

Statistical Report: Quantitative Urine Clinical Chemistry
Mail out date: April 8, 2013

This report summarizes data from the educational quantitative urine clinical chemistry proficiency test of April 8, 2013. Individual evaluation reports are provided for your laboratory for this testing.

Results for the quantitative urine clinical chemistry are listed as the mean $\pm$ 1SD for each instrument and reagent system as well as overall results. For albumin, creatinine, and albumin/creatinine ratio units shown are those most frequently used by participants; results from laboratories using different units were converted to the units shown. Please keep this in mind when comparing results reported by your laboratory. Individual laboratory reports were evaluated using ranges appropriate for units reported.

The following criteria were used for the educational quantitative urine clinical chemistry: Albumin ($\pm$ 25%); Creatinine ($\pm$ 17%); Albumin-Creatinine Ratio ($\pm$ 20%); alpha-Amylase (not evaluated); Calcium ($\pm$ 15%); Chloride ($\pm$ 20%); Glucose ($\pm$ 15%); Magnesium ($\pm$ 20%); Sodium ($\pm$ 15%); Phosphorus ($\pm$ 20%); Potassium ($\pm$ 15%); Total Protein ($\pm$ 30%); Uric Acid ($\pm$ 20%); Urea Nitrogen ($\pm$ 15%). At low analyte concentrations, ranges were based on the dispersion of results obtained. Overall mean values were used for calculation of target concentrations for all analytes.

The use of brand and/or trade names in this report does not constitute an endorsement of the products on the part of the Wadsworth Center or the New York State Department of Health.

New York State Department of Health - Wadsworth Center
Quantitative Urine Chemistry - Educational Proficiency Testing - 8 April 2013

Summary of Participant Performance (Mean and Standard Deviation)

Albumin

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

Specimen: U11	Specimen: U12	Specimen: U13	Specimen: U14	Specimen: U15	Number	Instrument or Reagent System
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214.4 ± 30.62	2682.4 ± 247.39	400.1 ± 35.89	1328.3 ± 95.48	754.8 ± 56.52	n = 181	All Methods & Instruments
						<Method Principles>
208.3 ± 28.11	2665.9 ± 164.88	388.9 ± 31.69	1305.1 ± 82.49	740.1 ± 55.52	n = 84	Reporting in mg/dL
220.9 ± 31.55	2692.1 ± 274.37	410.4 ± 33.16	1351.7 ± 96.85	769.2 ± 52.31	n = 77	Reporting in mg/L
217.6 ± 34.68	2655.7 ± 548.51	413.1 ± 41.67	1339.4 ± 106.09	762.2 ± 65.61	n = 20	Reporting in ug/mL
						<Instruments>
223.8 ± 23.35	2366.1 ± 429.19	412.8 ± 13.50	1328.0 ± 44.17	733.2 ± 33.02	n = 8	Abbott Architect c System
204.8 ± 22.02	2643.6 ± 107.34	389.9 ± 23.10	1300.0 ± 74.56	739.2 ± 44.73	n = 36	Beckman Coulter AU Chemistry System
191.6 ± 11.66	2568.8 ± 107.52	382.1 ± 19.01	1252.2 ± 32.27	722.1 ± 19.87	n = 3	Beckman Coulter Immage
217.5 ± 19.60	2794.8 ± 213.19	404.2 ± 17.30	1390.8 ± 98.12	779.1 ± 42.67	n = 8	Beckman Coulter UniCel DxC 600
212.0 ± 13.68	2790.3 ± 167.32	395.8 ± 2.36	1032.5 ± 560.03	771.5 ± 38.84	n = 3	Beckman Coulter UniCel DxC 800
191.6 ± 35.37	2187.4 ± 342.53	327.6 ± 14.28	1267.4 ± 14.31	649.6 ± 12.90	n = 3	Ortho Vitros 5,1FS
170.8 ± 12.77	2368.3 ± 405.38	344.4 ± 22.07	1259.9 ± 51.27	673.0 ± 18.12	n = 8	Ortho Vitros 5600
215.6 ± 29.54	2733.3 ± 151.30	406.7 ± 21.19	1306.2 ± 67.94	760.6 ± 30.14	n = 10	Roche cobas c501
197.2 ± 13.78	2750.0 ± 433.25	375.3 ± 4.34	1287.8 ± 39.37	718.8 ± 6.87	n = 4	Roche Cobas INTEGRA
205.8 ± 24.36	2606.6 ± 143.43	399.6 ± 27.06	1284.3 ± 60.27	764.8 ± 39.92	n = 23	Roche MODULAR D/P
213.2 ± 16.40	2588.7 ± 39.43	378.4 ± 6.67	1290.1 ± 18.14	722.7 ± 10.30	n = 14	Siemens ADVIA 1800
216.8 ± 12.61	2281.2 ± 518.09	370.9 ± 17.04	1213.4 ± 209.95	717.3 ± 47.69	n = 3	Siemens ADVIA 2400
206.6 ± 16.30	2419.3 ± 757.76	431.9 ± 17.99	1349.2 ± 247.29	817.3 ± 81.67	n = 4	Siemens Dimension EXL
231.5 ± 30.17	2596.3 ± 1261.39	442.7 ± 19.90	1380.2 ± 453.96	803.9 ± 40.92	n = 9	Siemens Dimension RxL
265.1 ± 35.52	2869.1 ± 181.24	434.3 ± 21.96	1402.7 ± 67.59	808.0 ± 48.18	n = 26	Siemens Dimension Vista
210.7 ± 20.07	2871.0 ± 183.66	426.2 ± 24.45	1391.0 ± 78.37	775.5 ± 39.99	n = 5	Other
						<Reagents>
227.8 ± 16.08	2310.7 ± 437.29	413.0 ± 13.04	1335.7 ± 47.20	738.1 ± 23.64	n = 7	Abbott
204.4 ± 18.81	2709.4 ± 194.92	396.3 ± 17.17	1325.7 ± 96.16	754.8 ± 38.88	n = 19	Beckman Coulter
213.0 ± 19.23	2633.9 ± 100.19	389.8 ± 25.22	1307.5 ± 80.16	739.4 ± 52.11	n = 21	Beckman Coulter AU Series
193.4 ± 8.52	2694.5 ± 151.13	395.2 ± 16.79	1301.9 ± 99.26	740.8 ± 46.62	n = 8	Kamiya
170.8 ± 18.47	2363.5 ± 397.25	338.8 ± 22.10	1263.3 ± 42.00	666.9 ± 21.08	n = 10	Randox
219.4 ± 26.59	2730.0 ± 169.92	409.1 ± 18.78	1304.0 ± 60.72	756.4 ± 25.56	n = 12	Roche cobas c501/c311/c502/c701
205.8 ± 24.36	2606.6 ± 143.43	399.6 ± 27.06	1284.3 ± 60.27	764.8 ± 39.92	n = 23	Roche Hitachi and Modular D/P
191.8 ± 13.11	2621.9 ± 419.59	379.4 ± 8.16	1315.6 ± 51.51	730.6 ± 21.47	n = 6	Roche Integra and MIRA S
213.7 ± 15.22	2585.1 ± 40.83	378.7 ± 8.40	1291.2 ± 22.15	720.9 ± 22.51	n = 18	Siemens ADVIA/ADVIA Centaur
251.8 ± 41.02	2855.0 ± 206.51	436.5 ± 20.52	1407.8 ± 73.45	801.2 ± 43.74	n = 37	Siemens Dimension
212.3 ± 22.81	2882.9 ± 176.54	436.7 ± 22.20	1447.5 ± 72.18	802.8 ± 47.86	n = 5	Other

