# Background

Multidrug resistant gram-negative Enterobacteriaceae, are increasing world-wide in hospital and community-settings due to rapid spread of extended spectum betalactamase (ESBL). So far ESBL-epidemiology in Switzerland has not been described systematically.

### Aims

To describe temporal and regional trends of third or fourth generation cephalosporin resistance (3GR) in *Escherichia coli* an *Klebsiella pneumonie* in Switzerland.

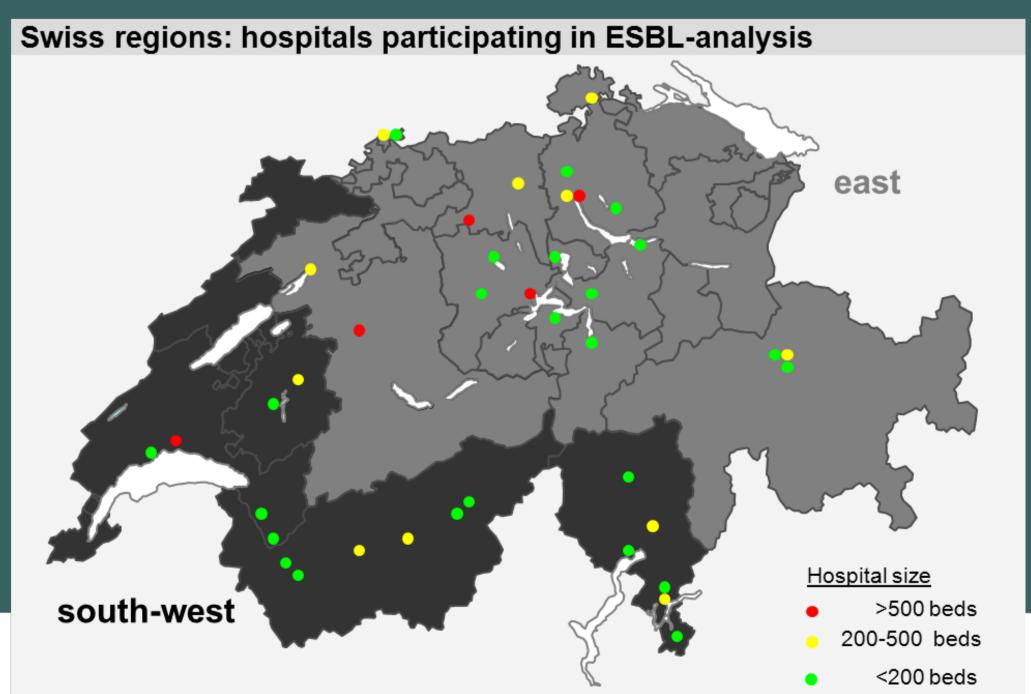
### Methods

To describe the temporal trends of 3GR *E. coli* and *K. pneumonia* we used data from the laboratory-based nation-wide surveillance system ANRESIS (www.anresis.ch).

- ANRESIS collects routine resistance data of actually 23 Swiss laboratories.
- ANRESIS includes in- and outpatient resistance data of all Swi regions. Outpatient data includes data from private physicians as well as data from outpatient clinics.
- For temporal trends 2006-2010 we included data from 16 laboratories / 40 hospitals sending data continuously since 200
- For temporal trends 2004 2010 we included data from 11
   laboratories / 34 hospitals sending data continuously since 20
- Only one isolate per patient and year was included in the analysis.

# Conclusion

In Switzerland, resistance to 3rd generation cephalosporines among *E. coli* and *K. pneumoniae* is increasing at low but constarates since 2004. Increase is comparable in the hospital and outpatient setting, but is higher in hospitals with >500beds than is smaller hospitals. While in *E. coli* 3GR is significantly higher in east- than in south-west Switzerland in 2010 there was a trend fo higher 3GR in *K. pneumoniae* in south-west Switzerland in 2010.



