

# Multicenter implementation of a quality-of-care bundle for the management of *Staphylococcus aureus* bacteremia



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## INTRODUCTION AND PURPOSE

- *Staphylococcus aureus* bacteremia (SAB) remains a severe disease with high morbidity and mortality rates. Structured management of SAB, using evidence-based bundles of care, proved to have a beneficial impact on patient care and outcome.
- The aim of this project was to harmonize SAB management in seven Belgian secondary care hospitals. Through consensus, an evidence-based bundle of quality-of-care indicators (QCIs) was set up and implemented in all hospitals.

## METHODS

### QCI-BUNDLE

#### QCI 1: Follow-up blood cultures

- 48-72h after start of antibiotic therapy

#### QCI 2: Source control

- Identification and removal (if possible)

#### QCI 3: Echocardiography

- Performance of TEE or TTE

#### QCI 4: Early start of adequate antibiotic therapy

- MSSA: i.v. flucloxacillin, MRSA: i.v. vancomycin (incl. TDM)
- Start within 48h after positive blood cultures

#### QCI 5: Adequate duration of therapy

- ≥ 14 days of i.v. therapy

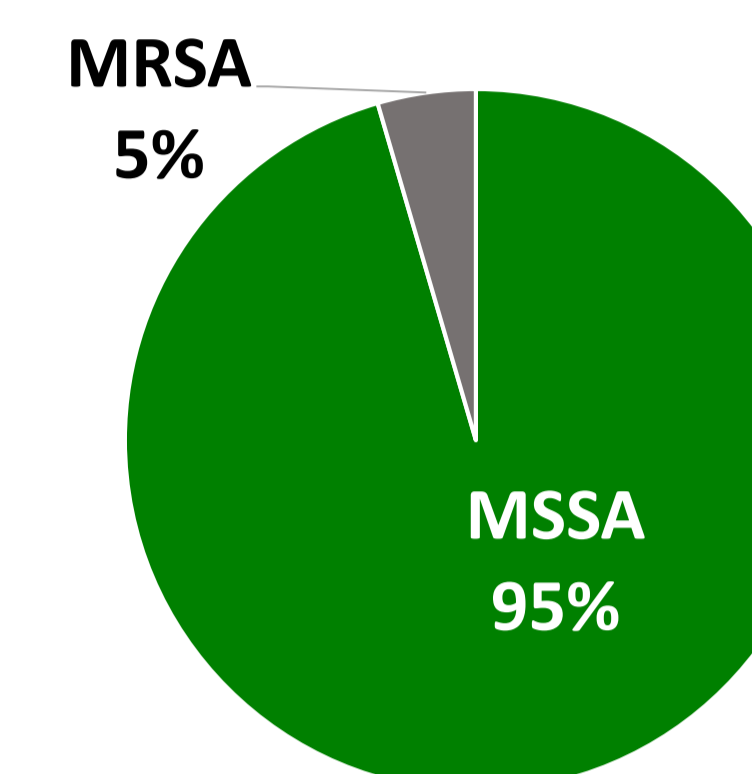
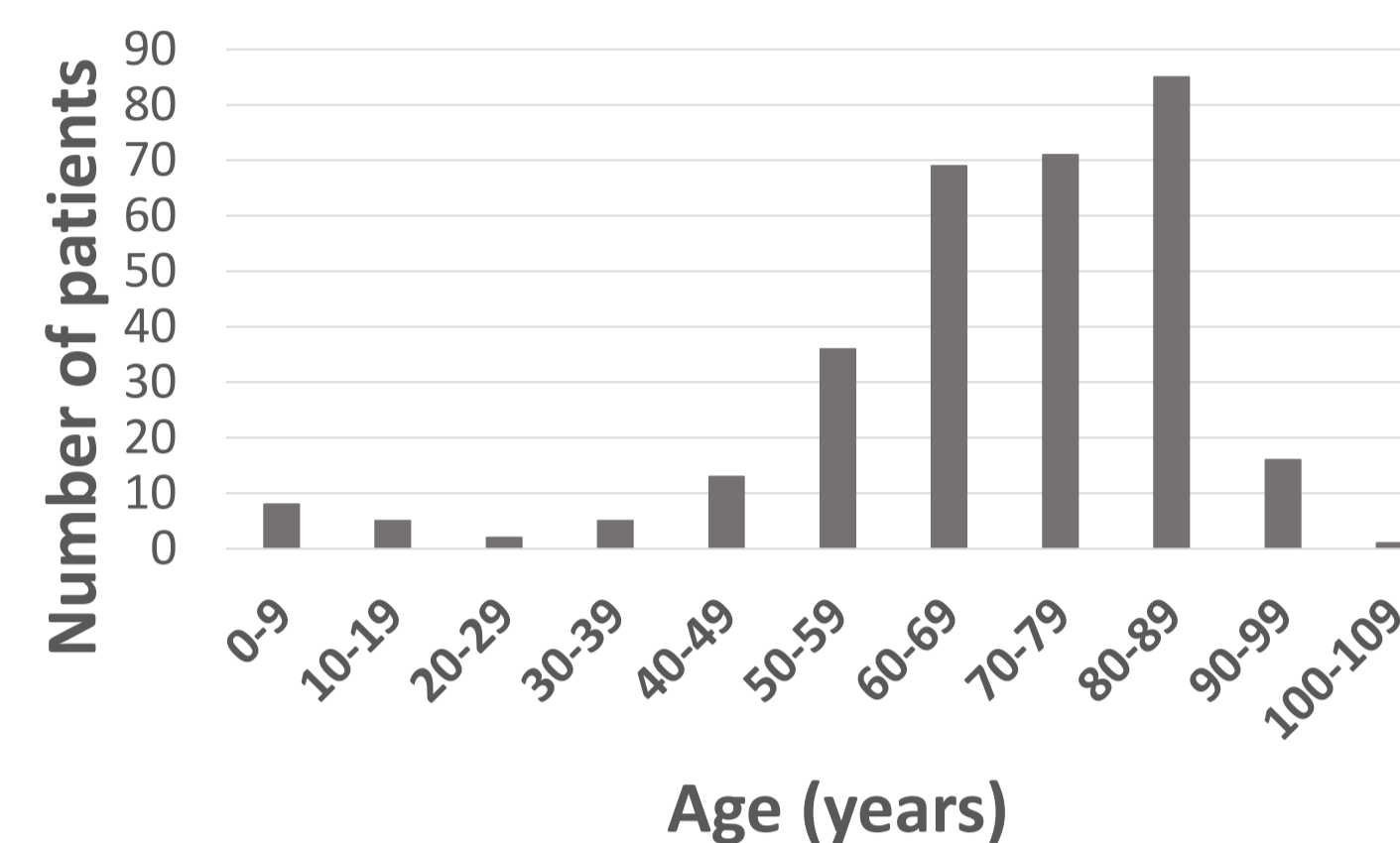
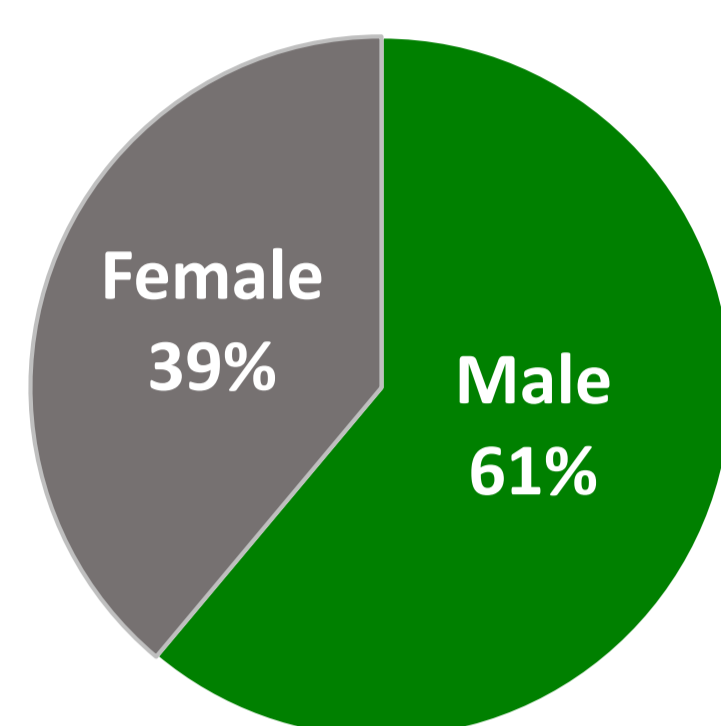
In all seven hospitals, adherence to the QCI-bundle is monitored by the microbiology staff in consultation with infectious diseases specialists and/or treating physicians for each new case of SAB.

