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Endocrinology Proficiency Test Program
Statistical Summary – August 2016 (Event 16-3)

This statistical report summarizes participant data for the five Endocrinology proficiency survey specimens shipped 29 August 2016. Test specimens E46-E50 were prepared by the quantitative transfer of constituents to a pooled human serum base. This material was subsequently sterile-filtered, dispensed into aliquots, stored at –80°C, and distributed to participants for analysis.

Results for individual instrument and reagent systems where the number of laboratories using those systems is three or greater are provided. Mean and Standard Deviation (± 1 SD) values are calculated by a robust statistical technique that does not assume a Gaussian distribution.

Disclaimer

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.

Should you have any questions regarding this report, please contact the Endocrinology Section at (518) 474-6930 or email: clinchem@wadsworth.org

Statistical Summary (Mean and Standard Deviation)

Thyroxin (T4, µg/dL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
1.34 ± 0.39 1.30	5.81 ± 0.76 5.70	8.70 ± 1.16 8.62	13.28 ± 1.81 13.20	12.99 ± 1.86 12.86	n = 107 n = 107	All Methods & Instruments Median value, All Methods & Instruments
<Instruments>						
1.82 ± 0.23	4.98 ± 0.28	7.32 ± 0.35	11.13 ± 0.38	10.87 ± 0.59	n = 9	Abbott Architect i System
1.14 ± 0.10	5.32 ± 0.30	8.19 ± 0.44	12.51 ± 0.71	11.85 ± 0.89	n = 12	Beckman Coulter ACCESS
1.51 ± 0.20	6.00 ± 0.09	8.13 ± 0.50	13.72 ± 0.49	13.43 ± 0.69	n = 3	Beckman Coulter AU Chemistry System
1.04 ± 0.17	5.48 ± 0.10	7.96 ± 0.82	13.27 ± 1.09	12.32 ± 0.53	n = 6	Beckman Coulter UniCel DxI 600
1.00 ± 0.16	5.46 ± 0.36	8.07 ± 0.65	13.12 ± 0.69	11.82 ± 0.84	n = 8	Beckman Coulter UniCel DxI 800
1.51 ± 0.11	6.36 ± 0.32	9.87 ± 0.43	14.95 ± 0.69	15.43 ± 0.70	n = 8	Ortho Vitros 5600
1.78 ± 0.10	6.72 ± 0.29	9.28 ± 0.31	14.73 ± 0.38	14.29 ± 0.43	n = 8	Roche cobas e601
