

## Summary statistics - quantitative results

(Groups: manufacturer of instrument)

Dead line: 12.04.2019

Filter: minimal size of groups n = 5

## EQA round: AM1/19 - Basic Clinical Chemistry - Urine

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										Traceability										
		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>	AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL	N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>
<b>(61) Sodium</b>					264							264	263	100%								0
Samples and groups	[mmol/L]																					
<b>Sample A</b>		168	2,8	1,6	264	CVP	168	0,42	11%	149	187	264	263	100%								0
(1) Abbott		166	1,6	0,95	46							46										
(12) Beckman Coulter		166	3,2	1,9	9							9										
(58) Beckman Coulter (Olympus)		169	2,0	1,2	69							69										
(60) Roche		169	2,6	1,6	85							85										
(149) Siemens (Dade)		163	3,5	2,2	10							10										
(177) MINDRAY		169	0,82	0,48	5							5										
(179) Siemens (Bayer)		170	2,2	1,3	35							35										
Other					5							5										
							1x 53, 1x 82, 2x 178, 1x 999															
<b>Sample B</b>		66,7	1,4	2,0	264	CVP	66,7	0,21	11%	59,3	74,1	264	264	100%								0
(1) Abbott		66,2	0,83	1,3	46							46										
(12) Beckman Coulter		65,5	0,74	1,1	9							9										
(58) Beckman Coulter (Olympus)		66,4	0,98	1,5	69							69										
(60) Roche		67,8	2,0	2,9	85							85										
(149) Siemens (Dade)		65,8	1,1	1,7	10							10										
(177) MINDRAY		66,3	1,0	1,6	5							5										
(179) Siemens (Bayer)		66,9	1,1	1,6	35							35										
Other					5							5										
							1x 53, 1x 82, 2x 178, 1x 999															
<b>(62) Potassium</b>					264							264	262	99%								0
Samples and groups	[mmol/L]																					
<b>Sample A</b>		64,6	2,1	3,2	264	CVP	64,6	0,31	15%	54,9	74,3	264	262	99%								0
(1) Abbott		63,2	0,67	1,1	46							46										
(12) Beckman Coulter		64,5	0,74	1,1	9							9										
(58) Beckman Coulter (Olympus)		65,9	1,6	2,5	69							69										
(60) Roche		63,6	2,1	3,3	85							85										
(149) Siemens (Dade)		65,7	3,4	5,2	10							10										
(177) MINDRAY		64,9	0,52	0,80	5							5										
(179) Siemens (Bayer)		65,7	1,6	2,4	35							35										
Other					5							5										
							1x 53, 1x 82, 2x 178, 1x 999															
<b>Sample B</b>		25,0	0,66	2,6	264	CVP	25,0	0,099	15%	21,2	28,8	264	263	100%								0
(1) Abbott		24,6	0,29	1,2	46							46										
(12) Beckman Coulter		25,1	0,52	2,1	9							9										
(58) Beckman Coulter (Olympus)		25,4	0,57	2,3	69							69										
(60) Roche		24,9	0,73	2,9	85							85										
(149) Siemens (Dade)		24,3	0,51	2,1	10							10										
(177) MINDRAY		24,7	0,22	0,90	5							5										
(179) Siemens (Bayer)		25,1	0,43	1,7	35							35										

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## EQA round: AM1/19 - Basic Clinical Chemistry - Urine

