Statistical Report: Quantitative Urine Clinical Chemistry
Mail out date: November 7, 2011

This report summarizes data from the educational quantitative urine clinical chemistry proficiency test of November 7, 2011. Individual evaluation reports are provided for your laboratory for this testing.

Results for the quantitative urine clinical chemistry are listed as the mean ± 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 (± 25%); Creatinine (± 17%); Albumin-Creatinine Ratio (± 20%); alpha-Amylase (not evaluated); Calcium (± 15%); Chloride (± 20%); Glucose (± 15%); Magnesium (± 20%); Sodium (± 15%); Phosphorus (± 20%); Potassium (± 15%); Total Protein (± 30%); Uric Acid (± 20%); Urea Nitrogen (± 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.

Summary of Participant Performance (Mean and Standard Deviation)

Albumin

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

Specimen: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
2049.5 ± 196.31	2.8 ± 2.40	1251.7 ± 113.60	331.5 ± 29.83	2.9 ± 2.42	n = 178	All Methods & Instruments
						<Method Principles>
2053.2 ± 217.50	2.5 ± 2.42	1248.7 ± 119.06	328.7 ± 32.16	2.5 ± 2.47	n = 79	Reporting in mg/dL
2051.1 ± 175.57	3.2 ± 2.43	1255.5 ± 108.03	334.4 ± 28.34	3.2 ± 2.47	n = 83	Reporting in mg/L
2016.9 ± 267.37	3.1 ± 1.98	1243.5 ± 118.05	328.0 ± 22.70	2.8 ± 1.89	n = 16	Reporting in ug/mL
						<Instruments>
2027.1 ± 166.18	5.0 ± 0.00	1264.4 ± 31.02	348.2 ± 31.04	5.0 ± 0.00	n = 6	Abbott Architect c System
2035.1 ± 158.43	2.3 ± 2.42	1237.0 ± 77.82	317.4 ± 25.73	2.3 ± 2.42	n = 31	Beckman Coulter AU Chemistry System
2098.5 ± 149.77	45.6 ± 122.49	1066.1 ± 582.45	306.0 ± 49.16	0.4 ± 0.81	n = 4	Beckman Coulter CX
2015.9 ± 217.44	2.0 ± 0.00	1199.0 ± 97.96	304.7 ± 34.02	2.0 ± 0.00	n = 3	Beckman Coulter Immage
2185.3 ± 345.27	1.8 ± 0.88	1286.6 ± 114.53	344.7 ± 19.20	2.0 ± 0.00	n = 9	Beckman Coulter UniCel DxC 600
2208.2 ± 244.20	1.8 ± 0.48	1345.0 ± 106.72	345.9 ± 39.82	1.7 ± 0.51	n = 10	Beckman Coulter UniCel DxC 800
1104.1 ± 755.18	5.1 ± 2.45	950.2 ± 465.59	277.6 ± 137.59	5.1 ± 2.45	n = 4	Ortho Vitros 5,1FS
2037.7 ± 85.62	5.3 ± 5.91	1204.3 ± 105.21	348.5 ± 6.21	5.3 ± 5.91	n = 8	Roche cobas c501
2061.7 ± 172.34	2.4 ± 1.34	1217.7 ± 70.62	308.4 ± 15.30	2.3 ± 1.58	n = 7	Roche Cobas INTEGRA
1925.3 ± 87.74	2.3 ± 1.57	1162.5 ± 40.59	329.4 ± 17.62	2.2 ± 1.50	n = 26	Roche MODULAR D/P
1961.1 ± 60.77	4.4 ± 3.46	1219.0 ± 35.92	311.8 ± 7.06	4.5 ± 3.58	n = 11	Siemens ADVIA 1800
1737.5 ± 626.60	3.2 ± 4.89	928.3 ± 653.82	319.6 ± 10.73	3.2 ± 4.89	n = 3	Siemens ADVIA 2400
1864.0 ± 373.09	3.6 ± 4.62	1223.5 ± 134.66	346.9 ± 3.54	3.8 ± 4.48	n = 3	Siemens Dimension EXL
2134.3 ± 183.85	2.0 ± 0.95	1352.2 ± 149.65	362.2 ± 17.85	2.4 ± 1.26	n = 11	Siemens Dimension RxL
2111.0 ± 141.01	5.0 ± 0.00	1317.6 ± 97.47	344.2 ± 33.12	5.0 ± 0.00	n = 21	Siemens Dimension Vista
2017.2 ±1945.28	1.0 ± 0.48	1073.2 ± 675.64	318.9 ± 144.56	1.1 ± 0.73	n = 6	Siemens Dimension Xpand
1980.4 ± 860.68	3.1 ± 1.13	1228.4 ± 497.69	332.3 ± 67.39	3.1 ± 1.13	n = 4	Other
						<Reagents>
2060.7 ± 123.08	5.0 ± 0.00	1264.5 ± 30.74	354.8 ± 17.44	5.0 ± 0.00	n = 5	Abbott
2112.2 ± 255.07	1.9 ± 0.96	1291.5 ± 108.79	333.8 ± 31.12	2.0 ± 0.00	n = 28	Beckman Coulter
1804.7 ± 511.73	2.7 ± 2.74	1214.6 ± 87.90	316.7 ± 27.76	2.7 ± 2.74	n = 18	Beckman Coulter AU Series
2117.5 ± 186.64	0.2 ± 0.36	1283.8 ± 187.72	310.4 ± 57.24	0.1 ± 0.20	n = 3	Carolina
2099.9 ± 180.09	2.0 ± 0.92	1280.3 ± 75.79	326.7 ± 21.48	2.0 ± 0.92	n = 7	Kamiya
845.3 ± 841.90	3.8 ± 3.30	708.0 ± 619.91	207.2 ± 181.85	3.8 ± 3.30	n = 5	Ortho Clinical Diagnostics
2037.7 ± 85.62	5.3 ± 5.91	1204.3 ± 105.21	348.5 ± 6.21	5.3 ± 5.91	n = 8	Roche cobas c501/c311/c502/c701
1925.3 ± 87.74	2.3 ± 1.57	1162.5 ± 40.59	329.4 ± 17.62	2.2 ± 1.50	n = 26	Roche Hitachi and Modular D/P
2057.1 ± 194.44	2.7 ± 1.39	1233.2 ± 64.17	308.7 ± 17.22	2.5 ± 1.86	n = 6	Roche Integra and MIRA S
1990.6 ± 108.83	4.1 ± 3.69	1241.7 ± 59.90	313.7 ± 9.60	4.1 ± 3.80	n = 15	Siemens ADVIA/ADVIA Centaur
300.0 ± 0.00	5.0 ± 0.00	300.0 ± 0.00	300.0 ± 0.00	5.0 ± 0.00	n = 3	Siemens DCA
2118.2 ± 175.26	3.5 ± 2.25	1328.5 ± 121.66	353.0 ± 33.12	3.6 ± 2.13	n = 36	Siemens Dimension
2266.8 ± 169.63	3.9 ± 1.83	1370.4 ± 149.19	347.7 ± 27.28	3.8 ± 1.53	n = 8	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: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
148.4 ± 8.00	82.3 ± 5.22	85.4 ± 4.73	52.5 ± 3.54	114.3 ± 6.49	n = 282	All Methods & Instruments
						<Method Principles>
148.5 ± 7.95	82.4 ± 5.27	85.4 ± 4.73	52.5 ± 3.53	114.3 ± 6.52	n = 276	Reporting in mg/dL
						<Instruments>
140.1 ± 3.68	77.4 ± 2.37	80.9 ± 2.13	48.8 ± 1.88	107.6 ± 2.84	n = 10	Abbott Architect c System
159.1 ± 4.85	89.9 ± 2.84	91.5 ± 3.35	57.8 ± 1.93	123.2 ± 3.79	n = 40	Beckman Coulter AU Chemistry System
146.0 ± 11.08	85.5 ± 3.53	88.6 ± 1.07	53.8 ± 1.60	117.3 ± 0.78	n = 6	Beckman Coulter CX
150.6 ± 3.19	83.5 ± 1.07	86.8 ± 2.00	53.1 ± 0.98	114.9 ± 1.48	n = 8	Beckman Coulter LX-20
158.3 ± 5.06	87.5 ± 3.11	91.2 ± 2.67	56.3 ± 1.94	121.1 ± 3.40	n = 17	Beckman Coulter UniCel DxC 600
149.9 ± 3.02	82.9 ± 1.45	86.6 ± 1.22	53.6 ± 1.15	115.1 ± 1.86	n = 20	Beckman Coulter UniCel DxC 800
145.8 ± 5.07	82.0 ± 4.50	86.6 ± 3.33	51.2 ± 1.52	111.9 ± 3.59	n = 14	Ortho Vitros 5,1FS
145.0 ± 4.61	82.8 ± 2.77	85.9 ± 2.82	50.4 ± 1.13	111.8 ± 2.39	n = 9	Ortho Vitros 5600
148.7 ± 5.08	81.5 ± 2.19	86.5 ± 2.74	52.7 ± 1.97	112.9 ± 3.33	n = 17	Roche cobas c501
143.1 ± 2.67	79.1 ± 1.07	81.8 ± 2.00	49.3 ± 1.25	108.7 ± 1.48	n = 12	Roche Cobas INTEGRA
143.0 ± 4.92	79.4 ± 3.55	83.3 ± 3.42	50.7 ± 2.12	110.1 ± 5.11	n = 35	Roche MODULAR D/P
142.7 ± 5.74	78.6 ± 3.76	82.5 ± 4.13	50.3 ± 3.17	109.8 ± 5.67	n = 14	Siemens ADVIA 1800
140.3 ± 7.77	77.7 ± 2.27	82.6 ± 4.30	48.7 ± 2.62	110.8 ± 4.94	n = 3	Siemens ADVIA 2400
148.8 ± 4.86	82.5 ± 4.19	86.9 ± 2.59	53.4 ± 2.25	116.5 ± 3.93	n = 5	Siemens Dimension EXL
149.6 ± 5.77	82.1 ± 3.47	84.3 ± 2.99	52.5 ± 2.76	118.5 ± 3.90	n = 15	Siemens Dimension RxL
149.3 ± 3.45	81.3 ± 2.26	82.8 ± 1.68	52.0 ± 2.42	114.2 ± 3.98	n = 35	Siemens Dimension Vista
138.1 ± 3.22	75.3 ± 1.49	78.3 ± 2.51	48.5 ± 1.50	106.7 ± 3.16	n = 9	Siemens Dimension Xpand
						<Reagents>
139.2 ± 2.82	77.0 ± 2.23	81.0 ± 2.26	48.5 ± 1.55	107.0 ± 2.35	n = 9	Abbott
153.3 ± 6.48	85.1 ± 3.47	88.4 ± 3.12	54.7 ± 2.17	117.5 ± 4.24	n = 51	Beckman Coulter
158.7 ± 4.67	89.8 ± 2.47	91.5 ± 3.05	57.8 ± 1.72	123.2 ± 3.64	n = 33	Beckman Coulter AU Series
142.7 ± 11.60	83.8 ± 3.88	83.5 ± 9.13	52.8 ± 1.27	114.3 ± 4.44	n = 3	Carolina
145.4 ± 5.04	82.2 ± 3.82	86.2 ± 3.14	50.9 ± 1.52	112.2 ± 3.36	n = 25	Ortho Clinical Diagnostics
148.3 ± 4.72	81.2 ± 1.86	86.3 ± 2.73	52.5 ± 2.00	112.6 ± 3.07	n = 16	Roche cobas c501/c311/c502/c701
143.0 ± 4.92	79.4 ± 3.55	83.3 ± 3.42	50.7 ± 2.12	110.1 ± 5.11	n = 35	Roche Hitachi and Modular D/P
142.9 ± 2.99	78.9 ± 1.10	81.6 ± 2.08	49.2 ± 1.18	108.5 ± 1.56	n = 11	Roche Integra and MIRA S
143.0 ± 6.46	78.7 ± 3.76	82.8 ± 4.57	50.1 ± 3.41	110.2 ± 5.78	n = 19	Siemens ADVIA/ADVIA Centaur
153.4 ± 6.36	83.0 ± 4.34	87.6 ± 5.33	54.6 ± 0.95	117.1 ± 2.97	n = 3	Siemens DCA
148.0 ± 5.86	80.6 ± 3.52	82.9 ± 3.06	51.6 ± 2.87	114.3 ± 5.72	n = 58	Siemens Dimension
148.1 ± 5.57	82.0 ± 3.62	82.7 ± 1.87	52.8 ± 1.70	113.5 ± 4.28	n = 10	Other

