

New York State Department of Health - Wadsworth Center
Quantitative Urine Chemistry - Educational Proficiency Testing - 11 April 2011

Summary of Participant Performance (Mean and Standard Deviation)

Albumin

The following albumin results are summaries with all results converted to mg/L:

Specimen: U86	Specimen: U87	Specimen: U88	Specimen: U89	Specimen: U90	Number	Instrument or Reagent System
259.9 ± 17.03	2508.7 ± 238.49	442.0 ± 42.18	2.9 ± 2.53	849.8 ± 66.32	n = 182	All Methods & Instruments
256.1 ± 16.09	2488.7 ± 261.75	431.8 ± 36.92	2.8 ± 2.39	837.9 ± 84.90	n = 82	<Method Principles>
262.4 ± 15.41	2528.8 ± 224.23	452.3 ± 38.38	3.4 ± 2.98	853.9 ± 54.34	n = 85	Reporting in mg/dL
269.5 ± 22.97	2468.3 ± 265.91	457.4 ± 72.94	1.9 ± 1.66	865.7 ± 80.50	n = 15	Reporting in mg/L
						Reporting in ug/mL
						<Instruments>
273.2 ± 5.63	2326.1 ± 341.88	447.5 ± 23.60	5.0 ± 0.00	845.9 ± 14.38	n = 5	Abbott Architect c System
242.6 ± 16.76	2239.5 ± 206.28	303.6 ± 23.06	1.0 ± 0.90	646.1 ± 138.10	n = 3	Beckman Coulter CX
255.6 ± 6.23	2464.5 ± 241.27	427.5 ± 9.94	9.8 ± 14.34	815.4 ± 22.42	n = 3	Beckman Coulter LX-20
254.0 ± 7.76	2571.2 ± 225.45	433.2 ± 16.80	1.6 ± 0.63	856.7 ± 39.63	n = 9	Beckman Coulter UniCel DxC 600
261.9 ± 12.60	2615.4 ± 134.51	443.7 ± 26.65	5.7 ± 7.94	863.2 ± 46.48	n = 10	Beckman Coulter UniCel DxC 800
254.1 ± 8.91	2210.5 ± 657.15	406.7 ± 24.45	2.3 ± 2.51	788.2 ± 124.76	n = 32	Beckman Coulter AU Chemistry System
253.5 ± 13.73	2105.9 ± 682.35	427.7 ± 15.46	6.0 ± 0.00	844.0 ± 31.97	n = 7	Ortho Vitros 5,1FS
254.6 ± 33.13	2430.4 ± 607.11	448.7 ± 23.94	3.5 ± 2.10	862.4 ± 70.75	n = 11	Other
263.4 ± 11.44	2534.8 ± 93.57	450.2 ± 22.19	6.4 ± 6.34	824.0 ± 39.42	n = 9	Roche cobas c501
239.7 ± 26.75	2423.9 ± 600.55	412.6 ± 31.68	4.5 ± 5.04	795.2 ± 51.47	n = 7	Roche Cobas INTEGRA
258.5 ± 7.93	2430.1 ± 124.66	456.9 ± 21.79	2.2 ± 1.61	841.7 ± 31.79	n = 24	Roche MODULAR D/P
246.4 ± 3.70	2333.7 ± 220.56	413.8 ± 20.63	3.9 ± 3.59	839.4 ± 38.22	n = 10	Siemens ADVIA 1800
239.4 ± 6.97	2341.0 ± 190.20	413.8 ± 8.77	3.2 ± 4.89	825.1 ± 89.98	n = 3	Siemens ADVIA 2400
308.4 ± 64.68	3015.1 ± 527.14	462.9 ± 10.47	3.7 ± 4.45	923.0 ± 149.56	n = 3	Siemens Dimension EXL
269.6 ± 14.11	2564.5 ± 323.38	471.0 ± 16.49	1.9 ± 1.28	875.7 ± 44.05	n = 15	Siemens Dimension RxL
285.5 ± 22.97	2594.9 ± 131.74	501.6 ± 29.87	5.0 ± 0.00	933.5 ± 76.83	n = 16	Siemens Dimension Vista
271.0 ± 8.99	2240.3 ± 820.45	482.7 ± 4.72	1.3 ± 0.00	890.9 ± 44.15	n = 6	Siemens Dimension Xpand
290.5 ± 17.12	3564.0 ± 912.37	514.8 ± 42.42	2.5 ± 0.00	989.7 ± 18.60	n = 3	Siemens Immulite 2000
						<Reagents>
273.2 ± 5.63	2460.7 ± 241.30	455.2 ± 8.94	5.8 ± 2.04	845.9 ± 14.37	n = 4	Abbott
255.9 ± 13.13	2586.9 ± 182.64	433.1 ± 23.56	2.0 ± 0.00	845.3 ± 46.33	n = 29	Beckman Coulter
250.6 ± 8.45	2446.1 ± 134.09	408.6 ± 15.71	2.0 ± 0.92	791.0 ± 50.77	n = 7	Kamiya
256.1 ± 7.94	2130.5 ± 630.57	409.8 ± 23.43	3.0 ± 2.99	805.9 ± 126.27	n = 18	Beckman Coulter AU Series
254.1 ± 12.50	2033.5 ± 702.75	429.9 ± 19.35	6.0 ± 0.00	838.9 ± 34.54	n = 11	Ortho Clinical Diagnostics
277.1 ± 36.13	2706.6 ± 82.81	484.3 ± 35.66	3.8 ± 2.40	930.1 ± 84.33	n = 12	Other
263.4 ± 11.44	2534.8 ± 93.57	450.2 ± 22.19	6.4 ± 6.34	824.0 ± 39.42	n = 9	Roche cobas c501
258.7 ± 8.41	2437.6 ± 131.92	458.4 ± 20.96	2.1 ± 1.64	839.9 ± 28.66	n = 23	Roche Hitachi and Modular D/P
250.6 ± 6.74	2541.1 ± 610.25	418.6 ± 22.18	5.5 ± 5.03	800.5 ± 57.11	n = 6	Roche Integra and MIRA
245.0 ± 7.17	2352.7 ± 193.76	416.4 ± 20.21	3.4 ± 3.74	836.6 ± 56.69	n = 14	Siemens ADVIA
277.4 ± 8.25	>300	>300	5.0 ± 0.00	>300	n = 3	Siemens DCA
273.6 ± 17.55	2565.3 ± 229.92	477.7 ± 17.50	3.0 ± 2.10	888.2 ± 59.13	n = 33	Siemens Dimension
290.5 ± 17.12	3564.0 ± 912.37	514.8 ± 42.42	2.5 ± 0.00	989.7 ± 18.60	n = 3	Siemens Immulite

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Summary of Participant Performance (Mean and Standard Deviation)

Creatinine

The following creatinine results are summaries with all results converted to mg/dL:

Specimen: U86	Specimen: U87	Specimen: U88	Specimen: U89	Specimen: U90	Number	Instrument or Reagent System
58.4 ± 3.58	90.5 ± 5.35	134.2 ± 6.72	76.3 ± 4.49	105.5 ± 5.87	n = 275	All Methods & Instruments
58.4 ± 3.60	90.6 ± 5.38	134.3 ± 6.72	76.4 ± 4.51	105.6 ± 5.90	n = 268	<Method Principles> Reporting in mg/dL
56.6 ± 0.87	87.6 ± 1.19	131.2 ± 3.06	75.0 ± 2.33	102.4 ± 1.13	n = 3	Reporting in mmol/L
						<Instruments>
57.1 ± 1.34	87.9 ± 0.28	130.9 ± 2.88	74.9 ± 0.93	103.0 ± 0.62	n = 9	Abbott Architect c System
58.1 ± 2.67	91.6 ± 4.87	134.6 ± 4.79	75.9 ± 3.28	105.0 ± 3.48	n = 5	Beckman Coulter CX
59.3 ± 0.70	92.0 ± 1.67	136.0 ± 2.76	77.3 ± 1.27	107.1 ± 1.92	n = 11	Beckman Coulter LX-20
61.6 ± 1.92	95.1 ± 2.85	140.6 ± 3.90	80.6 ± 2.91	110.0 ± 3.57	n = 16	Beckman Coulter UniCel DxC 600
59.5 ± 1.00	92.0 ± 1.45	136.4 ± 2.49	78.0 ± 1.18	107.4 ± 1.42	n = 18	Beckman Coulter UniCel DxC 800
64.4 ± 1.89	98.8 ± 3.34	142.4 ± 4.07	81.6 ± 2.35	114.4 ± 3.45	n = 38	Beckman Coulter AU Chemistry System
58.3 ± 2.15	87.9 ± 2.41	133.9 ± 2.60	79.9 ± 1.79	102.3 ± 2.71	n = 15	Ortho Vitros 5,1FS
59.3 ± 4.78	91.4 ± 5.90	136.5 ± 2.82	78.4 ± 3.91	106.0 ± 6.50	n = 7	Other
58.1 ± 1.48	89.7 ± 2.80	134.6 ± 3.98	75.9 ± 2.42	105.4 ± 3.36	n = 16	Roche cobas c501
55.1 ± 1.43	85.6 ± 1.90	127.6 ± 2.77	71.9 ± 1.29	99.7 ± 2.12	n = 14	Roche Cobas INTEGRA
56.1 ± 2.44	86.4 ± 3.46	128.8 ± 5.90	73.9 ± 3.45	101.3 ± 3.97	n = 33	Roche MODULAR D/P
55.7 ± 3.13	86.1 ± 4.27	130.3 ± 6.67	73.5 ± 3.11	102.3 ± 5.40	n = 13	Siemens ADVIA 1800
52.2 ± 2.19	79.9 ± 2.43	119.5 ± 3.39	69.7 ± 3.45	92.6 ± 2.37	n = 3	Siemens ADVIA 2400
56.1 ± 2.21	90.3 ± 2.15	131.8 ± 3.83	75.1 ± 1.92	103.3 ± 3.62	n = 5	Siemens Dimension EXL
58.2 ± 1.85	92.3 ± 3.03	134.9 ± 3.93	77.3 ± 2.56	107.1 ± 3.11	n = 25	Siemens Dimension RxL
58.1 ± 2.10	91.6 ± 2.94	133.5 ± 4.22	72.4 ± 2.34	106.3 ± 3.48	n = 25	Siemens Dimension Vista
53.6 ± 0.56	83.8 ± 0.79	124.3 ± 1.53	69.8 ± 0.10	97.9 ± 1.61	n = 9	Siemens Dimension Xpand
						<Reagents>
56.8 ± 1.09	88.0 ± 0.87	129.9 ± 2.56	74.8 ± 1.27	103.0 ± 0.62	n = 9	Abbott
60.1 ± 1.92	93.2 ± 2.78	137.7 ± 3.90	78.6 ± 2.53	108.1 ± 2.93	n = 51	Beckman Coulter
64.6 ± 1.65	99.0 ± 2.97	142.5 ± 3.76	81.7 ± 2.23	114.6 ± 3.15	n = 33	Beckman Coulter AU Series
57.9 ± 2.31	87.6 ± 2.54	134.0 ± 2.76	79.6 ± 1.76	102.0 ± 2.68	n = 20	Ortho Clinical Diagnostics
57.5 ± 2.20	90.1 ± 2.53	133.6 ± 3.01	72.7 ± 2.10	104.2 ± 2.59	n = 9	Other
57.9 ± 1.45	89.6 ± 2.88	134.4 ± 4.09	75.7 ± 2.43	105.4 ± 3.53	n = 15	Roche cobas c501
56.1 ± 2.44	86.4 ± 3.46	128.8 ± 5.90	73.9 ± 3.45	101.3 ± 3.97	n = 33	Roche Hitachi and Modular D/P
55.0 ± 1.51	85.4 ± 1.94	127.3 ± 2.58	72.0 ± 1.36	99.4 ± 2.08	n = 13	Roche Integra and MIRA
55.7 ± 3.54	86.1 ± 5.15	129.2 ± 7.60	73.7 ± 4.19	101.3 ± 5.95	n = 20	Siemens ADVIA
61.8 ± 2.63	94.6 ± 2.06	141.9 ± 3.70	78.4 ± 2.17	112.2 ± 3.19	n = 3	Siemens DCA
57.5 ± 2.52	91.1 ± 3.98	133.2 ± 5.27	74.3 ± 3.72	105.7 ± 4.48	n = 58	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Albumin-Creatinine Ratio

The following albumin-creatinine ratio results are summaries with all results converted to $\mu\text{g}/\text{mg}$:

Specimen: U86	Specimen: U87	Specimen: U88	Specimen: U89	Specimen: U90	Number	Instrument or Reagent System
443.6 $\pm$ 42.71	2765.2 $\pm$ 299.30	329.6 $\pm$ 41.82	4.2 $\pm$ 4.04	806.5 $\pm$ 88.73	n = 153	All Methods & Instruments
448.9 $\pm$ 40.11	2808.3 $\pm$ 245.43	335.2 $\pm$ 37.96	4.7 $\pm$ 4.28	821.5 $\pm$ 77.72	n = 98	<Method Principles>
429.9 $\pm$ 43.11	2636.7 $\pm$ 451.65	317.0 $\pm$ 41.15	3.5 $\pm$ 3.78	776.0 $\pm$ 83.57	n = 46	Reporting in mg/g
455.7 $\pm$ 37.86	2803.8 $\pm$ 245.48	342.5 $\pm$ 49.31	3.5 $\pm$ 2.01	831.8 $\pm$ 122.90	n = 7	Reporting in $\mu\text{g}/\text{mg}$
						Other
443.9 $\pm$ 28.83	2139.1 $\pm$ 1237.37	314.4 $\pm$ 40.23	3.8 $\pm$ 3.84	699.4 $\pm$ 205.82	n = 18	<Instruments>
401.7 $\pm$ 62.36	1133.0 $\pm$ 1173.34	250.8 $\pm$ 99.56	2.3 $\pm$ 2.74	548.0 $\pm$ 289.19	n = 9	Clinical Analyzer calculation
						Manual Calculation
446.2 $\pm$ 42.62	2764.1 $\pm$ 289.51	333.6 $\pm$ 39.07	4.3 $\pm$ 4.06	814.4 $\pm$ 80.12	n = 125	<Reagents>
443.9 $\pm$ 28.83	2139.1 $\pm$ 1237.37	314.4 $\pm$ 40.23	3.8 $\pm$ 3.84	699.4 $\pm$ 205.82	n = 18	Lab Information System
401.7 $\pm$ 62.36	1133.0 $\pm$ 1173.34	250.8 $\pm$ 99.56	2.3 $\pm$ 2.74	548.0 $\pm$ 289.19	n = 9	Clinical Analyzer calculation
						Manual Calculation

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Summary of Participant Performance (Mean and Standard Deviation)

Calcium (mg/dL)