### OUTCOME

- QCI-score: assignment of a score of 1 or 0 to each QCI
- All cause in-hospital mortality

## RESULTS

### 311 CASES OF SAB IN 7 BELGIAN SECONDARY CARE HOSPITALS IN 2017\*



\* For 1 hospital, only data on the last 6 months of 2017 were included

### OUTCOME

QCI-score (/5)	Patients
0	2.0 %
1	6.6 %
2	12.5 %
3	20.3 %
4	38.7 %
5	19.9 %

Patient population	Mortality
Total population (n = 256)	19.1 %
Subgroup with QCI-score ≤ 3 (n = 106)	27.4 %
Subgroup with QCI-score ≥ 4 (n = 150)	13.3 %

*p* < 0.05

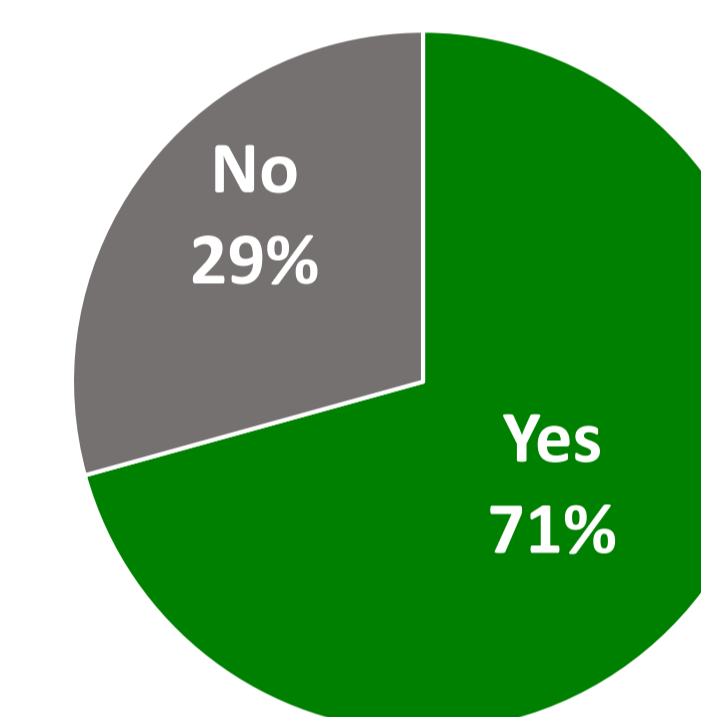
### ADHERENCE TO QCI-BUNDLE

Exclusion criteria:

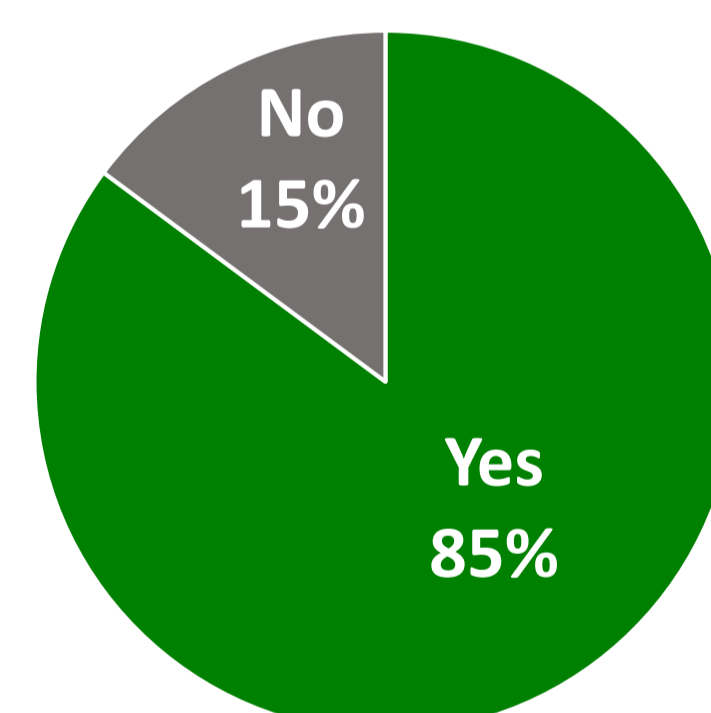
- Death within 48h after first positive blood cultures
- Transfer to another hospital
- Palliative setting
- < 18 years old