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: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
1375.8 ± 136.57	4.2 ± 3.83	1468.3 ± 171.88	631.0 ± 74.68	3.3 ± 3.56	n = 150	All Methods & Instruments
						<Method Principles>
1390.4 ± 132.84	4.4 ± 3.96	1479.9 ± 153.70	638.1 ± 67.02	3.6 ± 3.75	n = 96	Reporting in mg/g
1338.9 ± 127.97	3.8 ± 3.68	1429.7 ± 186.27	613.1 ± 74.21	3.1 ± 3.41	n = 49	Reporting in ug/mg
1575.2 ± 257.82	5.0 ± 1.84	1724.9 ± 267.67	771.0 ± 116.61	3.8 ± 1.09	n = 4	Other
						<Instruments>
1023.2 ± 623.49	3.4 ± 3.16	1217.8 ± 590.86	604.3 ± 75.15	2.1 ± 1.95	n = 21	Clinical Analyzer calculation
1339.7 ± 454.36	1.5 ± 2.35	1381.4 ± 329.18	590.8 ± 140.94	1.1 ± 1.63	n = 6	Manual Calculation
						<Reagents>
1377.4 ± 127.91	4.5 ± 3.91	1468.6 ± 160.09	636.6 ± 70.48	3.7 ± 3.75	n = 122	Lab Information System
1023.2 ± 623.49	3.4 ± 3.16	1217.8 ± 590.86	604.3 ± 75.15	2.1 ± 1.95	n = 21	Clinical Analyzer calculation
1339.7 ± 454.36	1.5 ± 2.35	1381.4 ± 329.18	590.8 ± 140.94	1.1 ± 1.63	n = 6	Manual Calculation

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Summary of Participant Performance (Mean and Standard Deviation)

Calcium (mg/dL)

Specimen: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
5.63 ± 0.94	4.09 ± 0.59	12.02 ± 0.91	5.48 ± 0.34	2.50 ± 1.21	n = 178	All Methods & Instruments
						<Method Principles>
5.56 ± 0.84	4.41 ± 0.66	12.25 ± 0.82	5.52 ± 0.33	3.44 ± 1.56	n = 84	o-Cresolphthalein
5.69 ± 1.06	3.97 ± 0.21	11.88 ± 0.95	5.45 ± 0.35	2.00 ± 0.23	n = 56	Arsenazo dye
5.75 ± 0.82	3.61 ± 0.29	11.62 ± 0.73	5.45 ± 0.30	2.00 ± 0.00	n = 32	Ion selective electrode
6.38 ± 2.40	4.14 ± 0.43	12.43 ± 1.55	5.42 ± 0.51	1.98 ± 0.10	n = 5	Other
						<Instruments>
5.87 ± 0.75	3.80 ± 0.24	11.56 ± 0.93	5.20 ± 0.25	2.04 ± 0.06	n = 7	Abbott Architect c System
5.47 ± 1.08	3.89 ± 0.16	11.68 ± 1.05	5.31 ± 0.26	2.20 ± 0.16	n = 18	Beckman Coulter AU Chemistry System
5.48 ± 2.19	3.56 ± 0.58	10.64 ± 1.15	5.05 ± 0.77	1.98 ± 0.04	n = 5	Beckman Coulter CX
6.19 ± 0.62	3.68 ± 0.04	11.49 ± 0.45	5.55 ± 0.23	2.00 ± 0.00	n = 5	Beckman Coulter LX-20
5.60 ± 0.70	3.44 ± 0.22	11.86 ± 0.54	5.35 ± 0.32	1.95 ± 0.27	n = 7	Beckman Coulter UniCel DxC 600
5.59 ± 0.87	3.62 ± 0.24	11.74 ± 0.74	5.47 ± 0.22	2.00 ± 0.00	n = 17	Beckman Coulter UniCel DxC 800
5.45 ± 0.63	4.15 ± 0.12	12.23 ± 0.46	5.79 ± 0.23	1.84 ± 0.19	n = 10	Ortho Vitros 5,1FS
6.41 ± 1.26	4.11 ± 0.18	12.12 ± 0.63	5.49 ± 0.32	1.70 ± 0.20	n = 8	Ortho Vitros 5600
6.26 ± 0.73	3.96 ± 0.22	12.42 ± 1.01	5.47 ± 0.25	2.09 ± 0.18	n = 9	Roche cobas c501
4.41 ± 0.68	3.87 ± 0.16	12.91 ± 0.73	5.12 ± 0.13	2.18 ± 0.17	n = 6	Roche Cobas INTEGRA
5.59 ± 0.87	3.88 ± 0.35	12.34 ± 0.77	5.46 ± 0.32	2.16 ± 0.22	n = 24	Roche MODULAR D/P
5.53 ± 0.68	4.04 ± 0.10	12.23 ± 0.81	5.50 ± 0.30	2.26 ± 0.35	n = 12	Siemens ADVIA 1800
5.43 ± 1.05	3.92 ± 0.15	11.15 ± 0.46	5.37 ± 0.23	2.00 ± 0.09	n = 3	Siemens ADVIA 2400
5.85 ± 0.91	5.00 ± 0.00	12.43 ± 0.71	5.71 ± 0.28	5.00 ± 0.00	n = 10	Siemens Dimension RxL
5.24 ± 0.39	5.00 ± 0.00	11.89 ± 0.75	5.58 ± 0.35	5.00 ± 0.00	n = 26	Siemens Dimension Vista
6.10 ± 0.56	5.00 ± 0.00	11.94 ± 1.23	5.74 ± 0.12	5.00 ± 0.00	n = 6	Siemens Dimension Xpand
						<Reagents>
5.87 ± 0.75	3.80 ± 0.24	11.56 ± 0.93	5.20 ± 0.25	2.04 ± 0.06	n = 7	Abbott
5.76 ± 0.90	3.63 ± 0.27	11.70 ± 0.72	5.48 ± 0.27	2.00 ± 0.00	n = 32	Beckman Coulter
5.49 ± 1.12	3.90 ± 0.14	11.64 ± 1.09	5.32 ± 0.26	2.20 ± 0.15	n = 17	Beckman Coulter AU Series
5.82 ± 1.08	4.14 ± 0.15	12.18 ± 0.54	5.66 ± 0.32	1.78 ± 0.21	n = 18	Ortho Clinical Diagnostics
6.27 ± 0.85	3.99 ± 0.20	12.57 ± 0.78	5.49 ± 0.26	2.12 ± 0.15	n = 8	Roche cobas c501/c311/c502/c701
5.49 ± 0.82	3.91 ± 0.31	12.37 ± 0.77	5.45 ± 0.33	2.17 ± 0.22	n = 22	Roche Hitachi and Modular D/P
4.41 ± 0.68	3.87 ± 0.16	12.91 ± 0.73	5.12 ± 0.13	2.18 ± 0.17	n = 6	Roche Integra and MIRA S
5.58 ± 0.90	4.03 ± 0.10	11.99 ± 0.89	5.47 ± 0.29	2.24 ± 0.39	n = 16	Siemens ADVIA/ADVIA Centaur
5.53 ± 0.69	5.00 ± 0.00	12.03 ± 0.87	5.65 ± 0.30	5.00 ± 0.00	n = 41	Siemens Dimension
5.96 ± 1.51	4.86 ± 0.37	12.06 ± 1.24	5.58 ± 0.37	4.52 ± 1.31	n = 4	Other

