

The increase in methicillin-susceptible *Staphylococcus aureus* bacteraemia in Switzerland (2008-2021) is mainly driven by elderly male of the German-speaking part

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Background

An increasing burden of *S. aureus* bacteraemia (SAB) despite a decrease in percentage of methicillin-resistant *S. aureus* (MRSA) was described for the EU and European Economic Area (EEA) between 2005 and 2018 [1].

Objective

The aim of this study was to analyse recent temporal trends of SAB, MSSA- and MRSA bloodstream infections (BSI) for Switzerland as well as the different Swiss linguistic regions.

Methods

A retrospective observational study was conducted in Switzerland over a period of 14 years (2008-2021). SAB from acute care hospitals which reported data in 2008, in 2021 and for more than half of the years within this period were included.

The number of cases per 100'000 inhabitants were extrapolated by the bed-days covered by Anresis. Temporal trends of SAB, MSSA- and MRSA-BSI were analysed applying a linear regression model for overall Switzerland and for each linguistic region separately. A logistic regression model was used for analysing proportions of MRSA-BSI over time.

Results

SAB in Switzerland increased by +64 % from 17.5 to 28.7 cases per 100'000 inhabitants between 2008 and 2021 ($P < 0.01$ for the predictor year, Figure 1). Thereof bacteraemia with MSSA increased by +73 % from 15.9 to 27.5 cases per 100'000 inhabitants ($P < 0.01$) while MRSA-BSI decreased from 1.7 to 1.2 cases (not significant). This resulted in a significant ($P < 0.01$) decrease in proportion of MRSA on SAB over time.

Temporal trends in MRSA-BSI differed between the linguistic regions i.e. the number of MRSA-BSI decreased significantly ($P < 0.01$) in the French-speaking part while increasing significantly ($P < 0.01$) in the German-speaking part (Figure 2). The increase of MSSA-BSI was significant ($P < 0.01$) in the German-speaking part while there was no significant trend in the French-speaking part.