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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: U11	Specimen: U12	Specimen: U13	Specimen: U14	Specimen: U15	Number	Instrument or Reagent System
71.4 ± 5.08	137.9 ± 9.48	102.5 ± 6.35	44.2 ± 3.52	90.0 ± 6.58	n = 272	All Methods & Instruments
71.4 ± 5.06	137.7 ± 9.40	102.4 ± 6.30	44.2 ± 3.48	89.9 ± 6.51	n = 268	<Method Principles> Reporting in mg/dL
65.8 ± 28.93	130.0 ± 58.10	97.0 ± 43.22	41.9 ± 18.36	85.7 ± 38.11	n = 4	Reporting in mg/L
68.3 ± 1.54	130.5 ± 2.48	98.2 ± 1.73	42.5 ± 0.86	85.5 ± 1.73	n = 14	<Instruments> Abbott Architect c System
79.8 ± 2.87	150.3 ± 6.17	110.1 ± 2.94	50.0 ± 1.64	99.7 ± 3.90	n = 50	Beckman Coulter AU Chemistry System
72.7 ± 1.70	139.4 ± 4.19	105.7 ± 2.97	46.2 ± 1.49	91.4 ± 2.57	n = 3	Beckman Coulter LX-20
76.7 ± 1.82	147.3 ± 3.44	110.3 ± 1.60	48.3 ± 1.45	96.2 ± 1.89	n = 13	Beckman Coulter UniCel DxC 600
73.1 ± 1.11	139.7 ± 2.72	105.0 ± 1.95	45.8 ± 1.04	92.1 ± 1.19	n = 9	Beckman Coulter UniCel DxC 800
69.1 ± 2.34	130.6 ± 4.27	98.6 ± 2.80	42.9 ± 1.23	85.5 ± 2.11	n = 14	Ortho Vitros 5,1FS
67.4 ± 1.74	126.3 ± 2.95	94.7 ± 2.44	41.8 ± 0.88	82.4 ± 1.89	n = 15	Ortho Vitros 5600
71.8 ± 2.42	138.6 ± 4.13	103.8 ± 3.80	45.6 ± 1.85	90.9 ± 3.42	n = 18	Roche cobas c501
67.7 ± 1.28	132.1 ± 2.42	97.9 ± 0.63	42.3 ± 1.40	84.9 ± 1.73	n = 7	Roche Cobas INTEGRA
68.5 ± 2.15	132.3 ± 4.42	99.1 ± 3.52	43.0 ± 1.69	86.4 ± 2.91	n = 31	Roche MODULAR D/P
68.1 ± 3.51	130.5 ± 6.01	97.8 ± 4.58	42.7 ± 2.24	84.7 ± 4.67	n = 18	Siemens ADVIA 1800
66.4 ± 2.12	122.6 ± 4.80	90.8 ± 3.12	41.6 ± 1.62	80.8 ± 2.30	n = 3	Siemens ADVIA 2400
70.3 ± 1.88	139.8 ± 4.46	102.1 ± 3.29	42.6 ± 2.18	89.9 ± 2.48	n = 6	Siemens Dimension EXL
71.3 ± 3.00	140.3 ± 4.60	102.6 ± 3.60	44.2 ± 1.41	91.4 ± 3.09	n = 10	Siemens Dimension RxL
71.6 ± 2.55	141.1 ± 3.69	103.4 ± 3.13	41.9 ± 1.63	91.1 ± 2.67	n = 40	Siemens Dimension Vista
65.9 ± 2.27	129.7 ± 4.16	95.6 ± 2.54	40.2 ± 1.02	84.5 ± 2.53	n = 4	Siemens Dimension Xpand
68.3 ± 1.54	130.5 ± 2.48	98.2 ± 1.73	42.5 ± 0.86	85.5 ± 1.73	n = 14	<Reagents> Abbott
75.5 ± 3.04	143.9 ± 6.01	108.1 ± 3.71	47.5 ± 2.10	94.7 ± 3.88	n = 31	Beckman Coulter
80.5 ± 1.83	151.9 ± 4.31	110.7 ± 2.01	50.2 ± 1.26	100.6 ± 2.60	n = 39	Beckman Coulter AU Series
71.2 ± 4.06	135.4 ± 8.72	104.4 ± 6.14	45.3 ± 3.74	90.5 ± 5.07	n = 3	In-House
68.1 ± 2.22	128.1 ± 4.32	96.5 ± 3.30	42.3 ± 1.09	83.8 ± 2.58	n = 29	Ortho Clinical Diagnostics
71.6 ± 2.36	137.8 ± 4.48	103.6 ± 3.59	45.2 ± 1.86	90.5 ± 3.15	n = 20	Roche cobas c501/c311/c502/c701
68.5 ± 2.15	132.3 ± 4.42	99.1 ± 3.52	43.0 ± 1.69	86.4 ± 2.91	n = 31	Roche Hitachi and Modular D/P
67.9 ± 1.08	131.8 ± 2.37	97.7 ± 1.41	42.2 ± 1.10	84.6 ± 1.54	n = 10	Roche Integra and MIRA S
67.6 ± 3.43	129.1 ± 6.45	96.5 ± 5.09	42.4 ± 2.14	83.9 ± 4.53	n = 22	Siemens ADVIA/ADVIA Centaur
71.1 ± 2.76	140.4 ± 4.27	102.7 ± 3.52	42.2 ± 1.98	90.6 ± 2.91	n = 57	Siemens Dimension
73.0 ± 1.49	141.9 ± 4.21	105.9 ± 0.74	42.0 ± 0.85	92.8 ± 1.46	n = 6	Other

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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 µg/mg:

Specimen: U11 -----	Specimen: U12 -----	Specimen: U13 -----	Specimen: U14 -----	Specimen: U15 -----	Number -----	Instrument or Reagent System -----
298.1 ± 47.83	1938.2 ± 200.78	387.3 ± 39.47	2972.6 ± 347.22	836.1 ± 79.22	n = 156	All Methods & Instruments
302.3 ± 47.39	1971.1 ± 188.04	391.6 ± 40.10	3040.6 ± 309.73	847.4 ± 71.20	n = 98	<Method Principles>
293.7 ± 48.20	1871.0 ± 214.28	381.9 ± 37.00	2851.0 ± 371.17	819.7 ± 83.50	n = 53	Reporting in mg/g
261.0 ± 28.98	1727.6 ± 637.30	355.8 ± 19.78	2591.4 ± 696.04	738.2 ± 121.05	n = 4	Reporting in ug/mg
						Other
						<Instruments>
286.7 ± 38.66	1556.6 ± 782.42	363.6 ± 46.95	2643.7 ± 895.12	750.4 ± 202.09	n = 22	Clinical Analyzer calculation
296.5 ± 35.78	1622.3 ± 370.36	383.6 ± 61.60	2152.5 ± 819.05	802.2 ± 132.38	n = 4	Manual Calculation
						<Reagents>
301.4 ± 50.19	1953.9 ± 190.35	390.6 ± 37.71	2989.6 ± 339.47	842.1 ± 75.52	n = 129	Lab Information System
286.7 ± 38.66	1556.6 ± 782.42	363.6 ± 46.95	2643.7 ± 895.12	750.4 ± 202.09	n = 22	Clinical Analyzer calculation
296.5 ± 35.78	1622.3 ± 370.36	383.6 ± 61.60	2152.5 ± 819.05	802.2 ± 132.38	n = 4	Manual Calculation

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Summary of Participant Performance (Mean and Standard Deviation)

Calcium (mg/dL)