→ 256 patients eligible for follow-up

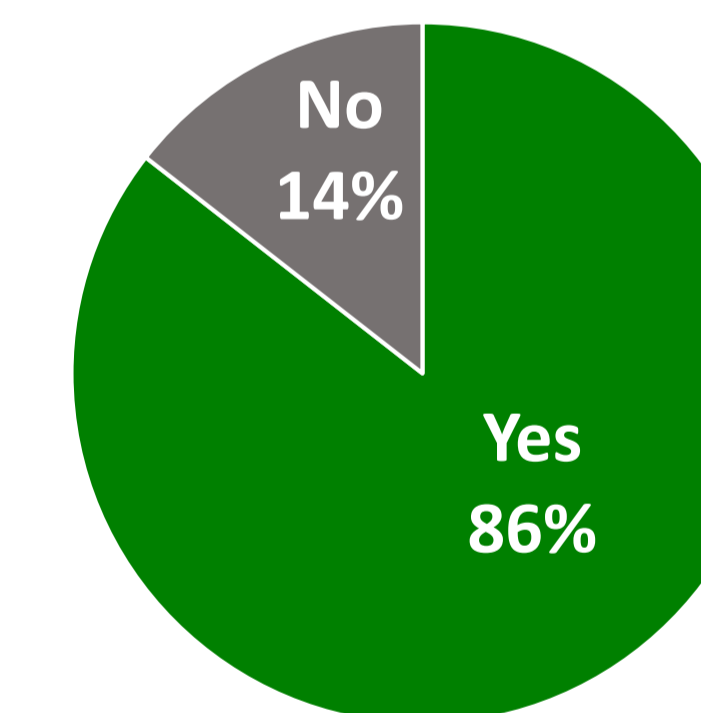
#### QCI 3: Echocardiography



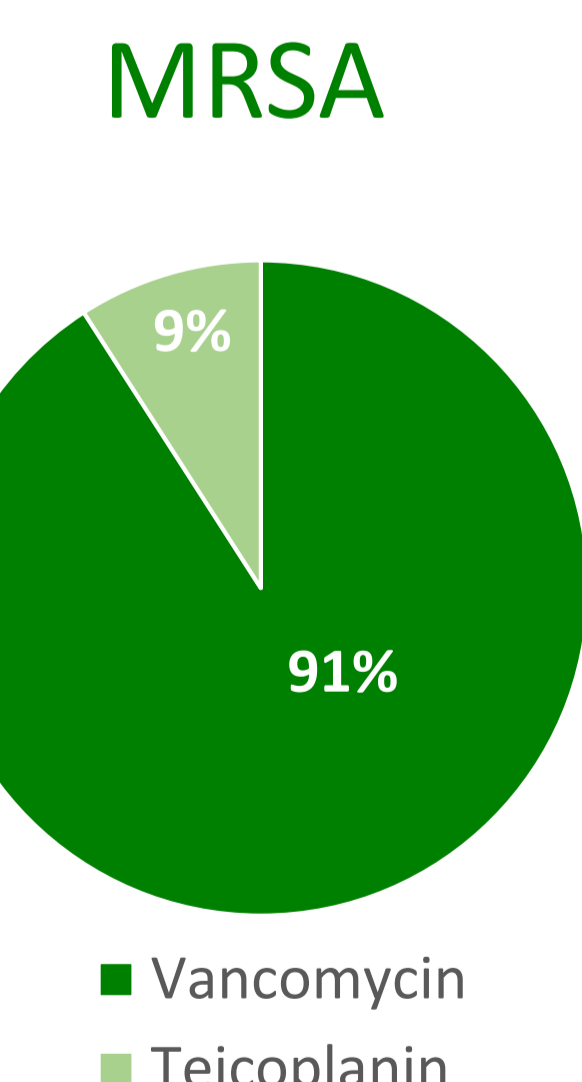