Specimen: U86		Specimen: U87		Specimen: U88		Specimen: U89		Specimen: U90		Number	Instrument or Reagent System
8.61 ±	1.46	8.90 ±	0.52	2.23 ±	1.13	11.20 ±	1.06	8.03 ±	0.35	n = 174	All Methods & Instruments
8.86 ±	1.57	9.17 ±	0.39	3.05 ±	1.73	11.47 ±	0.97	8.23 ±	0.31	n = 84	<Method Principles>
8.49 ±	1.45	8.82 ±	0.46	1.92 ±	0.46	11.03 ±	1.15	7.87 ±	0.31	n = 51	o-Cresolphthalein
8.26 ±	0.71	8.35 ±	0.26	2.00 ±	0.00	10.72 ±	0.97	7.83 ±	0.14	n = 32	Arsenazo dye
9.59 ±	1.31	9.02 ±	0.41	1.95 ±	0.26	11.76 ±	0.55	8.08 ±	0.19	n = 6	Ion selective electrode
											Other
											<Instruments>
8.83 ±	1.30	8.34 ±	0.08	2.03 ±	0.05	10.65 ±	0.81	7.41 ±	0.13	n = 6	Abbott Architect c System
7.10 ±	2.05	8.18 ±	0.61	2.06 ±	0.23	10.80 ±	0.85	7.54 ±	0.49	n = 5	Beckman Coulter CX
8.07 ±	0.42	8.39 ±	0.24	1.86 ±	0.20	9.78 ±	0.36	7.77 ±	0.13	n = 8	Beckman Coulter LX-20
8.43 ±	0.85	8.37 ±	0.29	2.00 ±	0.00	11.08 ±	0.77	7.81 ±	0.11	n = 6	Beckman Coulter UniCel DxC 600
8.46 ±	0.51	8.33 ±	0.22	2.00 ±	0.00	11.14 ±	0.72	7.88 ±	0.13	n = 15	Beckman Coulter UniCel DxC 800
9.02 ±	1.31	9.03 ±	0.35	2.07 ±	0.18	11.58 ±	0.61	7.99 ±	0.24	n = 18	Beckman Coulter AU Chemistry System
8.05 ±	0.84	8.71 ±	0.26	1.24 ±	0.25	10.77 ±	1.19	7.88 ±	0.15	n = 10	Ortho Vitros 5,1FS
8.63 ±	1.79	8.59 ±	0.52	1.60 ±	0.54	11.10 ±	1.09	7.78 ±	0.49	n = 3	Other
8.44 ±	1.68	9.02 ±	0.29	1.72 ±	0.19	11.59 ±	0.91	8.00 ±	0.29	n = 10	Roche cobas c501
8.82 ±	1.20	9.61 ±	0.34	1.72 ±	0.12	11.55 ±	0.58	8.67 ±	0.32	n = 7	Roche Cobas INTEGRA
8.47 ±	1.69	9.03 ±	0.32	1.75 ±	0.21	11.34 ±	0.87	7.97 ±	0.31	n = 22	Roche MODULAR D/P
8.21 ±	1.31	9.22 ±	0.45	2.02 ±	0.19	10.73 ±	1.26	8.08 ±	0.26	n = 12	Siemens ADVIA 1800
7.29 ±	1.86	8.68 ±	0.45	2.08 ±	0.41	10.61 ±	1.70	7.96 ±	0.33	n = 3	Siemens ADVIA 2400
9.47 ±	1.29	9.41 ±	0.29	4.48 ±	1.03	11.41 ±	1.10	8.42 ±	0.14	n = 18	Siemens Dimension RxL
8.84 ±	1.26	8.98 ±	0.35	5.00 ±	0.00	11.55 ±	0.79	8.21 ±	0.24	n = 18	Siemens Dimension Vista
10.23 ±	0.09	9.19 ±	0.37	5.00 ±	0.00	11.83 ±	0.77	8.32 ±	0.18	n = 6	Siemens Dimension Xpand
											<Reagents>
8.83 ±	1.30	8.34 ±	0.08	2.03 ±	0.05	10.65 ±	0.81	7.41 ±	0.13	n = 6	Abbott
8.27 ±	0.82	8.37 ±	0.26	2.00 ±	0.00	10.75 ±	1.01	7.83 ±	0.14	n = 32	Beckman Coulter
8.97 ±	1.36	9.07 ±	0.32	2.06 ±	0.16	11.54 ±	0.68	8.01 ±	0.21	n = 17	Beckman Coulter AU Series
8.02 ±	0.73	8.70 ±	0.32	1.23 ±	0.27	10.87 ±	1.25	7.92 ±	0.13	n = 13	Ortho Clinical Diagnostics
9.99 ±	0.87	8.75 ±	0.39	4.58 ±	1.14	11.75 ±	0.55	7.98 ±	0.53	n = 4	Other
8.17 ±	1.56	9.07 ±	0.24	1.69 ±	0.14	11.51 ±	0.96	8.05 ±	0.26	n = 9	Roche cobas c501
8.51 ±	1.71	9.04 ±	0.28	1.74 ±	0.21	11.41 ±	0.91	8.01 ±	0.28	n = 22	Roche Hitachi and Modular D/P
8.82 ±	1.20	9.61 ±	0.34	1.72 ±	0.12	11.55 ±	0.58	8.67 ±	0.32	n = 7	Roche Integra and MIRA
8.13 ±	1.62	9.20 ±	0.53	2.01 ±	0.23	10.91 ±	1.40	8.06 ±	0.27	n = 17	Siemens ADVIA
9.13 ±	1.47	9.21 ±	0.39	5.00 ±	0.00	11.43 ±	1.06	8.34 ±	0.21	n = 41	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Chloride (mmol/L)

Specimen: U86		Specimen: U87		Specimen: U88		Specimen: U89		Specimen: U90		Number	Instrument or Reagent System
96.69 ±	4.25	182.23 ±	4.23	38.03 ±	3.63	246.61 ±	7.12	162.67 ±	3.29	n = 197	All Methods & Instruments
											<Method Principles>
96.80 ±	4.25	182.32 ±	4.20	38.05 ±	3.65	246.08 ±	6.79	162.68 ±	3.21	n = 172	Ion selective electrode (diluted)
95.74 ±	4.41	181.32 ±	4.59	37.37 ±	2.59	251.35 ±	8.04	162.45 ±	4.00	n = 23	Ion selective electrode (undiluted)
											<Instruments>
95.50 ±	1.02	177.55 ±	3.51	37.60 ±	0.79	241.07 ±	5.54	159.14 ±	2.81	n = 6	Abbott Architect c System
98.60 ±	1.35	177.44 ±	4.48	35.95 ±	1.97	239.41 ±	5.74	162.75 ±	1.88	n = 5	Beckman Coulter CX
95.80 ±	1.81	179.45 ±	3.12	37.95 ±	1.75	242.61 ±	5.53	160.59 ±	3.90	n = 11	Beckman Coulter LX-20
96.02 ±	1.68	181.09 ±	2.93	38.36 ±	1.88	242.38 ±	6.12	161.66 ±	2.43	n = 13	Beckman Coulter UniCel DxC 600
95.28 ±	1.49	180.32 ±	2.79	38.42 ±	1.23	242.00 ±	5.32	161.61 ±	1.98	n = 17	Beckman Coulter UniCel DxC 800
97.71 ±	1.45	185.55 ±	2.88	38.44 ±	0.86	254.91 ±	4.35	166.89 ±	2.44	n = 21	Beckman Coulter AU Chemistry System
87.37 ±	1.66	178.79 ±	1.93	31.29 ±	1.70	254.95 ±	4.93	159.47 ±	1.14	n = 11	Roche cobas c501
93.58 ±	0.99	178.97 ±	2.78	40.05 ±	2.59	247.23 ±	4.13	161.08 ±	2.36	n = 8	Roche Cobas INTEGRA
92.34 ±	1.29	182.01 ±	2.13	33.19 ±	1.10	247.54 ±	10.21	161.61 ±	1.35	n = 25	Roche MODULAR D/P
96.71 ±	1.39	180.56 ±	1.93	38.00 ±	0.00	245.34 ±	2.71	161.55 ±	1.67	n = 13	Siemens ADVIA 1800
95.72 ±	0.51	180.00 ±	0.90	37.28 ±	0.51	244.44 ±	1.02	161.00 ±	0.00	n = 3	Siemens ADVIA 2400
104.74 ±	1.37	189.74 ±	2.26	53.47 ±	1.86	244.74 ±	3.16	165.26 ±	1.37	n = 3	Siemens Dimension EXL
102.76 ±	3.23	186.01 ±	3.24	43.48 ±	5.95	249.35 ±	4.66	165.54 ±	2.92	n = 24	Siemens Dimension RxL
99.43 ±	1.07	183.97 ±	3.82	39.92 ±	2.12	243.64 ±	5.17	163.22 ±	2.96	n = 23	Siemens Dimension Vista
104.57 ±	2.83	188.05 ±	3.38	51.39 ±	8.44	248.03 ±	2.39	165.65 ±	2.09	n = 7	Siemens Dimension Xpand
											<Reagents>
95.50 ±	1.02	177.55 ±	3.51	37.60 ±	0.79	241.07 ±	5.54	159.14 ±	2.81	n = 6	Abbott
95.78 ±	1.77	180.27 ±	3.26	38.11 ±	1.72	242.04 ±	5.51	161.54 ±	2.60	n = 44	Beckman Coulter
97.78 ±	1.42	185.91 ±	2.74	38.46 ±	0.76	255.34 ±	4.56	167.02 ±	2.53	n = 21	Beckman Coulter AU Series
96.39 ±	1.64	177.92 ±	3.06	45.57 ±	10.75	233.01 ±	29.03	159.69 ±	0.90	n = 4	Ortho Clinical Diagnostics
99.51 ±	0.83	184.47 ±	3.12	40.00 ±	2.72	244.24 ±	4.57	164.14 ±	3.01	n = 5	Other
87.29 ±	1.77	179.07 ±	1.79	31.22 ±	1.79	255.79 ±	4.31	159.71 ±	0.61	n = 10	Roche cobas c501
92.34 ±	1.29	182.01 ±	2.13	33.19 ±	1.10	247.54 ±	10.21	161.61 ±	1.35	n = 25	Roche Hitachi and Modular D/P
93.57 ±	1.02	178.61 ±	2.71	39.51 ±	3.34	247.21 ±	3.84	160.62 ±	2.73	n = 9	Roche Integra and MIRA
96.42 ±	1.16	180.42 ±	1.63	37.80 ±	0.53	245.34 ±	2.39	161.46 ±	1.36	n = 18	Siemens ADVIA
101.76 ±	3.28	185.85 ±	3.83	43.21 ±	6.15	247.00 ±	5.14	164.70 ±	2.88	n = 52	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Glucose (mg/dL)