1.63 ± 0.05	6.39 ± 0.20	9.07 ± 0.42	14.25 ± 0.36	13.55 ± 0.45	n = 3	Roche MODULAR E
1.22 ± 0.18	5.23 ± 0.37	8.12 ± 0.46	11.46 ± 0.47	11.84 ± 0.61	n = 12	Siemens ADVIA Centaur
1.01 ± 0.27	5.87 ± 0.38	10.14 ± 1.59	14.26 ± 0.69	13.22 ± 2.25	n = 4	Siemens Dimension EXL
1.40 ± 0.57	6.56 ± 0.69	10.13 ± 0.44	15.46 ± 0.61	15.00 ± 0.57	n = 17	Siemens Dimension Vista
1.00 ± 0.00	5.60 ± 0.27	8.67 ± 0.85	13.23 ± 1.22	13.07 ± 0.50	n = 3	Siemens Immulite 1000
1.00 ± 0.13	5.94 ± 0.28	8.69 ± 0.43	12.42 ± 0.58	13.06 ± 0.88	n = 5	Siemens Immulite 2000
1.50 ± 0.00	4.99 ± 0.20	6.97 ± 0.41	11.50 ± 0.36	10.46 ± 0.56	n = 3	Tosoh Bioscience
1.31 ± 0.32	5.76 ± 0.60	8.59 ± 1.00	13.31 ± 1.41	12.85 ± 1.46	n = 14	Mean of Above Means
<Reagents>						
1.82 ± 0.23	4.98 ± 0.28	7.32 ± 0.35	11.13 ± 0.38	10.87 ± 0.59	n = 9	Abbott
1.09 ± 0.15	5.41 ± 0.32	8.12 ± 0.59	12.83 ± 0.86	11.96 ± 0.83	n = 26	Beckman Coulter
1.51 ± 0.20	6.00 ± 0.09	8.13 ± 0.50	13.72 ± 0.49	13.43 ± 0.69	n = 3	Microgenics DRI
1.54 ± 0.12	6.42 ± 0.36	9.95 ± 0.46	14.89 ± 0.67	15.43 ± 0.61	n = 9	Ortho Clinical Diagnostics
1.75 ± 0.11	6.59 ± 0.32	9.25 ± 0.37	14.62 ± 0.53	14.14 ± 0.59	n = 14	Roche Elecsys/Modular E/e601/e411
1.22 ± 0.18	5.23 ± 0.37	8.12 ± 0.46	11.46 ± 0.47	11.84 ± 0.61	n = 12	Siemens ADVIA/ADVIA Centaur
1.20 ± 0.44	6.39 ± 0.75	10.00 ± 0.50	15.01 ± 0.85	14.76 ± 0.71	n = 19	Siemens Dimension
1.93 ± 0.43	6.38 ± 0.45	10.03 ± 0.32	15.87 ± 0.28	15.00 ± 0.37	n = 3	Siemens Dimension LOCI
1.00 ± 0.00	5.82 ± 0.32	8.73 ± 0.58	12.66 ± 0.93	13.06 ± 0.74	n = 8	Siemens Immulite
1.45 ± 0.35	5.95 ± 0.60	8.85 ± 1.04	13.62 ± 1.70	13.44 ± 1.62	n = 9	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Free T4 (ng/dL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
0.30 ± 0.06 0.30	1.11 ± 0.15 1.10	1.45 ± 0.23 1.43	2.68 ± 0.66 2.72	2.39 ± 0.44 2.40	n = 133 n = 133	All Methods & Instruments Median value, All Methods & Instruments
<Instruments>						
0.40 ± 0.00	0.87 ± 0.05	1.13 ± 0.05	1.96 ± 0.08	1.79 ± 0.09	n = 12	Abbott Architect i System
0.30 ± 0.00	1.01 ± 0.05	1.43 ± 0.05	2.16 ± 0.08	2.13 ± 0.10	n = 11	Beckman Coulter ACCESS