Specimen: U11	Specimen: U12	Specimen: U13	Specimen: U14	Specimen: U15	Number	Instrument or Reagent System
7.80 ± 1.21	3.71 ± 0.79	12.12 ± 2.69	4.28 ± 0.71	2.70 ± 1.06	n = 174	All Methods & Instruments
7.61 ± 1.15	4.15 ± 1.01	11.99 ± 2.72	4.45 ± 0.78	3.58 ± 1.45	n = 82	<Method Principles>
8.21 ± 1.12	3.59 ± 0.35	12.65 ± 2.50	4.23 ± 0.54	2.34 ± 0.38	n = 69	o-Cresolphthalein
6.96 ± 0.40	3.20 ± 0.37	10.25 ± 2.36	3.84 ± 0.52	2.21 ± 0.18	n = 17	Arsenazo dye
9.24 ± 2.27	3.28 ± 0.20	12.54 ± 2.72	3.74 ± 0.38	2.24 ± 0.39	n = 5	Ion selective electrode
						Other
						<Instruments>
7.89 ± 0.89	3.67 ± 0.27	12.31 ± 2.35	4.03 ± 0.12	2.32 ± 0.19	n = 10	Abbott Architect c System
7.86 ± 1.15	3.63 ± 0.34	12.63 ± 2.49	4.01 ± 0.40	2.57 ± 0.29	n = 25	Beckman Coulter AU Chemistry System
6.93 ± 0.27	2.98 ± 0.48	9.04 ± 1.00	4.08 ± 0.58	2.19 ± 0.16	n = 7	Beckman Coulter UniCel DxC 600
7.03 ± 0.51	3.24 ± 0.24	11.34 ± 2.65	3.68 ± 0.44	2.20 ± 0.19	n = 8	Beckman Coulter UniCel DxC 800
7.88 ± 0.84	3.25 ± 0.53	12.18 ± 2.37	4.48 ± 0.90	1.87 ± 0.18	n = 9	Ortho Vitros 5,1FS
8.70 ± 1.27	3.48 ± 0.33	12.72 ± 2.47	4.60 ± 0.45	2.04 ± 0.11	n = 11	Ortho Vitros 5600
8.21 ± 0.94	3.41 ± 0.32	11.50 ± 2.43	3.88 ± 0.32	2.44 ± 0.34	n = 8	Roche cobas c501
7.29 ± 0.30	3.51 ± 0.19	13.94 ± 3.18	3.77 ± 0.16	2.56 ± 0.23	n = 4	Roche Cobas INTEGRA
7.64 ± 1.50	3.40 ± 0.58	12.47 ± 3.12	3.91 ± 0.66	2.44 ± 0.40	n = 21	Roche MODULAR D/P
8.04 ± 1.11	3.58 ± 0.36	13.64 ± 1.61	4.11 ± 0.64	2.46 ± 0.29	n = 15	Siemens ADVIA 1800
8.72 ± 0.67	3.68 ± 0.09	11.04 ± 1.97	4.14 ± 0.11	2.40 ± 0.29	n = 3	Siemens ADVIA 2400
8.33 ± 0.95	<5	13.83 ± 2.23	<5	<5	n = 3	Siemens Dimension EXL
8.87 ± 1.77	4.48 ± 0.46	12.06 ± 2.85	4.68 ± 0.81	4.06 ± 0.93	n = 5	Siemens Dimension RxL
7.50 ± 1.10	<5	11.36 ± 2.27	<5	<5	n = 33	Siemens Dimension Vista
						<Reagents>
7.89 ± 0.89	3.67 ± 0.27	12.31 ± 2.35	4.03 ± 0.12	2.32 ± 0.19	n = 10	Abbott
6.99 ± 0.47	3.22 ± 0.36	10.10 ± 2.32	3.89 ± 0.56	2.23 ± 0.19	n = 18	Beckman Coulter
7.89 ± 1.21	3.64 ± 0.35	12.53 ± 2.51	4.00 ± 0.36	2.58 ± 0.30	n = 24	Beckman Coulter AU Series
8.18 ± 0.88	3.48 ± 0.03	13.83 ± 0.41	4.65 ± 0.47	2.37 ± 0.05	n = 3	Genzyme
8.25 ± 1.06	3.40 ± 0.43	12.48 ± 2.45	4.56 ± 0.70	1.97 ± 0.19	n = 20	Ortho Clinical Diagnostics
7.77 ± 0.87	3.33 ± 0.34	11.39 ± 2.34	3.77 ± 0.29	2.36 ± 0.39	n = 9	Roche cobas c501/c311/c502/c701
7.79 ± 1.51	3.43 ± 0.67	12.31 ± 3.15	3.93 ± 0.72	2.43 ± 0.44	n = 20	Roche Hitachi and Modular D/P
7.34 ± 0.28	3.51 ± 0.16	14.60 ± 3.01	3.77 ± 0.14	2.52 ± 0.21	n = 5	Roche Integra and MIRA S
8.17 ± 1.09	3.63 ± 0.36	13.34 ± 2.10	4.17 ± 0.60	2.47 ± 0.31	n = 19	Siemens ADVIA/ADVIA Centaur
7.81 ± 1.37	<5	11.66 ± 2.47	<5	<5	n = 41	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Chloride (mmol/L)

Specimen: U11	Specimen: U12	Specimen: U13	Specimen: U14	Specimen: U15	Number	Instrument or Reagent System
31.86 ± 2.51	80.73 ± 4.69	249.10 ± 8.76	131.01 ± 4.92	67.72 ± 4.39	n = 189	All Methods & Instruments
<Method Principles>						
31.80 ± 2.39	80.85 ± 4.67	249.03 ± 8.47	131.12 ± 5.02	67.78 ± 4.34	n = 168	Ion selective electrode (diluted)
32.90 ± 5.52	79.45 ± 4.68	250.10 ± 11.19	130.05 ± 4.02	66.86 ± 4.93	n = 20	Ion selective electrode (undiluted)
<Instruments>						
33.35 ± 0.84	80.12 ± 1.10	251.96 ± 2.75	128.84 ± 1.74	67.32 ± 0.85	n = 14	Abbott Architect c System
34.40 ± 0.57	80.25 ± 1.00	260.14 ± 3.02	130.82 ± 1.37	67.68 ± 0.72	n = 31	Beckman Coulter AU Chemistry System
32.86 ± 0.26	81.14 ± 0.26	246.85 ± 2.10	131.45 ± 0.45	67.43 ± 1.14	n = 3	Beckman Coulter LX-20
32.32 ± 0.88	81.06 ± 1.25	240.32 ± 5.10	130.40 ± 1.54	68.50 ± 0.78	n = 12	Beckman Coulter UniCel DxC 600
32.36 ± 1.47	81.05 ± 0.96	243.52 ± 5.03	131.43 ± 2.55	68.70 ± 1.21	n = 8	Beckman Coulter UniCel DxC 800
27.24 ± 1.28	71.16 ± 1.53	253.88 ± 9.92	123.02 ± 1.45	58.58 ± 1.54	n = 14	Roche cobas c501
30.87 ± 0.43	77.47 ± 1.21	242.99 ± 6.72	126.63 ± 1.30	64.63 ± 1.92	n = 4	Roche Cobas INTEGRA
31.00 ± 0.00	74.94 ± 1.12	247.97 ± 14.04	126.33 ± 1.57	61.57 ± 1.17	n = 22	Roche MODULAR D/P
33.00 ± 0.73	80.50 ± 0.57	244.78 ± 2.21	129.32 ± 0.89	67.42 ± 0.56	n = 16	Siemens ADVIA 1800
33.00 ± 0.00	80.72 ± 0.51	244.68 ± 4.22	128.74 ± 2.26	67.72 ± 0.51	n = 3	Siemens ADVIA 2400
46.39 ± 1.63	95.00 ± 0.64	250.94 ± 1.92	136.18 ± 0.91	80.05 ± 0.95	n = 6	Siemens Dimension EXL
43.89 ± 4.63	91.83 ± 5.76	246.53 ± 4.17	136.54 ± 2.91	78.57 ± 4.88	n = 8	Siemens Dimension RxL
29.90 ± 0.94	84.71 ± 1.50	247.44 ± 6.27	137.39 ± 2.01	70.82 ± 1.33	n = 37	Siemens Dimension Vista
46.47 ± 2.83	93.48 ± 5.46	249.50 ± 4.08	136.36 ± 2.31	78.73 ± 5.23	n = 4	Siemens Dimension Xpand
<Reagents>						
33.35 ± 0.84	80.12 ± 1.10	251.96 ± 2.75	128.84 ± 1.74	67.32 ± 0.85	n = 14	Abbott
32.59 ± 1.04	80.94 ± 1.11	243.04 ± 6.49	130.89 ± 1.64	68.29 ± 1.05	n = 25	Beckman Coulter
34.41 ± 0.58	80.33 ± 1.02	259.96 ± 3.08	130.88 ± 1.34	67.73 ± 0.72	n = 28	Beckman Coulter AU Series
46.97 ± 8.18	80.79 ± 1.96	207.75 ± 37.34	129.21 ± 3.10	68.00 ± 2.25	n = 4	Ortho Clinical Diagnostics
27.29 ± 1.60	71.08 ± 1.57	252.85 ± 9.69	123.09 ± 1.54	58.50 ± 1.58	n = 14	Roche cobas c501/c311/c502/c701
31.00 ± 0.00	74.94 ± 1.12	247.97 ± 14.04	126.33 ± 1.57	61.57 ± 1.17	n = 22	Roche Hitachi and Modular D/P
30.47 ± 1.13	76.75 ± 2.35	245.90 ± 9.63	125.94 ± 2.05	63.85 ± 2.86	n = 5	Roche Integra and MIRA S
33.00 ± 0.53	80.53 ± 0.57	244.91 ± 2.69	129.32 ± 1.04	67.47 ± 0.57	n = 20	Siemens ADVIA/ADVIA Centaur
33.94 ± 8.06	86.31 ± 4.21	248.15 ± 5.32	137.10 ± 2.10	72.47 ± 4.11	n = 53	Siemens Dimension
31.28 ± 0.51	84.20 ± 2.36	241.48 ± 3.63	133.54 ± 5.40	70.47 ± 1.86	n = 3	Other

