voluntary surveillance system for the North West region of England dropped from 4,256 in 2010 to 2,209 in 2012 (a 48% decrease) (Figure 2), the corresponding decrease in the mandatory surveillance system for the North West was 43% (from 4,222 reports in 2010 to 2,409 reports in 2012). The large decrease observed in the voluntary system is concurrent with the mandatory system, suggesting that this is likely to be a true decrease and not due to incomplete reporting. The proportionately larger decrease in reports of *C. difficile* in the North West (48%) in comparison with the other regions in England (35%) is unexplained.

## Voluntary surveillance of *Clostridium difficile* in England, Wales and Northern Ireland, 2012

Figure 2. Voluntary laboratory reports of *C. difficile*: English health regions, Wales and Northern Ireland 2010- 2012\*



\* Data from 2012 are provisional (data was extracted on 22<sup>nd</sup> January 2013)

### Region-specific rates of *C. difficile*

Variation in the rates of *C. difficile* reports were noted between England, Wales and Northern Ireland in 2012. The Northern Ireland reported rate was the highest at 32.6 per 100,000 population, greater than Wales (31.6 per 100,000) and England (25.1 per 100,000). The rate in Wales for the previous four years was markedly higher; however, between 2011 and 2012 there was a 37% decrease in Wales' *C. difficile* rate, which is a substantial proportion of the 67% overall decrease seen since 2008.

The overall rate of *C. difficile* laboratory reports for England, Wales and Northern Ireland was 25.7 per 100,000 population in 2012, a 25% decrease from 34.2 per 100,000 in 2011. The rates of *C. difficile* positive reports have continued to fall year-on-year for all regions in England; the overall rate for England has fallen from 63.3 per 100,000 in 2008 to 25.1 per 100,000 in 2012, representing a 60% decrease (Table 1). However, the regions within England reported a variation of *C. difficile* rates, ranging from 14.1 per 100,000 population in London to 35.7 per 100,000 population in the South West (Figure 3).