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Summary of Participant Performance (Mean and Standard Deviation)

Chloride (mmol/L)

Specimen: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
52.81 ± 3.39	152.03 ± 3.62	238.50 ± 7.15	104.16 ± 3.83	190.65 ± 4.38	n = 198	All Methods & Instruments
						<Method Principles>
52.73 ± 3.10	151.96 ± 3.45	238.34 ± 7.04	104.19 ± 3.73	190.52 ± 4.15	n = 174	Ion selective electrode (diluted)
53.60 ± 5.56	151.84 ± 5.27	240.59 ± 7.66	103.54 ± 5.08	190.78 ± 5.28	n = 20	Ion selective electrode (undiluted)
53.07 ± 2.33	155.55 ± 3.54	235.73 ± 7.16	105.23 ± 3.42	195.85 ± 6.15	n = 4	Other
						<Instruments>
53.15 ± 0.41	150.98 ± 2.40	237.28 ± 5.98	103.56 ± 1.06	188.49 ± 3.25	n = 8	Abbott Architect c System
54.85 ± 1.20	154.01 ± 1.77	243.71 ± 2.81	105.04 ± 1.65	191.10 ± 2.07	n = 23	Beckman Coulter AU Chemistry System
52.03 ± 1.89	150.37 ± 5.35	223.70 ± 7.06	106.05 ± 1.59	188.31 ± 6.84	n = 4	Beckman Coulter CX
52.69 ± 1.12	149.72 ± 2.97	232.82 ± 3.13	104.41 ± 1.22	189.50 ± 2.49	n = 8	Beckman Coulter LX-20
52.67 ± 1.14	150.22 ± 1.76	231.96 ± 5.81	104.06 ± 1.54	187.77 ± 3.17	n = 14	Beckman Coulter UniCel DxC 600
52.34 ± 1.01	150.47 ± 2.35	234.55 ± 5.47	104.34 ± 1.81	189.50 ± 2.89	n = 19	Beckman Coulter UniCel DxC 800
69.85 ± 21.61	151.48 ± 2.74	232.80 ± 2.36	105.07 ± 2.86	191.00 ± 1.80	n = 3	Ortho Vitros 5600
45.62 ± 1.35	146.35 ± 1.97	245.86 ± 3.45	95.22 ± 1.30	187.31 ± 2.78	n = 13	Roche cobas c501
49.89 ± 1.23	149.65 ± 0.74	237.70 ± 3.27	100.85 ± 1.12	185.52 ± 1.39	n = 6	Roche Cobas INTEGRA
49.04 ± 1.11	150.91 ± 1.38	244.44 ± 7.16	99.30 ± 1.21	190.77 ± 2.35	n = 26	Roche MODULAR D/P
53.45 ± 0.57	150.70 ± 1.10	234.79 ± 0.94	103.19 ± 0.73	187.64 ± 0.93	n = 12	Siemens ADVIA 1800
53.28 ± 0.51	149.28 ± 0.51	232.40 ± 2.56	103.00 ± 0.90	186.00 ± 0.90	n = 3	Siemens ADVIA 2400
62.35 ± 1.58	156.50 ± 1.22	242.50 ± 2.32	111.17 ± 2.11	194.27 ± 1.51	n = 4	Siemens Dimension EXL
57.98 ± 1.87	154.97 ± 1.51	241.20 ± 3.23	107.87 ± 2.02	192.74 ± 2.75	n = 15	Siemens Dimension RxL
53.36 ± 1.34	156.03 ± 2.43	235.86 ± 5.39	106.80 ± 1.51	197.70 ± 3.66	n = 31	Siemens Dimension Vista
60.89 ± 3.57	154.76 ± 2.64	240.38 ± 4.30	109.64 ± 2.66	192.70 ± 2.27	n = 7	Siemens Dimension Xpand
						<Reagents>
53.15 ± 0.41	150.98 ± 2.40	237.28 ± 5.98	103.56 ± 1.06	188.49 ± 3.25	n = 8	Abbott
52.57 ± 1.10	150.23 ± 2.53	233.04 ± 6.14	104.35 ± 1.69	188.83 ± 2.95	n = 43	Beckman Coulter
54.94 ± 1.06	154.07 ± 1.58	243.80 ± 2.56	105.22 ± 1.36	191.26 ± 1.95	n = 22	Beckman Coulter AU Series
63.11 ± 18.70	151.36 ± 2.31	233.17 ± 2.11	104.55 ± 2.30	188.30 ± 6.99	n = 4	Ortho Clinical Diagnostics
45.74 ± 1.39	146.60 ± 1.81	246.24 ± 3.31	95.38 ± 1.18	187.73 ± 2.23	n = 12	Roche cobas c501/c311/c502/c701
49.04 ± 1.11	150.91 ± 1.38	244.44 ± 7.16	99.30 ± 1.21	190.77 ± 2.35	n = 26	Roche Hitachi and Modular D/P
49.61 ± 1.86	149.65 ± 0.74	238.40 ± 3.44	100.85 ± 1.12	185.10 ± 1.81	n = 7	Roche Integra and MIRA S
53.35 ± 0.63	150.28 ± 1.20	234.50 ± 1.74	103.07 ± 0.81	187.18 ± 1.26	n = 16	Siemens ADVIA/ADVIA Centaur
56.02 ± 3.83	155.56 ± 2.23	238.87 ± 5.22	107.64 ± 2.29	195.02 ± 3.86	n = 52	Siemens Dimension
52.86 ± 1.27	156.00 ± 2.12	235.77 ± 5.35	106.83 ± 1.07	199.35 ± 2.31	n = 5	Other

Summary of Participant Performance (Mean and Standard Deviation)

Glucose (mg/dL)

