

Trends in *Staphylococcus aureus*/MRSA bacteraemia in Ireland, 1999 to the end of Q3 2011 (data correct as of 14th December 2011)

The Health Protection Surveillance Centre (HPSC) collects data on invasive isolates of *Staphylococcus aureus* as part of the European Antimicrobial Resistance Surveillance Network (EARS-Net), previously known as the European Antimicrobial Resistance Surveillance System (EARSS), from microbiology laboratories in hospitals throughout Ireland. Data are collected on the first isolate from blood per patient per quarter (i.e. no duplicates or second strains are included) in accordance with the EARS-Net case definition. The data collected include demographic data on patients (e.g. age and sex) and susceptibility of the isolates to important antibiotics (e.g. meticillin). From the latter, we determine the proportion of *S. aureus* isolates that are resistant to meticillin (**Meticillin-Resistant *S. aureus*** or MRSA).

The number of Irish laboratories reporting to EARS-Net at HPSC has grown over the years: from 11 in 1999 [representing approximately (~) 42% coverage of the Irish population], when the surveillance system first started here, to 44 by 2007 (100% coverage). Data are missing for one laboratory for the period Q3 2008–Q4 2008 (~98% coverage). In Q3 2011, one additional laboratory joined EARS-Net. It is important to note that the total numbers of both *S. aureus* and MRSA have increased over the 13 years that surveillance has been undertaken as a result of more laboratories participating, therefore the proportion of MRSA (%MRSA) gives the best indication as to what is happening over time in the data presented here.

The raw data are presented in Table 1 and the *S. aureus*/MRSA trends over time in Figure 1. The proportion of *S. aureus* that are MRSA (%MRSA) increased from ~39% to ~43% over the first four years and subsequently stabilized at ~42% from 2003 to 2006. The proportion decreased to 38.5% in 2007, 33.7% in 2008, 27.1% in 2009 and 24.4% in 2010, with the latter signalling a change from red (25% to <50%) to orange (10% to <25%) in the way that Ireland is represented on the EARS-Net map (Figure 2). In 2011 (to the end of Q3), the %MRSA appears to have levelled off at 24.5%. It should be stressed that the numbers reported to EARS-Net represent only a proportion of the total number of people infected and/or colonized with MRSA in Ireland.

Although the overall trend in the proportion of MRSA observed in Ireland is decreasing, it is still relatively high and compares with the UK and Southern European countries (Figure 2). In 2010, Ireland (23.9%, n=1,207; lower number than HPSC report as EARS-Net de-duplicates over the year) ranked 9th out of 28 countries reporting to EARS-Net (median, 17.8%). Eight countries reported MRSA proportions greater than 25% (2009, 10 countries; 2008, 13 of 33 countries; 2007, 13 of 31 countries). The lowest proportions are still seen in the Netherlands (~1%) and Nordic countries (≤3%). In 2010, seven countries reported a decreasing trend (including Ireland and the UK), while only four countries reported increasing trends (Germany, Hungary, Italy, Slovenia). 2008 was the first year that EARSS reported an improvement for MRSA in Europe with the situation stabilising or even decreasing in the majority of countries and this situation has continued into 2010 with the second report from EARS-Net.

For more information/FAQs on *S. aureus* and MRSA, see: <http://www.ndsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/EuropeanAntimicrobialResistanceSurveillanceSystemEARSS/ReferenceandEducationalResourceMaterial/SaureusMRSA/Factsheets/>

For more information on antimicrobial resistance/EARS-Net (EARSS) in Ireland, including the latest quarterly reports, see: <http://www.ndsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/EuropeanAntimicrobialResistanceSurveillanceSystemEARSS/>

For more information on antimicrobial resistance/EARS-Net in Europe, see: <http://www.ecdc.europa.eu/en/activities/surveillance/EARS-Net/Pages/Database.aspx>

Table 1. Total number of episodes of *Staphylococcus aureus* bacteraemia, numbers of meticillin-susceptible and meticillin-resistant *S. aureus*, and proportion (%) MRSA reported to the Health Protection Surveillance Centre (HPSC) as part of the European Antimicrobial Resistance Surveillance Network (EARS-Net) over the period 1999-2011*