## Voluntary surveillance of *Clostridium difficile* in England, Wales and Northern Ireland, 2012

---

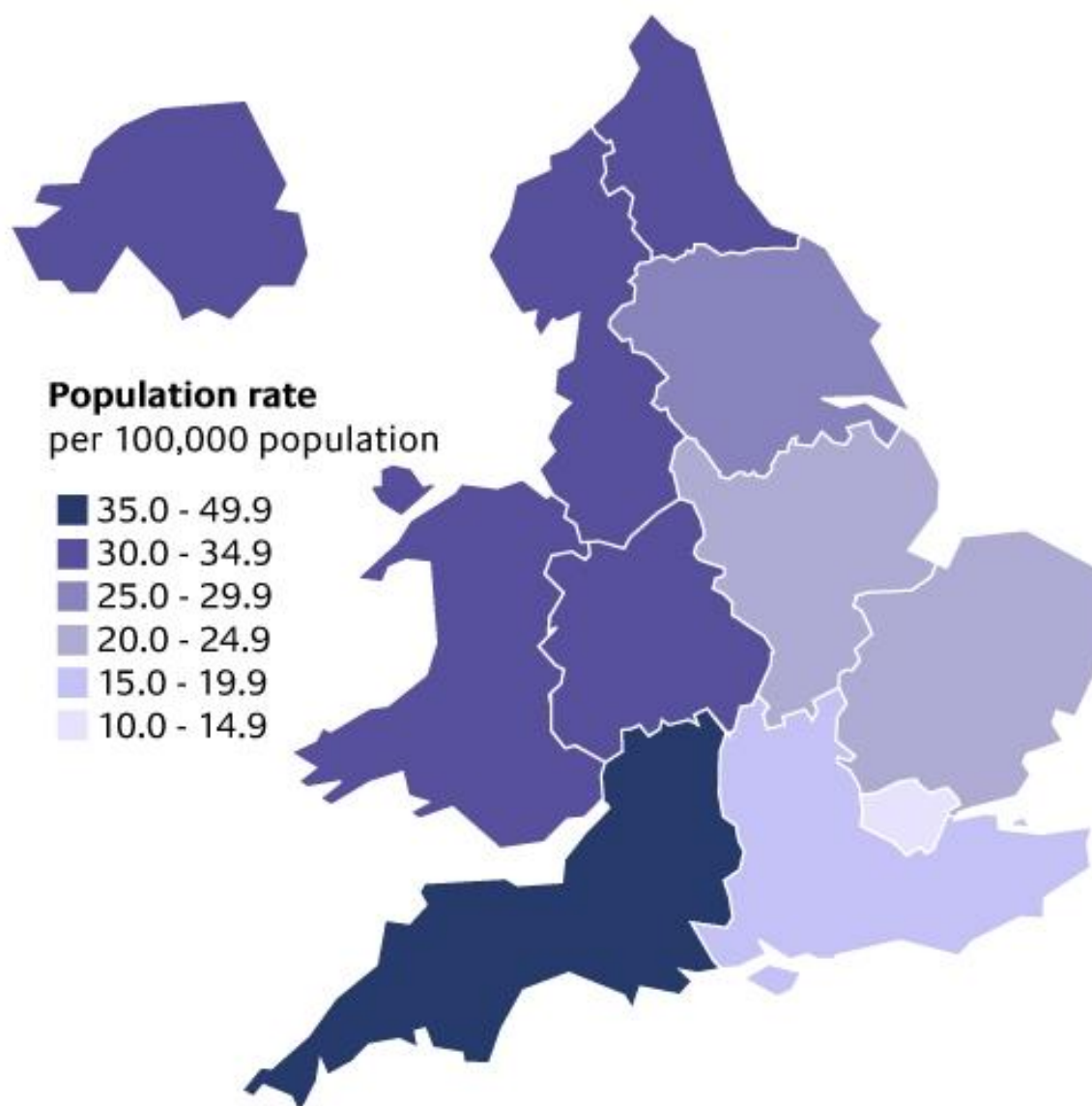
The reported rates of *C. difficile* in Wales and Northern Ireland have also fallen year-on-year since 2008 (67% and 65% decrease in reports between 2008 and 2012, respectively) (Table 1).

**Table 1. Region-specific rates of *Clostridium difficile* in England, Wales and Northern Ireland, 2008 to 2012, per 100,000 population.**

Region	2008	2009	2010	2011	2012
East Midlands	60.3	43.3	34.0	33.5	24.4
East of England	56.8	40.1	32.0	23.5	21.7
London	33.7	54.7	26.4	19.0	14.1
North East	86.6	49.2	39.4	37.7	34.0
North West	81.6	71.2	61.4	46.3	31.3
Yorkshire and the Humber	80.2	48.4	39.5	38.9	26.0
West Midlands	72.5	54.2	49.0	40.8	31.0
South East	50.8	37.1	32.3	25.6	19.9
South West	74.9	51.2	43.7	44.0	35.7
England	63.3	50.1	39.4	33.1	25.1
Wales	95.6	72.8	70.1	49.8	31.6
Northern Ireland	94.2	57.0	38.6	38.1	32.6
England, Wales & NI	66.0	51.5	41.0	34.2	25.7

## Voluntary surveillance of *Clostridium difficile* in England, Wales and Northern Ireland, 2012

Figure 3. Region specific rates of *Clostridium difficile* reports, England, Wales and Northern Ireland: 2012



