

## Summary statistics - quantitative results

(Groups: system)

Filter: minimal size of groups n = 5

## EQA round: ABR1/18 - Acid-base Status and Electrolytes

Dead line: 30.03.2018

RoM = robust average	AV = assigned value	Dmax = acceptable percent difference
SD = standard deviation	CRV = certified reference value	LL = lower limit
CV = coefficient of variation	RV = reference value	UL = upper limit
Ntot = total number of participants	CVE = consensus value from experts	Neva = number of evaluated participants
Nout = number of results excluded before calculation	CVP = consensus value from all participants	Nsuc = number of successful participants
	CVPG = consensus value from participants groups	Srel = success (relative)
	U <sub>AV</sub> = expanded uncertainty of the assigned value (k = 2)	

Test	[unit]	Comparability					Comparability							
		RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL	N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>
<b>(131) pH</b>					331							331	327	99%
Samples and groups	[-]													
<b>Sample A</b>		7,41	0,0110,15		331	CVP	7,41	,0015	0,8%	7,35	7,47	331	328	99%
(404) Siemens Rapidlab 248		7,42	0,0110,15		6	0						6		
(405) Siemens Rapidlab 348		7,42	0,010,13		12	0						12		
(410) Siemens Rapidlab (series 1200)		7,43	0,0020,03		5	0						5		
(411) IL GEM 3000		7,43	0,0070,10		9	0						9		
(412) IL GEM 4000		7,42	0,000,00		7	0						7		
(416) Nova Stat Profile CCX, pHox Ultra		7,42	0,0050,07		22	0						22		
(418) Nova Stat Profile pHox, pHox Plus		7,44	0,0270,37		8	0						8		
(433) Radiometer ABL (series 700 and 800)		7,40	0,0040,06		134	0						134		
(448) Roche OMNI C / cobas b121		7,41	0,0070,10		8	0						8		
(449) Roche OMNI S1-6 / cobas b221		7,41	0,0070,10		52	0						52		
(450) Techno Medica Gastat		7,42	0,0090,13		11	0						11		
(451) Radiometer ABL 80		7,40	0,0130,17		10	0						10		
(452) Radiometer ABL 90		7,41	0,0040,06		24	0						24		
(454) Siemens RapidPoint (series 400, 500)		7,40	0,0060,08		12	0						12		
(999) another system		7,42	0,0210,28		5	0						5		
Other					6	0						6		
							3x 414, 1x 424, 2x 453							
<b>Sample B</b>		7,62	0,0130,17		331	CVP	7,62	,0017	0,8%	7,55	7,69	331	330	100%
(404) Siemens Rapidlab 248		7,65	0,0210,27		6	0						6		
(405) Siemens Rapidlab 348		7,64	0,0130,17		12	0						12		
(410) Siemens Rapidlab (series 1200)		7,65	0,0020,02		5	0						5		
(411) IL GEM 3000		7,69	0,0070,09		9	0						9		
(412) IL GEM 4000		7,67	0,0070,09		7	0						7		
(416) Nova Stat Profile CCX, pHox Ultra		7,63	0,0040,05		22	0						22		
(418) Nova Stat Profile pHox, pHox Plus		7,63	0,0430,56		8	0						8		
(433) Radiometer ABL (series 700 and 800)		7,62	0,0030,04		134	0						134		
(448) Roche OMNI C / cobas b121		7,60	0,0080,11		8	1						8		
(449) Roche OMNI S1-6 / cobas b221		7,61	0,0060,07		52	0						52		
(450) Techno Medica Gastat		7,62	0,0150,20		11	0						11		
(451) Radiometer ABL 80		7,58	0,0120,15		10	0						10		
(452) Radiometer ABL 90		7,63	0,0030,04		24	0						24		
(454) Siemens RapidPoint (series 400, 500)		7,62	0,0080,12		12	0						12		
(999) another system		7,64	0,0250,33		5	0						5		
Other					6	0						6		
							3x 414, 1x 424, 2x 453							
<b>(132) pCO2</b>					331							331	322	97%
Samples and groups	[kPa]													
<b>Sample A</b>		5,67	0,25	4,3	331	CVP	5,67	0,033	12%	4,98	6,36	331	326	98%
(404) Siemens Rapidlab 248		5,68	0,21	3,7	6	0						6		
(405) Siemens Rapidlab 348		5,78	0,28	4,8	12	0						12		
(410) Siemens Rapidlab (series 1200)		5,50	0,18	3,2	5	0						5		
(411) IL GEM 3000		5,90	0,000,00		9	0						9		
(412) IL GEM 4000		5,65	0,074	1,3	7	0						7		
(416) Nova Stat Profile CCX, pHox Ultra		5,59	0,19	3,4	22	0						22		
(418) Nova Stat Profile pHox, pHox Plus		5,23	0,26	4,9	8	0						8		
(433) Radiometer ABL (series 700 and 800)		5,56	0,15	2,7	134	0						134		
(448) Roche OMNI C / cobas b121		5,94	0,13	2,1	8	0						8		
(449) Roche OMNI S1-6 / cobas b221		5,87	0,14	2,4	52	0						52		
(450) Techno Medica Gastat		5,75	0,45	7,9	11	0						11		
(451) Radiometer ABL 80		5,65	0,34	6,0	10	0						10		
(452) Radiometer ABL 90		5,68	0,12	2,2	24	0						24		
(454) Siemens RapidPoint (series 400, 500)		6,02	0,31	5,2	12	0						12		
(999) another system		5,60	0,58	10	5	0						5		
Other					6	0						6		
							3x 414, 1x 424, 2x 453							
<b>Sample B</b>		2,72	0,10	3,7	331	CVP	2,72	0,014	12%	2,39	3,05	331	327	99%
(404) Siemens Rapidlab 248		2,60	0,15	5,7	6	0						6		