Specimen: U86	Specimen: U87	Specimen: U88	Specimen: U89	Specimen: U90	Number	Instrument or Reagent System
294.7 ± 8.98	1.3 ± 1.11	574.7 ± 23.07	1.3 ± 1.05	29.4 ± 1.21	n = 126	All Methods & Instruments
						<Method Principles>
293.9 ± 8.64	1.2 ± 0.72	574.3 ± 14.00	1.3 ± 0.67	29.4 ± 1.16	n = 70	Hexokinase, UV
294.0 ± 10.49	1.0 ± 0.58	558.8 ± 41.35	1.0 ± 0.57	29.1 ± 1.50	n = 31	Hexokinase, colorimetric
303.2 ± 6.38	<20	601.9 ± 11.47	<20	29.6 ± 1.07	n = 13	Glucose oxidase, colorimetric
293.7 ± 2.24	3.8 ± 1.34	574.3 ± 8.69	3.5 ± 1.46	29.2 ± 1.08	n = 7	Glucose oxidase, O2 electrode
						<Instruments>
302.0 ± 4.64	1.0 ± 0.00	611.9 ± 3.52	5.2 ± 11.44	24.8 ± 11.45	n = 4	Abbott Architect c System
288.7 ± 3.07	5.0 ± 0.00	572.6 ± 11.78	5.0 ± 0.00	29.0 ± 0.90	n = 3	Beckman Coulter CX
294.8 ± 2.61	4.3 ± 1.10	573.7 ± 5.93	4.3 ± 1.10	29.0 ± 0.00	n = 5	Beckman Coulter LX-20
248.7 ± 115.85	4.1 ± 3.52	480.7 ± 228.52	4.1 ± 3.52	25.4 ± 7.94	n = 4	Beckman Coulter UniCel DxC 600
293.9 ± 1.27	3.6 ± 1.37	571.2 ± 8.05	3.4 ± 1.09	29.3 ± 1.38	n = 5	Beckman Coulter UniCel DxC 800
291.9 ± 4.76	5.9 ± 5.28	563.1 ± 10.17	5.8 ± 5.38	29.7 ± 0.64	n = 11	Beckman Coulter AU Chemistry System
302.6 ± 4.07	<20	599.4 ± 11.35	<20	29.5 ± 1.02	n = 9	Ortho Vitros 5,1FS
304.5 ± 6.76	15.0 ± 9.22	600.9 ± 18.38	15.0 ± 9.22	30.1 ± 0.77	n = 3	Other
289.9 ± 9.59	1.4 ± 0.71	569.8 ± 8.12	1.6 ± 0.52	29.9 ± 0.82	n = 9	Roche cobas c501
298.4 ± 5.74	1.0 ± 0.04	574.7 ± 10.18	1.3 ± 1.25	29.9 ± 0.79	n = 6	Roche Cobas INTEGRA
297.9 ± 10.55	1.7 ± 0.66	577.2 ± 15.66	1.9 ± 0.47	29.8 ± 1.15	n = 21	Roche MODULAR D/P
296.9 ± 5.29	1.0 ± 0.00	579.0 ± 6.72	1.0 ± 0.00	29.7 ± 0.80	n = 9	Siemens ADVIA 1800
304.6 ± 1.02	6.0 ± 10.00	588.2 ± 4.89	6.3 ± 9.73	30.0 ± 0.00	n = 3	Siemens ADVIA 2400
294.4 ± 8.66	0.7 ± 0.54	574.9 ± 20.10	0.7 ± 0.54	28.5 ± 1.86	n = 9	Siemens Dimension RxL
284.8 ± 8.56	1.0 ± 0.00	500.2 ± 19.21	1.0 ± 0.00	27.9 ± 1.30	n = 17	Siemens Dimension Vista
287.3 ± 0.51	0.0 ± 0.00	562.8 ± 1.54	0.0 ± 0.00	27.5 ± 1.86	n = 3	Siemens Dimension Xpand
						<Reagents>
302.0 ± 4.64	1.0 ± 0.00	611.9 ± 3.52	5.2 ± 11.44	24.8 ± 11.45	n = 4	Abbott
294.0 ± 1.66	3.8 ± 1.98	571.7 ± 8.94	3.7 ± 1.86	29.0 ± 0.79	n = 16	Beckman Coulter
292.9 ± 6.04	6.7 ± 4.96	563.2 ± 10.22	6.7 ± 4.96	29.8 ± 0.56	n = 10	Beckman Coulter AU Series
303.8 ± 5.32	<20	602.2 ± 10.71	<20	29.7 ± 0.97	n = 12	Ortho Clinical Diagnostics
289.9 ± 9.59	1.4 ± 0.71	569.8 ± 8.12	1.6 ± 0.52	29.9 ± 0.82	n = 9	Roche cobas c501
297.9 ± 10.55	1.7 ± 0.66	577.2 ± 15.66	1.9 ± 0.47	29.8 ± 1.15	n = 21	Roche Hitachi and Modular D/P
298.4 ± 5.74	1.0 ± 0.04	574.7 ± 10.18	1.3 ± 1.25	29.9 ± 0.79	n = 6	Roche Integra and MIRA
298.6 ± 7.46	1.0 ± 0.00	580.8 ± 10.29	1.0 ± 0.00	30.0 ± 0.63	n = 14	Siemens ADVIA
288.9 ± 8.43	0.8 ± 0.43	539.1 ± 45.67	1.0 ± 0.00	27.9 ± 1.65	n = 29	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Magnesium (mg/dL)

Specimen: U86	Specimen: U87	Specimen: U88	Specimen: U89	Specimen: U90	Number	Instrument or Reagent System
6.63 ± 0.37	14.36 ± 0.55	1.66 ± 0.28	9.89 ± 0.47	13.02 ± 0.59	n = 120	All Methods & Instruments
6.59 ± 0.35	14.40 ± 0.42	1.46 ± 0.31	9.77 ± 0.35	13.10 ± 0.31	n = 25	<Method Principles> Calmagite
6.85 ± 0.24	14.55 ± 0.37	1.64 ± 0.10	10.18 ± 0.40	13.32 ± 0.42	n = 29	Methylthymol blue
6.57 ± 0.38	14.30 ± 0.76	1.78 ± 0.27	9.77 ± 0.41	12.80 ± 0.59	n = 41	Xylidyl blue (Magon)
6.35 ± 0.11	14.11 ± 0.18	1.20 ± 0.00	10.48 ± 0.21	13.55 ± 0.11	n = 5	Formazon dye
6.59 ± 0.18	14.20 ± 0.38	1.78 ± 0.21	9.74 ± 0.44	12.77 ± 0.61	n = 13	Chlorophosphonazo III
5.30 ± 0.68	11.84 ± 0.93	1.45 ± 0.52	8.19 ± 1.07	11.22 ± 0.39	n = 4	Arsenazo dye
5.97 ± 0.68	12.81 ± 1.99	1.17 ± 0.50	8.54 ± 1.36	11.95 ± 1.13	n = 4	<Instruments> Beckman Coulter CX
6.94 ± 0.36	14.75 ± 0.38	1.55 ± 0.27	9.85 ± 0.50	13.08 ± 0.09	n = 5	Beckman Coulter LX-20
6.53 ± 0.22	51.10 ± 67.36	1.28 ± 0.24	9.61 ± 0.28	13.04 ± 0.10	n = 3	Beckman Coulter UniCel DxC 600
6.55 ± 0.28	14.32 ± 0.42	1.40 ± 0.29	9.73 ± 0.28	13.09 ± 0.44	n = 13	Beckman Coulter UniCel DxC 800
6.45 ± 0.31	13.88 ± 1.00	1.66 ± 0.05	9.67 ± 0.37	12.46 ± 0.71	n = 9	Beckman Coulter AU Chemistry System
6.38 ± 0.04	14.12 ± 0.21	1.17 ± 0.08	10.44 ± 0.23	13.58 ± 0.04	n = 4	Ortho Vitros 5,1FS
6.48 ± 0.38	14.09 ± 0.31	1.73 ± 0.19	9.65 ± 0.46	12.52 ± 0.38	n = 7	Roche cobas c501
6.60 ± 0.13	14.35 ± 0.41	1.84 ± 0.21	9.85 ± 0.38	13.18 ± 0.61	n = 6	Roche Cobas INTEGRA
6.55 ± 0.41	14.21 ± 0.59	1.81 ± 0.29	9.64 ± 0.41	12.68 ± 0.43	n = 19	Roche MODULAR D/P
6.78 ± 0.32	14.79 ± 0.44	1.86 ± 0.33	10.11 ± 0.30	13.27 ± 0.45	n = 9	Siemens ADVIA 1800
6.63 ± 0.17	14.02 ± 0.50	1.83 ± 0.10	9.80 ± 0.18	12.89 ± 0.08	n = 3	Siemens ADVIA 2400
6.74 ± 0.21	14.39 ± 0.23	1.60 ± 0.00	9.91 ± 0.12	13.19 ± 0.41	n = 11	Siemens Dimension RxL
6.97 ± 0.29	14.69 ± 0.39	1.67 ± 0.10	10.47 ± 0.24	13.46 ± 0.46	n = 15	Siemens Dimension Vista
6.60 ± 0.36	14.42 ± 0.44	1.43 ± 0.31	9.73 ± 0.33	13.11 ± 0.34	n = 23	<Reagents> Beckman Coulter
6.48 ± 0.17	14.05 ± 0.85	1.66 ± 0.05	9.74 ± 0.30	12.58 ± 0.62	n = 8	Beckman Coulter AU Series
6.35 ± 0.11	14.11 ± 0.18	1.20 ± 0.00	10.48 ± 0.21	13.55 ± 0.11	n = 5	Ortho Clinical Diagnostics
6.63 ± 0.14	14.27 ± 0.23	1.64 ± 0.10	9.93 ± 0.51	12.99 ± 0.37	n = 3	Other
6.48 ± 0.38	14.09 ± 0.31	1.73 ± 0.19	9.65 ± 0.46	12.52 ± 0.38	n = 7	Roche cobas c501
6.54 ± 0.40	14.21 ± 0.57	1.80 ± 0.29	9.65 ± 0.40	12.69 ± 0.42	n = 20	Roche Hitachi and Modular D/P
6.60 ± 0.13	14.35 ± 0.41	1.84 ± 0.21	9.85 ± 0.38	13.18 ± 0.61	n = 6	Roche Integra and MIRA
6.73 ± 0.27	14.73 ± 0.62	1.85 ± 0.26	10.05 ± 0.29	13.16 ± 0.39	n = 14	Siemens ADVIA
6.86 ± 0.27	14.51 ± 0.36	1.64 ± 0.08	10.20 ± 0.39	13.32 ± 0.44	n = 27	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Sodium (mmol/L)