Specimen: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
39.1 ± 1.59	1.3 ± 1.44	383.6 ± 11.76	749.2 ± 31.96	1.2 ± 0.62	n = 129	All Methods & Instruments
						<Method Principles>
39.2 ± 1.53	1.0 ± 0.79	383.5 ± 12.00	743.3 ± 31.99	1.2 ± 0.57	n = 71	Hexokinase, UV
39.3 ± 1.64	1.4 ± 1.77	382.3 ± 13.51	742.5 ± 30.37	1.7 ± 1.70	n = 29	Hexokinase, colorimetric
38.3 ± 1.44	<20	387.1 ± 8.25	773.5 ± 13.70	<20	n = 15	Glucose oxidase, colorimetric
38.5 ± 1.92	4.6 ± 3.00	387.1 ± 9.64	777.3 ± 25.37	4.5 ± 3.12	n = 9	Glucose oxidase, O2 electrode
						<Instruments>
39.0 ± 0.00	1.0 ± 0.00	400.8 ± 6.25	795.5 ± 6.16	1.0 ± 0.00	n = 5	Abbott Architect c System
38.9 ± 1.12	6.3 ± 5.35	376.5 ± 10.66	722.2 ± 47.74	6.5 ± 5.05	n = 12	Beckman Coulter AU Chemistry System
39.2 ± 1.96	5.0 ± 0.00	380.0 ± 8.56	742.4 ± 19.29	5.2 ± 0.41	n = 4	Beckman Coulter LX-20
38.4 ± 2.09	3.5 ± 2.17	389.2 ± 6.39	797.5 ± 71.10	3.5 ± 2.17	n = 4	Beckman Coulter UniCel DxC 600
39.0 ± 1.37	5.8 ± 3.23	388.6 ± 11.29	777.2 ± 29.43	5.7 ± 3.44	n = 6	Beckman Coulter UniCel DxC 800
38.1 ± 1.41	<20	385.9 ± 7.24	766.7 ± 16.35	<20	n = 10	Ortho Vitros 5,1FS
39.0 ± 1.37	<20	389.3 ± 8.01	779.2 ± 8.72	<20	n = 6	Ortho Vitros 5600
40.1 ± 1.53	1.5 ± 0.74	383.8 ± 5.95	741.3 ± 21.23	1.6 ± 0.56	n = 7	Roche cobas c501
40.5 ± 0.81	1.1 ± 1.88	384.3 ± 9.95	765.5 ± 43.54	1.8 ± 1.47	n = 5	Roche Cobas INTEGRA
40.1 ± 1.24	1.6 ± 0.99	391.3 ± 8.69	742.5 ± 25.66	1.6 ± 0.55	n = 22	Roche MODULAR D/P
39.3 ± 0.67	0.8 ± 0.41	383.6 ± 5.74	749.3 ± 7.88	1.0 ± 0.00	n = 10	Siemens ADVIA 1800
37.5 ± 1.86	6.0 ± 10.00	386.0 ± 16.24	751.3 ± 24.86	6.0 ± 10.00	n = 3	Siemens ADVIA 2400
40.1 ± 1.13	0.0 ± 0.00	386.4 ± 4.79	754.4 ± 30.19	1.4 ± 1.82	n = 6	Siemens Dimension RxL
37.6 ± 1.49	1.0 ± 0.00	368.9 ± 10.33	721.4 ± 24.31	1.0 ± 0.00	n = 21	Siemens Dimension Vista
39.0 ± 0.90	0.3 ± 0.51	381.6 ± 3.87	784.0 ± 58.24	0.7 ± 0.51	n = 3	Siemens Dimension Xpand
						<Reagents>
39.0 ± 0.00	1.0 ± 0.00	400.8 ± 6.25	795.5 ± 6.16	1.0 ± 0.00	n = 5	Abbott
38.9 ± 1.68	4.5 ± 2.50	385.5 ± 10.09	762.0 ± 25.97	4.5 ± 2.60	n = 15	Beckman Coulter
38.8 ± 1.20	7.9 ± 4.47	376.8 ± 12.71	712.7 ± 53.14	7.9 ± 4.31	n = 10	Beckman Coulter AU Series
38.5 ± 1.48	<20	387.1 ± 7.72	773.1 ± 13.20	<20	n = 16	Ortho Clinical Diagnostics
40.1 ± 1.53	1.5 ± 0.74	383.8 ± 5.95	741.3 ± 21.23	1.6 ± 0.56	n = 7	Roche cobas c501/c311/c502/c701
40.1 ± 1.24	1.6 ± 0.99	391.3 ± 8.69	742.5 ± 25.66	1.6 ± 0.55	n = 22	Roche Hitachi and Modular D/P
40.5 ± 0.81	1.1 ± 1.88	384.3 ± 9.95	765.5 ± 43.54	1.8 ± 1.47	n = 5	Roche Integra and MIRA S
39.3 ± 0.99	0.7 ± 0.53	383.9 ± 7.83	749.2 ± 12.45	1.0 ± 0.00	n = 14	Siemens ADVIA/ADVIA Centaur
38.4 ± 1.60	0.8 ± 0.43	374.9 ± 11.45	732.6 ± 31.40	1.0 ± 0.00	n = 29	Siemens Dimension
36.8 ± 1.54	1.0 ± 0.00	371.1 ± 12.91	721.0 ± 8.16	1.0 ± 0.00	n = 3	Other

Summary of Participant Performance (Mean and Standard Deviation)

Magnesium (mg/dL)

Specimen: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
1.20 ± 0.22	5.92 ± 0.24	10.87 ± 0.56	3.00 ± 0.30	8.51 ± 0.39	n = 123	All Methods & Instruments
						<Method Principles>
1.04 ± 0.12	5.90 ± 0.18	10.90 ± 0.46	2.86 ± 0.25	8.69 ± 0.46	n = 26	Calmagite
1.17 ± 0.11	6.01 ± 0.16	11.15 ± 0.22	3.08 ± 0.09	8.46 ± 0.25	n = 27	Methylthymol blue
1.33 ± 0.29	5.93 ± 0.27	10.58 ± 0.50	3.09 ± 0.23	8.57 ± 0.33	n = 43	Xylidyl blue (Magon)
1.20 ± 0.00	5.81 ± 0.38	11.61 ± 0.28	2.00 ± 0.31	8.04 ± 0.33	n = 8	Formazon dye
1.27 ± 0.22	5.71 ± 0.19	10.66 ± 0.29	2.98 ± 0.24	8.36 ± 0.56	n = 10	Chlorophosphonazo III
1.45 ± 0.48	4.37 ± 0.50	9.23 ± 0.77	2.25 ± 0.23	5.82 ± 0.91	n = 5	Arsenazo dye
1.21 ± 0.20	6.04 ± 0.10	10.69 ± 0.66	2.93 ± 0.14	8.28 ± 0.24	n = 3	Other
						<Instruments>
1.77 ± 0.23	4.67 ± 0.42	9.68 ± 0.32	2.40 ± 0.09	6.45 ± 0.36	n = 3	Abbott Architect c System
1.20 ± 0.07	5.89 ± 0.18	10.42 ± 0.56	3.03 ± 0.07	8.64 ± 0.15	n = 9	Beckman Coulter AU Chemistry System
0.93 ± 0.14	4.56 ± 1.11	9.40 ± 1.35	2.27 ± 0.59	6.01 ± 2.13	n = 3	Beckman Coulter CX
1.03 ± 0.14	5.91 ± 0.17	10.89 ± 0.28	2.96 ± 0.14	8.68 ± 0.57	n = 3	Beckman Coulter LX-20
0.97 ± 0.05	5.82 ± 0.20	10.83 ± 0.35	2.72 ± 0.28	8.58 ± 0.45	n = 4	Beckman Coulter UniCel DxC 600
1.03 ± 0.06	5.91 ± 0.17	10.78 ± 0.56	2.79 ± 0.20	8.76 ± 0.42	n = 15	Beckman Coulter UniCel DxC 800
1.20 ± 0.00	5.60 ± 0.30	11.39 ± 0.27	2.03 ± 0.09	7.80 ± 0.08	n = 4	Ortho Vitros 5,1FS
1.20 ± 0.00	5.93 ± 0.35	11.74 ± 0.15	1.87 ± 0.56	8.25 ± 0.28	n = 5	Ortho Vitros 5600
1.32 ± 0.29	5.58 ± 0.13	10.45 ± 0.06	3.09 ± 0.11	8.30 ± 0.08	n = 5	Roche cobas c501
1.20 ± 0.11	5.83 ± 0.16	10.92 ± 0.20	2.89 ± 0.25	8.53 ± 0.70	n = 5	Roche Cobas INTEGRA
1.35 ± 0.26	5.84 ± 0.26	10.44 ± 0.28	3.06 ± 0.23	8.47 ± 0.34	n = 22	Roche MODULAR D/P
1.49 ± 0.40	6.10 ± 0.23	10.99 ± 0.58	3.19 ± 0.29	8.76 ± 0.40	n = 9	Siemens ADVIA 1800
1.32 ± 0.21	6.16 ± 0.11	11.21 ± 0.32	3.28 ± 0.14	8.67 ± 0.18	n = 3	Siemens ADVIA 2400
1.25 ± 0.11	5.98 ± 0.18	11.16 ± 0.24	3.13 ± 0.07	8.47 ± 0.24	n = 7	Siemens Dimension RxL
1.13 ± 0.10	6.02 ± 0.14	11.20 ± 0.19	3.04 ± 0.10	8.44 ± 0.23	n = 19	Siemens Dimension Vista
						<Reagents>
1.77 ± 0.23	4.67 ± 0.42	9.68 ± 0.32	2.40 ± 0.09	6.45 ± 0.36	n = 3	Abbott
1.01 ± 0.08	5.90 ± 0.18	10.83 ± 0.45	2.82 ± 0.24	8.75 ± 0.45	n = 23	Beckman Coulter
1.21 ± 0.06	5.89 ± 0.18	10.47 ± 0.41	3.03 ± 0.07	8.63 ± 0.15	n = 8	Beckman Coulter AU Series
1.20 ± 0.00	5.78 ± 0.36	11.61 ± 0.25	1.95 ± 0.39	8.02 ± 0.31	n = 9	Ortho Clinical Diagnostics
1.32 ± 0.29	5.58 ± 0.13	10.45 ± 0.06	3.09 ± 0.11	8.30 ± 0.08	n = 5	Roche cobas c501/c311/c502/c701
1.35 ± 0.26	5.84 ± 0.26	10.44 ± 0.28	3.06 ± 0.23	8.47 ± 0.34	n = 22	Roche Hitachi and Modular D/P
1.20 ± 0.11	5.83 ± 0.16	10.92 ± 0.20	2.89 ± 0.25	8.53 ± 0.70	n = 5	Roche Integra and MIRA S
1.49 ± 0.42	6.11 ± 0.20	11.06 ± 0.52	3.25 ± 0.28	8.73 ± 0.35	n = 13	Siemens ADVIA/ADVIA Centaur
1.18 ± 0.11	6.01 ± 0.14	11.18 ± 0.20	3.08 ± 0.09	8.46 ± 0.23	n = 27	Siemens Dimension
1.21 ± 0.20	6.02 ± 0.15	10.95 ± 0.19	3.00 ± 0.09	8.33 ± 0.23	n = 3	Other