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Dead line: 30.03.2018

Test	[unit]	RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	Comparability						N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>
							AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL				
<b>(132) pCO2</b>					331								331	322	97%
Samples and groups	[kPa]														
<b>Sample B</b>		2,72	0,10	3,7	331		CVP	2,72	0,014	12%	2,39	3,05	331	327	99%
(405) Siemens Rapidlab 348		2,75	0,19	7,0	12	0							12		
(410) Siemens Rapidlab (series 1200)		2,61	0,19	7,4	5	0							5		
(411) IL GEM 3000		2,45	0,074	3,0	9	0							9		
(412) IL GEM 4000		2,65	0,074	2,8	7	0							7		
(416) Nova Stat Profile CCX, pHox Ultra		2,78	0,083	3,0	22	0							22		
(418) Nova Stat Profile pHox, pHox Plus		2,69	0,20	7,5	8	0							8		
(433) Radiometer ABL (series 700 and 800)		2,71	0,074	2,7	134	0							134		
(448) Roche OMNI C / cobas b121		2,75	0,074	2,7	8	1							8		
(449) Roche OMNI S1-6 / cobas b221		2,74	0,077	2,8	52	0							52		
(450) Techno Medica Gastat		2,71	0,15	5,6	11	0							11		
(451) Radiometer ABL 80		2,81	0,18	6,3	10	0							10		
(452) Radiometer ABL 90		2,72	0,065	2,4	24	0							24		
(454) Siemens RapidPoint (series 400, 500)		2,83	0,15	5,3	12	0							12		
(999) another system		2,79	0,03	1,1	5	0							5		
Other					6	0							6		
								3x 414, 1x 424, 2x 453							
<b>(133) pO2</b>					329								329	315	96%
Samples and groups	[kPa]														
<b>Sample A</b>		14,5	0,98	6,8	329		CVP	14,5	0,13	17%	12	17	329	320	97%
(404) Siemens Rapidlab 248		13,0	0,46	3,5	6	0							6		
(405) Siemens Rapidlab 348		13,1	1,1	8,4	11	0							11		
(410) Siemens Rapidlab (series 1200)		13,5	0,36	2,6	5	0							5		
(411) IL GEM 3000		14,2	0,37	2,6	9	0							9		
(412) IL GEM 4000		14,4	0,37	2,6	7	0							7		
(416) Nova Stat Profile CCX, pHox Ultra		13,7	0,44	3,2	22	0							22		
(418) Nova Stat Profile pHox, pHox Plus		13,6	0,33	2,4	8	0							8		
(433) Radiometer ABL (series 700 and 800)		14,6	0,46	3,2	134	0							134		
(448) Roche OMNI C / cobas b121		15,2	0,50	3,3	8	0							8		
(449) Roche OMNI S1-6 / cobas b221		15,7	0,54	3,4	51	0							51		
(450) Techno Medica Gastat		15,1	0,96	6,3	11	0							11		
(451) Radiometer ABL 80		13,9	1,0	7,4	10	0							10		
(452) Radiometer ABL 90		13,4	0,76	5,7	24	0							24		
(454) Siemens RapidPoint (series 400, 500)		14,2	0,79	5,5	11	0							11		
(999) another system		14,2	0,97	6,9	5	0							5		
Other					7	0							7		
								1x 406, 3x 414, 1x 424, 2x 453							
<b>Sample B</b>		18,6	0,72	3,9	329		CVP	18,6	0,097	12%	16,3	20,9	329	320	97%
(404) Siemens Rapidlab 248		17,7	0,68	3,8	6	0							6		
(405) Siemens Rapidlab 348		17,5	1,3	7,5	11	0							11		
(410) Siemens Rapidlab (series 1200)		18,1	0,39	2,1	5	0							5		
(411) IL GEM 3000		19,1	0,22	1,2	9	0							9		
(412) IL GEM 4000		18,6	0,82	4,4	7	0							7		
(416) Nova Stat Profile CCX, pHox Ultra		18,5	0,41	2,2	22	0							22		
(418) Nova Stat Profile pHox, pHox Plus		18,6	0,59	3,2	8	0							8		
(433) Radiometer ABL (series 700 and 800)		18,5	0,52	2,8	134	0							134		
(448) Roche OMNI C / cobas b121		19,1	0,52	2,7	8	1							8		
(449) Roche OMNI S1-6 / cobas b221		19,1	0,70	3,7	51	0							51		
(450) Techno Medica Gastat		19,6	1,1	5,6	11	0							11		
(451) Radiometer ABL 80		18,4	1,3	7,1	10	0							10		
(452) Radiometer ABL 90		18,6	0,92	4,9	24	0							24		
(454) Siemens RapidPoint (series 400, 500)		18,2	0,77	4,2	11	0							11		
(999) another system		18,6	1,4	7,4	5	0							5		
Other					7	0							7		
								1x 406, 3x 414, 1x 424, 2x 453							
<b>(134) Sodium cation (ISE)</b>					195								195	192	98%
Samples and groups	[mmol/L]														
<b>Sample A</b>		132	1,30	0,96	195		CVP	132	0,22	5%	125	139	195	194	99%
(411) IL GEM 3000		134	1,20	0,88	10	0							10		
(412) IL GEM 4000		131	0,00	0,00	7	0							7		
(416) Nova Stat Profile CCX, pHox Ultra		131	0,46	0,35	22	0							22		
(433) Radiometer ABL (series 700 and 800)		132	0,91	0,69	83	1							83		
(449) Roche OMNI S1-6 / cobas b221		132	1,7	1,3	20	0							20		