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Summary of Participant Performance (Mean and Standard Deviation)

Glucose (mg/dL)

Specimen: U11	Specimen: U12	Specimen: U13	Specimen: U14	Specimen: U15	Number	Instrument or Reagent System
77.2 ± 2.38	272.6 ± 9.07	1.3 ± 1.19	1.9 ± 0.92	829.5 ± 33.26	n = 128	All Methods & Instruments
						<Method Principles>
77.1 ± 1.97	270.8 ± 7.90	1.1 ± 1.02	1.8 ± 0.62	822.3 ± 31.55	n = 73	Hexokinase, UV
77.6 ± 3.11	271.0 ± 8.73	1.1 ± 0.64	1.8 ± 1.04	825.1 ± 34.37	n = 28	Hexokinase, colorimetric
78.5 ± 1.50	285.1 ± 4.52	<20	<20	854.3 ± 16.70	n = 16	Glucose oxidase, colorimetric
74.2 ± 1.77	269.9 ± 5.36	5.0 ± 3.91	5.6 ± 3.52	841.4 ± 26.58	n = 9	Glucose oxidase, O2 electrode
						<Instruments>
78.7 ± 1.11	282.8 ± 4.07	<1	2.0 ± 0.70	845.7 ± 51.55	n = 7	Abbott Architect c System
75.7 ± 1.29	263.7 ± 4.18	7.1 ± 6.00	7.3 ± 5.04	790.4 ± 43.63	n = 14	Beckman Coulter AU Chemistry System
75.2 ± 1.96	270.7 ± 4.49	4.4 ± 3.50	4.9 ± 2.50	822.4 ± 28.93	n = 6	Beckman Coulter UniCel Dx C 600
74.5 ± 1.81	269.7 ± 5.44	5.6 ± 3.85	5.8 ± 3.69	862.9 ± 30.43	n = 5	Beckman Coulter UniCel Dx C 800
78.1 ± 1.60	281.9 ± 3.46	<20	<20	841.2 ± 27.72	n = 7	Ortho Vitros 5,1FS
78.6 ± 1.61	287.0 ± 4.10	<20	<20	855.0 ± 12.69	n = 10	Ortho Vitros 5600
76.5 ± 1.76	269.5 ± 5.72	1.3 ± 1.06	<2	836.4 ± 14.79	n = 8	Roche cobas c501
79.7 ± 2.41	277.7 ± 6.18	1.7 ± 1.15	2.3 ± 0.52	839.6 ± 23.78	n = 18	Roche MODULAR D/P
77.5 ± 1.54	268.6 ± 4.89	1.3 ± 1.61	<2	814.6 ± 15.20	n = 12	Siemens ADVIA 1800
78.5 ± 1.86	271.3 ± 6.76	6.0 ± 10.00	7.0 ± 9.22	815.6 ± 42.71	n = 3	Siemens ADVIA 2400
79.7 ± 0.51	276.1 ± 3.72	0	1.7 ± 0.51	880.5 ± 32.67	n = 3	Siemens Dimension EXL
75.9 ± 2.07	267.2 ± 7.37	<1	<1	817.7 ± 26.04	n = 25	Siemens Dimension Vista
						<Reagents>
78.7 ± 1.11	282.8 ± 4.07	<1	2.0 ± 0.70	845.7 ± 51.55	n = 7	Abbott
75.2 ± 2.40	270.5 ± 4.73	4.1 ± 3.48	4.8 ± 2.93	835.7 ± 31.90	n = 14	Beckman Coulter
75.4 ± 1.12	262.8 ± 3.52	8.4 ± 5.06	8.5 ± 4.09	782.8 ± 43.40	n = 12	Beckman Coulter AU Series
78.4 ± 1.64	284.7 ± 4.70	<20	<20	852.3 ± 20.54	n = 17	Ortho Clinical Diagnostics
76.2 ± 1.07	268.9 ± 4.93	1.6 ± 0.88	<2	829.4 ± 16.73	n = 11	Roche cobas c501/c311/c502/c701
79.7 ± 2.41	277.7 ± 6.18	1.7 ± 1.15	2.3 ± 0.52	839.6 ± 23.78	n = 18	Roche Hitachi and Modular D/P
77.5 ± 1.62	269.1 ± 5.12	0.6 ± 0.57	<2	818.3 ± 19.22	n = 16	Siemens ADVIA/ADVIA Centaur
76.3 ± 2.27	268.4 ± 7.41	<1	<1	824.9 ± 29.75	n = 29	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Magnesium (mg/dL)

Specimen: U11	Specimen: U12	Specimen: U13	Specimen: U14	Specimen: U15	Number	Instrument or Reagent System
1.88 ± 0.25	6.02 ± 0.64	16.71 ± 0.97	2.55 ± 0.28	7.99 ± 0.93	n = 121	All Methods & Instruments
						<Method Principles>
1.89 ± 0.32	6.08 ± 0.56	16.75 ± 0.75	2.63 ± 0.27	8.08 ± 0.70	n = 15	Calmagite
1.96 ± 0.10	6.29 ± 0.24	17.07 ± 0.40	2.61 ± 0.10	8.34 ± 0.44	n = 31	Methylthymol blue
1.87 ± 0.16	6.10 ± 0.40	16.28 ± 0.75	2.54 ± 0.25	8.12 ± 0.82	n = 48	Xylidyl blue (Magon)
1.20 ± 0.00	4.58 ± 0.28	18.15 ± 0.41	1.33 ± 0.22	6.44 ± 0.79	n = 10	Formazon dye
2.15 ± 0.73	6.40 ± 0.83	17.15 ± 1.89	2.73 ± 0.36	8.30 ± 0.85	n = 4	Chlorophosphonazo III
1.87 ± 0.19	4.89 ± 0.81	15.78 ± 1.48	2.07 ± 0.46	6.41 ± 1.20	n = 9	Arsenazo dye
1.90 ± 0.25	5.86 ± 0.69	16.29 ± 1.66	2.49 ± 0.26	7.63 ± 0.57	n = 4	Other
						<Instruments>
1.87 ± 0.12	4.63 ± 0.54	15.16 ± 0.79	1.99 ± 0.21	6.09 ± 0.69	n = 6	Abbott Architect c System
1.90 ± 0.07	6.15 ± 0.20	16.16 ± 0.49	2.60 ± 0.09	8.15 ± 0.59	n = 12	Beckman Coulter AU Chemistry System
1.88 ± 0.35	6.10 ± 0.63	16.45 ± 1.00	2.69 ± 0.31	7.94 ± 0.68	n = 4	Beckman Coulter UniCel DxC 600
1.86 ± 0.22	6.08 ± 0.12	16.65 ± 0.43	2.55 ± 0.30	7.90 ± 0.25	n = 6	Beckman Coulter UniCel DxC 800
1.88 ± 0.25	5.64 ± 0.66	16.53 ± 2.66	2.46 ± 0.31	7.85 ± 0.91	n = 3	ICP/MS
1.20 ± 0.00	4.55 ± 0.06	17.94 ± 0.45	1.30 ± 0.17	5.92 ± 0.87	n = 4	Ortho Vitros 5,1FS
1.20 ± 0.00	4.57 ± 0.33	18.16 ± 0.34	1.31 ± 0.20	6.50 ± 0.65	n = 8	Ortho Vitros 5600
2.05 ± 0.22	6.70 ± 0.17	17.38 ± 0.85	2.82 ± 0.21	8.07 ± 1.10	n = 5	Roche cobas c501
1.82 ± 0.22	5.90 ± 0.41	15.97 ± 0.81	2.49 ± 0.26	7.79 ± 0.54	n = 19	Roche MODULAR D/P
1.87 ± 0.15	6.18 ± 0.28	16.70 ± 0.46	2.59 ± 0.28	8.55 ± 0.48	n = 12	Siemens ADVIA 1800
1.88 ± 0.14	6.31 ± 0.09	16.58 ± 0.33	2.57 ± 0.18	8.22 ± 0.30	n = 3	Siemens ADVIA 2400
1.98 ± 0.10	6.32 ± 0.22	17.16 ± 0.33	2.61 ± 0.09	8.45 ± 0.39	n = 27	Siemens Dimension Vista
						<Reagents>
1.87 ± 0.12	4.63 ± 0.54	15.16 ± 0.79	1.99 ± 0.21	6.09 ± 0.69	n = 6	Abbott
1.91 ± 0.29	6.12 ± 0.49	16.61 ± 0.69	2.64 ± 0.27	8.07 ± 0.54	n = 13	Beckman Coulter
1.91 ± 0.06	6.17 ± 0.20	16.18 ± 0.53	2.60 ± 0.10	8.16 ± 0.64	n = 11	Beckman Coulter AU Series
1.92 ± 0.24	5.92 ± 0.71	16.43 ± 2.66	2.50 ± 0.31	8.24 ± 0.93	n = 3	In-House
1.20 ± 0.00	4.58 ± 0.23	18.09 ± 0.40	1.31 ± 0.19	6.33 ± 0.77	n = 12	Ortho Clinical Diagnostics
2.13 ± 0.38	6.79 ± 0.24	17.61 ± 1.07	2.88 ± 0.08	8.29 ± 0.99	n = 6	Roche cobas c501/c311/c502/c701
1.82 ± 0.22	5.90 ± 0.41	15.97 ± 0.81	2.49 ± 0.26	7.79 ± 0.54	n = 19	Roche Hitachi and Modular D/P
1.87 ± 0.14	6.23 ± 0.30	16.68 ± 0.43	2.58 ± 0.26	8.46 ± 0.50	n = 16	Siemens ADVIA/ADVIA Centaur
1.96 ± 0.10	6.29 ± 0.24	17.10 ± 0.38	2.60 ± 0.08	8.37 ± 0.46	n = 30	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Sodium (mmol/L)