New York State Department of Health – Wadsworth Center
Quantitative Urine Chemistry – Educational Proficiency Testing – 7 November 2011

Summary of Participant Performance (Mean and Standard Deviation)

Sodium (mmol/L)

Specimen: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
54.4 ± 1.59	149.7 ± 4.07	245.1 ± 6.00	102.7 ± 3.01	183.0 ± 7.73	n = 225	All Methods & Instruments
						<Method Principles>
54.3 ± 1.54	149.4 ± 3.62	244.6 ± 5.69	102.5 ± 2.75	182.3 ± 7.66	n = 187	Ion selective electrode (diluted)
54.9 ± 1.98	154.7 ± 7.06	251.8 ± 12.67	104.9 ± 3.85	187.6 ± 6.07	n = 33	Ion selective electrode (undiluted)
55.0 ± 0.00	148.6 ± 2.88	245.8 ± 4.71	100.7 ± 2.57	176.8 ± 7.01	n = 5	Other
						<Instruments>
52.9 ± 0.75	146.2 ± 1.61	241.8 ± 6.29	101.0 ± 1.22	183.8 ± 2.50	n = 8	Abbott Architect c System
55.1 ± 1.19	151.9 ± 1.59	249.0 ± 3.40	104.3 ± 1.09	189.1 ± 1.66	n = 25	Beckman Coulter AU Chemistry System
55.6 ± 1.56	152.3 ± 3.28	243.3 ± 4.60	105.6 ± 1.28	184.4 ± 1.02	n = 5	Beckman Coulter CX
54.4 ± 0.72	149.7 ± 2.13	244.4 ± 5.36	104.0 ± 1.22	183.6 ± 2.43	n = 8	Beckman Coulter LX-20
54.8 ± 1.16	150.4 ± 1.55	243.0 ± 2.53	103.9 ± 1.31	183.3 ± 2.05	n = 15	Beckman Coulter UniCel DxC 600
55.0 ± 0.96	149.4 ± 1.72	242.9 ± 3.66	103.9 ± 1.67	182.7 ± 2.69	n = 20	Beckman Coulter UniCel DxC 800
55.1 ± 2.20	160.9 ± 4.09	264.7 ± 13.13	107.7 ± 3.14	191.4 ± 4.32	n = 14	Ortho Vitros 5,1FS
54.6 ± 2.10	158.7 ± 3.06	256.1 ± 11.79	105.8 ± 0.76	189.0 ± 3.73	n = 8	Ortho Vitros 5600
52.9 ± 1.33	150.1 ± 1.81	247.0 ± 2.42	102.6 ± 1.48	185.4 ± 2.09	n = 14	Roche cobas c501
57.6 ± 1.73	150.0 ± 0.56	246.0 ± 4.39	103.6 ± 0.82	180.6 ± 2.22	n = 6	Roche Cobas INTEGRA
52.7 ± 2.22	151.7 ± 1.22	249.0 ± 5.76	102.7 ± 1.22	186.7 ± 1.51	n = 27	Roche MODULAR D/P
54.2 ± 0.65	151.9 ± 1.29	249.5 ± 4.17	103.7 ± 0.64	187.9 ± 1.03	n = 12	Siemens ADVIA 1800
54.0 ± 0.00	151.0 ± 0.90	247.7 ± 1.37	103.7 ± 0.51	187.6 ± 1.02	n = 3	Siemens ADVIA 2400
54.3 ± 0.51	146.4 ± 1.02	241.7 ± 2.26	100.3 ± 0.51	174.7 ± 1.37	n = 3	Siemens Dimension EXL
54.6 ± 1.23	145.8 ± 1.62	239.0 ± 3.15	100.3 ± 1.36	172.7 ± 2.26	n = 16	Siemens Dimension RxL
54.3 ± 1.21	144.9 ± 2.41	242.1 ± 4.04	97.3 ± 2.04	169.3 ± 3.72	n = 32	Siemens Dimension Vista
54.9 ± 0.85	146.1 ± 0.85	240.7 ± 2.88	100.6 ± 0.72	174.9 ± 2.06	n = 8	Siemens Dimension Xpand
						<Reagents>
52.9 ± 0.75	146.2 ± 1.61	241.8 ± 6.29	101.0 ± 1.22	183.8 ± 2.50	n = 8	Abbott
54.8 ± 1.07	149.9 ± 1.81	243.0 ± 3.56	104.0 ± 1.56	183.1 ± 2.43	n = 46	Beckman Coulter
55.0 ± 1.13	152.0 ± 1.55	249.1 ± 3.12	104.2 ± 1.10	189.2 ± 1.55	n = 24	Beckman Coulter AU Series
55.0 ± 2.17	160.0 ± 3.84	261.8 ± 13.55	107.0 ± 3.02	190.5 ± 4.38	n = 22	Ortho Clinical Diagnostics
52.9 ± 1.33	150.1 ± 1.81	247.0 ± 2.42	102.6 ± 1.48	185.4 ± 2.09	n = 14	Roche cobas c501/c311/c502/c701
52.7 ± 2.22	151.7 ± 1.22	249.0 ± 5.76	102.7 ± 1.22	186.7 ± 1.51	n = 27	Roche Hitachi and Modular D/P
57.6 ± 1.73	150.0 ± 0.56	246.0 ± 4.39	103.6 ± 0.82	180.6 ± 2.22	n = 6	Roche Integra and MIRA S
54.1 ± 0.61	151.6 ± 1.21	248.7 ± 3.82	103.7 ± 0.63	187.7 ± 1.14	n = 16	Siemens ADVIA/ADVIA Centaur
54.5 ± 1.11	145.5 ± 1.91	241.2 ± 3.69	99.1 ± 2.30	171.8 ± 3.69	n = 54	Siemens Dimension
53.4 ± 1.33	144.4 ± 2.61	238.7 ± 4.44	96.5 ± 2.33	167.9 ± 4.34	n = 5	Other

Summary of Participant Performance (Mean and Standard Deviation)

Phosphorus (mg/dL)