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## EQA round: ABR1/18 - Acid-base Status and Electrolytes

Dead line: 30.03.2018

Test	[unit]	RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	Comparability						N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>
							AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL				
<b>(134) Sodium cation (ISE)</b>					195							195	192	98%	
--- Samples and groups ---	[mmol/L]														
<b>Sample A</b>		132	1,30,96		195		CVP	132	0,22	5%	125	139	195	194	99%
(452) Radiometer ABL 90		133	0,550,41		24	0							24		
(454) Siemens RapidPoint (series 400, 500)		129	0,300,23		9	0							9		
(999) another system		131	3,4 2,6		5	0							5		
Other					15	0							15		
							4x 405, 2x 410, 3x 448, 3x 450, 3x 451								
<b>Sample B</b>		159	1,8 1,1		195		CVP	159	0,32	5%	151	167	195	192	98%
(411) IL GEM 3000		161	2,0 1,2		10	0							10		
(412) IL GEM 4000		159	0,740,47		7	0							7		
(416) Nova Stat Profile CCX, pHox Ultra		161	0,580,36		22	0							22		
(433) Radiometer ABL (series 700 and 800)		158	0,870,55		83	1							83		
(449) Roche OMNI S1-6 / cobas b221		158	1,00,63		20	0							20		
(452) Radiometer ABL 90		161	0,000,00		24	0							24		
(454) Siemens RapidPoint (series 400, 500)		158	0,670,42		9	0							9		
(999) another system		159	2,6 1,6		5	0							5		
Other					15	1							15		
							4x 405, 2x 410, 3x 448, 3x 450, 3x 451								
<b>(135) Potassium cation (ISE)</b>					197								197	195	99%
--- Samples and groups ---	[mmol/L]														
<b>Sample A</b>		4,31	0,081 1,9		197		CVP	4,31	0,014	8%	3,96	4,66	197	196	99%
(411) IL GEM 3000		4,19	0,040,95		10	0							10		
(412) IL GEM 4000		4,30	0,000,00		7	0							7		
(416) Nova Stat Profile CCX, pHox Ultra		4,42	0,0280,63		22	0							22		
(433) Radiometer ABL (series 700 and 800)		4,33	0,055 1,3		84	1							84		
(449) Roche OMNI S1-6 / cobas b221		4,21	0,0330,79		20	0							20		
(452) Radiometer ABL 90		4,27	0,052 1,2		24	0							24		
(454) Siemens RapidPoint (series 400, 500)		4,30	0,030,69		9	0							9		
(999) another system		4,25	0,059 1,4		5	0							5		
Other					16	0							16		
							4x 405, 2x 410, 3x 448, 4x 450, 3x 451								
<b>Sample B</b>		6,22	0,11 1,8		197		CVP	6,22	0,020	8%	5,72	6,72	197	195	99%
(411) IL GEM 3000		6,06	0,07 1,2		10	0							10		
(412) IL GEM 4000		6,30	0,000,00		7	0							7		
(416) Nova Stat Profile CCX, pHox Ultra		6,49	0,12 1,8		22	0							22		
(433) Radiometer ABL (series 700 and 800)		6,20	0,0010,01		84	1							84		
(449) Roche OMNI S1-6 / cobas b221		6,31	0,0550,86		20	0							20		
(452) Radiometer ABL 90		6,10	0,000,00		24	0							24		
(454) Siemens RapidPoint (series 400, 500)		6,19	0,030,48		9	0							9		
(999) another system		6,19	0,18 2,9		5	0							5		
Other					16	1							16		
							4x 405, 2x 410, 3x 448, 4x 450, 3x 451								
<b>(136) Chloride anion (ISE)</b>					172								172	170	99%
--- Samples and groups ---	[mmol/L]														
<b>Sample A</b>		94,6	1,7 1,8		172		CVP	94,6	0,32	7%	87,9	102	172	171	99%
(412) IL GEM 4000		99,5	0,740,75		7	0							7		
(416) Nova Stat Profile CCX, pHox Ultra		100	1,4 1,4		16	0							16		
(433) Radiometer ABL (series 700 and 800)		94,3	0,850,90		82	0							82		
(449) Roche OMNI S1-6 / cobas b221		93,2	1,4 1,5		19	0							19		
(452) Radiometer ABL 90		94,0	0,000,00		24	0							24		
(454) Siemens RapidPoint (series 400, 500)		96,0	0,000,00		9	0							9		
Other					15	0							15		
							1x 405, 2x 410, 3x 448, 3x 450, 3x 451, 3x 999								
<b>Sample B</b>		127	2,7 2,1		172		CVP	127	0,51	7%	118	136	172	171	99%
(412) IL GEM 4000		131	2,2 1,7		7	0							7		
(416) Nova Stat Profile CCX, pHox Ultra		131	1,10,84		16	0							16		
(433) Radiometer ABL (series 700 and 800)		127	1,10,90		82	0							82		
(449) Roche OMNI S1-6 / cobas b221		122	1,10,91		19	0							19		
(452) Radiometer ABL 90		127	0,650,51		24	0							24		
(454) Siemens RapidPoint (series 400, 500)		128	1,5 1,2		9	0							9		
Other					15	1							15		
							1x 405, 2x 410, 3x 448, 3x 450, 3x 451, 3x 999								

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(Groups: system)

