

Supplemental Materials for:

Comparison of microorganism detection and time-to-positivity in pediatric and standard media from three major commercial continuously monitored blood culture systems

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Running title: Time-to-positivity of major blood culture systems

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Supplemental Table 1. Differences in detection rate of standard aerobic, pediatric, and anaerobic blood culture bottles according to blood volume

	Blood volume (mL)	Detection rate (%)								
		VIRTUO BACT/ALERT			VersaTREK			BD Bactec		
		Standard aerobic	Pediatric aerobic*	Anaerobic	Standard aerobic	Pediatric aerobic*	Anaerobic	Standard aerobic	Pediatric aerobic*	Anaerobic
<i>Staphylococcus aureus</i>	1	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)
	3	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)
	5	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)
	10	3/3 (100)		3/3 (100)	3/3 (100)		3/3 (100)	3/3 (100)		3/3 (100)
<i>Streptococcus agalactiae</i>	1	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)
	3	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)
	5	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)
	10	3/3 (100)		3/3 (100)	3/3 (100)		3/3 (100)	3/3 (100)		3/3 (100)
<i>Streptococcus pneumoniae</i>	1	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)
	3	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)
	5	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)
	10	3/3 (100)		3/3 (100)	3/3 (100)		3/3 (100)	3/3 (100)		2/3 (67)
<i>Escherichia coli</i>	1	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)
	3	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)
	5	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)
	10	3/3 (100)		3/3 (100)	3/3 (100)		3/3 (100)	3/3 (100)		3/3 (100)
<i>Haemophilus influenzae</i>	1	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)
	3	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	3/3 (100)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)
	5	3/3 (100)	3/3 (100)	3/3 (100)	2/3 (67)	3/3 (100)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)
	10	3/3 (100)		3/3 (100)	3/3 (100)		0/3 (0)	3/3 (100)		0/3 (0)
<i>Neisseria meningitidis</i>	1	3/3 (100)	3/3 (100)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)
	3	3/3 (100)	3/3 (100)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)
	5	3/3 (100)	3/3 (100)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)	3/3 (100)	3/3 (100)	2/3 (67)
	10	3/3 (100)		2/3 (67)	2/3 (67)		0/3 (0)	3/3 (100)		1/3 (33)

	Blood volume (mL)	Detection rate (%)								
		VIRTUO BACT/ALERT			VersaTREK			BD Bactec		
		Standard aerobic	Pediatric aerobic*	Anaerobic	Standard aerobic	Pediatric aerobic*	Anaerobic	Standard aerobic	Pediatric aerobic*	Anaerobic
<i>Kingella kingae</i>	1	2/3 (67)	1/3 (33)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)
	3	0/3 (0)	1/3 (33)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)
	5	0/3 (0)	1/3 (33)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)	3/3 (100)	3/3 (100)	0/3 (0)
	10	3/3 (100)		0/3 (0)	3/3 (100)		0/3 (0)	3/3 (100)		1/3 (33)
<i>Bacteroides fragilis</i>	1	0/3 (0)	0/3 (0)	2/3 (67)	0/3 (0)	0/3 (0)	3/3 (100)	0/3 (0)	0/3 (0)	3/3 (100)
	3	0/3 (0)	0/3 (0)	2/3 (67)	0/3 (0)	0/3 (0)	3/3 (100)	0/3 (0)	0/3 (0)	3/3 (100)
	5	0/3 (0)	0/3 (0)	3/3 (100)	0/3 (0)	0/3 (0)	3/3 (100)	0/3 (0)	0/3 (0)	3/3 (100)
	10	0/3 (0)		3/3 (100)	0/3 (0)		3/3 (100)	0/3 (0)		3/3 (100)
Negative control (saline)	1	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)
	3	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)
	5	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)	0/3 (0)
	10	0/3 (0)		0/3 (0)	0/3 (0)		0/3 (0)	0/3 (0)		0/3 (0)

*Shaded box indicates no data collected, as 10 mL of blood volume is beyond capacity for pediatric media.

Supplemental Table 2: Effect of blood volume on time-to-positivity for anaerobic media

	Blood volume (mL)	Average time-to-positivity, h (range)		
		VIRTUO BACT/ALERT	VersaTREK	BD Bactec
<i>Staphylococcus aureus</i>	1	18.4 (18.2-18.7)	19.9 (19.1-21.6)	13.8 (13.6-14.1)
	3	18.1 (17.0-19.2)	18.6 (17.5-19.1)	12.9 (12.6-13.1)
	5	18.2 (16.4-19.5)	27.5 (23.9-29.9)	12.5 (12.1-13.1)
	10	16.0 (15.5-16.5)	37.4 (32.3-44.7)	12.0 (11.7-12.1)
<i>Streptococcus agalactiae</i>	1	12.9 (12.3-13.6)	17.9 (17.4-18.6)	12.3 (12.1-12.4)
	3	12.1 (12.1-12.1)	17.0 (16.4-17.4)	12.2 (12.1-12.4)
	5	11.4 (11.0-11.6)	17.6 (17.2-18.0)	12.1 (12.1-12.2)
	10	10.9 (10.7-11.3)	19.2 (18.0-20.0)	12.1 (12.1-12.1)
<i>Streptococcus pneumoniae</i>	1	11.6 (10.9-12.1)	16.7 (16.4-16.8)	13.1 (13.0-13.2)
	3	11.6 (11.5-11.8)	16.3 (15.5-17.5)	13.5 (13.4-13.6)
	5	11.3 (11.1-11.4)	16.4 (15.9-16.7)	16.3 (15.1-17.6)
	10	11.2 (11.2-11.2)	15.8 (15.5-15.9)	24.9 (24.1-25.6)
<i>Escherichia coli</i>	1	9.2 (9.1-9.2)	13.3 (13.1-13.6)	10.4 (10.1-10.8)
	3	9.1 (8.9-9.4)	13.0 (12.7-13.2)	10.3 (10.3-10.3)
	5	8.7 (8.4-9.0)	13.7 (13.4-14.2)	10.1 (10.0-10.2)
	10	9.0 (8.5-9.2)	13.1 (12.6-14.0)	10.5 (10.2-10.8)
<i>Haemophilus influenzae</i>	1	14.2 (13.3-15.8)	NG	NG
	3	13.2 (12.9-13.4)	NG	NG
	5	13.5 (12.8-14.5)	NG	NG
	10	13.0 (12.6-13.7)	NG	NG
<i>Neisseria meningitidis</i>	1	NG	NG	NG
	3	NG	NG	NG
	5	NG	NG	22.6 (20.6-24.6)
	10	15.7 (15.4-16.0)	NG	18.1 NC
<i>Kingella kingae</i>	1	NG	NG	NG
	3	NG	NG	NG
	5	NG	NG	NG
	10	NG	NG	23.1 NC

NC: not calculated due to single positive replicate; NG: no growth