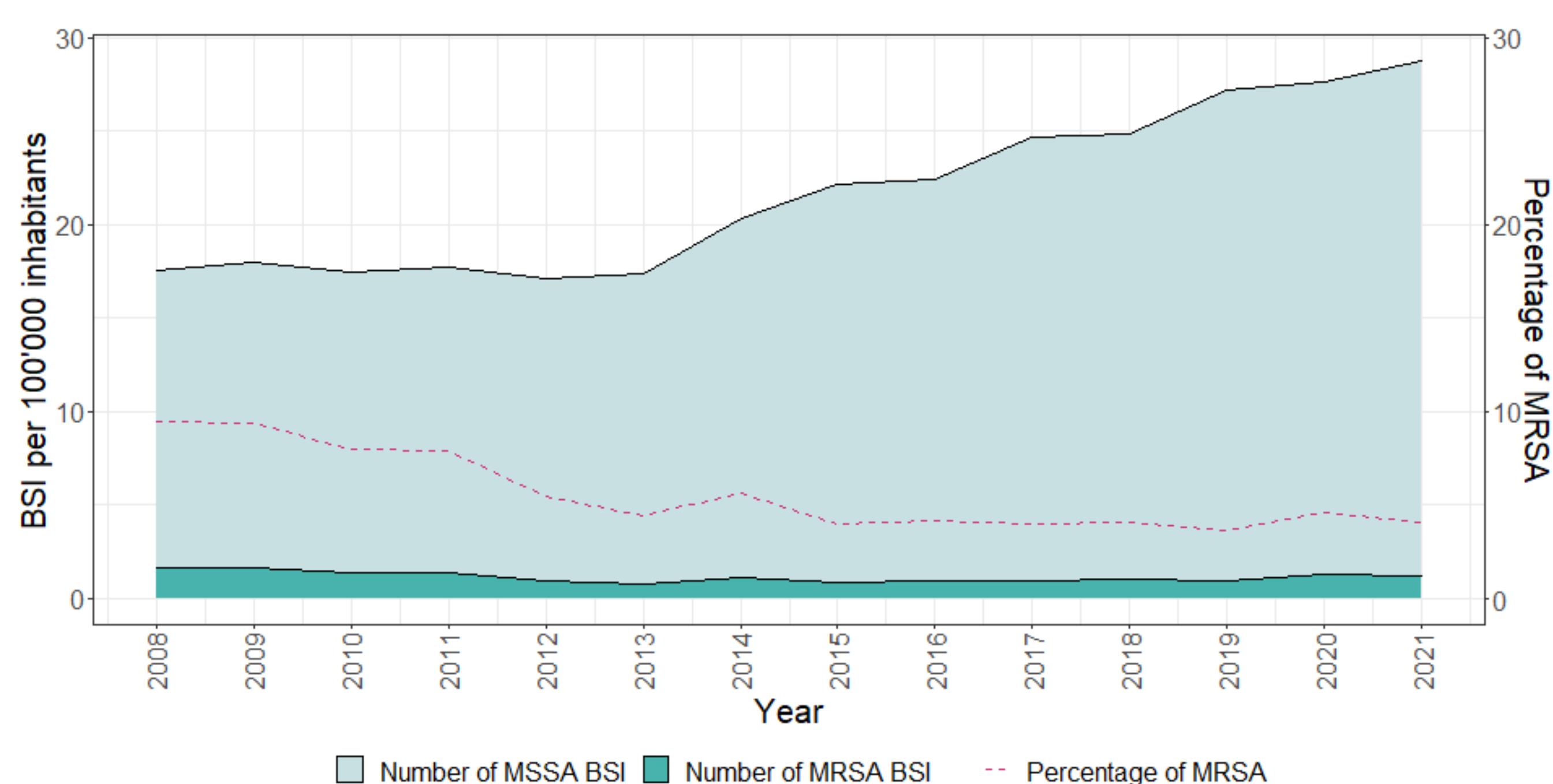


Figure 1: Temporal trends of MSSA and MRSA bloodstream infections (BSI) and proportion of MRSA on SAB (2008-2021).

Results

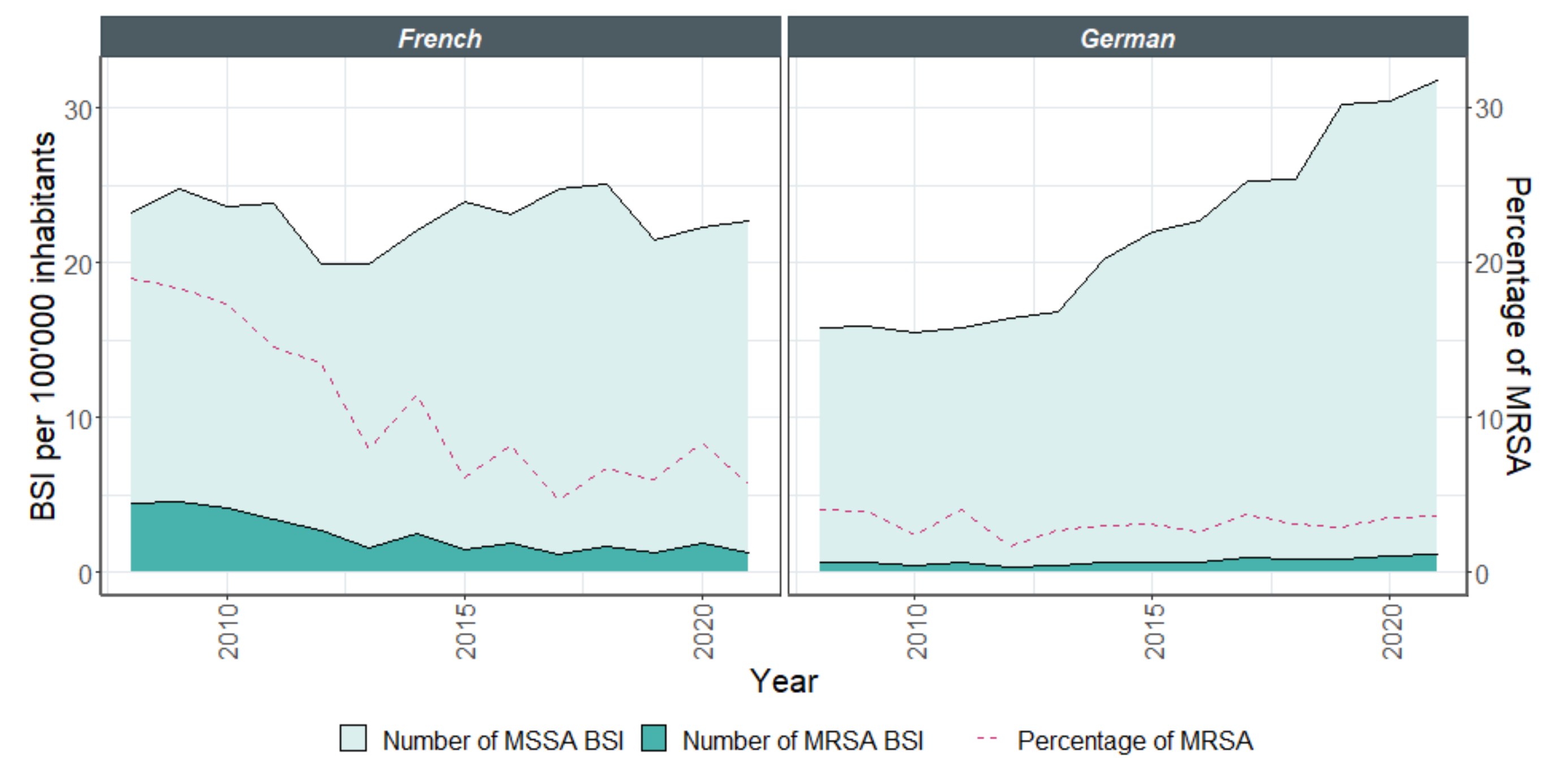


Figure 2: Incidence of MSSA and MRSA bloodstream infections (BSI) and percentage of MRSA in different linguistic regions (2008-2021).