Filter: minimal size of groups n = 5

## EQA round: ABR1/18 - Acid-base Status and Electrolytes

Dead line: 30.03.2018

Test	[unit]	RoM	SD	CV [%]	N <sub>tot</sub>	N <sub>out</sub>	Comparability									
							AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL	N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>		
<b>(137) Calcium cation (ISE)</b>					236							233	210	90%		
Samples and groups	[mmol/L]															
<b>Sample A</b>		1,11	0,034	3,1	236		CVP	1,11	,0055	10%	0,999	1,23	236	234	99%	
(411) IL GEM 3000		1,11	0,02	1,8	10	0							10			
(412) IL GEM 4000		1,10	0,015	1,3	7	0							7			
(416) Nova Stat Profile CCX, pHox Ultra		1,09	0,013	1,2	19	0							19			
(433) Radiometer ABL (series 700 and 800)		1,13	0,012	1,1	110	0							110			
(449) Roche OMNI S1-6 / cobas b221		1,08	0,021	1,9	28	0							28			
(450) Techno Medica Gastat		1,05	0,059	5,6	5	0							5			
(452) Radiometer ABL 90		1,07	0,0040	4,43	24	0							24			
(454) Siemens RapidPoint (series 400, 500)		1,05	0,014	1,3	10	0							10			
(999) another system		1,07	0,074	6,9	5	1							5			
Other					18	0							18			
								4x 405, 3x 410, 1x 418, 4x 448, 4x 451, 2x 453								
<b>Sample B</b>		0,513	0,052	10	236								233	211	91%	
(38) IL; (411) IL GEM 3000		0,440	0,013	2,9	10	0	CVPG	0,436	,0073	10%	0,392	0,48	10			
(38) IL; (412) IL GEM 4000		0,425	0,007	1,7	7	0	CVPG	0,436	,0073	10%	0,392	0,48	7			
(53) Nova Biomedical; (416) Nova Stat Profile CCX, pHox Ultra		0,509	0,017	3,4	19	0	CVPG	0,508	,0091	10%	0,457	0,559	19			
(60) Roche; (449) Roche OMNI S1-6 / cobas b221		0,454	0,012	2,7	28	0	CVPG	0,455	,0063	10%	0,409	0,501	28			
(61) Radiometer; (433) Radiometer ABL (series 700 and 800)		0,547	0,029	5,3	110	0	CVPG	0,537	,0076	10%	0,483	0,591	110			
(61) Radiometer; (452) Radiometer ABL 90		0,490	0,000	0,00	24	0	CVPG	0,537	,0076	10%	0,483	0,591	24			
(179) Siemens (Bayer); (454) Siemens RapidPoint (series 400, 500)		0,494	0,047	9,5	10	0	CVPG	0,487	0,028	10%	0,438	0,536	10			
(198) Techno Medica; (450) Techno Medica Gastat		0,525	0,037	7,1	5	1	CVPG	0,525	0,037	10%	0,472	0,578	5			
Other					23	1							20			
								1x 11/999, 1x 38/999, 1x 53/418, 1x 53/999, 4x 60/448, 4x 61/451, 1x 109/999, 1x 120/999, 4x 179/405, 3x 179/410, 2x 179/453								
