

Trends in *Staphylococcus aureus*/MRSA bacteraemia in Ireland, 1999 to the end of Q4 2009 (data correct as of 19th February 2010)

The Health Protection Surveillance Centre (HPSC) collects data on invasive isolates of *Staphylococcus aureus* as part of 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 EARSS 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 EARSS 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). It is important to note that the total numbers of both *S. aureus* and MRSA have increased over the ten 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 participating laboratories represent both public and private hospitals and other healthcare institutions, thus the data in this bulletin and the quarterly EARSS report do not match the data presented in the latest HSE Healthcare-Associated Infection (HCAI) Report on *Staphylococcus aureus* bloodstream isolates in Ireland by acute public hospital.

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. In 2007, the proportion decreased to 38.5%. The proportion decreased further to 33.7% in 2008 and to 27.1% in 2009 (provisional data to the end of Q4). It should be stressed that the numbers reported for EARSS represent only a proportion of the total number of people infected and/or colonized with MRSA in Ireland.

Although the 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 2008, 13 of 33 countries in the EARSS network reported MRSA proportions greater than 25% (2007, 13 of 31 countries; 2006, 15 of 31 countries). The lowest proportions are still seen in the Netherlands (~1%) and Nordic countries ($\leq 3\%$), where increasing trends in recent years appear to have stabilised. Significant decreases in the %MRSA have been reported France (from ~33% in 2002 to ~24% in 2008), Slovenia (from ~21% in 2000 to ~7% in 2007) and the UK (from ~44% in 2005 to ~31% in 2008). Both Malta and Portugal reported proportions of MRSA over 50% in 2008, of which Portugal has seen an increasing trend since 2000. Overall, 2008 was the first year that EARSS could report an improvement for MRSA in Europe with the situation stabilising or even decreasing in the majority of countries.

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/EARSS in Ireland, including the latest quarterly reports, see: <http://www.ndsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/EuropeanAntimicrobialResistanceSurveillanceSystemEARSS/>

For more information on antimicrobial resistance/EARSS in Europe, see:

<http://www.rivm.nl/earss/>

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 System (EARSS) over the period 1999-2009*

Year	No. Laboratories	Total <i>S. aureus</i> **	MSSA**	MRSA**	%MRSA
1999	11	510	312	198	38.8%
2000	18	639	390	249	39.0%
2001	20	815	478	337	41.3%
2002	23	1,042	597	445	42.7%
2003	28	1,140	660	480	42.1%
2004	41	1,323	770	553	41.8%
2005	42	1,424	832	592	41.6%
2006	42	1,412	820	592	41.9%
2007	44	1,393	857	536	38.5%
2008	43	1,303	864	439	33.7%
2009Q1-4	44	1,310	955	355	27.1%

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

* Data for 2009 (provisional to the end of Q4) are provisional (data correct as of 19/02/2010); ** 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