Dead line: 12.04.2019

Test	[unit]	Comparability					Traceability																
		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>	AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL	N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>	
<b>(62) Potassium</b>					264							264	262	99%									0
--- Samples and groups ---	[mmol/L]																						
<b>Sample B</b>		25,0	0,66	2,6	264	CVP	25	0,099	15%	21,2	28,8	264	263	100%									0
Other					5							5											
							1x 53, 1x 82, 2x 178, 1x 999																
<b>(63) Chloride</b>					262							262	253	97%									0
--- Samples and groups ---	[mmol/L]																						
<b>Sample A</b>		195	4,9	2,5	262	CVP	195	0,74	14%	167	223	262	262	100%									0
(1) Abbott		193	2,3	1,2	46	0						46											
(12) Beckman Coulter		193	5,9	3,0	9	0						9											
(58) Beckman Coulter (Olympus)		198	2,7	1,4	69	0						69											
(60) Roche		193	6,2	3,2	84	0						84											
(149) Siemens (Dade)		205	2,3	1,1	10	0						10											
(177) MINDRAY		190	1,9	0,98	5	0						5											
(179) Siemens (Bayer)		193	3,2	1,7	35	0						35											
Other					4	0						4											
							1x 53, 2x 178, 1x 999																
<b>Sample B</b>		66,8	3,2	4,8	262	CVP	66,8	0,48	14%	57,4	76,2	262	253	97%									0
(1) Abbott		68,0	1,1	1,6	46	0						46											
(12) Beckman Coulter		67,3	2,0	2,9	9	0						9											
(58) Beckman Coulter (Olympus)		68,2	0,86	1,3	69	0						69											
(60) Roche		62,6	4,5	7,2	84	0						84											
(149) Siemens (Dade)		72,2	4,3	6,0	10	0						10											
(177) MINDRAY		63,3	5,6	8,9	5	0						5											
(179) Siemens (Bayer)		67,9	1,4	2,1	35	0						35											
Other					4	0						4											
							1x 53, 2x 178, 1x 999																
<b>(64) Calcium</b>					265							265	262	99%									0
--- Samples and groups ---	[mmol/L]																						
<b>Sample A</b>		3,05	0,12	3,8	265	CVP	3,05	0,017	18%	2,5	3,6	265	262	99%									0
(1) Abbott		2,94	0,08	2,8	46	0						46											
(12) Beckman Coulter		2,98	0,21	7,0	10	0						10											
(58) Beckman Coulter (Olympus)		3,05	0,07	2,5	67	0						67											
(60) Roche		3,10	0,07	2,4	84	0						84											
(149) Siemens (Dade)		3,12	0,10	3,4	10	0						10											
(177) MINDRAY		3,05	0,07	2,4	5	0						5											
(179) Siemens (Bayer)		3,07	0,11	3,6	34	0						34											
Other					9	0						9											
							1x 5, 1x 46, 1x 53, 3x 82, 1x 166, 2x 178																
<b>Sample B</b>		2,05	0,08	4,2	265	CVP	2,05	0,013	18%	1,68	2,42	265	263	99%									0
(1) Abbott		1,98	0,05	3,0	46	0						46											
(12) Beckman Coulter		2,00	0,15	7,3	10	0						10											
(58) Beckman Coulter (Olympus)		2,04	0,06	2,9	67	0						67											
(60) Roche		2,11	0,05	2,6	84	0						84											
(149) Siemens (Dade)		2,12	0,06	3,1	10	0						10											
(177) MINDRAY		2,05	0,07	3,6	5	0						5											
(179) Siemens (Bayer)		2,04	0,06	3,4	34	0						34											
Other					9	0						9											
							1x 5, 1x 46, 1x 53, 3x 82, 1x 166, 2x 178																