Specimen: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
49.39 ± 2.59	66.58 ± 3.30	81.63 ± 4.02	90.38 ± 4.41	137.47 ± 7.80	n = 158	All Methods & Instruments
						<Method Principles>
48.78 ± 2.02	65.61 ± 2.31	80.38 ± 3.18	89.37 ± 3.16	135.57 ± 5.09	n = 78	Phosphomolybdate - no reduction
48.41 ± 0.93	66.18 ± 1.05	80.63 ± 2.32	88.58 ± 2.52	138.54 ± 2.08	n = 3	Phosphomolybdate reduction (ANS)
50.71 ± 3.18	68.64 ± 4.10	84.06 ± 4.59	92.69 ± 6.24	142.19 ± 10.42	n = 45	Phosphomolybdate reduction (PMA phe
50.09 ± 2.61	68.17 ± 3.83	83.07 ± 3.66	92.10 ± 3.72	140.86 ± 9.04	n = 19	Phosphomolybdate reduction-other
49.45 ± 2.44	66.00 ± 2.60	81.11 ± 2.32	89.40 ± 3.63	135.98 ± 3.54	n = 10	Other
						<Instruments>
50.00 ± 1.30	65.35 ± 1.41	80.83 ± 1.68	88.87 ± 1.69	134.51 ± 2.64	n = 4	Abbott Architect c System
48.56 ± 1.46	65.52 ± 2.32	80.13 ± 2.82	88.87 ± 2.87	136.94 ± 4.22	n = 17	Beckman Coulter AU Chemistry System
48.97 ± 1.95	65.38 ± 2.79	81.30 ± 7.11	87.22 ± 5.32	132.39 ± 6.63	n = 3	Beckman Coulter CX
50.39 ± 1.41	66.02 ± 0.85	81.78 ± 2.03	89.74 ± 2.41	134.90 ± 1.16	n = 4	Beckman Coulter LX-20
50.46 ± 1.08	67.47 ± 2.04	82.69 ± 1.99	91.76 ± 1.90	138.34 ± 3.43	n = 7	Beckman Coulter UniCel DxC 600
49.49 ± 1.40	66.94 ± 1.92	82.06 ± 3.21	90.83 ± 3.12	136.63 ± 6.77	n = 15	Beckman Coulter UniCel DxC 800
52.45 ± 1.86	72.19 ± 2.31	86.99 ± 2.05	96.10 ± 2.78	149.97 ± 7.43	n = 8	Ortho Vitros 5,1FS
52.96 ± 1.91	72.53 ± 2.06	87.01 ± 2.46	96.35 ± 2.44	150.57 ± 5.76	n = 8	Ortho Vitros 5600
50.17 ± 1.70	65.89 ± 1.33	80.11 ± 2.01	90.22 ± 2.89	136.55 ± 3.37	n = 8	Roche cobas c501
48.33 ± 2.37	65.77 ± 1.93	80.97 ± 2.46	90.49 ± 2.70	136.94 ± 4.98	n = 5	Roche Cobas INTEGRA
47.68 ± 1.43	64.36 ± 1.66	78.93 ± 2.03	88.14 ± 2.16	134.12 ± 3.43	n = 24	Roche MODULAR D/P
48.11 ± 3.00	66.44 ± 2.69	81.67 ± 3.85	91.58 ± 3.74	138.55 ± 4.65	n = 11	Siemens ADVIA 1800
47.04 ± 2.93	66.10 ± 6.63	78.28 ± 5.89	89.39 ± 6.85	130.19 ± 8.04	n = 3	Siemens ADVIA 2400
53.49 ± 1.81	71.42 ± 2.37	87.66 ± 2.02	98.08 ± 3.39	147.99 ± 3.43	n = 10	Siemens Dimension RxL
47.91 ± 1.99	65.20 ± 2.36	80.07 ± 3.12	87.10 ± 2.81	132.65 ± 5.85	n = 24	Siemens Dimension Vista
51.50 ± 0.54	66.97 ± 1.06	82.95 ± 0.83	95.80 ± 6.48	141.24 ± 5.81	n = 3	Siemens Dimension Xpand
						<Reagents>
50.00 ± 1.30	65.35 ± 1.41	80.83 ± 1.68	88.87 ± 1.69	134.51 ± 2.64	n = 4	Abbott
49.90 ± 1.32	66.98 ± 1.93	82.13 ± 2.65	90.86 ± 2.74	137.22 ± 3.89	n = 27	Beckman Coulter
48.68 ± 1.44	65.66 ± 2.37	80.38 ± 2.65	89.11 ± 2.58	137.02 ± 3.78	n = 16	Beckman Coulter AU Series
52.51 ± 2.05	72.17 ± 2.51	86.83 ± 2.54	95.97 ± 2.93	149.45 ± 7.51	n = 17	Ortho Clinical Diagnostics
50.17 ± 1.70	65.89 ± 1.33	80.11 ± 2.01	90.22 ± 2.89	136.55 ± 3.37	n = 8	Roche cobas c501/c311/c502/c701
47.68 ± 1.43	64.36 ± 1.66	78.93 ± 2.03	88.14 ± 2.16	134.12 ± 3.43	n = 24	Roche Hitachi and Modular D/P
48.33 ± 2.37	65.77 ± 1.93	80.97 ± 2.46	90.49 ± 2.70	136.94 ± 4.98	n = 5	Roche Integra and MIRA S
47.87 ± 2.84	66.13 ± 3.70	80.99 ± 4.06	91.05 ± 4.37	136.70 ± 6.02	n = 15	Siemens ADVIA/ADVIA Centaur
50.05 ± 3.37	67.03 ± 3.93	82.94 ± 4.84	90.95 ± 6.72	140.15 ± 10.51	n = 35	Siemens Dimension
47.64 ± 0.79	66.75 ± 1.17	80.81 ± 0.61	87.57 ± 2.15	120.06 ± 21.44	n = 3	Other

Summary of Participant Performance (Mean and Standard Deviation)

Potassium (mmol/L)

Specimen: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
17.10 ± 0.65	34.71 ± 1.27	27.56 ± 0.84	41.93 ± 1.63	83.91 ± 4.09	n = 225	All Methods & Instruments
						<Method Principles>
17.07 ± 0.63	34.81 ± 1.25	27.51 ± 0.83	41.78 ± 1.49	83.48 ± 3.69	n = 188	Ion selective electrode (diluted)
17.28 ± 0.59	34.12 ± 1.14	27.84 ± 0.88	42.92 ± 1.74	87.08 ± 4.92	n = 33	Ion selective electrode (undiluted)
16.20 ± 0.95	34.58 ± 1.32	27.41 ± 0.69	41.05 ± 2.17	82.89 ± 3.19	n = 4	Other
						<Instruments>
17.01 ± 0.16	34.33 ± 0.60	27.12 ± 0.32	41.41 ± 0.62	82.90 ± 1.02	n = 8	Abbott Architect c System
17.67 ± 0.45	35.51 ± 0.71	27.66 ± 0.53	42.93 ± 0.79	85.66 ± 1.52	n = 24	Beckman Coulter AU Chemistry System
17.48 ± 0.20	35.73 ± 1.05	28.39 ± 0.85	43.04 ± 1.40	86.21 ± 1.72	n = 4	Beckman Coulter CX
17.01 ± 0.36	34.88 ± 0.53	27.82 ± 0.28	41.60 ± 0.66	83.13 ± 1.33	n = 8	Beckman Coulter LX-20
16.97 ± 0.17	34.68 ± 0.37	27.69 ± 0.30	41.16 ± 0.49	82.08 ± 0.80	n = 16	Beckman Coulter UniCel DxC 600
16.95 ± 0.18	34.55 ± 0.56	27.72 ± 0.41	41.19 ± 0.92	82.39 ± 1.52	n = 20	Beckman Coulter UniCel DxC 800
17.23 ± 0.36	33.43 ± 0.54	28.23 ± 0.72	43.76 ± 1.10	90.50 ± 1.68	n = 14	Ortho Vitros 5,1FS
17.57 ± 0.30	33.63 ± 0.56	28.67 ± 0.40	44.38 ± 0.76	91.72 ± 1.74	n = 8	Ortho Vitros 5600
17.03 ± 0.20	35.01 ± 0.74	27.12 ± 0.38	41.87 ± 0.78	83.30 ± 2.02	n = 14	Roche cobas c501
18.01 ± 0.08	35.37 ± 0.74	27.54 ± 0.41	43.36 ± 0.65	83.90 ± 2.00	n = 6	Roche Cobas INTEGRA
17.64 ± 0.52	36.32 ± 1.13	27.94 ± 0.92	43.43 ± 1.81	84.57 ± 5.94	n = 27	Roche MODULAR D/P
17.28 ± 0.35	35.51 ± 0.55	27.89 ± 0.19	42.31 ± 0.44	85.16 ± 0.94	n = 13	Siemens ADVIA 1800
17.50 ± 0.45	35.45 ± 0.45	27.92 ± 0.15	42.00 ± 0.00	85.74 ± 1.37	n = 3	Siemens ADVIA 2400
16.94 ± 0.10	33.27 ± 0.59	26.11 ± 0.20	41.00 ± 0.63	79.35 ± 0.91	n = 3	Siemens Dimension EXL
16.43 ± 0.33	32.76 ± 0.58	26.05 ± 0.16	39.59 ± 0.60	77.54 ± 1.55	n = 16	Siemens Dimension RxL
15.97 ± 0.46	34.50 ± 1.25	27.48 ± 1.00	40.94 ± 1.34	84.28 ± 3.64	n = 32	Siemens Dimension Vista
17.08 ± 0.21	33.64 ± 0.65	26.61 ± 0.44	41.08 ± 0.68	80.50 ± 1.88	n = 8	Siemens Dimension Xpand
						<Reagents>
17.01 ± 0.16	34.33 ± 0.60	27.12 ± 0.32	41.41 ± 0.62	82.90 ± 1.02	n = 8	Abbott
16.98 ± 0.22	34.68 ± 0.52	27.73 ± 0.36	41.29 ± 0.73	82.43 ± 1.33	n = 46	Beckman Coulter
17.69 ± 0.41	35.51 ± 0.71	27.66 ± 0.53	42.93 ± 0.79	85.67 ± 1.51	n = 23	Beckman Coulter AU Series
17.39 ± 0.36	33.54 ± 0.54	28.42 ± 0.67	44.07 ± 1.02	91.07 ± 1.86	n = 21	Ortho Clinical Diagnostics
17.03 ± 0.20	35.01 ± 0.74	27.12 ± 0.38	41.87 ± 0.78	83.30 ± 2.02	n = 14	Roche cobas c501/c311/c502/c701
17.66 ± 0.52	36.26 ± 1.13	27.90 ± 0.91	43.38 ± 1.77	84.47 ± 5.80	n = 28	Roche Hitachi and Modular D/P
18.00 ± 0.09	35.41 ± 0.83	27.62 ± 0.41	43.54 ± 0.53	84.23 ± 2.08	n = 5	Roche Integra and MIRA S
17.29 ± 0.39	35.45 ± 0.54	27.87 ± 0.22	42.19 ± 0.38	85.22 ± 1.05	n = 17	Siemens ADVIA/ADVIA Centaur
16.39 ± 0.60	33.72 ± 1.30	26.75 ± 0.97	40.50 ± 1.22	81.00 ± 4.51	n = 54	Siemens Dimension
15.81 ± 0.23	34.20 ± 0.84	27.33 ± 0.59	40.95 ± 1.19	84.37 ± 3.05	n = 5	Other