0.30 ± 0.00	0.99 ± 0.06	1.34 ± 0.08	2.31 ± 0.10	2.21 ± 0.11	n = 7	Beckman Coulter UniCel DxI 600
0.25 ± 0.05	1.03 ± 0.05	1.36 ± 0.09	2.29 ± 0.08	2.27 ± 0.16	n = 8	Beckman Coulter UniCel DxI 800
0.20 ± 0.00	1.27 ± 0.10	1.77 ± 0.13	5.15 ± 0.29	4.48 ± 0.21	n = 9	Ortho Vitros 5600
0.23 ± 0.05	1.25 ± 0.04	1.78 ± 0.07	5.14 ± 0.32	4.57 ± 0.20	n = 3	Ortho Vitros Eci/ECiQ
0.30 ± 0.02	1.31 ± 0.03	1.75 ± 0.06	3.63 ± 0.10	3.10 ± 0.11	n = 8	Roche cobas e601
0.29 ± 0.02	1.30 ± 0.01	1.77 ± 0.05	3.63 ± 0.09	3.09 ± 0.07	n = 3	Roche MODULAR E
0.27 ± 0.07	1.02 ± 0.07	1.23 ± 0.08	2.61 ± 0.14	2.23 ± 0.12	n = 14	Siemens ADVIA Centaur
0.31 ± 0.01	1.18 ± 0.03	1.54 ± 0.06	2.90 ± 0.13	2.58 ± 0.08	n = 11	Siemens Dimension EXL
0.31 ± 0.02	1.14 ± 0.05	1.47 ± 0.07	2.83 ± 0.08	2.47 ± 0.08	n = 24	Siemens Dimension Vista
0.19 ± 0.10	0.70 ± 0.09	1.08 ± 0.13	1.82 ± 0.14	1.78 ± 0.12	n = 3	Siemens Dimension Xpand
0.34 ± 0.05	1.18 ± 0.07	1.56 ± 0.10	2.75 ± 0.13	2.41 ± 0.12	n = 8	Siemens Immulite 2000
0.17 ± 0.05	1.03 ± 0.05	1.43 ± 0.05	3.94 ± 0.10	3.10 ± 0.09	n = 3	Tosoh Bioscience
0.28 ± 0.06	1.11 ± 0.17	1.48 ± 0.24	2.94 ± 1.03	2.55 ± 0.73	n = 14	Mean of Above Means
<Reagents>						
0.40 ± 0.00	0.87 ± 0.05	1.13 ± 0.05	1.96 ± 0.08	1.79 ± 0.09	n = 12	Abbott
0.28 ± 0.04	1.01 ± 0.05	1.39 ± 0.08	2.24 ± 0.11	2.18 ± 0.14	n = 26	Beckman Coulter
0.22 ± 0.03	1.27 ± 0.08	1.77 ± 0.12	5.15 ± 0.30	4.51 ± 0.21	n = 12	Ortho Clinical Diagnostics
0.29 ± 0.02	1.30 ± 0.00	1.77 ± 0.06	3.64 ± 0.09	3.10 ± 0.10	n = 15	Roche Elecsys/Modular E/e601/e411
0.27 ± 0.07	1.02 ± 0.07	1.23 ± 0.08	2.61 ± 0.14	2.23 ± 0.12	n = 14	Siemens ADVIA/ADVIA Centaur
0.25 ± 0.08	0.78 ± 0.16	1.11 ± 0.18	1.78 ± 0.13	1.83 ± 0.25	n = 5	Siemens Dimension
0.31 ± 0.02	1.16 ± 0.05	1.49 ± 0.08	2.85 ± 0.10	2.51 ± 0.09	n = 34	Siemens Dimension LOCI
0.34 ± 0.05	1.16 ± 0.07	1.53 ± 0.11	2.71 ± 0.14	2.38 ± 0.11	n = 10	Siemens Immulite
0.29 ± 0.05	1.08 ± 0.18	1.42 ± 0.27	2.64 ± 0.85	2.26 ± 0.45	n = 8	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