Further stratification revealed that incidence increased the most in male patients of the age group ≥ 80 years of the German-speaking part (Figure 3).

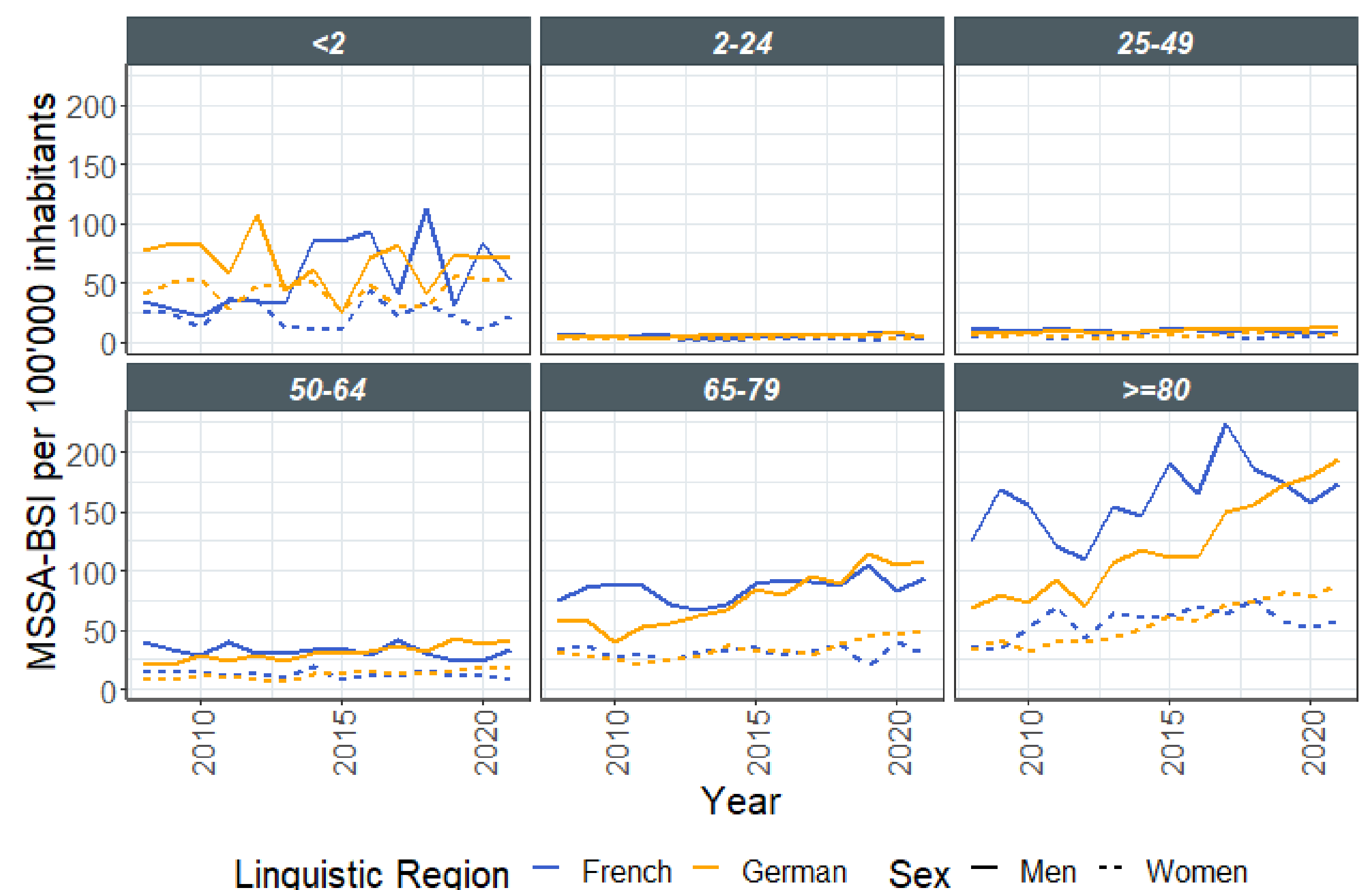


Figure 3: Incidence of MSSA and MRSA bloodstream infections and percentage of MRSA in different linguistic regions stratified by age group and sex (2008-2021).

Conclusion

The health burden of SAB increased in Switzerland similarly as it was observed in most EU or EEA countries. Within Switzerland, trends in the incidence of MSSA- and MRSA-BSI differed between the linguistic regions. In addition, stratification by sex and age group revealed that increase in MSSA-BSI was mainly driven by increasing incidence in elderly male patients of the German-speaking part. Further studies should examine the underlying reasons for the growing incidence in this sub population in order to formulate appropriate regionally targeted measures.

References

1. Gagliotti C et al., Euro Surveill, 2021, doi: 10.2807/1560-7917.ES.2021.26.46.2002094.