New York State Department of Health – Wadsworth Center
Quantitative Urine Chemistry – Educational Proficiency Testing – 7 November 2011

Summary of Participant Performance (Mean and Standard Deviation)

Total Protein (mg/dL)

Specimen: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
226.53 ± 16.18	4.39 ± 2.22	145.03 ± 6.81	41.17 ± 2.64	6.08 ± 3.68	n = 225	All Methods & Instruments
						<Method Principles>
226.04 ± 13.33	4.64 ± 2.19	144.47 ± 6.01	41.40 ± 2.59	6.31 ± 3.77	n = 96	Biuret (alkaline cupric sulfate)
323.22 ± 92.02	4.16 ± 1.54	201.13 ± 65.93	45.37 ± 3.87	5.56 ± 1.02	n = 3	Refractometry
242.19 ± 10.26	3.78 ± 2.10	148.92 ± 4.19	42.82 ± 1.42	4.45 ± 1.67	n = 27	Tubidimetric/Benzethonium Chloride
223.21 ± 16.14	4.43 ± 2.28	144.77 ± 7.44	40.36 ± 2.00	6.87 ± 4.12	n = 87	Pyrogallol red
291.36 ± 84.94	3.78 ± 1.85	160.56 ± 41.42	42.96 ± 4.50	4.91 ± 0.46	n = 12	Other
						<Instruments>
237.68 ± 4.47	6.84 ± 0.09	150.80 ± 2.18	42.33 ± 1.15	6.84 ± 0.09	n = 8	Abbott Architect c System
235.02 ± 12.11	3.37 ± 1.51	146.00 ± 6.18	39.82 ± 1.72	4.00 ± 0.00	n = 27	Beckman Coulter AU Chemistry System
244.46 ± 26.69	4.33 ± 2.54	152.53 ± 6.50	41.39 ± 1.18	5.62 ± 2.85	n = 4	Beckman Coulter CX
223.14 ± 19.60	3.09 ± 1.56	147.95 ± 8.01	41.04 ± 2.34	6.72 ± 0.94	n = 8	Beckman Coulter LX-20
213.14 ± 24.36	4.85 ± 1.81	147.57 ± 4.27	41.39 ± 2.25	7.06 ± 1.01	n = 13	Beckman Coulter UniCel DxC 600
218.89 ± 9.28	4.95 ± 1.89	142.81 ± 7.30	40.50 ± 1.79	6.73 ± 0.85	n = 18	Beckman Coulter UniCel DxC 800
347.31 ± 37.25	5.00 ± 0.00	194.70 ± 7.53	46.68 ± 3.84	5.00 ± 0.00	n = 12	Ortho Vitros 5,1FS
341.77 ± 27.15	5.00 ± 0.00	193.01 ± 22.26	47.93 ± 1.00	5.00 ± 0.00	n = 8	Ortho Vitros 5600
240.25 ± 26.65	2.19 ± 1.33	152.52 ± 4.82	41.95 ± 3.14	2.74 ± 1.33	n = 14	Roche cobas c501
235.58 ± 8.58	2.84 ± 1.37	144.22 ± 7.83	42.55 ± 2.34	4.75 ± 0.70	n = 8	Roche Cobas INTEGRA
236.85 ± 14.17	3.28 ± 2.45	144.58 ± 6.62	41.18 ± 2.96	3.54 ± 2.07	n = 29	Roche MODULAR D/P
213.45 ± 12.46	1.96 ± 0.48	133.58 ± 6.11	39.22 ± 0.89	2.95 ± 0.77	n = 14	Siemens ADVIA 1800
180.87 ± 56.56	2.43 ± 1.14	98.54 ± 69.38	38.04 ± 1.43	3.30 ± 1.27	n = 3	Siemens ADVIA 2400
230.58 ± 7.61	5.70 ± 1.27	920.38 ±1420.15	41.19 ± 1.57	11.81 ± 2.00	n = 3	Siemens Dimension EXL
223.61 ± 4.19	6.00 ± 0.00	143.98 ± 2.22	42.07 ± 1.23	11.74 ± 1.26	n = 14	Siemens Dimension RxL
220.07 ± 3.90	6.24 ± 0.98	143.78 ± 2.53	40.59 ± 1.72	11.75 ± 1.50	n = 32	Siemens Dimension Vista
222.74 ± 4.79	6.00 ± 0.00	144.65 ± 4.85	41.70 ± 1.22	10.01 ± 2.40	n = 8	Siemens Dimension Xpand
						<Reagents>
237.68 ± 4.47	6.84 ± 0.09	150.80 ± 2.18	42.33 ± 1.15	6.84 ± 0.09	n = 8	Abbott
218.12 ± 14.21	4.54 ± 1.91	145.26 ± 7.03	40.79 ± 1.94	6.82 ± 0.92	n = 42	Beckman Coulter
235.13 ± 11.37	3.44 ± 1.46	146.18 ± 5.64	39.74 ± 1.71	4.00 ± 0.00	n = 25	Beckman Coulter AU Series
347.57 ± 23.76	5.00 ± 0.00	196.57 ± 11.40	47.71 ± 2.51	5.00 ± 0.00	n = 19	Ortho Clinical Diagnostics
229.97 ± 28.03	2.00 ± 0.00	151.17 ± 9.25	35.86 ± 3.15	2.00 ± 0.00	n = 5	Pointe Scientific
241.05 ± 27.08	2.35 ± 1.39	152.15 ± 5.06	43.01 ± 1.96	3.01 ± 1.24	n = 12	Roche cobas c501/c311/c502/c701
238.60 ± 11.75	3.39 ± 2.58	144.80 ± 6.35	41.69 ± 2.09	3.66 ± 2.16	n = 24	Roche Hitachi and Modular D/P
235.58 ± 8.58	2.84 ± 1.37	144.22 ± 7.83	42.55 ± 2.34	4.75 ± 0.70	n = 8	Roche Integra and MIRA S
213.16 ± 12.75	1.95 ± 0.49	134.12 ± 5.57	39.07 ± 1.11	2.98 ± 0.86	n = 17	Siemens ADVIA/ADVIA Centaur
221.57 ± 4.94	6.06 ± 0.57	144.01 ± 3.08	41.22 ± 1.77	11.51 ± 1.69	n = 52	Siemens Dimension
222.30 ± 1.83	8.12 ± 2.52	144.57 ± 2.35	40.81 ± 0.84	12.39 ± 1.59	n = 5	Other

Summary of Participant Performance (Mean and Standard Deviation)

Uric Acid (mg/dL)