T3-Uptake (%)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
31.87 ± 5.28 30.60	36.33 ± 5.45 35.70	36.19 ± 6.09 35.30	40.83 ± 5.91 41.40	39.45 ± 6.57 40.00	n = 67 n = 67	All Methods & Instruments Median value, All Methods & Instruments
<Instruments>						
28.97 ± 0.53	30.40 ± 0.74	28.00 ± 0.18	31.22 ± 0.70	27.86 ± 0.67	n = 5	Abbott Architect i System
39.33 ± 1.78	42.18 ± 2.08	43.05 ± 3.03	45.76 ± 3.55	45.05 ± 2.04	n = 9	Beckman Coulter ACCESS
30.37 ± 3.87	35.48 ± 4.61	35.68 ± 4.22	40.04 ± 3.58	38.32 ± 3.07	n = 3	Beckman Coulter AU Chemistry System
37.45 ± 1.64	41.83 ± 0.68	40.59 ± 1.08	45.15 ± 1.77	44.57 ± 1.61	n = 3	Beckman Coulter UniCel DxI 600
39.27 ± 1.31	42.88 ± 1.86	43.19 ± 0.62	46.29 ± 2.39	46.30 ± 1.98	n = 7	Beckman Coulter UniCel DxI 800
32.19 ± 0.92	37.50 ± 0.95	37.44 ± 1.76	42.80 ± 1.94	41.62 ± 1.57	n = 5	Ortho Vitros 5600
30.19 ± 1.37	38.81 ± 3.84	38.56 ± 4.54	41.08 ± 2.62	42.45 ± 4.87	n = 6	Siemens ADVIA Centaur
29.84 ± 1.27	34.38 ± 1.80	36.00 ± 2.45	39.00 ± 2.45	37.73 ± 2.26	n = 4	Siemens Dimension EXL
30.04 ± 1.40	34.17 ± 1.47	33.78 ± 1.45	40.44 ± 2.82	37.47 ± 2.53	n = 12	Siemens Dimension Vista
26.01 ± 0.62	28.79 ± 1.25	27.95 ± 0.90	29.50 ± 1.03	28.28 ± 1.90	n = 5	Siemens Immulite 2000
31.99 ± 4.69	36.76 ± 5.00	36.73 ± 5.39	40.88 ± 5.38	39.69 ± 6.31	n = 10	Mean of Above Means
<Reagents>						
28.97 ± 0.53	30.40 ± 0.74	28.00 ± 0.18	31.22 ± 0.70	27.86 ± 0.67	n = 5	Abbott
39.07 ± 1.70	42.32 ± 1.83	42.62 ± 2.13	45.80 ± 2.84	45.40 ± 2.11	n = 19	Beckman Coulter
31.90 ± 1.07	37.19 ± 1.24	37.40 ± 1.53	42.64 ± 1.75	41.33 ± 1.57	n = 6	Ortho Clinical Diagnostics
29.78 ± 0.24	34.76 ± 0.39	35.19 ± 0.20	40.97 ± 1.87	39.62 ± 1.67	n = 3	Roche Elecsys/Modular E/e601/e411
30.19 ± 1.37	38.81 ± 3.84	38.56 ± 4.54	41.08 ± 2.62	42.45 ± 4.87	n = 6	Siemens ADVIA/ADVIA Centaur
30.00 ± 1.37	34.19 ± 1.59	34.11 ± 2.05	40.05 ± 2.83	37.54 ± 2.46	n = 16	Siemens Dimension
25.93 ± 0.57	29.09 ± 1.40	28.45 ± 1.13	30.15 ± 1.51	28.82 ± 2.16	n = 7	Siemens Immulite
29.73 ± 1.95	35.20 ± 4.59	34.98 ± 5.27	39.38 ± 5.76	38.11 ± 6.70	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