<b>(139) Glucose</b>					166								166	165	99%	
Samples and groups	[mmol/L]															
<b>Sample A</b>		10,8	0,36	3,3	166		CVP	10,8	0,069	15%	9,18	12,5	166	165	99%	
(411) IL GEM 3000		10,8	0,36	3,3	10	0							10			
(412) IL GEM 4000		11,2	0,15	1,3	7	0							7			
(416) Nova Stat Profile CCX, pHox Ultra		10,6	0,37	3,5	22	0							22			
(433) Radiometer ABL (series 700 and 800)		10,8	0,28	2,6	86	0							86			
(452) Radiometer ABL 90		10,4	0,13	1,2	25	0							25			
(454) Siemens RapidPoint (series 400, 500)		11,1	0,15	1,3	8	0							8			
Other					8	0							8			
								4x 449, 1x 450, 3x 999								
<b>Sample B</b>		15,5	0,58	3,8	166		CVP	15,5	0,11	15%	13,1	17,9	166	166	100%	
(411) IL GEM 3000		15,7	0,61	3,9	10	0							10			
(412) IL GEM 4000		16,7	0,22	1,3	7	0							7			
(416) Nova Stat Profile CCX, pHox Ultra		15,8	0,41	2,6	22	0							22			
(433) Radiometer ABL (series 700 and 800)		15,3	0,48	3,2	86	0							86			
(452) Radiometer ABL 90		15,2	0,21	1,4	25	0							25			
(454) Siemens RapidPoint (series 400, 500)		16,1	0,52	3,2	8	0							8			
Other					8	0							8			
								4x 449, 1x 450, 3x 999								
<b>(169) Lactate</b>					159								159	156	98%	
Samples and groups	[mmol/L]															
<b>Sample A</b>		2,47	0,12	4,8	159		CVP	2,47	0,023	18%	2,02	2,92	159	157	99%	
(411) IL GEM 3000		2,51	0,13	5,3	10	0							10			
(412) IL GEM 4000		2,45	0,074	3,0	7	0							7			
(416) Nova Stat Profile CCX, pHox Ultra		2,50	0,15	5,9	17	0							17			
(433) Radiometer ABL (series 700 and 800)		2,47	0,098	4,0	87	0							87			
(452) Radiometer ABL 90		2,40	0,000	0,00	25	0							25			
Other					13	0							13			
								1x 410, 4x 449, 1x 450, 4x 454, 3x 999								
<b>Sample B</b>		6,78	0,29	4,3	159		CVP	6,78	0,056	18%	5,55	8,01	159	157	99%	
(411) IL GEM 3000		7,25	0,32	4,4	10	0							10			
(412) IL GEM 4000		7,00	0,15	2,1	7	0							7			
(416) Nova Stat Profile CCX, pHox Ultra		6,92	0,25	3,6	17	0							17			
(433) Radiometer ABL (series 700 and 800)		6,66	0,25	3,7	87	0							87			
(452) Radiometer ABL 90		6,72	0,12	1,8	25	0							25			
Other					13	0							13			
								1x 410, 4x 449, 1x 450, 4x 454, 3x 999								