Specimen: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
17.84 ± 3.97	30.34 ± 1.99	14.13 ± 1.11	25.87 ± 2.64	41.53 ± 2.78	n = 162	All Methods & Instruments
						<Method Principles>
18.98 ± 3.48	30.09 ± 1.73	13.61 ± 0.55	26.18 ± 1.79	41.66 ± 1.99	n = 13	Uricase (NAD-NADH reaction)
17.32 ± 4.31	29.36 ± 2.02	13.91 ± 1.09	25.30 ± 2.80	40.15 ± 2.91	n = 53	Uricase/allantoin (differential abs
17.97 ± 3.77	30.88 ± 1.79	14.32 ± 1.14	26.13 ± 2.66	42.31 ± 2.34	n = 92	Uricase/peroxidase (colorimetric)
17.92 ± 4.26	31.12 ± 0.98	13.98 ± 0.27	25.76 ± 2.09	41.01 ± 3.67	n = 4	Other
						<Instruments>
16.22 ± 0.46	30.79 ± 1.09	14.27 ± 0.23	25.81 ± 2.81	41.76 ± 1.21	n = 5	Abbott Architect c System
19.53 ± 2.99	31.18 ± 1.20	13.97 ± 0.29	26.61 ± 1.13	42.72 ± 1.07	n = 17	Beckman Coulter AU Chemistry System
20.42 ± 4.75	31.23 ± 1.31	13.93 ± 2.03	28.07 ± 2.10	43.64 ± 1.78	n = 5	Beckman Coulter CX
19.06 ± 5.34	31.86 ± 0.51	15.03 ± 0.26	27.57 ± 2.73	43.55 ± 0.41	n = 5	Beckman Coulter LX-20
18.46 ± 3.78	31.63 ± 1.19	15.92 ± 0.46	28.35 ± 1.47	44.40 ± 0.46	n = 6	Beckman Coulter UniCel DxC 600
17.90 ± 3.91	32.26 ± 1.03	15.76 ± 0.79	27.85 ± 2.45	44.50 ± 0.48	n = 15	Beckman Coulter UniCel DxC 800
17.83 ± 2.33	31.78 ± 0.98	14.48 ± 0.48	26.44 ± 1.01	43.35 ± 0.91	n = 9	Ortho Vitros 5,1FS
15.80 ± 3.99	31.71 ± 0.94	14.24 ± 0.51	23.86 ± 3.53	43.04 ± 1.40	n = 7	Ortho Vitros 5600
16.83 ± 2.56	30.26 ± 1.48	13.97 ± 0.13	25.97 ± 1.82	40.59 ± 2.04	n = 10	Roche cobas c501
18.64 ± 4.00	29.94 ± 0.65	13.67 ± 0.27	24.58 ± 2.18	41.40 ± 0.92	n = 5	Roche Cobas INTEGRA
16.74 ± 4.01	28.65 ± 0.98	12.91 ± 0.39	24.46 ± 1.63	39.18 ± 1.36	n = 24	Roche MODULAR D/P
19.81 ± 2.48	31.01 ± 1.13	14.88 ± 0.60	26.85 ± 1.66	43.08 ± 1.20	n = 11	Siemens ADVIA 1800
18.20 ± 3.20	31.43 ± 0.50	14.73 ± 1.48	26.05 ± 1.53	43.53 ± 1.69	n = 3	Siemens ADVIA 2400
18.74 ± 5.00	30.90 ± 1.30	14.71 ± 1.25	27.18 ± 1.17	43.07 ± 1.55	n = 9	Siemens Dimension RxL
16.90 ± 4.82	27.94 ± 1.16	13.68 ± 0.60	22.81 ± 3.93	37.82 ± 1.44	n = 24	Siemens Dimension Vista
17.98 ± 1.17	28.39 ± 0.47	13.31 ± 0.80	24.65 ± 0.81	39.26 ± 0.82	n = 4	Siemens Dimension Xpand
						<Reagents>
16.22 ± 0.46	30.79 ± 1.09	14.27 ± 0.23	25.81 ± 2.81	41.76 ± 1.21	n = 5	Abbott
18.83 ± 4.15	31.97 ± 0.96	15.50 ± 0.97	28.09 ± 2.15	44.10 ± 0.88	n = 30	Beckman Coulter
18.97 ± 3.45	31.10 ± 1.09	14.00 ± 0.27	26.43 ± 1.13	42.59 ± 0.94	n = 15	Beckman Coulter AU Series
17.09 ± 3.14	31.75 ± 0.96	14.38 ± 0.51	25.94 ± 2.58	43.22 ± 1.14	n = 16	Ortho Clinical Diagnostics
16.83 ± 2.56	30.26 ± 1.48	13.97 ± 0.13	25.97 ± 1.82	40.59 ± 2.04	n = 10	Roche cobas c501/c311/c502/c701
16.74 ± 4.01	28.65 ± 0.98	12.91 ± 0.39	24.46 ± 1.63	39.18 ± 1.36	n = 24	Roche Hitachi and Modular D/P
18.64 ± 4.00	29.94 ± 0.65	13.67 ± 0.27	24.58 ± 2.18	41.40 ± 0.92	n = 5	Roche Integra and MIRA S
19.72 ± 2.51	31.10 ± 0.97	14.84 ± 0.76	26.79 ± 1.65	43.07 ± 1.23	n = 15	Siemens ADVIA/ADVIA Centaur
17.71 ± 4.50	28.78 ± 1.81	13.92 ± 0.91	24.92 ± 3.05	39.27 ± 2.71	n = 36	Siemens Dimension
14.73 ± 3.42	27.61 ± 0.52	13.30 ± 0.46	20.60 ± 2.36	37.58 ± 0.24	n = 3	Other

Summary of Participant Performance (Mean and Standard Deviation)

Urea Nitrogen (mg/dL)

Specimen: U91	Specimen: U92	Specimen: U93	Specimen: U94	Specimen: U95	Number	Instrument or Reagent System
989.8 ± 41.76	854.3 ± 36.18	710.8 ± 34.67	1450.1 ± 69.74	1259.3 ± 60.11	n = 167	All Methods & Instruments
						<Method Principles>
987.3 ± 42.51	851.9 ± 36.68	713.4 ± 34.47	1436.1 ± 67.82	1249.9 ± 56.46	n = 129	Urease w/glutamate dehydrogenase
997.2 ± 46.49	854.4 ± 28.87	714.0 ± 35.45	1474.1 ± 55.81	1266.2 ± 68.74	n = 20	Urease, conductivity rate
999.5 ± 31.64	873.1 ± 38.48	686.9 ± 23.42	1510.7 ± 44.47	1313.2 ± 34.55	n = 15	Urease with indicator dye
						<Instruments>
969.9 ± 23.77	833.2 ± 18.95	690.4 ± 20.05	1397.8 ± 5.30	1227.5 ± 29.01	n = 5	Abbott Architect c System
988.5 ± 25.30	846.8 ± 21.50	707.0 ± 25.24	1437.8 ± 43.38	1243.4 ± 39.26	n = 22	Beckman Coulter AU Chemistry System
1023.0 ± 35.15	850.0 ± 20.90	760.7 ± 44.34	1661.3 ± 243.91	1402.1 ± 230.65	n = 3	Beckman Coulter CX
1037.1 ± 69.13	856.8 ± 49.79	722.9 ± 39.28	1487.1 ± 48.13	1280.1 ± 79.20	n = 4	Beckman Coulter LX-20
970.7 ± 28.10	841.2 ± 27.84	711.9 ± 30.94	1413.8 ± 32.59	1237.8 ± 19.46	n = 8	Beckman Coulter UniCel DxC 600
989.4 ± 29.35	853.4 ± 22.67	711.0 ± 27.34	1470.4 ± 53.75	1258.0 ± 65.29	n = 16	Beckman Coulter UniCel DxC 800
1012.5 ± 25.54	871.8 ± 37.62	690.1 ± 20.88	1518.6 ± 37.73	1308.8 ± 31.28	n = 8	Ortho Vitros 5,1FS
973.5 ± 40.02	856.1 ± 36.23	672.1 ± 31.20	1497.6 ± 55.60	1307.9 ± 42.91	n = 8	Ortho Vitros 5600
979.6 ± 34.26	853.4 ± 28.02	708.4 ± 23.04	1433.7 ± 40.32	1242.8 ± 36.36	n = 11	Roche cobas c501
1031.2 ± 9.51	890.8 ± 18.83	743.7 ± 17.37	1501.9 ± 13.28	1338.9 ± 10.23	n = 4	Roche Cobas INTEGRA
972.2 ± 33.61	840.8 ± 29.09	707.2 ± 26.64	1423.8 ± 51.79	1238.6 ± 52.55	n = 24	Roche MODULAR D/P
1050.2 ± 33.99	910.7 ± 19.18	754.2 ± 20.73	1554.4 ± 39.78	1320.1 ± 51.59	n = 10	Siemens ADVIA 1800
985.8 ± 11.50	863.0 ± 22.89	514.0 ± 340.70	1452.3 ± 35.82	1246.1 ± 32.61	n = 3	Siemens ADVIA 2400
1050.9 ± 39.15	904.8 ± 36.16	756.4 ± 31.70	1537.2 ± 80.16	1330.1 ± 51.82	n = 9	Siemens Dimension RxL
967.4 ± 30.51	834.1 ± 28.80	695.3 ± 28.92	1393.1 ± 51.56	1219.2 ± 44.96	n = 24	Siemens Dimension Vista
1017.8 ± 11.97	869.1 ± 9.88	736.7 ± 12.81	1457.4 ± 24.48	1277.9 ± 17.96	n = 4	Siemens Dimension Xpand
						<Reagents>
969.9 ± 23.77	833.2 ± 18.95	690.4 ± 20.05	1397.8 ± 5.30	1227.5 ± 29.01	n = 5	Abbott
986.2 ± 39.21	850.6 ± 27.27	714.3 ± 31.22	1457.9 ± 59.63	1253.7 ± 56.60	n = 30	Beckman Coulter
992.2 ± 23.23	848.3 ± 22.29	708.9 ± 24.61	1443.9 ± 38.49	1249.4 ± 35.74	n = 20	Beckman Coulter AU Series
995.4 ± 35.45	867.6 ± 40.54	683.8 ± 25.86	1506.1 ± 47.70	1308.5 ± 36.02	n = 17	Ortho Clinical Diagnostics
979.6 ± 34.26	853.4 ± 28.02	708.4 ± 23.04	1433.7 ± 40.32	1242.8 ± 36.36	n = 11	Roche cobas c501/c311/c502/c701
972.2 ± 33.61	840.8 ± 29.09	707.2 ± 26.64	1423.8 ± 51.79	1238.6 ± 52.55	n = 24	Roche Hitachi and Modular D/P
1031.2 ± 9.51	890.8 ± 18.83	743.7 ± 17.37	1501.9 ± 13.28	1338.9 ± 10.23	n = 4	Roche Integra and MIRA S
1027.7 ± 46.97	896.8 ± 32.51	742.0 ± 31.52	1502.6 ± 93.72	1290.2 ± 68.45	n = 14	Siemens ADVIA/ADVIA Centaur
998.9 ± 53.44	858.2 ± 47.06	716.4 ± 44.27	1434.5 ± 90.72	1259.2 ± 73.63	n = 35	Siemens Dimension
963.6 ± 26.10	839.6 ± 12.71	721.2 ± 25.01	1426.6 ± 46.54	1237.0 ± 25.33	n = 4	Other