Specimen: U11	Specimen: U12	Specimen: U13	Specimen: U14	Specimen: U15	Number	Instrument or Reagent System
33.5 ± 1.68	78.4 ± 4.23	250.4 ± 5.23	135.5 ± 5.47	66.0 ± 3.50	n = 219	All Methods & Instruments
						<Method Principles>
33.5 ± 1.57	77.9 ± 4.07	250.4 ± 5.36	134.9 ± 4.69	65.6 ± 3.25	n = 183	Ion selective electrode (diluted)
33.7 ± 2.33	81.2 ± 3.54	256.6 ± 15.37	141.6 ± 6.69	68.6 ± 3.55	n = 35	Ion selective electrode (undiluted)
						<Instruments>
33.0 ± 0.47	79.4 ± 1.17	244.5 ± 3.70	134.6 ± 2.02	66.0 ± 1.27	n = 14	Abbott Architect c System
34.4 ± 0.81	81.0 ± 1.06	254.5 ± 2.38	137.7 ± 1.24	68.5 ± 0.89	n = 33	Beckman Coulter AU Chemistry System
31.3 ± 0.51	78.3 ± 0.51	248.8 ± 1.54	136.3 ± 0.51	65.4 ± 1.02	n = 3	Beckman Coulter LX-20
31.8 ± 1.42	78.2 ± 1.30	245.6 ± 2.67	135.7 ± 1.41	66.1 ± 1.51	n = 13	Beckman Coulter UniCel DxC 600
32.6 ± 0.88	79.2 ± 0.79	245.1 ± 1.65	136.8 ± 1.79	67.0 ± 1.64	n = 9	Beckman Coulter UniCel DxC 800
33.2 ± 2.30	81.7 ± 4.38	268.3 ± 17.67	145.0 ± 4.20	69.0 ± 4.23	n = 14	Ortho Vitros 5,1FS
34.7 ± 2.77	82.6 ± 5.48	265.9 ± 17.70	146.7 ± 6.05	69.9 ± 4.55	n = 12	Ortho Vitros 5600
31.4 ± 1.90	78.4 ± 0.97	249.9 ± 2.19	136.3 ± 1.62	65.7 ± 1.43	n = 15	Roche cobas c501
35.6 ± 0.85	79.4 ± 1.16	245.7 ± 11.81	135.6 ± 0.80	66.4 ± 1.19	n = 4	Roche Cobas INTEGRA
32.8 ± 1.57	79.1 ± 1.23	250.5 ± 5.78	137.0 ± 1.69	66.4 ± 1.39	n = 24	Roche MODULAR D/P
33.4 ± 0.70	80.6 ± 0.77	253.1 ± 2.24	137.2 ± 0.93	67.7 ± 0.74	n = 16	Siemens ADVIA 1800
33.3 ± 0.51	80.0 ± 0.00	253.9 ± 2.86	137.4 ± 1.02	67.3 ± 0.51	n = 3	Siemens ADVIA 2400
32.6 ± 0.55	75.6 ± 0.55	252.0 ± 4.64	132.7 ± 1.10	63.5 ± 0.83	n = 5	Siemens Dimension EXL
33.7 ± 0.55	74.2 ± 1.41	242.7 ± 3.79	130.1 ± 0.85	63.4 ± 2.00	n = 9	Siemens Dimension RxL
34.4 ± 1.39	70.0 ± 2.87	251.6 ± 3.47	125.8 ± 2.54	59.7 ± 2.52	n = 38	Siemens Dimension Vista
33.2 ± 0.41	75.1 ± 1.13	246.1 ± 3.44	131.3 ± 1.51	63.3 ± 0.82	n = 4	Siemens Dimension Xpand
						<Reagents>
33.0 ± 0.47	79.4 ± 1.17	244.5 ± 3.70	134.6 ± 2.02	66.0 ± 1.27	n = 14	Abbott
32.2 ± 1.36	78.7 ± 1.18	246.3 ± 3.39	136.2 ± 1.42	66.4 ± 1.56	n = 27	Beckman Coulter
34.4 ± 0.83	81.1 ± 1.05	254.4 ± 2.46	137.7 ± 1.21	68.5 ± 0.86	n = 30	Beckman Coulter AU Series
33.9 ± 2.63	82.2 ± 4.82	267.2 ± 17.74	145.8 ± 5.04	69.4 ± 4.42	n = 26	Ortho Clinical Diagnostics
31.6 ± 2.07	78.5 ± 1.08	249.8 ± 1.95	136.5 ± 1.62	65.8 ± 1.45	n = 16	Roche cobas c501/c311/c502/c701
32.8 ± 1.57	79.1 ± 1.23	250.5 ± 5.78	137.0 ± 1.69	66.4 ± 1.39	n = 24	Roche Hitachi and Modular D/P
35.6 ± 0.85	79.4 ± 1.16	245.7 ± 11.81	135.6 ± 0.80	66.4 ± 1.19	n = 4	Roche Integra and MIRA S
33.4 ± 0.75	80.5 ± 0.77	253.4 ± 2.83	137.3 ± 0.96	67.6 ± 0.77	n = 20	Siemens ADVIA/ADVIA Centaur
34.1 ± 1.38	71.9 ± 3.45	250.2 ± 4.97	127.9 ± 3.73	61.2 ± 2.80	n = 54	Siemens Dimension
33.8 ± 1.54	70.0 ± 6.42	249.7 ± 3.16	126.8 ± 5.12	58.9 ± 5.22	n = 3	Other

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Summary of Participant Performance (Mean and Standard Deviation)

Phosphorus (mg/dL)