Specimen: U86		Specimen: U87		Specimen: U88		Specimen: U89		Specimen: U90		Number	Instrument or Reagent System
95.6 ±	2.69	178.5 ±	6.84	44.0 ±	3.63	252.9 ±	7.77	162.2 ±	3.76	n = 221	All Methods & Instruments
95.4 ±	2.52	177.7 ±	6.36	43.8 ±	3.67	252.0 ±	6.76	162.0 ±	3.30	n = 185	<Method Principles> Ion selective electrode (diluted)
97.2 ±	3.05	184.1 ±	6.53	44.6 ±	3.14	261.1 ±	12.75	166.6 ±	7.55	n = 33	Ion selective electrode (undiluted)
95.9 ±	6.58	179.6 ±	11.78	43.4 ±	8.43	260.1 ±	11.62	164.7 ±	8.64	n = 3	Other
93.9 ±	1.70	177.3 ±	2.51	45.9 ±	1.01	252.2 ±	2.40	158.7 ±	1.98	n = 7	<Instruments> Abbott Architect c System
98.5 ±	1.02	180.6 ±	1.88	45.8 ±	0.77	249.2 ±	3.55	164.4 ±	2.30	n = 6	Beckman Coulter CX
95.9 ±	1.51	178.5 ±	2.07	42.3 ±	2.12	253.4 ±	4.93	162.7 ±	2.61	n = 11	Beckman Coulter LX-20
95.8 ±	1.62	177.8 ±	1.89	43.2 ±	1.46	249.9 ±	4.18	161.7 ±	1.55	n = 14	Beckman Coulter UniCel DxC 600
96.0 ±	1.50	178.5 ±	2.04	43.1 ±	1.35	251.3 ±	3.14	163.1 ±	1.01	n = 18	Beckman Coulter UniCel DxC 800
97.1 ±	1.30	183.9 ±	1.89	48.1 ±	1.26	260.0 ±	3.50	164.4 ±	1.40	n = 23	Beckman Coulter AU Chemistry System
98.5 ±	3.08	187.9 ±	3.71	43.4 ±	2.14	271.3 ±	13.14	172.4 ±	3.94	n = 14	Ortho Vitros 5,1FS
97.8 ±	2.36	188.1 ±	3.72	45.0 ±	2.70	259.0 ±	8.11	170.5 ±	6.32	n = 3	Other
94.5 ±	1.62	179.1 ±	2.29	45.3 ±	1.72	254.1 ±	3.47	161.8 ±	2.27	n = 12	Roche cobas c501
98.6 ±	2.65	181.2 ±	3.84	44.9 ±	1.28	258.8 ±	6.25	166.8 ±	4.35	n = 8	Roche Cobas INTEGRA
96.6 ±	1.92	181.6 ±	1.70	45.4 ±	1.64	256.6 ±	6.15	163.6 ±	1.69	n = 26	Roche MODULAR D/P
96.8 ±	0.51	182.9 ±	1.22	46.8 ±	0.44	250.0 ±	26.26	164.3 ±	0.73	n = 13	Siemens ADVIA 1800
96.3 ±	0.51	182.6 ±	1.02	47.0 ±	0.00	258.5 ±	3.63	164.7 ±	0.51	n = 3	Siemens ADVIA 2400
94.0 ±	0.90	171.7 ±	1.37	40.3 ±	0.51	246.0 ±	1.80	159.3 ±	1.37	n = 3	Siemens Dimension EXL
94.1 ±	1.44	169.6 ±	1.98	41.5 ±	1.09	244.5 ±	3.34	158.1 ±	2.12	n = 25	Siemens Dimension RxL
90.8 ±	1.98	166.9 ±	2.85	34.9 ±	2.49	247.2 ±	3.76	157.8 ±	2.14	n = 24	Siemens Dimension Vista
93.5 ±	1.05	173.1 ±	2.14	40.3 ±	0.74	249.3 ±	3.83	160.9 ±	1.01	n = 8	Siemens Dimension Xpand
93.9 ±	1.70	177.3 ±	2.51	45.9 ±	1.01	252.2 ±	2.40	158.7 ±	1.98	n = 7	<Reagents> Abbott
96.2 ±	1.77	178.5 ±	2.18	43.2 ±	1.97	251.0 ±	3.89	162.7 ±	1.97	n = 46	Beckman Coulter
97.1 ±	1.15	183.9 ±	1.83	48.1 ±	1.21	260.1 ±	3.21	164.4 ±	1.39	n = 23	Beckman Coulter AU Series
98.4 ±	2.91	188.2 ±	3.58	43.4 ±	1.98	270.1 ±	13.11	172.7 ±	3.93	n = 17	Ortho Clinical Diagnostics
89.6 ±	1.69	166.4 ±	2.61	33.5 ±	1.80	247.6 ±	2.31	158.2 ±	0.41	n = 5	Other
94.5 ±	1.62	179.1 ±	2.29	45.3 ±	1.72	254.1 ±	3.47	161.8 ±	2.27	n = 12	Roche cobas c501
96.6 ±	1.92	181.6 ±	1.70	45.4 ±	1.64	256.6 ±	6.15	163.6 ±	1.69	n = 26	Roche Hitachi and Modular D/P
98.6 ±	2.65	181.2 ±	3.84	44.9 ±	1.28	258.8 ±	6.25	166.8 ±	4.35	n = 8	Roche Integra and MIRA
96.7 ±	0.58	182.6 ±	1.34	47.0 ±	0.00	259.5 ±	2.95	164.3 ±	0.86	n = 18	Siemens ADVIA
93.1 ±	2.05	169.4 ±	3.24	39.8 ±	3.39	246.0 ±	3.97	158.6 ±	2.33	n = 55	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Phosphorus (mg/dL)