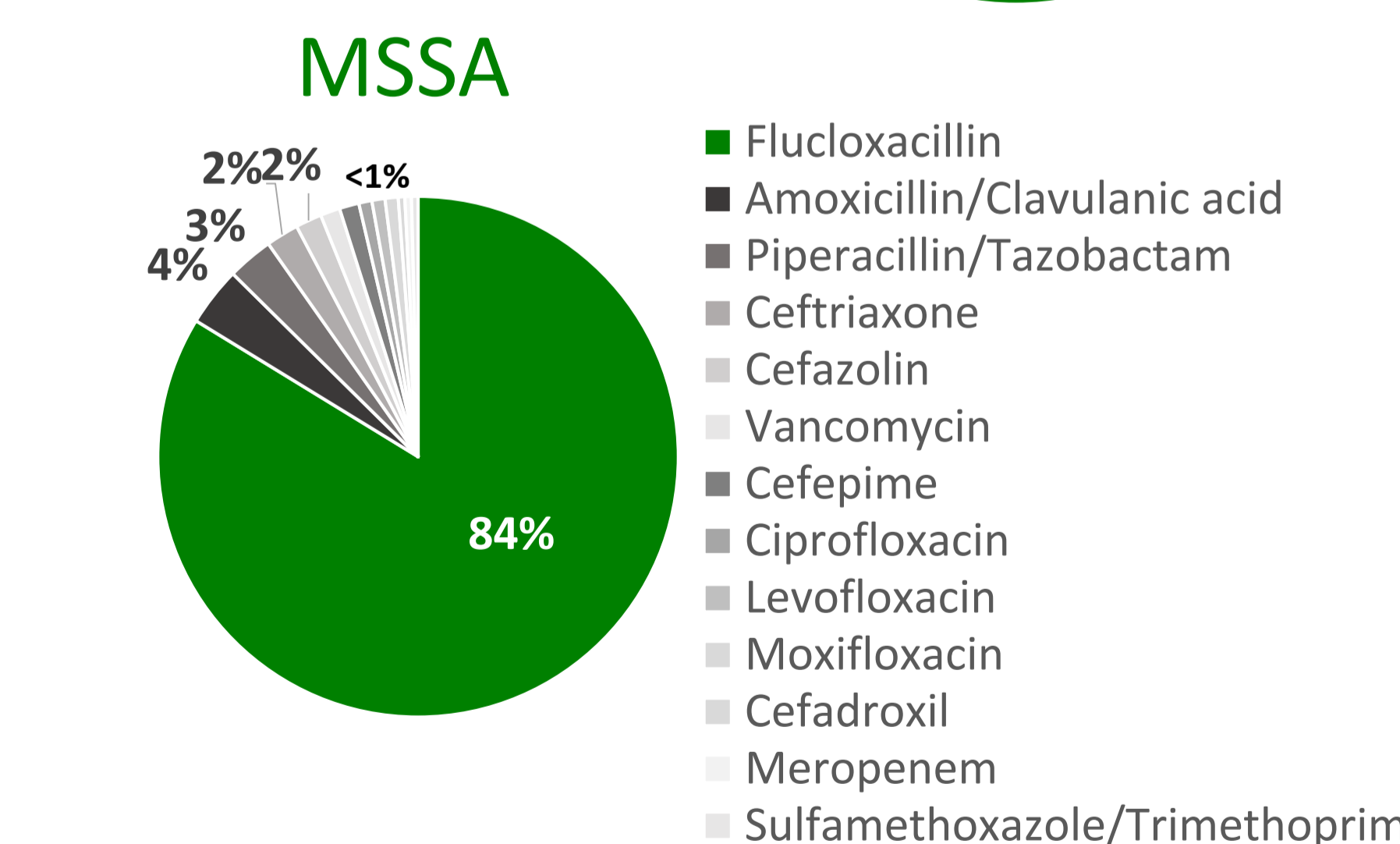
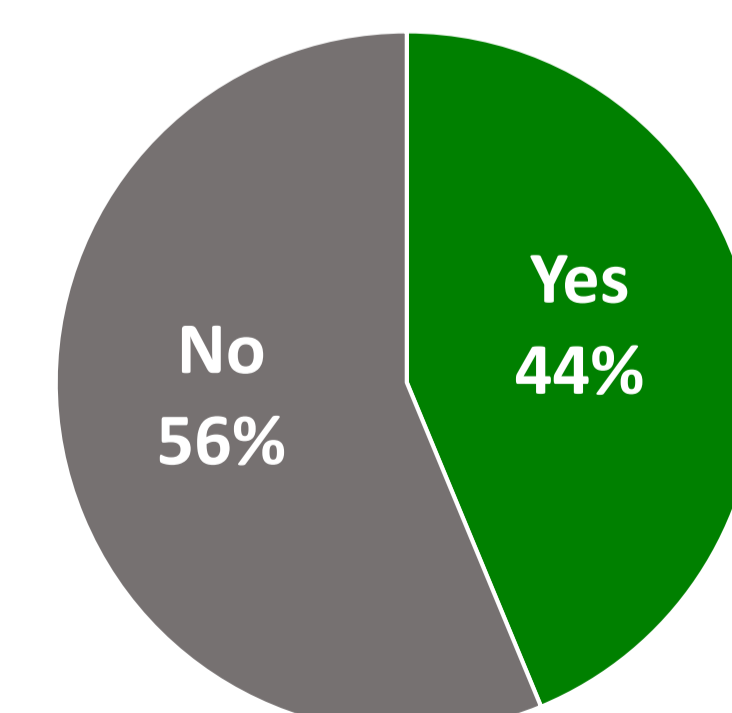
#### QCI 1: Follow-up blood cultures