Specimen: U11	Specimen: U12	Specimen: U13	Specimen: U14	Specimen: U15	Number	Instrument or Reagent System
75.46 ± 3.49	144.31 ± 6.35	34.77 ± 2.86	96.57 ± 4.35	121.81 ± 5.39	n = 153	All Methods & Instruments
<Method Principles>						
74.90 ± 3.13	142.82 ± 4.79	34.55 ± 2.42	95.80 ± 2.95	121.15 ± 4.45	n = 79	Phosphomolybdate - no reduction
75.56 ± 5.11	146.57 ± 9.16	35.38 ± 0.91	98.56 ± 6.10	124.28 ± 6.72	n = 4	Phosphomolybdate reduction (ANS)
76.71 ± 3.97	147.35 ± 8.83	35.14 ± 3.92	97.56 ± 5.98	122.96 ± 7.23	n = 48	Phosphomolybdate reduction (PMA phe
75.54 ± 3.24	144.28 ± 8.80	34.30 ± 2.66	97.53 ± 4.64	120.87 ± 5.34	n = 11	Phosphomolybdate reduction-other
74.40 ± 2.60	145.31 ± 4.23	35.77 ± 1.95	96.22 ± 4.19	123.00 ± 6.31	n = 8	Other
<Instruments>						
74.04 ± 1.76	141.72 ± 1.21	34.93 ± 2.69	95.83 ± 1.21	120.33 ± 1.90	n = 8	Abbott Architect c System
73.71 ± 2.28	142.32 ± 3.60	34.17 ± 2.06	95.22 ± 2.01	120.32 ± 2.98	n = 22	Beckman Coulter AU Chemistry System
78.80 ± 2.57	152.70 ± 7.56	34.23 ± 1.72	100.34 ± 3.18	126.50 ± 4.79	n = 6	Beckman Coulter UniCel DxC 600
77.92 ± 3.59	147.69 ± 5.40	36.80 ± 3.10	100.73 ± 3.95	124.28 ± 5.38	n = 6	Beckman Coulter UniCel DxC 800
78.97 ± 1.39	154.10 ± 6.18	37.77 ± 2.18	102.09 ± 2.23	126.84 ± 2.64	n = 7	Ortho Vitros 5,1FS
79.77 ± 2.52	152.47 ± 6.15	38.62 ± 2.11	101.86 ± 1.62	126.94 ± 3.75	n = 11	Ortho Vitros 5600
75.69 ± 1.42	144.21 ± 4.72	35.11 ± 2.36	96.38 ± 1.38	121.88 ± 2.98	n = 8	Roche cobas c501
74.77 ± 1.10	143.21 ± 1.27	34.17 ± 2.03	95.57 ± 0.77	121.12 ± 1.46	n = 4	Roche Cobas INTEGRA
73.37 ± 2.91	141.78 ± 4.47	34.21 ± 2.42	95.18 ± 2.77	120.64 ± 5.02	n = 21	Roche MODULAR D/P
75.91 ± 3.56	145.17 ± 6.34	35.83 ± 2.00	96.84 ± 4.26	122.47 ± 6.49	n = 14	Siemens ADVIA 1800
73.54 ± 3.04	138.81 ± 3.88	32.00 ± 1.26	95.44 ± 3.98	115.79 ± 5.23	n = 3	Siemens ADVIA 2400
81.54 ± 4.29	153.84 ± 6.87	39.54 ± 4.07	108.79 ± 13.64	129.58 ± 6.12	n = 4	Siemens Dimension RxL
74.29 ± 2.87	141.67 ± 6.60	32.68 ± 2.24	93.26 ± 5.44	117.69 ± 8.08	n = 30	Siemens Dimension Vista
<Reagents>						
74.04 ± 1.76	141.72 ± 1.21	34.93 ± 2.69	95.83 ± 1.21	120.33 ± 1.90	n = 8	Abbott
78.40 ± 3.00	148.22 ± 7.05	35.08 ± 2.34	99.55 ± 3.83	124.69 ± 4.85	n = 15	Beckman Coulter
73.76 ± 2.35	142.39 ± 3.70	34.03 ± 1.99	95.21 ± 2.11	120.40 ± 3.05	n = 21	Beckman Coulter AU Series
79.21 ± 2.24	152.57 ± 6.78	38.09 ± 2.33	102.01 ± 2.48	126.63 ± 3.67	n = 19	Ortho Clinical Diagnostics
75.46 ± 1.43	143.73 ± 4.57	35.10 ± 2.19	96.33 ± 1.19	121.46 ± 3.01	n = 9	Roche cobas c501/c311/c502/c701
73.37 ± 2.91	141.78 ± 4.47	34.21 ± 2.42	95.18 ± 2.77	120.64 ± 5.02	n = 21	Roche Hitachi and Modular D/P
74.77 ± 1.10	143.21 ± 1.27	34.17 ± 2.03	95.57 ± 0.77	121.12 ± 1.46	n = 4	Roche Integra and MIRA S
75.45 ± 3.46	143.75 ± 6.23	35.10 ± 2.39	96.51 ± 4.06	121.13 ± 6.51	n = 18	Siemens ADVIA/ADVIA Centaur
75.08 ± 3.71	143.65 ± 8.47	33.38 ± 3.03	94.42 ± 6.35	119.28 ± 9.77	n = 35	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Potassium (mmol/L)

Specimen: U11	Specimen: U12	Specimen: U13	Specimen: U14	Specimen: U15	Number	Instrument or Reagent System
27.58 ± 1.70	78.69 ± 6.03	12.58 ± 0.61	54.08 ± 3.36	72.08 ± 5.37	n = 218	All Methods & Instruments
						<Method Principles>
27.43 ± 1.78	77.98 ± 5.79	12.61 ± 0.60	53.70 ± 3.21	71.44 ± 5.17	n = 182	Ion selective electrode (diluted)
28.29 ± 1.07	83.21 ± 4.77	12.43 ± 0.63	56.53 ± 2.96	76.08 ± 4.28	n = 35	Ion selective electrode (undiluted)
						<Instruments>
27.50 ± 0.42	79.10 ± 0.84	12.69 ± 0.24	53.77 ± 0.63	72.34 ± 0.97	n = 14	Abbott Architect c System
28.64 ± 0.49	82.44 ± 1.57	13.00 ± 0.11	55.66 ± 1.00	75.71 ± 1.33	n = 32	Beckman Coulter AU Chemistry System
27.41 ± 1.08	78.10 ± 0.73	13.06 ± 0.10	54.61 ± 0.72	72.82 ± 1.23	n = 3	Beckman Coulter LX-20
27.14 ± 0.24	76.92 ± 0.86	13.07 ± 0.11	53.45 ± 0.31	70.50 ± 1.02	n = 13	Beckman Coulter UniCel DxC 600
27.20 ± 0.29	77.14 ± 1.23	13.13 ± 0.17	53.83 ± 0.68	71.01 ± 1.09	n = 9	Beckman Coulter UniCel DxC 800
28.47 ± 0.86	85.53 ± 2.56	11.96 ± 0.33	58.29 ± 1.77	78.94 ± 1.31	n = 14	Ortho Vitros 5,1FS
28.56 ± 0.94	85.35 ± 2.82	12.01 ± 0.35	58.23 ± 1.98	78.23 ± 2.69	n = 12	Ortho Vitros 5600
27.47 ± 0.63	79.27 ± 1.99	12.67 ± 0.31	54.35 ± 0.93	72.65 ± 1.48	n = 14	Roche cobas c501
28.72 ± 0.53	79.00 ± 2.92	12.51 ± 0.29	54.12 ± 1.09	72.26 ± 2.05	n = 4	Roche Cobas INTEGRA
28.98 ± 0.90	82.27 ± 3.72	12.83 ± 0.20	56.34 ± 1.59	74.56 ± 3.56	n = 23	Roche MODULAR D/P
27.94 ± 0.12	80.60 ± 1.02	13.02 ± 0.06	54.93 ± 0.61	73.30 ± 1.06	n = 17	Siemens ADVIA 1800
27.89 ± 0.20	80.16 ± 1.54	12.93 ± 0.05	54.95 ± 0.99	73.47 ± 0.97	n = 3	Siemens ADVIA 2400
27.76 ± 0.28	77.46 ± 0.54	12.27 ± 0.24	53.14 ± 0.15	71.19 ± 0.54	n = 5	Siemens Dimension EXL
26.09 ± 0.36	72.54 ± 1.81	12.19 ± 0.21	50.64 ± 1.01	66.86 ± 0.81	n = 10	Siemens Dimension RxL
23.95 ± 0.73	67.78 ± 2.75	11.70 ± 0.26	48.04 ± 1.60	62.30 ± 2.29	n = 38	Siemens Dimension Vista
27.36 ± 0.50	76.93 ± 1.82	12.28 ± 0.27	52.74 ± 0.95	70.59 ± 1.44	n = 4	Siemens Dimension Xpand
						<Reagents>
27.50 ± 0.42	79.10 ± 0.84	12.69 ± 0.24	53.77 ± 0.63	72.34 ± 0.97	n = 14	Abbott
27.22 ± 0.39	77.15 ± 1.10	13.08 ± 0.13	53.74 ± 0.78	70.98 ± 1.48	n = 27	Beckman Coulter
28.65 ± 0.50	82.41 ± 1.62	13.00 ± 0.11	55.73 ± 1.05	75.71 ± 1.35	n = 29	Beckman Coulter AU Series
28.51 ± 0.91	85.42 ± 2.72	11.98 ± 0.33	58.24 ± 1.89	78.37 ± 2.50	n = 25	Ortho Clinical Diagnostics
27.53 ± 0.73	79.32 ± 1.85	12.68 ± 0.30	54.43 ± 0.93	72.77 ± 1.44	n = 15	Roche cobas c501/c311/c502/c701
28.98 ± 0.90	82.27 ± 3.72	12.83 ± 0.20	56.34 ± 1.59	74.56 ± 3.56	n = 23	Roche Hitachi and Modular D/P
28.72 ± 0.53	79.00 ± 2.92	12.51 ± 0.29	54.12 ± 1.09	72.26 ± 2.05	n = 4	Roche Integra and MIRA S
27.93 ± 0.14	80.60 ± 1.15	13.00 ± 0.07	54.94 ± 0.70	73.34 ± 1.10	n = 21	Siemens ADVIA/ADVIA Centaur
24.83 ± 1.69	69.97 ± 4.71	11.87 ± 0.37	49.19 ± 2.52	64.28 ± 4.18	n = 55	Siemens Dimension
24.94 ± 1.17	71.30 ± 2.91	11.93 ± 0.23	50.29 ± 1.10	65.55 ± 2.55	n = 3	Other

