

INTRODUCTION AND PURPOSE

Aims of automation of bacteriological cultures:

- improve quality (e.g. standardization, traceability)
- improve efficiency
- reduce time to reporting of results

Impact of introduction of WASPLab[®] (Copan, Italy) on reporting time of identification (ID) and antimicrobial susceptibility testing (AST) results of blood cultures (BC) in real-life laboratory setting.

MATERIALS AND METHODS

- Belgian tertiary care hospital UZ Leuven

- Opening hours of bacteriology laboratory on weekday: 8.30 am – 6.00 pm
- Streaking of positive blood cultures during the night at 22.00 pm and 2.00 am
- Manual streaking of plates on at least a blood agar and a MacConkey agar
- Identification when sufficient visual growth with MALDI-TOF MS (Bruker)
- Antimicrobial susceptibility testing with Vitek[®] 2 (BioMérieux) or disk diffusion (Neo-Sensitab, Rosco)
- Automation of incubation and reading of plates: WASPLab[®] (period 2)

Period 1 (June-October 2017)

Period 2 (June-October 2018)

Conventional incubation and reading
Reading of agar plates at 8.30 am, 2 pm and 5 pm

During opening hours bacteriology lab:
WASPLab[®] incubation and reading
(photographs of plates at 4, 6, 10, 16, 24 and 48 hours)
During night: **conventional** incubation and reading

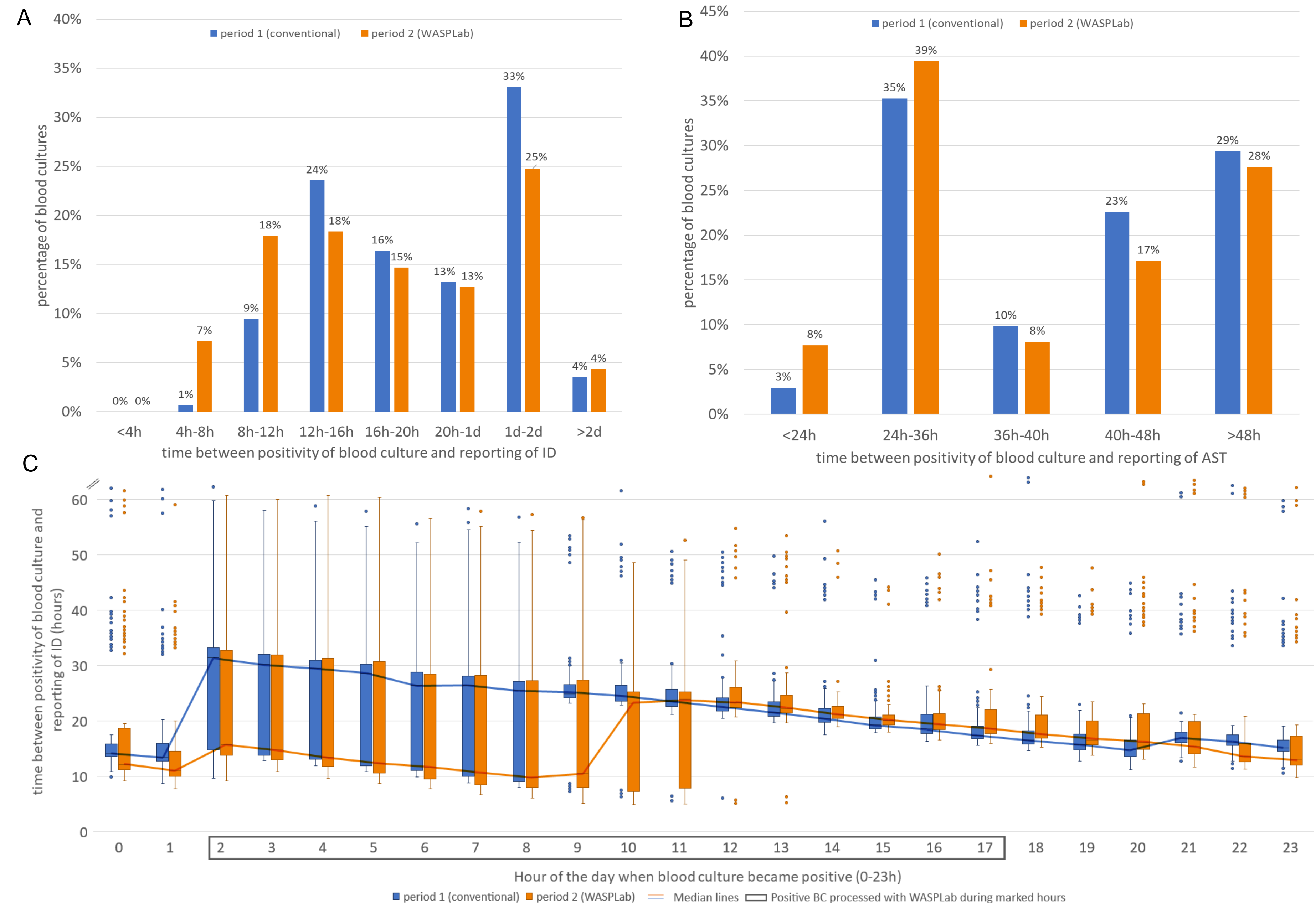
RESULTS (1)

	period 1	period 2
method of incubation and reading of BC	conventional	WASPLab [®]
number of positive BC	4905	4310
median time between BC positivity and reporting ID	20 h 00 min	17 h 42 min
median time between BC positivity and reporting AST	40 h 54 min	37 h 54 min

CONCLUSION

A real-life laboratory introduction of WASPLab[®] resulted in faster reporting of both ID and AST results of positive BC compared to conventional incubation and reading, while maintaining the same number of laboratory technicians and the same opening hours of the laboratory.

RESULTS (2)



Figures: Comparison of time to reporting of identification (ID) (A,C) and antimicrobial susceptibility testing (AST) (B) results of positive blood cultures for period 1 (conventional incubation and reading) and period 2 (WASPLab incubation and reading). In figure C, comparison is based on the moment of the day when the blood culture became positive.