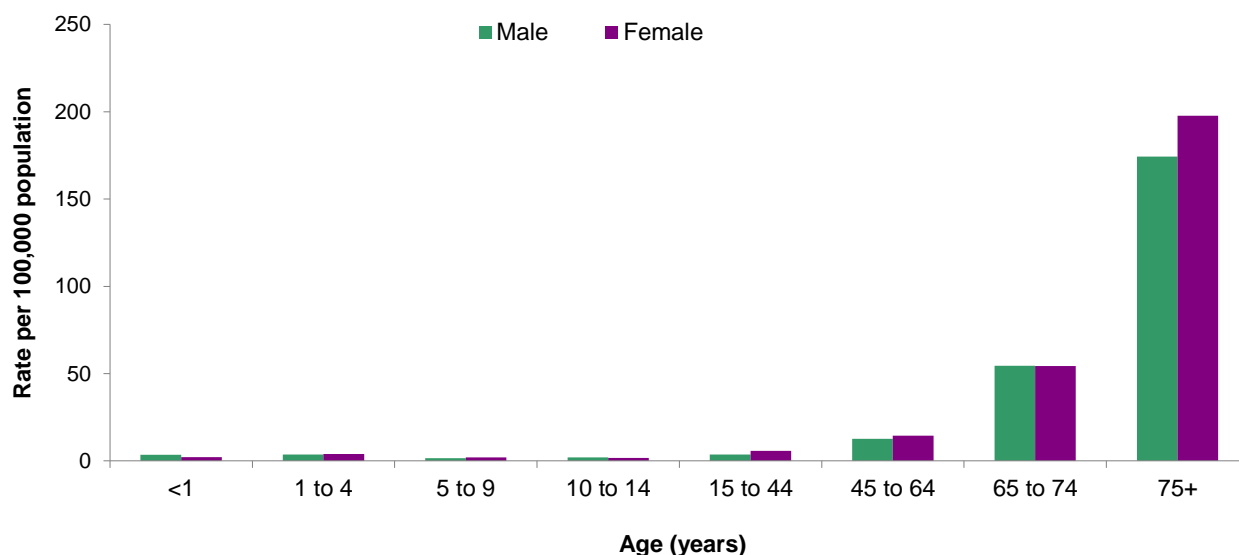
## Voluntary surveillance of *Clostridium difficile* in England, Wales and Northern Ireland, 2012

### Age and sex-specific rates of *C. difficile*

The age distribution of reports did not change substantially in 2012 in comparison to reports from 2011.<sup>1</sup> The highest age-specific rate was in those aged 75 years and over (189.0 per 100,000 population), and the rate for females was slightly higher than that for males in this age group (197.7 and 174.3 per 100,000 population, respectively) (Appendix Table 2). The second highest rate was for the 65 to 74 age group, with similar rates among females and males (54.3 and 54.5 per 100,000, respectively) (Figure 4 & Appendix Table 2). Overall, 75.7% of *C. difficile* reports were in patients aged 65 years and over. These results are similar to those obtained from previous reports.<sup>1-2</sup>

Compared with 2011, the number of *C. difficile* reports decreased by 24.2% for females and 24.5% for males. Overall rates of *C. difficile* reports were higher in females (29.3/100,000) than males (21.1/100,000).

**Figure 4. Age specific rates<sup>†</sup> of *C. difficile* from laboratory reports under voluntary reporting scheme: England, Wales and Northern Ireland, 2012\***



\* Data from 2012 are provisional (data was extracted on 22<sup>nd</sup> January 2013)

<sup>†</sup> Rates are calculated using 2011 ONS mid-year population estimates

# Voluntary surveillance of *Clostridium difficile* in England, Wales and Northern Ireland, 2012

---

## Discussion

- Voluntary *C. difficile* reports peaked in 2007 (Figure 1) but have since been decreasing in line with mandatory surveillance reports.<sup>3</sup> The most likely reason for this is the introduction of measures aimed at reducing incidence of *C. difficile*, for example enhanced infection control procedures with emphasis on hand washing, antibiotic prescribing policies, and isolation of infected patients.<sup>4,5</sup>
- Region-specific *C. difficile* rates have been decreasing since 2008 with Wales (67%) and Northern Ireland (65%) showing the largest decreases between 2008 and 2012 compared with England (60%).
- Wales' *C. difficile* rate had a relatively greater decrease (37% between 2011 and 2012) in comparison with Northern Ireland (14%) and England (24%).
- Age-specific rates show that *C. difficile* mainly affects older patients with the highest rate in people aged 75 years and older (189.0 per 100,000 population); the second highest rate was in those aged 65 to 74 years. In fact 75.7% of all reports were in those aged 65 years and above. These results are similar to those obtained in previous years.<sup>1,2</sup>
- The overall rate was higher in females than males (29.3 and 21.1 per 100,000 population, respectively). The reason for this gender disparity requires further investigation.