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Dead line: 12.04.2019

Test	[unit]	Comparability					Traceability																
		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>	AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL	N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>	
<b>(73) Magnesium</b>					226							226	223	99%									0
Samples and groups	[mmol/L]																						
<b>Sample A</b>		4,85	0,21	4,4	226	CVP	4,85	0,035	20%	3,88	5,82	226	224	99%									0
(1) Abbott		4,82	0,23	4,9	37							37											
(12) Beckman Coulter		4,88	0,21	4,4	10							10											
(58) Beckman Coulter (Olympus)		4,83	0,16	3,4	61							61											
(60) Roche		4,93	0,20	4,1	67							67											
(149) Siemens (Dade)		4,93	0,23	4,6	10							10											
(179) Siemens (Bayer)		4,75	0,21	4,4	31							31											
Other					10							10											
							3x 82, 4x 177, 2x 178, 1x 999																
<b>Sample B</b>		2,55	0,13	5,1	226	CVP	2,55	0,021	20%	2,04	3,06	226	223	99%									0
(1) Abbott		2,52	0,10	4,1	37							37											
(12) Beckman Coulter		2,56	0,15	5,7	10							10											
(58) Beckman Coulter (Olympus)		2,55	0,09	3,7	61							61											
(60) Roche		2,58	0,15	5,9	67							67											
(149) Siemens (Dade)		2,62	0,14	5,3	10							10											
(179) Siemens (Bayer)		2,53	0,13	5,0	31							31											
Other					10							10											
							3x 82, 4x 177, 2x 178, 1x 999																
<b>(65) Inorganic phosphate</b>					259							259	256	99%									0
Samples and groups	[mmol/L]																						
<b>Sample A</b>		14,0	0,53	3,8	259	CVP	14,0	0,081	18%	11,4	16,6	259	257	99%									0
(1) Abbott		13,7	0,38	2,8	44							44											
(12) Beckman Coulter		14,3	0,49	3,4	10							10											
(58) Beckman Coulter (Olympus)		14,0	0,48	3,4	66							66											
(60) Roche		14,1	0,53	3,7	82							82											
(149) Siemens (Dade)		14,1	0,59	4,2	11							11											
(177) MINDRAY		14,1	0,96	6,9	5							5											
(179) Siemens (Bayer)		14,2	0,67	4,7	35							35											
Other					6							6											
							1x 5, 1x 46, 1x 82, 1x 166, 2x 178																
<b>Sample B</b>		6,90	0,31	4,5	259	CVP	6,9	0,047	18%	5,65	8,15	259	257	99%									0
(1) Abbott		6,73	0,29	4,3	44							44											
(12) Beckman Coulter		7,01	0,19	2,7	10							10											
(58) Beckman Coulter (Olympus)		6,88	0,26	3,8	66							66											
(60) Roche		6,94	0,27	3,9	82							82											
(149) Siemens (Dade)		6,92	0,42	6,1	11							11											
(177) MINDRAY		7,07	0,64	9,0	5							5											
(179) Siemens (Bayer)		7,06	0,39	5,6	35							35											
Other					6							6											
							1x 5, 1x 46, 1x 82, 1x 166, 2x 178																
<b>(66) Osmolality</b>					129							129	126	98%									0
Samples and groups	[mmol/kg]																						
<b>Sample A</b>		770	7,1	0,92	129	CVP	770	1,5	4%	739	801	129	127	98%									0
(119) Advanced Instruments		773	7,2	0,94	41							41											
(150) Arkray		768	4,9	0,64	33							33											
(151) Fiske Associates		773	6,1	0,79	32							32											



