

# AlertsNet 2.0

## A Thuringia-wide population-based surveillance of bloodstream infections

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### Background & Objectives

Limitations of existing BSI surveillance studies:

- Not representative of the population
- No hospital-, patient-, and laboratory-based denominator data
- Not directly used to improve health care
- Weak BC testing performance in Germany (ECDC reports)

Objectives:

- To sustain and expand a population-based surveillance and warning system of hospitalized patients with BSIs in Thuringia
- To build up a collection bank of BSI pathogens (→ **CSCC Pathogen Collection**, B. Löffler)
- To create an infrastructure for large-scale interventional trials (e.g., → **SUPPORT**; M.W. Pletz)
- To improve outcomes of patients with BSIs

### Project Progress and Results

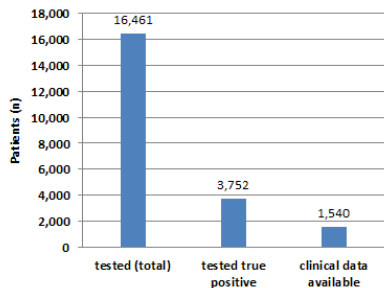


Fig. 1 Patients tested and documented (01/08/2015 – 31/08/2016).

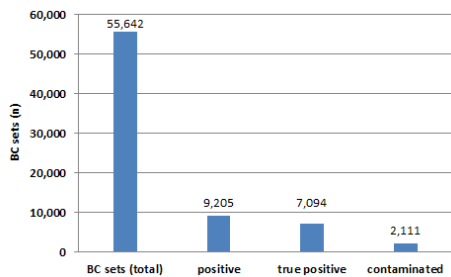


Fig. 2 Documented BC sets and positivity (01/08/2015 – 31/08/2016).

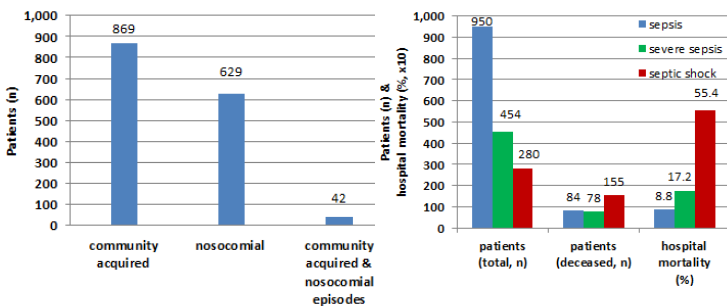


Fig. 3 Source and severity of infection (01/08/2015 – 31/08/2016).

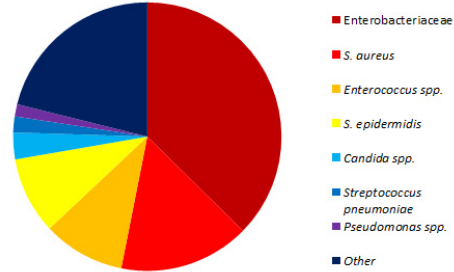
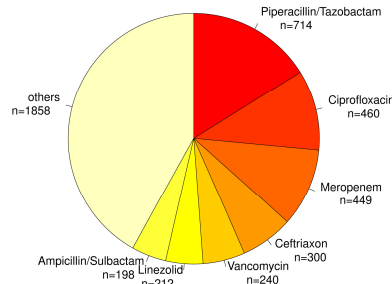


Fig. 4 Distribution of pathogens in 3,752 patients (01/08/2015 – 31/08/2016).

Tab. 1 Sites of infection in 1,462 patients (01/08/2015 – 31/08/2016).

Site	Patients (n)
urogenital	434
respiratory	321
abdomen / gastrointestinal	261
central line	166
bones / soft tissue	153
Cardiovascular	69
post-surgery wound	39
central nervous	13
ear / nose / throat	6



Treatment duration (d)	Pip / Taz (n)	MP (n)	CF (n)
1-4	276	108	166
5-7	209	87	109
≥ 8	185	243	166
n.d.	44	11	19

Fig. 5 / Tab. 2 Episodes of empirical antibiotic treatment (n=4,431) performed after first BC withdrawal and therapy duration for selected anti-infectives (n=1,623) (01/08/2015 – 31/08/2016). MP: Meropenem, CF: Ciprofloxacin, n.d.: not documented

Tab. 3 Network development since August 2015.

Target hospitals (beds) / Labs (n)	Active hospitals (beds) / labs (n)	Data provided by labs (n)	Data provided by hospitals (n)
38 (14,760) / 18	30 (11,895) / 14 <sup>1)</sup>	8 <sup>1)</sup>	21 <sup>1)</sup>
	21 (7,973) / 6 <sup>2)</sup>	4 <sup>2)</sup>	4 <sup>2)</sup>

<sup>1)</sup> 01/2017, <sup>2)</sup> 07/2015

### Project related publications

- Schmitz RPH, Karch A, Rißner F, Mikolajczyk RT, Brunkhorst FM. Populationsbasierte Surveillance von Blutstrominfektionen – aktuelle Daten des Thüringer Registers AlertsNet. Medical Special, Jan./Feb. 2016, 18. Jahrgang, ISSN 1435-9405
- Brunkhorst FM, Schmitz RPH. 2015. Qualitätssicherung in der Blutkulturdiagnostik – der Thüringer Netzwerk AlertsNet. In: Werner Kuckelt, Peter H. Tonner (Hrsg.): Jahrbuch Intensivmedizin 2016. Pabst Science Publishers Lengerich. ISBN 978-3-95853-145-1
- Karch A, Schmitz RPH, Rißner F, Castell S, Töpel S, Jakob M, Brunkhorst FM, Mikolajczyk RT. 2015. Bloodstream infections, antibiotic resistance and the practice of blood culture sampling in Germany: study design of a Thuringia-wide prospective population-based study (AlertsNet). BMJ Open 5(12):e009095
- Karch A, Castell S, Schwab F, Geffers C, Bongartz H, Brunkhorst FM, Gastmeier P, Mikolajczyk RT. 2015. Proposing an empirically justified reference threshold for blood culture sampling rates in intensive care units. J Clin Microbiol 53(2):648-52
- Schmitz RPH, Karch A, Rißner F, Mikolajczyk RT, Brunkhorst FM. 2015. Qualitätssicherung in der Diagnose und Therapie von Blutstrominfektionen – das Thüringer populationsbasierte Blutkultur-Register AlertsNet. Intensiv-News 19(4):1-4
- Schmitz RPH, ...Brunkhorst FM (2013) Quality of blood culture testing – a survey in intensive care units and microbiological laboratories across four European countries. Crit Care 17: R248

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