## Acknowledgements

We are grateful to microbiology colleagues in NHS acute Trusts for their contributions to this reporting scheme, as well as efforts from colleagues in the regional offices of the Health Protection Agency.

## References

1. Health Protection Agency. Voluntary Surveillance of *Clostridium difficile*, 2011. <http://www.hpa.org.uk/web/HPAweb&Page&HPAwebAutoListName/Page/1179745282413>
2. Health Protection Agency. *Clostridium difficile*: England, Wales and Northern Ireland, 2000 to 2002. *Commun Dis Rep CDR Wkly* 2003;13. [http://www.hpa.org.uk/cdr/archives/2003/bact\\_4003.pdf](http://www.hpa.org.uk/cdr/archives/2003/bact_4003.pdf)
3. Health Protection Agency. Mandatory Surveillance of *Clostridium difficile*, Annual publication, 2012. <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/ClostridiumDifficile/EpidemiologicalData/MandatorySurveillance/>
4. Department of Health. Save lives: Clean your hands. 4 May, 2012. <http://www.dh.gov.uk/health/2012/05/save-lives-clean-your-hands/>
5. Department of Health. Professional Letter – Chief Nursing Officer. Infection caused by *Clostridium difficile*, 2005. [http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Professionalletters/Chiefnursingofficerletters/DH\\_4124989](http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Professionalletters/Chiefnursingofficerletters/DH_4124989)

## Voluntary surveillance of *Clostridium difficile* in England, Wales and Northern Ireland, 2012

---

### Appendix

**Table 1. Number of voluntary reports of *C. difficile* positive faecal specimens in England, Wales and N. Ireland\*\* 1990-2012 \***

Year	England	Wales	Northern Ireland	England, Wales & Northern Ireland
1990	1,172	22	--	--
1991	1,591	70	--	--
1992	2,423	506	--	--
1993	4,439	993	--	--
1994	6,387	1,083	--	--
1995	8,905	1,134	--	--
1996	10,440	1,290	--	--
1997	14,541	1,331	--	--
1998	15,721	1,397	--	--
1999	17,279	1,438	--	--
2000	18,812	1,744	--	--
2001	20,064	1,599	689	22,352
2002	26,357	1,710	930	28,997
2003	33,200	1,587	1,016	35,803
2004	40,414	2,114	1,388	43,916
2005	47,021	1,957	1,412	50,390
2006	51,279	2,255	1,429	54,963
2007	52,983	2,883	1,384	57,250
2008	32,595	2,860	1,672	37,127
2009	25,956	2,182	1,019	29,157
2010	20,562	2,106	695	23,363
2011	17,593	1,525	689	19,807
2012	13,352	969	589	14,910

\* Data from 2012 are provisional (data was extracted on 22<sup>nd</sup> January 2013)

\*\* Northern Ireland reports reported from 2001



## Voluntary surveillance of *Clostridium difficile* in England, Wales and Northern Ireland, 2012

---

### Appendix

**Table 2. Age and sex distribution of voluntary laboratory reports of *C. difficile* in England, Wales, and Northern Ireland, 2012\***

Age Group (years)	Male	Female	Unknown	Total	Rate per 100,000		
					Male	Female	Total
<1	13	8	8	29	3.4	2.2	3.9
1 to 4	55	56	0	111	3.7	4.0	3.8
5 to 9	27	33	1	61	1.6	2.1	1.9
10 to 14	34	28	3	65	2.0	1.7	1.9
15 to 44	437	676	7	1120	3.7	5.8	4.8
45 to 64	917	1074	9	2000	12.6	14.4	13.6
65 to 74	1320	1423	6	2749	54.5	54.3	54.5
75+	3186	5323	34	8543	174.3	197.7	189.0
Unknown	22	16	194	232			
<b>Total</b>	6011	8637	262	14910	21.1	29.3	25.7

\* Data from 2012 are provisional (data was extracted on 22<sup>nd</sup> January 2013)