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# Temporal trends of Enterobacteriaceae with resistance to higher generation cephalosporines in Switzerland, 2004 to 2010

A. Kronenberg, M. Hilty, K. Mühlemann for anresis.ch

According to the Swiss hospital statistics 2007 www.bag.admin.ch) the 40 hospitals included in or covered 43.3% of acute care hospital beds in south 3.6% in east-Switzerland in 2007 samples analyzed for this study covered 3 beddays tpatient data 60.2 % of outpatient data were from medical practit 9.2% from outpatient clinics. Resistance rates were comparable in both subgroups (data not shown). In total data from 2214 medical practitioners were in						
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7.8%

4.5%

blood

urine

128

1103

3.6%

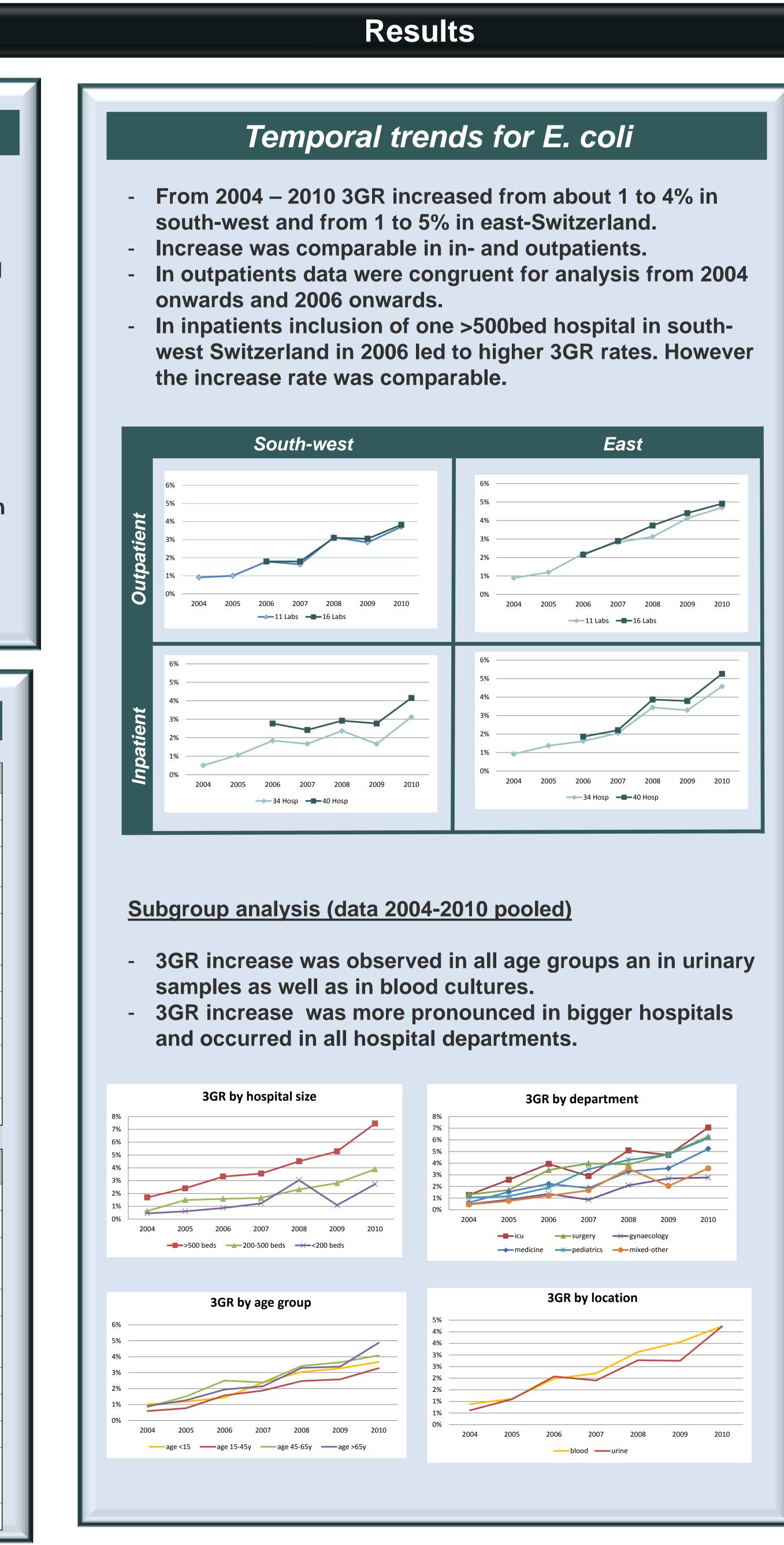
3.3%

167

1868

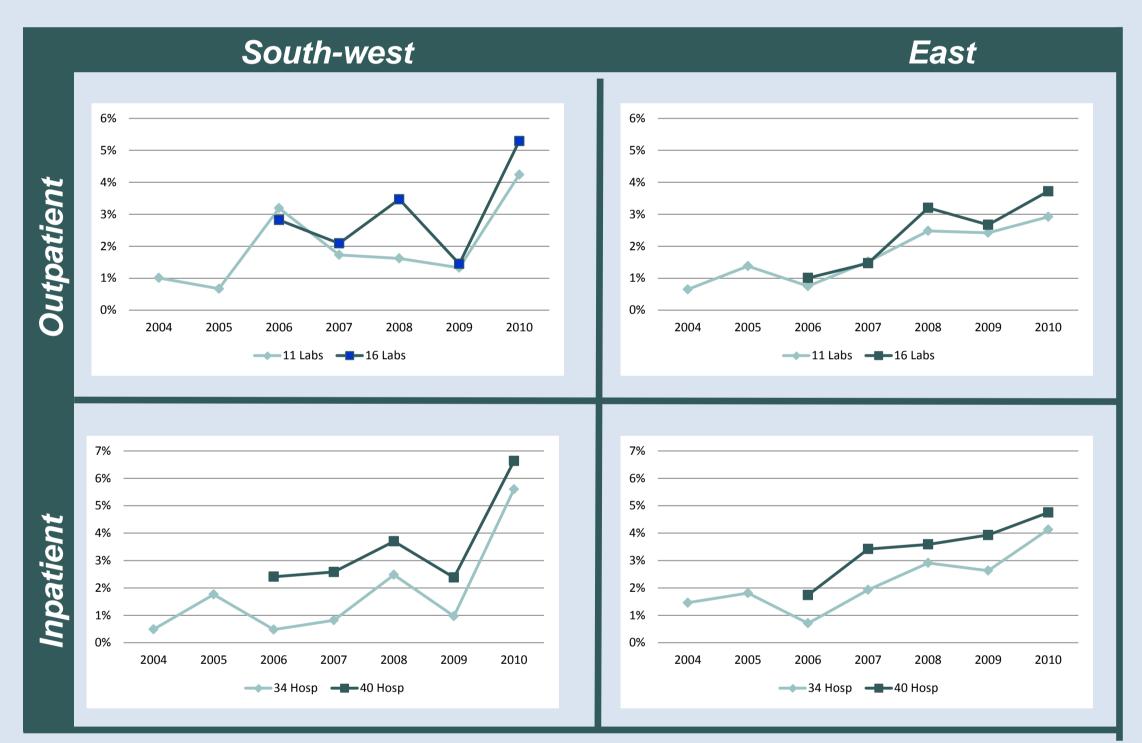
0.2

0.1





- From 2004 2010 3GR increased in east and south-west-Switzerland.
- Increase was comparable in in- and outpatients.
- In 2010 3GR tended to be higher in south-west Switzerland (p=0.08). This trend could be observed in in- and outpatients.
- Due to small numbers overlap of data from 2004 onwards versus data from 2006 onwards was less complete as for *E. coli*, although trends were comparable.



### Subgroup analysis (data 2004-2010 pooled)

As in *E. coli* 3GR increase was observed in all subgroups and was more pronounced in bigger hospitals.
The peak in patients <2years in 2006 was caused by an</li>

outbreak in a single hospital.