Year	No. Laboratories	Estimated % Pop/n Coverage	Total <i>S. aureus</i> **	MSSA**	MRSA**	%MRSA
1999	11	52	510	312	198	38.8%
2000	18	66	639	390	249	39.0%
2001	20	79	815	478	337	41.3%
2002	23	83	1,042	597	445	42.7%
2003	28	91	1,140	660	480	42.1%
2004	41	96	1,323	770	553	41.8%
2005	42	98	1,424	832	592	41.6%
2006	42	98	1,412	820	592	41.9%
2007	44	98	1,393	857	536	38.5%
2008	43	98	1,303	864	439	33.7%
2009	43	100	1,309	954	355	27.1%
2010	40	100	1,251	946	305	24.4%
2011*	39	100	840	634	206	24.5%

MSSA, Meticillin-Susceptible *S. aureus*; MRSA, Meticillin-Resistant *S. aureus*

* Data for 2011 (to the end of Q3) are provisional (data correct as of 14/12/2011); ** Increasing numbers over the earlier years are due to more laboratories participating in the surveillance system; %MRSA gives the best indication of what is happening over all years

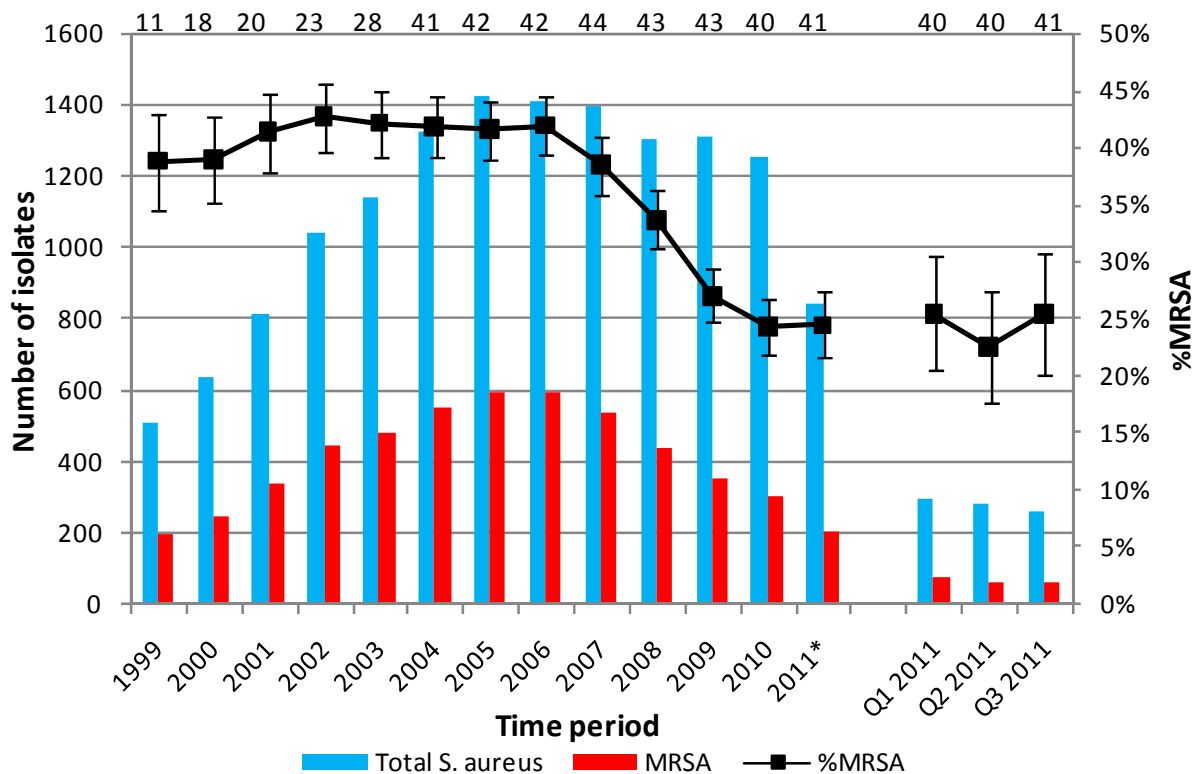


Figure 1. Trends for *S. aureus* by time period: by year for 1999–2011*: total numbers of *S. aureus*/MRSA and percentage MRSA with 95% confidence intervals. The number of participating laboratories is indicated above the bar for each year/quarter