Specimen: U86		Specimen: U87		Specimen: U88		Specimen: U89		Specimen: U90		Number	Instrument or Reagent System
76.40 ±	4.30	131.82 ±	7.06	155.52 ±	9.82	95.39 ±	5.05	76.53 ±	4.00	n = 156	All Methods & Instruments
75.09 ±	3.73	130.18 ±	5.58	153.82 ±	8.18	94.47 ±	3.56	75.61 ±	3.14	n = 79	<Method Principles>
78.22 ±	1.43	134.47 ±	4.04	159.60 ±	2.62	97.87 ±	2.03	78.03 ±	1.76	n = 3	Phosphomolybdate - no reduction
78.82 ±	4.98	136.54 ±	11.05	161.20 ±	14.94	97.68 ±	8.00	79.04 ±	5.32	n = 43	Phosphomolybdate reduction (ANS)
77.20 ±	4.03	133.06 ±	6.02	156.69 ±	6.53	97.43 ±	3.05	76.74 ±	2.81	n = 16	Phosphomolybdate reduction (PMA phe
76.66 ±	3.36	131.37 ±	5.60	153.87 ±	6.74	95.03 ±	4.45	75.95 ±	3.38	n = 12	Phosphomolybdate reduction-other
											Other
											<Instruments>
76.45 ±	0.83	129.33 ±	1.40	150.02 ±	1.52	92.94 ±	1.19	74.61 ±	0.52	n = 3	Abbott Architect c System
70.47 ±	1.72	119.59 ±	8.60	148.68 ±	17.42	89.49 ±	2.39	72.58 ±	1.83	n = 4	Beckman Coulter CX
74.75 ±	6.94	130.14 ±	7.91	161.18 ±	9.18	95.62 ±	2.69	77.98 ±	4.79	n = 6	Beckman Coulter LX-20
78.00 ±	2.04	137.44 ±	4.44	164.89 ±	8.92	97.64 ±	0.58	77.64 ±	1.33	n = 6	Beckman Coulter UniCel DxC 600
77.41 ±	2.81	132.20 ±	4.05	157.42 ±	10.84	96.47 ±	2.81	76.90 ±	2.94	n = 13	Beckman Coulter UniCel DxC 800
75.87 ±	2.29	132.32 ±	4.77	155.31 ±	4.56	95.98 ±	2.99	76.23 ±	2.02	n = 17	Beckman Coulter AU Chemistry System
78.84 ±	1.71	137.35 ±	2.99	158.66 ±	10.76	99.52 ±	2.86	78.84 ±	1.94	n = 8	Ortho Vitros 5,1FS
75.70 ±	2.50	130.54 ±	3.55	153.55 ±	3.18	94.61 ±	3.92	75.75 ±	1.94	n = 10	Roche cobas c501
76.25 ±	1.97	130.07 ±	5.36	151.84 ±	6.78	94.03 ±	2.93	75.60 ±	2.59	n = 6	Roche Cobas INTEGRA
74.24 ±	2.97	128.56 ±	3.71	150.98 ±	4.90	93.05 ±	3.42	74.25 ±	2.76	n = 23	Roche MODULAR D/P
77.03 ±	4.37	134.87 ±	9.00	159.30 ±	8.67	96.37 ±	5.48	77.96 ±	5.80	n = 11	Siemens ADVIA 1800
71.78 ±	2.84	121.32 ±	8.40	142.12 ±	5.59	91.34 ±	4.30	72.72 ±	7.40	n = 3	Siemens ADVIA 2400
83.94 ±	3.55	146.08 ±	11.76	171.51 ±	13.62	104.04 ±	7.26	83.82 ±	3.46	n = 16	Siemens Dimension RxL
74.42 ±	3.08	127.75 ±	5.06	150.78 ±	6.62	91.62 ±	4.55	74.07 ±	2.59	n = 19	Siemens Dimension Vista
77.82 ±	3.30	133.71 ±	0.74	157.78 ±	5.11	94.64 ±	1.98	77.09 ±	1.79	n = 3	Siemens Dimension Xpand
											<Reagents>
76.45 ±	0.83	129.33 ±	1.40	150.02 ±	1.52	92.94 ±	1.19	74.61 ±	0.52	n = 3	Abbott
76.62 ±	4.24	132.59 ±	7.32	159.01 ±	10.49	96.44 ±	2.97	76.98 ±	3.35	n = 27	Beckman Coulter
75.87 ±	2.29	132.32 ±	4.75	155.31 ±	4.56	95.97 ±	2.89	76.23 ±	2.01	n = 16	Beckman Coulter AU Series
79.28 ±	1.78	137.93 ±	3.74	160.09 ±	8.75	100.24 ±	3.00	79.28 ±	2.22	n = 11	Ortho Clinical Diagnostics
75.75 ±	1.91	119.06 ±	20.72	141.57 ±	36.70	92.63 ±	5.71	73.91 ±	2.48	n = 3	Other
75.70 ±	2.50	130.54 ±	3.55	153.55 ±	3.18	94.61 ±	3.92	75.75 ±	1.94	n = 10	Roche cobas c501
74.30 ±	2.83	128.53 ±	3.59	150.94 ±	4.72	93.06 ±	3.32	74.24 ±	2.69	n = 24	Roche Hitachi and Modular D/P
76.25 ±	1.97	130.07 ±	5.36	151.84 ±	6.78	94.03 ±	2.93	75.60 ±	2.59	n = 6	Roche Integra and MIRA
75.75 ±	4.84	131.45 ±	10.08	156.53 ±	10.12	95.49 ±	4.77	77.37 ±	5.94	n = 16	Siemens ADVIA
78.88 ±	6.02	135.70 ±	12.73	160.06 ±	15.86	96.56 ±	8.76	78.82 ±	5.74	n = 37	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Potassium (mmol/L)

Specimen: U86		Specimen: U87		Specimen: U88		Specimen: U89		Specimen: U90		Number	Instrument or Reagent System
38.74 ±	1.48	62.12 ±	2.67	86.52 ±	5.10	32.01 ±	1.13	27.57 ±	0.87	n = 220	All Methods & Instruments
38.55 ±	1.37	61.79 ±	2.49	86.18 ±	5.16	31.88 ±	1.08	27.48 ±	0.86	n = 185	<Method Principles> Ion selective electrode (diluted)
39.88 ±	1.51	64.26 ±	2.72	88.17 ±	4.16	32.76 ±	1.13	27.98 ±	0.71	n = 33	Ion selective electrode (undiluted)
38.45 ±	0.50	61.60 ±	0.73	88.39 ±	1.11	31.43 ±	0.28	27.10 ±	0.27	n = 7	<Instruments> Abbott Architect c System
39.57 ±	0.59	63.52 ±	1.12	89.94 ±	2.63	32.25 ±	0.51	28.11 ±	0.51	n = 5	Beckman Coulter CX
38.07 ±	0.76	61.30 ±	1.15	85.67 ±	1.95	32.00 ±	0.55	27.35 ±	0.48	n = 11	Beckman Coulter LX-20
37.93 ±	0.24	60.86 ±	0.52	85.54 ±	1.03	32.02 ±	0.50	27.23 ±	0.28	n = 15	Beckman Coulter UniCel DxC 600
37.83 ±	0.69	60.88 ±	0.92	85.41 ±	1.28	32.21 ±	0.68	27.37 ±	0.53	n = 18	Beckman Coulter UniCel DxC 800
39.73 ±	0.85	63.77 ±	1.21	92.18 ±	2.25	32.21 ±	0.60	28.08 ±	0.46	n = 22	Beckman Coulter AU Chemistry System
40.62 ±	0.88	65.91 ±	1.14	85.83 ±	1.75	33.53 ±	0.86	28.24 ±	0.53	n = 14	Ortho Vitros 5,1FS
40.53 ±	1.33	65.50 ±	1.55	88.63 ±	2.48	33.17 ±	0.95	28.37 ±	0.67	n = 3	Other
38.24 ±	0.73	61.98 ±	0.52	88.64 ±	1.38	31.28 ±	0.57	27.09 ±	0.35	n = 12	Roche cobas c501
39.79 ±	1.20	62.65 ±	1.93	89.10 ±	4.46	31.90 ±	0.87	27.89 ±	0.91	n = 8	Roche Cobas INTEGRA
39.91 ±	1.08	62.93 ±	2.14	90.73 ±	4.68	32.15 ±	0.61	27.94 ±	0.63	n = 26	Roche MODULAR D/P
39.23 ±	0.37	63.25 ±	0.65	91.53 ±	0.81	32.42 ±	0.44	27.90 ±	0.17	n = 13	Siemens ADVIA 1800
39.91 ±	1.49	63.84 ±	1.54	91.48 ±	1.87	32.00 ±	0.90	28.28 ±	0.51	n = 3	Siemens ADVIA 2400
37.34 ±	0.10	59.36 ±	1.18	81.01 ±	0.29	30.17 ±	0.05	26.40 ±	0.09	n = 3	Siemens Dimension EXL
36.67 ±	0.69	57.89 ±	1.12	78.84 ±	1.99	30.23 ±	0.73	26.22 ±	0.48	n = 26	Siemens Dimension RxL
39.27 ±	0.92	64.47 ±	1.23	82.71 ±	2.75	33.17 ±	0.78	28.28 ±	0.54	n = 23	Siemens Dimension Vista
37.89 ±	0.65	60.39 ±	1.05	83.28 ±	1.86	30.72 ±	0.58	27.14 ±	0.41	n = 8	Siemens Dimension Xpand
38.45 ±	0.50	61.60 ±	0.73	88.39 ±	1.11	31.43 ±	0.28	27.10 ±	0.27	n = 7	<Reagents> Abbott
37.95 ±	0.64	61.06 ±	0.97	85.53 ±	1.33	32.09 ±	0.58	27.35 ±	0.49	n = 47	Beckman Coulter
39.79 ±	0.73	63.80 ±	1.18	92.27 ±	1.87	32.20 ±	0.59	28.05 ±	0.38	n = 22	Beckman Coulter AU Series
40.55 ±	1.06	65.80 ±	1.29	85.84 ±	1.88	33.52 ±	0.84	28.22 ±	0.60	n = 17	Ortho Clinical Diagnostics
39.50 ±	0.43	64.73 ±	0.49	82.18 ±	1.28	33.42 ±	0.58	28.24 ±	0.62	n = 5	Other
38.24 ±	0.73	61.98 ±	0.52	88.64 ±	1.38	31.28 ±	0.57	27.09 ±	0.35	n = 12	Roche cobas c501
39.91 ±	1.05	62.90 ±	2.05	90.64 ±	4.56	32.13 ±	0.61	27.93 ±	0.61	n = 27	Roche Hitachi and Modular D/P
39.79 ±	1.30	62.71 ±	2.10	89.27 ±	4.83	31.98 ±	0.93	27.95 ±	0.99	n = 7	Roche Integra and MIRA
39.15 ±	0.40	63.14 ±	0.77	91.28 ±	1.22	32.33 ±	0.51	27.91 ±	0.18	n = 18	Siemens ADVIA
37.62 ±	1.40	59.98 ±	3.15	80.65 ±	3.34	31.10 ±	1.58	26.99 ±	1.10	n = 55	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Total Protein (mg/dL)

