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## Objectives

Surveillance data prove an increase in methicillin-resistant *S. aureus* (MRSA) prevalence in German hospitals since the 1990s. In 2006, MRSA proportions around 21 percent were reported: EARSS: 21,0% in blood cultures (1); GENARS: 20,7% in any material for university hospitals (2). In contrast, little is known about the situation in ambulatory care settings in Germany.

To gain a first insight, a dataset from a laboratory serving for physicians in the city and surroundings of Berlin covering the period from 2000 to 2006 was analyzed.

**Table 1:** Trends of MRSA overall (shaded grey) and by specialty – specification in percent (upper value) of number of *S. aureus* isolates (in italics below) – regression coefficient (upper value) and 95% CI (in italics below)

**Figure 2:** Regression analysis results a) overall b) for selected specialties: dots – observed MRSA proportion in percent, blue line – regression line, dotted lines – 95% confidence interval

## Materials & Methods

The dataset originates from a laboratory covering almost a third of the physicians in ambulatory care in the Berlin area; it is based on clinical specimens of all specialties 2000-2006.

*S. aureus* identification and antimicrobial susceptibility testing (AST) were performed by VITEK 1 (bioMérieux). The phenotypical detection of MRSA was confirmed by subsequent PCR for *MecA* gene.

A total of 18,767 *S. aureus* isolates was analyzed; the sample was adjusted for copy strains: only the first isolate of the same material per patient and year was included. The percentage composition by material was: 23.6% wound swabs, 16.8% nose and throat, 16.8% swabs without location, 42.8% others. Time trends were calculated by linear regression.

## Results

Results are given in the table below and illustrated by the figures at the bottom:

From 2000 to 2006 the percentage of MRSA in ambulatory care increased from 2.7 percent to 17.0 percent with a yearly increment of 2.4% (CI: 2.2 – 2.6).

Stratification by the specialty of the physicians resulted in significant differences: highest proportions of MRSA were found

in internal medicine (28.1%), followed by GPs (16.1%) and surgery (9.8%), low proportions were observed in ENT (3.8%), pediatrics (1.6%), and gynecology (0.9%). All specialties except for pediatrics and gynecology showed an increase over the years. The major increase was observed for internal medicine, it peaked with 36% in 2006.

specialty	year						total	regression coefficient (95%-CI)
	2000	2001	2002	2003	2004	2005		
internal medicine	8.9	8.8	22.9	33.9	34.9	31.1	36.0	28.1 3.4 - 5.4
general medicine	4.0	6.0	15.1	19.0	13.9	21.0	25.1	16.1 3.2 3.22 386 464 431 452 514 606
surgery	2.9	5.1	8.1	12.1	11.0	15.9	16.9	9.8 2.4 580 533 559 514 491 478 413 3568 1.9 - 2.9
ear nose throat	1.1	2.0	4.0	2.0	5.0	6.1	5.0	3.8 0.7 370 397 447 405 564 479 424 3086 0.4 - 1.1
pediatrics	1.1	1.0	3.1	2.1	1.0	2.2	1.1	1.6 0.0 279 298 255 238 299 325 272 1966 -0.3 - 0.3
gynecology	1.1	0.9	0.9	0.0	0.9	1.1	1.1	0.9 0.0 176 214 215 206 216 276 281 1584 -0.2 - 0.2
others	1.9	6.0	6.9	11.0	13.0	19.0	19.0	12.1 2.9 369 416 390 419 423 505 700 3222 2.4 - 3.5
overall	2.7	4.4	8.9	12.3	11.7	15.1	17.0	10.8 2.4 2265 2459 2596 2532 2792 3024 3099 18767 2.2 - 2.6

## Conclusions

Analysis of AST data from the Berlin area showed a continuous increase of MRSA proportions in ambulatory care settings from 2000 to 2006 reaching and passing levels known from hospital settings. Unfortunately, no further information is available that allows distinction of infection and colonisation respectively health care associated and community acquired MRSA. In the light of these results the ambulatory care sector should be included into a national antimicrobial resistance surveillance; this will be started in Germany in 2008.

## References

- www.rivm.nl/earss
- www.genars.de/data.htm

Figure 2a ↓

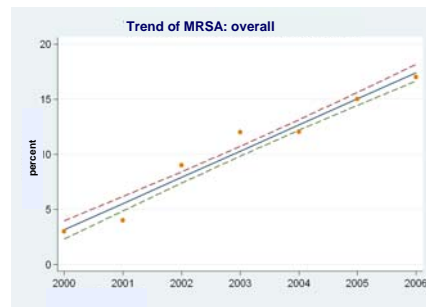


Figure 2b ↓

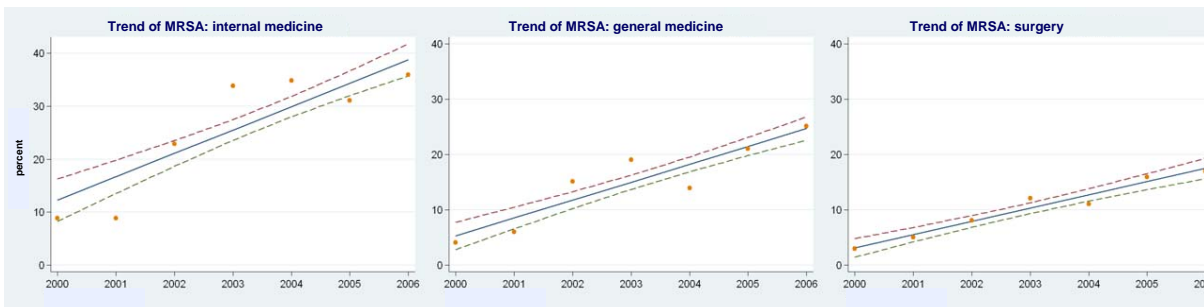


Table 1 ↑