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Summary of Participant Performance (Mean and Standard Deviation)

Total Protein (mg/dL)

Specimen: U11	Specimen: U12	Specimen: U13	Specimen: U14	Specimen: U15	Number	Instrument or Reagent System
26.92 ± 3.97	304.83 ± 20.68	49.28 ± 3.48	155.39 ± 6.25	91.60 ± 4.93	n = 222	All Methods & Instruments
27.23 ± 4.02	302.55 ± 21.98	48.93 ± 2.90	154.71 ± 5.71	91.24 ± 4.76	n = 80	<Method Principles>
26.18 ± 2.44	317.36 ± 9.50	46.79 ± 1.54	158.20 ± 3.71	87.30 ± 2.13	n = 32	Biuret (alkaline cupric sulfate)
26.34 ± 3.32	301.89 ± 21.82	50.50 ± 2.95	154.90 ± 7.24	93.45 ± 4.30	n = 92	Turbidimetric/Benzethonium Chloride
36.17 ± 2.18	485.21 ± 33.73	63.76 ± 2.74	232.24 ± 13.42	124.59 ± 7.29	n = 12	Pyrogallol red
22.47 ± 4.31	300.21 ± 8.24	45.82 ± 1.40	143.38 ± 8.29	88.98 ± 4.22	n = 4	Pyrocatechol Violet
						Other
						<Instruments>
26.56 ± 2.36	316.45 ± 7.83	46.30 ± 1.18	160.31 ± 2.02	87.97 ± 1.12	n = 13	Abbott Architect c System
27.17 ± 3.31	313.22 ± 13.94	49.28 ± 1.49	158.24 ± 4.96	92.30 ± 2.89	n = 37	Beckman Coulter AU Chemistry System
29.26 ± 3.16	309.52 ± 6.32	50.47 ± 1.86	147.43 ± 7.34	98.69 ± 5.09	n = 3	Beckman Coulter LX-20
26.02 ± 2.12	308.65 ± 12.10	50.89 ± 1.39	160.06 ± 1.70	99.16 ± 3.98	n = 11	Beckman Coulter UniCel DxC 600
25.74 ± 1.84	315.93 ± 8.13	51.00 ± 0.00	159.70 ± 4.81	100.50 ± 0.57	n = 8	Beckman Coulter UniCel DxC 800
35.87 ± 1.70	482.52 ± 33.93	63.04 ± 2.35	225.79 ± 6.23	123.11 ± 8.07	n = 12	Ortho Vitros 5,1FS
35.93 ± 2.57	501.99 ± 37.86	64.03 ± 5.49	234.14 ± 15.59	123.32 ± 9.84	n = 13	Ortho Vitros 5600
25.93 ± 3.49	317.44 ± 15.82	47.04 ± 2.53	160.82 ± 6.29	89.96 ± 4.02	n = 17	Roche cobas c501
25.95 ± 2.00	314.45 ± 12.89	46.60 ± 1.01	155.05 ± 2.08	86.34 ± 1.88	n = 6	Roche Cobas INTEGRA
26.25 ± 2.94	315.08 ± 6.49	46.88 ± 1.17	156.15 ± 3.11	86.16 ± 1.86	n = 26	Roche MODULAR D/P
24.15 ± 2.80	290.17 ± 17.74	46.60 ± 2.03	140.00 ± 10.00	92.30 ± 3.99	n = 17	Siemens ADVIA 1800
24.91 ± 2.56	275.68 ± 20.26	46.47 ± 0.41	148.25 ± 1.92	90.43 ± 0.41	n = 3	Siemens ADVIA 2400
27.04 ± 2.22	297.48 ± 5.52	52.52 ± 1.22	150.65 ± 1.97	93.28 ± 3.41	n = 5	Siemens Dimension EXL
28.98 ± 3.13	295.44 ± 3.15	52.20 ± 1.25	151.85 ± 1.56	92.26 ± 1.52	n = 8	Siemens Dimension RxL
26.51 ± 2.85	277.93 ± 22.67	52.07 ± 1.95	153.21 ± 3.98	93.08 ± 2.66	n = 38	Siemens Dimension Vista
25.99 ± 4.68	304.16 ± 2.85	51.65 ± 0.54	151.03 ± 1.95	91.89 ± 0.80	n = 3	Siemens Dimension Xpand
						<Reagents>
26.56 ± 2.36	316.45 ± 7.83	46.30 ± 1.18	160.31 ± 2.02	87.97 ± 1.12	n = 13	Abbott
26.36 ± 2.28	312.67 ± 8.92	50.62 ± 1.50	157.48 ± 6.37	98.57 ± 4.25	n = 24	Beckman Coulter
27.11 ± 3.45	312.50 ± 14.41	49.23 ± 1.44	158.09 ± 4.84	92.12 ± 2.81	n = 34	Beckman Coulter AU Series
35.89 ± 2.04	493.52 ± 36.94	63.56 ± 3.58	230.48 ± 13.49	123.46 ± 8.38	n = 23	Ortho Clinical Diagnostics
20.05 ± 3.25	299.59 ± 31.89	42.79 ± 1.37	152.89 ± 9.86	84.33 ± 5.80	n = 5	Pointe Scientific
26.44 ± 2.73	320.32 ± 14.76	47.70 ± 2.11	160.58 ± 5.43	89.89 ± 3.73	n = 16	Roche cobas c501/c311/c502/c701
26.42 ± 2.33	314.92 ± 6.52	47.01 ± 1.00	156.44 ± 3.14	86.43 ± 1.49	n = 23	Roche Hitachi and Modular D/P
25.95 ± 2.00	314.45 ± 12.89	46.60 ± 1.01	155.05 ± 2.08	86.34 ± 1.88	n = 6	Roche Integra and MIRA S
24.28 ± 2.77	288.08 ± 19.14	46.60 ± 1.82	142.03 ± 8.75	91.85 ± 3.55	n = 20	Siemens ADVIA/ADVIA Centaur
26.74 ± 3.11	285.24 ± 21.04	52.08 ± 1.69	152.38 ± 3.37	92.79 ± 2.48	n = 52	Siemens Dimension

New York State Department of Health - Wadsworth Center
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Summary of Participant Performance (Mean and Standard Deviation)

Uric Acid (mg/dL)