Specimen: U86		Specimen: U87		Specimen: U88		Specimen: U89		Specimen: U90		Number	Instrument or Reagent System
33.48 ±	1.93	285.35 ±	15.85	56.80 ±	6.10	4.59 ±	3.01	98.67 ±	3.64	n = 221	All Methods & Instruments
<Method Principles>											Biuret (alkaline cupric sulfate) Refractometry Tubidimetric/Benzethonium Chloride Pyrogallol red Other
33.55 ±	1.71	286.61 ±	14.31	57.07 ±	6.44	4.66 ±	2.88	98.90 ±	3.45	n = 99	
42.13 ±	5.22	427.69 ±	139.16	65.28 ±	0.51	4.44 ±	1.02	117.08 ±	7.17	n = 3	
33.09 ±	1.17	297.58 ±	10.44	50.18 ±	1.03	2.82 ±	2.06	98.98 ±	2.69	n = 25	
33.71 ±	2.14	280.29 ±	14.24	58.33 ±	3.63	5.38 ±	3.36	98.41 ±	3.81	n = 83	
36.23 ±	9.28	320.16 ±	79.78	58.75 ±	13.24	3.35 ±	2.40	103.30 ±	18.33	n = 11	<Instruments>
33.07 ±	1.10	295.54 ±	10.42	50.89 ±	0.42	5.79 ±	2.29	100.64 ±	0.77	n = 8	
31.83 ±	6.56	287.37 ±	60.22	56.80 ±	10.28	3.36 ±	2.31	97.12 ±	17.45	n = 4	
33.77 ±	1.64	286.38 ±	8.98	60.53 ±	1.56	3.42 ±	1.08	98.24 ±	2.19	n = 10	
34.10 ±	1.58	283.70 ±	14.19	61.98 ±	2.77	5.01 ±	1.72	100.53 ±	3.99	n = 13	
33.31 ±	1.30	281.71 ±	16.56	61.13 ±	2.89	5.19 ±	1.72	98.94 ±	4.43	n = 16	
32.60 ±	1.71	290.99 ±	15.51	55.23 ±	2.65	3.44 ±	1.07	100.75 ±	5.14	n = 25	
46.31 ±	2.52	405.60 ±	41.65	65.58 ±	3.81	5.33 ±	0.67	120.10 ±	8.53	n = 11	
36.31 ±	8.95	341.72 ±	65.03	65.68 ±	18.01	4.56 ±	1.99	108.21 ±	17.94	n = 5	
32.73 ±	1.74	288.68 ±	17.29	50.32 ±	1.31	1.43 ±	1.27	100.88 ±	4.38	n = 13	
33.71 ±	0.85	292.34 ±	10.05	49.14 ±	1.46	3.07 ±	1.05	98.44 ±	3.00	n = 10	
32.75 ±	1.17	295.58 ±	6.07	49.49 ±	0.96	2.46 ±	2.12	97.93 ±	3.29	n = 28	
31.45 ±	1.01	270.35 ±	8.81	55.40 ±	1.39	1.81 ±	0.55	96.32 ±	2.18	n = 13	
31.35 ±	1.44	270.30 ±	7.74	55.32 ±	0.49	2.05 ±	0.81	96.84 ±	2.98	n = 3	
34.37 ±	3.29	308.04 ±	29.66	58.99 ±	1.01	7.15 ±	0.99	97.80 ±	1.98	n = 3	
35.00 ±	1.24	280.34 ±	5.14	59.80 ±	1.77	7.72 ±	1.42	97.73 ±	1.88	n = 24	
34.80 ±	1.56	273.27 ±	9.72	59.51 ±	2.33	9.67 ±	1.94	99.02 ±	2.76	n = 23	
35.19 ±	1.51	281.91 ±	8.67	59.39 ±	1.41	7.90 ±	0.97	96.20 ±	2.18	n = 7	
<Reagents>											Abbott Beckman Coulter Beckman Coulter AU Series Ortho Clinical Diagnostics Other Pointe Scientific Roche cobas c501 Roche Hitachi and Modular D/P Roche Integra and MIRA Siemens ADVIA Siemens Dimension
33.07 ±	1.10	295.54 ±	10.42	50.89 ±	0.42	5.79 ±	2.29	100.64 ±	0.77	n = 8	
33.60 ±	1.49	284.95 ±	14.25	61.23 ±	2.73	4.54 ±	1.73	99.23 ±	3.69	n = 42	
32.67 ±	1.59	290.91 ±	14.34	55.35 ±	2.54	3.57 ±	1.01	100.64 ±	4.68	n = 24	
46.63 ±	2.46	408.51 ±	37.22	66.50 ±	3.31	5.38 ±	0.64	123.08 ±	6.45	n = 14	
34.24 ±	1.56	271.34 ±	5.54	60.19 ±	2.76	9.25 ±	1.25	98.74 ±	1.84	n = 5	
29.54 ±	1.98	291.11 ±	20.57	51.08 ±	3.53	1.38 ±	0.71	98.67 ±	7.40	n = 4	
33.07 ±	1.27	291.03 ±	18.25	50.39 ±	1.33	1.45 ±	1.41	101.80 ±	2.88	n = 11	
32.90 ±	1.08	296.96 ±	5.99	49.55 ±	0.92	2.64 ±	2.25	98.37 ±	2.40	n = 25	
33.71 ±	0.85	292.34 ±	10.05	49.14 ±	1.46	3.07 ±	1.05	98.44 ±	3.00	n = 10	
31.30 ±	1.18	267.83 ±	10.88	55.31 ±	1.34	1.82 ±	0.61	96.28 ±	2.55	n = 18	
35.00 ±	1.48	279.13 ±	7.90	59.53 ±	1.83	8.27 ±	1.69	97.96 ±	2.55	n = 52	

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Summary of Participant Performance (Mean and Standard Deviation)

Uric Acid (mg/dL)