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Test	[unit]	Comparability					Traceability							
		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>(68) Creatinine</b>					272									
--- Samples and groups ---	[mmol/L]													
<b>Sample B</b>		5,72	0,30	5,2	272									
(1) Abbott		5,61	0,21	3,7	45	0					RV	5,74	0,11	21%
(12) Beckman Coulter		5,86	0,18	3,1	11							4,53	6,95	
(58) Beckman Coulter (Olympus)		5,73	0,34	5,9	69									
(60) Roche		5,76	0,26	4,5	89									
(149) Siemens (Dade)		5,59	0,23	4,2	11									
(177) MINDRAY		5,67	0,24	4,3	5									
(179) Siemens (Bayer)		5,74	0,37	6,4	35									
Other					7									
														7
														1x 27, 1x 82, 1x 116, 2x 166, 2x 178
<b>(69) Uric acid</b>					253									
--- Samples and groups ---	[mmol/L]													
<b>Sample A</b>		0,766	0,04	6,4	253	CVP	0,766	0,076	23%	0,589	0,943	253	249	98%
(1) Abbott		0,740	0,02	2,7	42	0						42		
(12) Beckman Coulter		0,837	0,04	4,8	10	0						10		
(58) Beckman Coulter (Olympus)		0,804	0,02	2,8	66	0						66		
(60) Roche		0,731	0,03	4,1	80	2						80		
(149) Siemens (Dade)		0,795	0,05	6,9	11	0						11		
(177) MINDRAY		0,761	0,03	4,1	5	0						5		
(179) Siemens (Bayer)		0,771	0,03	4,2	35	0						35		
Other					4	0						4		
														1x 46, 1x 166, 2x 178
<b>Sample B</b>		0,339	0,03	10	253	CVP	0,339	0,053	23%	0,261	0,417	253	243	96%
(1) Abbott		0,336	0,01	4,9	42	0						42		
(12) Beckman Coulter		0,398	0,03	9,1	10	0						10		
(58) Beckman Coulter (Olympus)		0,362	0,01	4,4	66	0						66		
(60) Roche		0,309	0,01	4,5	80	2						80		
(149) Siemens (Dade)		0,387	0,04	12	11	0						11		
(177) MINDRAY		0,341	0,01	4,6	5	0						5		
(179) Siemens (Bayer)		0,343	0,03	9,7	35	0						35		
Other					4	0						4		
														1x 46, 1x 166, 2x 178
<b>(70) Glucose</b>					248									
--- Samples and groups ---	[mmol/L]													
<b>Sample A</b>		16,2	0,46	2,8	248	CVP	16,2	0,071	22%	12,6	19,8	248	248	100%
(1) Abbott		16,3	0,41	2,5	44	0						44		
(12) Beckman Coulter		16,2	0,30	1,9	9	0						9		
(58) Beckman Coulter (Olympus)		16,1	0,51	3,2	64	0						64		
(60) Roche		16,4	0,42	2,5	66	0						66		
(149) Siemens (Dade)		16,0	0,34	2,1	10	0						10		
(177) MINDRAY		16,6	0,22	1,3	5	0						5		
(179) Siemens (Bayer)		16,2	0,36	2,2	35	0						35		
Other					15	0						15		
														1x 6, 1x 18, 2x 49, 1x 166, 2x 178, 3x 187, 3x 188, 1x 196, 1x 199
<b>Sample B</b>		1,51	0,07	5,2	248	CVP	1,51	0,012	22%	1,17	1,85	248	246	99%
(1) Abbott		1,45	0,05	3,7	44	0						44		

