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Panton-Valentine Leukocidin–Encoding Methicillin-Resistant *Staphylococcus aureus,* the Netherlands, 2023–2024

Appendix

Appendix Table 1. Overview of samples collected at the massage center from employees and environmental sources*

Sample	First visit (t = 7 d)	Second visit (t = 12 d)	Third visit (t = 20 d)	Fourth visit (t = 27 d)	Fifth visit (after disinfection) (t = 36 d)
Employee samples					
Employee 1	Negative		Negative	Negative	
Employee 2	Negative		Negative	Negative	
Employee 3	Ns†		Ns†	Positive (nose/throat/skin); Negative (rectum)	
Environmental samples					
Bed sheets		Negative			
Hand alcohol bottle		Negative			
Lamp above bed		Negative			
Massage bench towel		Negative			
Massage lotion		Negative			
Massage oil		Negative			
Massage oil cannister		Negative			
Tiger balm		Negative			
Toilet sink		Negative			
Wooden frame bed		Negative			
Working table		Negative			
Curtain				Negative	
Feet bench				Negative	
Massage bench 1				Negative	
Massage bench 2				Negative	
Mattress (1)				Negative	
Mattress (2)				Negative	
Pedicure plastic tray				Negative	
Peppermint jar				Negative	
Scissor and plasticized desk card				Negative	
Scrub salt				Negative	
Shoehorn				Negative‡	
Sitting stool				Negative	
Phone				Negative‡	Negative‡
Tissue box (fabric)				Positive‡	Ns§
Waste bin handle				Positive‡	Negative‡
Water cooker				Positive‡	Negative‡
Comb					Negative‡
Fan					Negative‡
Laptop					Negative‡
Tea box					Negative‡
Toothbrush					Negative‡

*Overview of samples collected at the massage center from employees and environmental sources. During the first visit, employees performed self-sampling of nasal and throat swabs. During subsequent visits, the infection prevention expert collected nasal, throat, and rectal swabs from the employees. Environmental samples were selected based on the infection prevention expert's assessment and comprised materials with direct skin contact involving employees, clients, or both. Samples were taken using gauze moistened with sterilized water or by PL agar contact plate.
†Ns = not screened (the third employee was unknown to the Public Health Service until day 27 and therefore was not screened earlier).
‡Sample collected using a PL agar contact plate.
§Ns = not screened (object was discarded during disinfection on day 28 and 29 and therefore unavailable for re-testing).

Appendix Table 2. MIC and interpretation of phenotypical resistance for antimicrobials*

Antimicrobial	MIC range (mg/L)	Interpretation according to EUCAST Clinical Breakpoint Tables†
Oxacillin	>2 - ≥4	R
Ciprofloxacin	≤0.5	I
Levofloxacin	0.25 – 0.5	I
Gentamicin	>8 - ≥16	R
Tobramycin	8 - ≥16	R
Teicoplanin	≤0.5	S
Vancomycin	≤0.5 – 1	S
Clindamycin	>2 - ≥4	R
Erytromycin	>4 - ≥8	R
Tetracycline	>8 - ≥16	R
Linezolid	1 - 2	S
Co-trimoxazole	80 - ≥320	R/I
Fusidic acid	≤0.5	S
Rifampin	≤0.03	S
Trimethoprim		R‡
Mupirocin	≤1.0	S

*Minimal inhibitory concentration (MIC) of various antibiotics as determined by VITEK (Biomerieux) and the phenotypic resistance interpretation, based on EUCAST breakpoint values of the MIC during the testing period (2023 and 2024). S = susceptible, I = susceptible, increased exposure, R = resistant.
†European Committee on Antimicrobial Susceptibility Testing (EUCAST). EUCAST clinical breakpoints. *https://www.eucast.org/*. Accessed January 28, 2026.
‡Susceptibility tested using disk diffusion method (Rosco Diagnostica, according to EUCAST methodology), therefore no MIC available. In all determined cases (28/31) the disk diffusion zone diameter was interpreted as resistant (EUCAST Clinical Breakpoint Tables).

Appendix Table 3. Whole genome sequencing analysis of the MC0398-MT2306 outbreak strain*

SSCmec genes	Antimicrobial resistance genes	Virulence genes
V(5C2)	*ant(9)-Ia* (aminoglycoside)	*lukF, lukS* (Panton valentine leucocidin)
	aph(2")-Ia (aminoglycoside)	*aur* (Aureolysin)
	dfrE	*hlgA, hlgB, hlgC* (Gamma-hemoysin)
	erm(A) (streptogramin, olincosamide and macrolide)	*sak* (Staphylokinase)
	erm(B) (streptogramin, olincosamide and macrolide)	*scn (*Staphylococcal complement inhibitor)
	mecA (β-lactam)	
	tet(K) (tetracycline)	

*Presence of *SSCmec,* virulence and antimicrobial resistance genes in the MC0398-MT2306 outbreak strain, as determined by whole-genome sequencing.