Specimen: U86		Specimen: U87		Specimen: U88		Specimen: U89		Specimen: U90		Number	Instrument or Reagent System
13.63 ±	1.36	36.68 ±	3.99	20.19 ±	1.48	25.86 ±	7.91	22.52 ±	4.91	n = 159	All Methods & Instruments
13.97 ±	1.48	36.50 ±	4.10	20.60 ±	1.66	27.55 ±	9.47	22.03 ±	6.62	n = 12	<Method Principles>
13.48 ±	1.15	36.39 ±	3.78	19.99 ±	1.35	24.61 ±	7.34	22.45 ±	4.38	n = 52	Uricase (NAD-NADH reaction)
13.81 ±	1.49	36.91 ±	4.22	20.38 ±	1.52	26.33 ±	8.12	22.44 ±	5.16	n = 87	Uricase/allantoin (differential abs
12.77 ±	0.72	36.19 ±	2.19	19.16 ±	0.93	29.34 ±	1.81	24.98 ±	0.91	n = 8	Uricase/peroxidase (colorimetric)
											Other
											<Instruments>
13.58 ±	0.83	35.35 ±	2.72	20.04 ±	0.69	21.19 ±	2.79	20.74 ±	2.84	n = 4	Abbott Architect c System
15.08 ±	2.27	39.92 ±	3.41	21.45 ±	1.56	30.69 ±	6.74	25.46 ±	4.88	n = 6	Beckman Coulter CX
15.26 ±	0.87	36.82 ±	3.82	21.38 ±	0.87	22.79 ±	9.67	21.58 ±	7.19	n = 7	Beckman Coulter LX-20
15.59 ±	0.33	36.80 ±	6.26	21.89 ±	0.18	25.94 ±	10.00	21.85 ±	7.58	n = 5	Beckman Coulter UniCel DxC 600
15.79 ±	0.40	39.75 ±	2.93	21.96 ±	0.41	29.64 ±	7.57	24.26 ±	4.39	n = 13	Beckman Coulter UniCel DxC 800
13.67 ±	0.36	37.24 ±	4.50	21.03 ±	0.28	27.72 ±	7.10	23.11 ±	4.74	n = 17	Beckman Coulter AU Chemistry System
13.59 ±	0.55	38.09 ±	2.92	19.79 ±	0.80	25.23 ±	4.09	23.78 ±	2.70	n = 8	Ortho Vitros 5,1FS
12.96 ±	0.12	37.92 ±	2.76	19.70 ±	0.47	27.45 ±	6.36	24.59 ±	1.82	n = 11	Roche cobas c501
12.99 ±	0.46	35.65 ±	2.88	19.66 ±	0.85	28.94 ±	2.51	23.13 ±	0.26	n = 6	Roche Cobas INTEGRA
12.10 ±	0.30	34.90 ±	1.90	18.52 ±	0.50	24.72 ±	6.18	21.66 ±	2.92	n = 23	Roche MODULAR D/P
14.36 ±	1.10	38.93 ±	3.20	20.96 ±	1.28	31.10 ±	4.77	24.05 ±	4.70	n = 11	Siemens ADVIA 1800
12.85 ±	1.08	31.64 ±	5.98	19.09 ±	1.10	21.44 ±	10.41	17.95 ±	5.92	n = 3	Siemens ADVIA 2400
14.65 ±	0.80	37.66 ±	3.54	21.54 ±	0.69	25.83 ±	8.66	23.56 ±	5.00	n = 14	Siemens Dimension RxL
13.33 ±	0.76	34.07 ±	4.64	19.21 ±	0.54	21.67 ±	9.17	20.81 ±	6.03	n = 19	Siemens Dimension Vista
12.93 ±	0.54	35.64 ±	3.26	18.96 ±	0.80	20.42 ±	8.56	18.95 ±	4.05	n = 4	Siemens Dimension Xpand
											<Reagents>
13.58 ±	0.83	35.35 ±	2.72	20.04 ±	0.69	21.19 ±	2.79	20.74 ±	2.84	n = 4	Abbott
15.68 ±	0.79	39.21 ±	3.50	21.82 ±	0.64	27.64 ±	9.10	24.17 ±	5.40	n = 30	Beckman Coulter
13.70 ±	0.35	36.83 ±	4.74	21.00 ±	0.28	27.40 ±	7.72	22.41 ±	5.20	n = 15	Beckman Coulter AU Series
13.52 ±	0.51	36.76 ±	4.14	19.71 ±	0.67	24.06 ±	6.56	22.27 ±	4.37	n = 11	Ortho Clinical Diagnostics
13.74 ±	0.39	33.10 ±	6.20	19.47 ±	0.42	19.84 ±	8.76	21.47 ±	6.16	n = 3	Other
12.98 ±	0.09	37.66 ±	2.86	19.70 ±	0.50	26.82 ±	6.72	24.49 ±	2.03	n = 10	Roche cobas c501
12.13 ±	0.32	34.84 ±	1.87	18.53 ±	0.48	24.51 ±	6.12	21.35 ±	3.22	n = 24	Roche Hitachi and Modular D/P
12.99 ±	0.46	35.65 ±	2.88	19.66 ±	0.85	28.94 ±	2.51	23.13 ±	0.26	n = 6	Roche Integra and MIRA
13.94 ±	1.11	38.26 ±	3.82	20.54 ±	1.30	30.46 ±	4.43	23.41 ±	4.75	n = 16	Siemens ADVIA
13.67 ±	1.10	35.79 ±	4.08	20.00 ±	1.43	23.49 ±	8.70	21.88 ±	5.40	n = 36	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Urea Nitrogen (mg/dL)

Specimen: U86	Specimen: U87	Specimen: U88	Specimen: U89	Specimen: U90	Number	Instrument or Reagent System
674.5 ± 34.73	1179.3 ± 62.75	1439.1 ± 80.25	900.4 ± 42.75	1094.9 ± 62.56	n = 163	All Methods & Instruments
675.5 ± 34.05	1171.5 ± 65.10	1420.9 ± 79.53	893.8 ± 43.06	1088.1 ± 63.82	n = 129	<Method Principles> Urease w/glutamate dehydrogenase
683.9 ± 32.00	1210.1 ± 53.76	1485.4 ± 45.13	915.5 ± 29.68	1126.9 ± 59.21	n = 19	Urease, conductivity rate
642.7 ± 16.21	1179.4 ± 11.06	1495.9 ± 20.15	916.6 ± 21.18	1092.5 ± 17.90	n = 11	Urease with indicator dye
709.7 ± 42.84	1260.9 ± 19.92	1538.5 ± 31.03	969.8 ± 6.61	1162.1 ± 32.56	n = 3	Other
639.3 ± 12.37	1113.9 ± 29.74	1359.5 ± 36.50	874.9 ± 99.99	997.2 ± 58.83	n = 4	<Instruments> Abbott Architect c System
679.6 ± 27.02	1220.8 ± 43.18	1503.9 ± 126.63	902.8 ± 46.10	1099.6 ± 42.13	n = 4	Beckman Coulter CX
685.6 ± 52.70	1240.1 ± 82.47	1501.1 ± 48.57	937.1 ± 50.36	1178.4 ± 26.70	n = 6	Beckman Coulter LX-20
666.2 ± 27.54	1187.9 ± 92.53	1449.9 ± 68.52	889.1 ± 25.69	1071.5 ± 71.56	n = 7	Beckman Coulter UniCel DxC 600
675.6 ± 26.13	1183.1 ± 45.71	1458.4 ± 56.98	894.8 ± 29.89	1087.2 ± 51.83	n = 14	Beckman Coulter UniCel DxC 800
671.7 ± 14.76	1161.2 ± 43.15	1406.3 ± 46.63	879.6 ± 20.07	1072.4 ± 44.18	n = 21	Beckman Coulter AU Chemistry System
650.1 ± 13.38	1189.6 ± 21.51	1510.2 ± 26.15	929.6 ± 28.63	1104.5 ± 22.15	n = 8	Ortho Vitros 5,1FS
664.9 ± 11.60	1159.7 ± 43.77	1388.0 ± 23.20	887.9 ± 20.42	1078.6 ± 35.36	n = 10	Roche cobas c501
702.2 ± 25.83	1232.0 ± 34.86	1492.4 ± 5.70	944.9 ± 22.12	1153.6 ± 36.81	n = 6	Roche Cobas INTEGRA
662.6 ± 29.82	1137.7 ± 44.24	1380.1 ± 60.04	879.4 ± 40.23	1065.3 ± 41.59	n = 24	Roche MODULAR D/P
712.3 ± 29.49	1210.6 ± 112.14	1532.3 ± 42.21	943.5 ± 28.52	1131.2 ± 112.16	n = 10	Siemens ADVIA 1800
685.4 ± 24.32	1155.7 ± 51.40	1411.8 ± 44.07	904.5 ± 17.41	1098.1 ± 43.13	n = 3	Siemens ADVIA 2400
728.1 ± 31.99	1246.1 ± 54.06	1506.0 ± 87.74	959.7 ± 43.82	1166.8 ± 46.22	n = 15	Siemens Dimension RxL
660.4 ± 28.80	1152.3 ± 48.82	1383.2 ± 60.30	871.2 ± 27.39	1066.4 ± 52.70	n = 18	Siemens Dimension Vista
680.3 ± 14.20	1182.7 ± 37.91	1463.9 ± 79.97	909.7 ± 22.87	1119.9 ± 28.50	n = 4	Siemens Dimension Xpand
639.3 ± 12.37	1113.9 ± 29.74	1359.5 ± 36.50	874.9 ± 99.99	997.2 ± 58.83	n = 4	<Reagents> Abbott
674.0 ± 30.94	1200.0 ± 67.23	1464.4 ± 61.95	900.1 ± 32.41	1102.9 ± 67.97	n = 30	Beckman Coulter
671.3 ± 15.15	1159.6 ± 37.49	1403.3 ± 44.97	879.8 ± 18.43	1071.7 ± 37.77	n = 19	Beckman Coulter AU Series
643.7 ± 15.60	1179.9 ± 12.00	1499.3 ± 24.49	920.0 ± 25.39	1095.8 ± 20.88	n = 12	Ortho Clinical Diagnostics
668.5 ± 16.15	1169.3 ± 20.18	1397.0 ± 34.83	870.8 ± 12.65	1058.1 ± 37.23	n = 4	Other
664.9 ± 11.60	1159.7 ± 43.77	1388.0 ± 23.20	887.9 ± 20.42	1078.6 ± 35.36	n = 10	Roche cobas c501
662.6 ± 29.82	1137.7 ± 44.24	1380.1 ± 60.04	879.4 ± 40.23	1065.3 ± 41.59	n = 24	Roche Hitachi and Modular D/P
702.2 ± 25.83	1232.0 ± 34.86	1492.4 ± 5.70	944.9 ± 22.12	1153.6 ± 36.81	n = 6	Roche Integra and MIRA
707.8 ± 31.21	1210.1 ± 89.71	1505.7 ± 64.09	932.4 ± 32.96	1131.7 ± 84.57	n = 16	Siemens ADVIA
693.5 ± 44.81	1199.3 ± 69.20	1446.4 ± 97.14	915.6 ± 53.76	1124.0 ± 64.65	n = 35	Siemens Dimension