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Test	[unit]	Comparability					Traceability																	
		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>	AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL	N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>		
<b>(70) Glucose</b>					248							248	246	99%									0	
Samples and groups	[mmol/L]																							
<b>Sample B</b>		1,51	0,07	5,2	248		CVP	1,51	0,012	22%	1,17	1,85		248	246	99%							0	
(12) Beckman Coulter		1,49	0,05	3,5	9	0								9										
(58) Beckman Coulter (Olympus)		1,50	0,04	3,1	64	0								64										
(60) Roche		1,55	0,05	3,5	66	0								66										
(149) Siemens (Dade)		1,47	0,05	4,0	10	0								10										
(177) MINDRAY		1,60	0,15	9,3	5	0								5										
(179) Siemens (Bayer)		1,50	0,09	6,0	35	0								35										
Other					15	0								15										
								1x 6, 1x 18, 2x 49, 1x 166, 2x 178, 3x 187, 3x 188, 1x 196, 1x 199																
<b>(71) Total protein</b>					237									227	212	93%							0	
Samples and groups	[g/L]																							
<b>Sample A</b>		0,730	0,16	22	237									227	224	99%							0	
(1) Abbott; (1) Abbott		0,887	0,02	3,2	36	0	CVPG	0,887	0,012	30%	0,62	1,16		36										
(12) Beckman Coulter; (12) Beckman Coulter		0,793	0,10	13	10	0	CVPG	0,799	0,074	30%	0,559	1,04		10										
(58) Beckman Coulter (Olympus); (58) Beckman Coulter (Olympus)		0,865	0,02	2,8	58	0	CVPG	0,865	,0079	30%	0,605	1,13		58										
(60) Roche; (60) Roche		0,616	0,04	7,6	79	2	CVPG	0,616	0,013	30%	0,431	0,801		79										
(149) Siemens (Dade); (149) Siemens (Dade)		0,755	0,06	8,7	8	0	CVPG	0,755	0,050	30%	0,528	0,982		8										
(179) Siemens (Bayer); (179) Siemens (Bayer)		0,386	0,04	12	21	0	CVPG	0,386	0,024	30%	0,27	0,502		21										
Other					25	0								15										
								1x 12/58, 1x 46/179, 1x 49/1, 1x 49/166, 4x 49/179, 1x 60/58, 3x 75/179, 1x 77/58, 3x 77/177, 1x 77/178, 2x 77/179, 2x 158/1, 1x 158/58, 1x 178/58, 1x 178/178, 1x 178/179																
<b>Sample B</b>		0,217	0,08	40	237									227	212	93%							0	
(1) Abbott; (1) Abbott		0,281	0,01	5,6	36	0	CVPG	0,281	,0065	30%	0,196	0,366		36										
(12) Beckman Coulter; (12) Beckman Coulter		0,259	0,06	24	10	0	CVPG	0,263	0,045	30%	0,184	0,342		10										
(58) Beckman Coulter (Olympus); (58) Beckman Coulter (Olympus)		0,302	0,01	3,3	58	0	CVPG	0,302	,0032	30%	0,211	0,393		58										
(60) Roche; (60) Roche		0,144	0,01	12	79	2	CVPG	0,143	,0050	30%	0,1	0,186		79										
(149) Siemens (Dade); (149) Siemens (Dade)		0,223	0,02	13	8	0	CVPG	0,223	0,021	30%	0,156	0,29		8										
(179) Siemens (Bayer); (179) Siemens (Bayer)		0,117	0,01	16	21	0	CVPG	0,117	,0100	30%	0,081	0,153		21										
Other					25	0								15										
								1x 12/58, 1x 46/179, 1x 49/1, 1x 49/166, 4x 49/179, 1x 60/58, 3x 75/179, 1x 77/58, 3x 77/177, 1x 77/178, 2x 77/179, 2x 158/1, 1x 158/58, 1x 178/58, 1x 178/178, 1x 178/179																
<b>(72) pH</b>					29									29	29	100%							0	
Samples and groups	[-]																							
<b>Sample A</b>		6,77	0,09	1,5	29		CVP	6,77	0,045	5%	6,43	7,11		29	29	100%							0	
(60) Roche		6,86	0,00	0,08	5	0								5										
(61) Radiometer		6,73	0,03	0,55	7	0								7										
(999) another manufacturer		6,75	0,05	0,77	9	0								9										
Other					8	0								8										
								1x 0, 1x 49, 2x 50, 1x 57, 1x 62, 1x 179, 1x 207																
<b>Sample B</b>		6,78	0,11	1,7	29		CVP	6,78	0,052	5%	6,44	7,12		29	29	100%							0	
(60) Roche		6,92	0,01	0,27	5	0								5										
(61) Radiometer		6,75	0,06	1,0	7	0								7										

## Summary statistics - quantitative results

(Groups: manufacturer of instrument)

Filter: minimal size of groups n = 5

## EQA round: AM1/19 - Basic Clinical Chemistry - Urine

Dead line: 12.04.2019

Test	[unit]						Comparability						Traceability																
		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>	AV	U <sub>AV</sub>	D <sub>max</sub>	LL	UL	N <sub>eva</sub>	N <sub>suc</sub>	S <sub>rel</sub>							
<b>(72) pH</b>					29						29	29	100%							0									
Samples and groups	[-]																												
<b>Sample B</b>		6,78	0,11	1,7	29	CVP	6,78	0,052	5%	6,44	7,12	29	29	100%						0									
(999) another manufacturer		6,76	0,08	1,3	9							9																	
Other					8							8																	
							1x 0, 1x 49, 2x 50, 1x 57, 1x 62, 1x 179, 1x 207																						
st_kn_np							End of report																						Printed: 19.04.2019