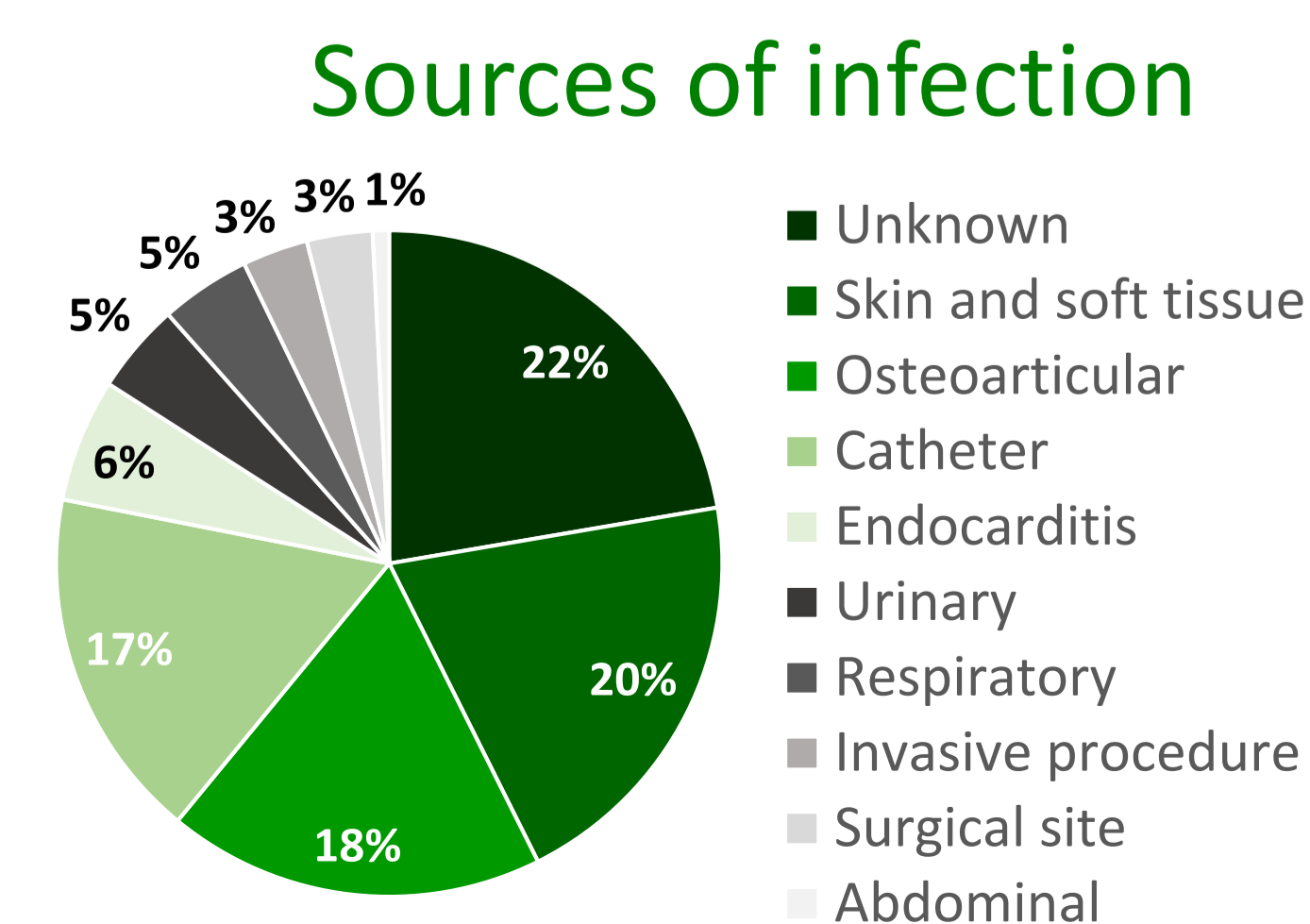
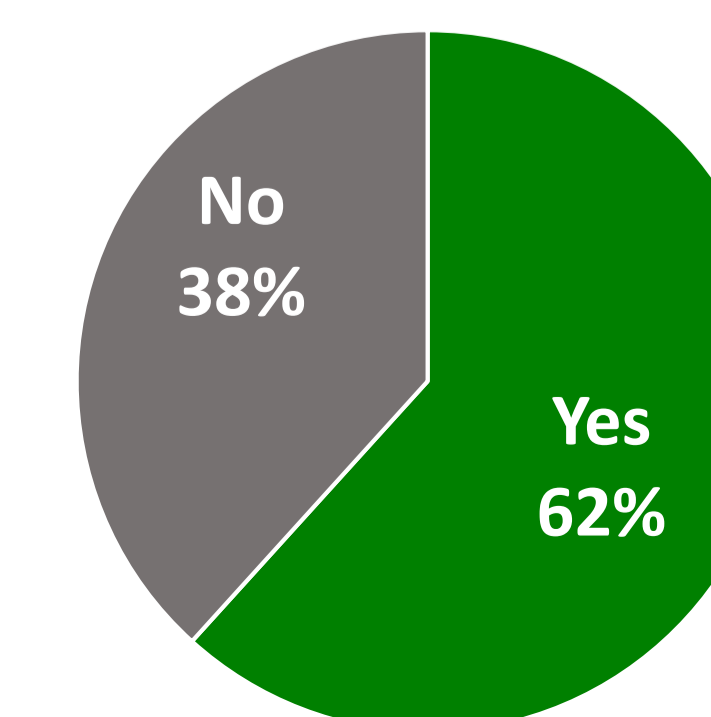
#### QCI 4: Early start of adequate antibiotic therapy



#### QCI 2: Source control



#### QCI 5: Adequate duration of therapy



## CONCLUSION

- Starting from January 2017, a single QCI-bundle for management of patients with SAB was successfully implemented in seven different secondary care hospitals in Belgium.
- In 2017, at least 4 out of 5 QCIs were fulfilled for 59 % of patients. In this subgroup, a significantly reduced mortality was observed.
- Our results are in line with other studies, showing that adherence to selected QCIs may favor patient management and outcome in SAB.