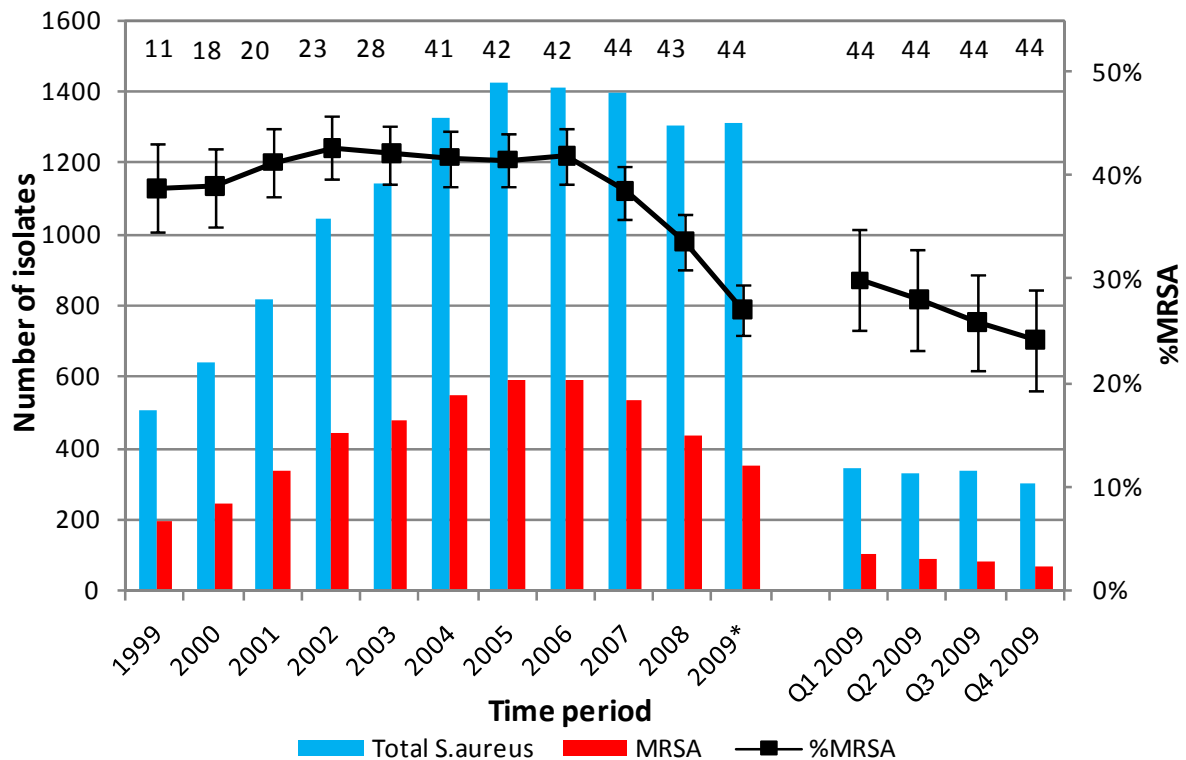


Figure 1. Trends for *S. aureus* by time period: by year for 1999–2009*: total numbers of *S. aureus*/MRSA and percentage MRSA with 95% confidence intervals. The number of participating laboratories is indicated above the bar for each year

* Data for 2009 (provisional to the end of Q4) are provisional (data correct as of 19/02/2010)

Proportion of MRSA isolates in participating countries in 2008
(c) EARSS

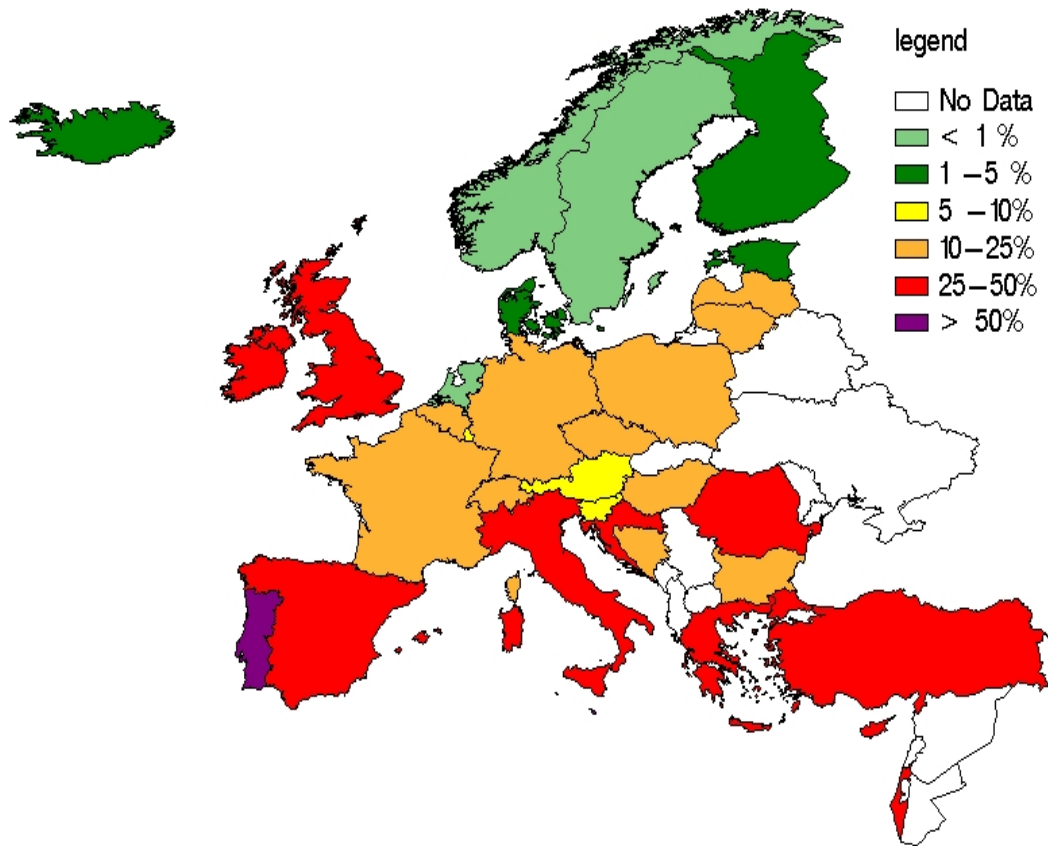


Figure 2. Distribution of MRSA in EARSS countries in 2008
Map downloaded from <http://www.rivm.nl/earss/database/> on 24/08/2009