Specimen: U11	Specimen: U12	Specimen: U13	Specimen: U14	Specimen: U15	Number	Instrument or Reagent System
11.03 ± 2.44	46.68 ± 2.73	9.68 ± 0.88	21.16 ± 1.30	36.33 ± 2.09	n = 158	All Methods & Instruments
10.75 ± 2.91	47.52 ± 1.48	9.47 ± 0.99	21.21 ± 1.28	36.50 ± 1.58	n = 11	<Method Principles>
11.43 ± 2.37	44.97 ± 3.03	9.97 ± 0.72	20.65 ± 1.25	35.09 ± 2.28	n = 51	Uricase (NAD-NADH reaction)
10.85 ± 2.37	47.42 ± 2.17	9.55 ± 0.88	21.43 ± 1.20	36.92 ± 1.66	n = 92	Uricase/allantoin (differential abs
10.81 ± 2.58	45.85 ± 2.10	9.64 ± 0.58	20.81 ± 1.23	35.99 ± 1.74	n = 4	Uricase/peroxidase (colorimetric)
						Other
						<Instruments>
10.38 ± 1.15	46.19 ± 1.23	9.44 ± 0.36	20.53 ± 0.56	35.80 ± 1.02	n = 9	Abbott Architect c System
11.74 ± 2.92	48.57 ± 1.96	10.03 ± 0.31	21.84 ± 0.93	37.60 ± 1.54	n = 22	Beckman Coulter AU Chemistry System
11.55 ± 1.51	48.55 ± 1.56	11.26 ± 0.30	23.08 ± 0.51	38.49 ± 0.67	n = 6	Beckman Coulter UniCel DxC 600
11.68 ± 1.95	48.68 ± 1.15	11.05 ± 0.34	23.01 ± 0.45	38.28 ± 0.98	n = 7	Beckman Coulter UniCel DxC 800
11.31 ± 2.89	47.94 ± 1.75	9.21 ± 0.44	21.68 ± 0.71	36.91 ± 0.96	n = 8	Ortho Vitros 5,1FS
11.75 ± 2.73	47.76 ± 0.67	9.08 ± 0.28	21.56 ± 0.40	36.90 ± 0.33	n = 10	Ortho Vitros 5600
10.18 ± 2.38	47.62 ± 1.38	8.99 ± 0.08	21.01 ± 0.10	37.33 ± 1.21	n = 9	Roche cobas c501
10.68 ± 1.39	45.71 ± 2.23	8.61 ± 0.40	20.33 ± 0.70	36.03 ± 1.94	n = 4	Roche Cobas INTEGRA
9.06 ± 1.87	44.92 ± 1.54	8.54 ± 0.22	19.86 ± 0.68	34.80 ± 1.05	n = 21	Roche MODULAR D/P
11.55 ± 1.73	48.11 ± 1.85	9.96 ± 0.21	22.01 ± 0.80	37.50 ± 1.19	n = 14	Siemens ADVIA 1800
8.90 ± 0.64	46.47 ± 0.86	9.57 ± 0.23	21.26 ± 0.39	37.28 ± 0.77	n = 3	Siemens ADVIA 2400
12.70 ± 2.09	49.30 ± 0.73	10.78 ± 1.23	22.49 ± 1.08	38.19 ± 0.20	n = 3	Siemens Dimension EXL
13.59 ± 7.10	48.27 ± 3.25	10.78 ± 0.60	22.90 ± 0.61	38.44 ± 2.42	n = 4	Siemens Dimension RxL
11.61 ± 2.26	43.18 ± 1.24	10.01 ± 0.36	20.07 ± 0.55	33.78 ± 0.90	n = 31	Siemens Dimension Vista
						<Reagents>
10.38 ± 1.15	46.19 ± 1.23	9.44 ± 0.36	20.53 ± 0.56	35.80 ± 1.02	n = 9	Abbott
12.27 ± 2.14	48.47 ± 1.57	11.04 ± 0.46	22.85 ± 0.69	38.29 ± 1.01	n = 17	Beckman Coulter
11.70 ± 2.82	48.60 ± 1.59	10.05 ± 0.26	21.88 ± 0.69	37.60 ± 1.42	n = 20	Beckman Coulter AU Series
11.56 ± 2.82	47.84 ± 1.13	9.12 ± 0.36	21.61 ± 0.57	36.93 ± 0.55	n = 18	Ortho Clinical Diagnostics
10.47 ± 2.15	48.01 ± 1.46	8.99 ± 0.06	21.36 ± 0.64	37.22 ± 1.09	n = 11	Roche cobas c501/c311/c502/c701
9.06 ± 1.87	44.92 ± 1.54	8.54 ± 0.22	19.86 ± 0.68	34.80 ± 1.05	n = 21	Roche Hitachi and Modular D/P
10.68 ± 1.39	45.71 ± 2.23	8.61 ± 0.40	20.33 ± 0.70	36.03 ± 1.94	n = 4	Roche Integra and MIRA S
11.04 ± 1.86	47.85 ± 1.81	9.91 ± 0.25	21.87 ± 0.76	37.48 ± 1.08	n = 18	Siemens ADVIA/ADVIA Centaur
11.58 ± 2.52	43.72 ± 2.24	10.06 ± 0.43	20.29 ± 0.91	34.10 ± 1.48	n = 38	Siemens Dimension

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Summary of Participant Performance (Mean and Standard Deviation)

Urea Nitrogen (mg/dL)

Specimen: U11	Specimen: U12	Specimen: U13	Specimen: U14	Specimen: U15	Number	Instrument or Reagent System
637.1 ± 25.54	580.6 ± 21.61	634.0 ± 27.31	539.2 ± 22.83	808.5 ± 32.44	n = 161	All Methods & Instruments
						<Method Principles>
637.0 ± 26.76	580.5 ± 22.40	634.9 ± 27.53	537.6 ± 24.07	806.6 ± 33.39	n = 134	Urease w/glutamate dehydrogenase
654.7 ± 27.68	597.1 ± 26.35	656.2 ± 34.29	547.3 ± 22.32	841.0 ± 32.06	n = 9	Urease, conductivity rate
632.9 ± 13.41	576.9 ± 12.05	624.4 ± 14.73	546.6 ± 12.09	808.5 ± 19.64	n = 17	Urease with indicator dye
						<Instruments>
626.8 ± 14.20	573.0 ± 4.23	634.5 ± 14.64	541.7 ± 22.78	805.5 ± 20.34	n = 9	Abbott Architect c System
634.7 ± 18.43	583.8 ± 13.41	634.9 ± 17.45	534.2 ± 15.83	801.8 ± 20.35	n = 25	Beckman Coulter AU Chemistry System
644.3 ± 0.98	580.5 ± 8.56	641.6 ± 16.45	550.2 ± 11.46	810.9 ± 18.59	n = 8	Beckman Coulter UniCel Dx C 600
655.3 ± 30.34	604.7 ± 23.38	671.4 ± 29.35	558.5 ± 23.31	847.4 ± 28.14	n = 7	Beckman Coulter UniCel Dx C 800
632.2 ± 12.36	575.8 ± 5.94	623.6 ± 17.64	551.3 ± 9.79	808.0 ± 18.60	n = 7	Ortho Vitros 5,1FS
629.1 ± 14.38	575.1 ± 13.51	621.7 ± 16.30	542.3 ± 12.72	803.3 ± 19.92	n = 13	Ortho Vitros 5600
626.9 ± 28.24	566.7 ± 26.01	612.7 ± 19.99	516.7 ± 20.52	778.4 ± 32.67	n = 11	Roche cobas c501
622.5 ± 17.03	567.6 ± 20.85	618.9 ± 22.42	521.6 ± 12.30	790.1 ± 22.83	n = 21	Roche MODULAR D/P
674.7 ± 22.23	612.9 ± 21.33	675.7 ± 22.28	568.3 ± 18.26	858.8 ± 29.03	n = 13	Siemens ADVIA 1800
664.2 ± 11.93	581.4 ± 24.80	643.2 ± 28.49	540.9 ± 22.59	836.4 ± 17.23	n = 3	Siemens ADVIA 2400
681.5 ± 18.25	628.2 ± 22.40	688.0 ± 19.84	577.4 ± 25.20	877.4 ± 26.67	n = 4	Siemens Dimension EXL
662.5 ± 22.34	603.0 ± 25.94	658.7 ± 39.38	558.8 ± 29.82	847.1 ± 41.90	n = 4	Siemens Dimension RxL
633.1 ± 20.28	575.7 ± 15.01	631.2 ± 18.98	534.7 ± 18.17	801.4 ± 23.66	n = 30	Siemens Dimension Vista
						<Reagents>
626.8 ± 14.20	573.0 ± 4.23	634.5 ± 14.64	541.7 ± 22.78	805.5 ± 20.34	n = 9	Abbott
644.5 ± 24.47	587.8 ± 22.06	651.2 ± 26.38	550.2 ± 16.74	826.8 ± 27.31	n = 17	Beckman Coulter
634.9 ± 18.89	583.4 ± 13.80	635.2 ± 18.11	535.0 ± 15.80	802.5 ± 20.71	n = 24	Beckman Coulter AU Series
630.5 ± 13.70	576.6 ± 12.13	622.3 ± 16.72	546.0 ± 12.33	805.1 ± 19.49	n = 20	Ortho Clinical Diagnostics
623.2 ± 29.66	563.1 ± 27.71	609.6 ± 21.77	513.4 ± 25.49	773.3 ± 36.51	n = 12	Roche cobas c501/c311/c502/c701
622.5 ± 17.03	567.6 ± 20.85	618.9 ± 22.42	521.6 ± 12.30	790.1 ± 22.83	n = 21	Roche Hitachi and Modular D/P
671.9 ± 19.89	608.4 ± 24.78	671.0 ± 25.43	564.4 ± 21.65	853.6 ± 28.46	n = 17	Siemens ADVIA/ADVIA Centaur
640.0 ± 27.03	581.0 ± 21.81	636.1 ± 27.80	539.1 ± 23.42	810.2 ± 34.56	n = 37	Siemens Dimension