* Data for 2011 (to the end of Q3) are provisional (data correct as of 14/12/2011)

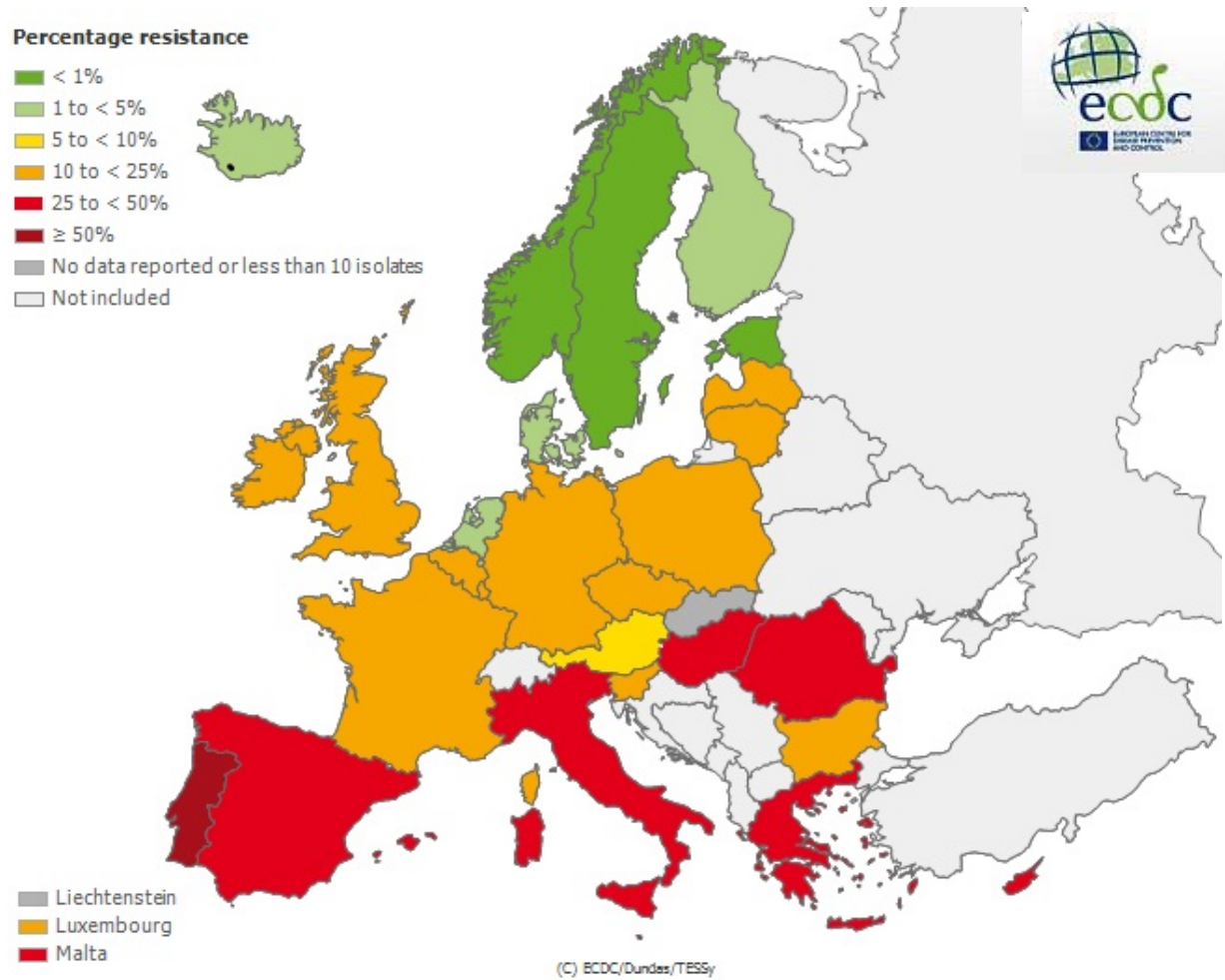


Figure 2. Distribution of MRSA in EARS-Net (previously EARSS) countries in 2010

Map downloaded from ECDC's TESSy database on 14/12/2011:

<http://ecdc.europa.eu/en/activities/surveillance/EARS-Net/Pages/Database.aspx>