T Uptake (Unit)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
1.120 ± 0.118	1.002 ± 0.062	1.035 ± 0.036	0.876 ± 0.076	0.966 ± 0.103	n = 6	All Methods & Instruments
1.060	1.020	1.020	0.840	0.900	n = 6	Median value, All Methods & Instruments
						<Instruments>
1.013 ± 0.034	0.953 ± 0.060	1.075 ± 0.046	0.939 ± 0.044	1.052 ± 0.041	n = 3	Abbott Architect i System
1.220 ± 0.018	1.034 ± 0.026	1.014 ± 0.010	0.815 ± 0.019	0.880 ± 0.018	n = 3	Roche cobas e601
1.117 ± 0.118	0.994 ± 0.046	1.044 ± 0.035	0.877 ± 0.071	0.966 ± 0.098	n = 2	Mean of Above Means
						<Reagents>
1.013 ± 0.034	0.953 ± 0.060	1.075 ± 0.046	0.939 ± 0.044	1.052 ± 0.041	n = 3	Abbott
1.220 ± 0.018	1.034 ± 0.026	1.014 ± 0.010	0.815 ± 0.019	0.880 ± 0.018	n = 3	Roche Elecsys/Modular E/e601/e411
1.117 ± 0.118	0.994 ± 0.046	1.044 ± 0.035	0.877 ± 0.071	0.966 ± 0.098	n = 2	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Triiodothyronine (T3, ng/dL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
16.0 ± 11.43	33.3 ± 16.95	122.7 ± 24.80	182.2 ± 32.57	237.7 ± 45.31	n = 81	All Methods & Instruments
12.0	33.3	122.0	184.0	240.0	n = 81	Median value, All Methods & Instruments
<Instruments>						
25.9 ± 1.72	41.8 ± 10.15	118.6 ± 6.75	178.0 ± 11.75	240.3 ± 18.11	n = 10	Abbott Architect i System
6.5 ± 3.02	20.6 ± 4.49	104.7 ± 1.62	152.8 ± 8.90	194.0 ± 8.27	n = 7	Beckman Coulter ACCESS
9.9 ± 6.46	21.0 ± 4.80	108.0 ± 6.33	154.6 ± 5.24	193.8 ± 9.07	n = 6	Beckman Coulter UniCel DxI 600
10.0 ± 0.00	14.9 ± 5.73	97.2 ± 7.71	152.5 ± 12.25	182.1 ± 19.25	n = 7	Beckman Coulter UniCel DxI 800
15.0 ± 3.99	36.6 ± 2.23	129.7 ± 2.81	190.3 ± 2.49	236.3 ± 15.19	n = 6	Ortho Vitros 5600
25.1 ± 1.92	69.8 ± 1.86	191.0 ± 6.48	262.2 ± 10.22	339.9 ± 14.26	n = 6	Roche cobas e601
22.3 ± 2.26	64.3 ± 4.68	189.4 ± 9.84	257.0 ± 13.64	322.1 ± 15.35	n = 3	Roche MODULAR E
9.4 ± 6.52	33.9 ± 5.25	134.2 ± 10.40	194.9 ± 11.28	252.3 ± 11.53	n = 21	Siemens ADVIA Centaur
40.0 ± 0.00	40.0 ± 0.00	107.5 ± 3.78	172.0 ± 12.08	217.4 ± 12.87	n = 5	Siemens Immulite 2000
12.6 ± 8.81	20.3 ± 0.51	119.7 ± 0.51	180.6 ± 1.02	236.4 ± 4.72	n = 3	Tosoh Bioscience
16.2 ± 9.65	34.4 ± 18.21	123.2 ± 29.19	182.7 ± 35.99	234.6 ± 49.27	n = 10	Mean of Above Means
<Reagents>						
25.9 ± 1.72	41.8 ± 10.15	118.6 ± 6.75	178.0 ± 11.75	240.3 ± 18.11	n = 10	Abbott
8.4 ± 4.63	18.7 ± 6.08	102.9 ± 7.22	153.8 ± 9.67	191.8 ± 11.81	n = 20	Beckman Coulter
14.8 ± 3.67	36.6 ± 2.00	129.6 ± 2.53	190.1 ± 8.96	234.5 ± 12.49	n = 7	Ortho Clinical Diagnostics
23.7 ± 2.57	68.7 ± 2.42	190.9 ± 6.87	262.1 ± 9.38	334.3 ± 14.32	n = 11	Roche Elecsys/Modular E/e601/e411
9.7 ± 6.58	34.3 ± 5.88	135.0 ± 11.07	195.8 ± 13.15	253.6 ± 13.73	n = 22	Siemens ADVIA/ADVIA Centaur
40.0 ± 0.00	40.0 ± 0.00	107.5 ± 6.77	171.3 ± 13.51	226.5 ± 20.29	n = 7	Siemens Immulite
19.5 ± 11.39	38.2 ± 13.85	122.5 ± 22.19	183.0 ± 26.81	238.5 ± 37.62	n = 6	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Free T3 (pg/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
0.64 ± 0.33 0.50	1.11 ± 0.42 1.10	3.39 ± 0.64 3.30	5.45 ± 0.80 5.20	6.53 ± 0.90 6.30	n = 67 n = 67	All Methods & Instruments Median value, All Methods & Instruments
						<Instruments>
1.00 ± 0.00	1.03 ± 0.05	2.99 ± 0.23	4.68 ± 0.34	5.74 ± 0.39	n = 8	Abbott Architect i System
0.68 ± 0.17	1.32 ± 0.10	3.34 ± 0.10	5.08 ± 0.12	6.23 ± 0.21	n = 5	Beckman Coulter ACCESS
0.65 ± 0.46	1.27 ± 0.05	3.23 ± 0.14	4.90 ± 0.18	5.91 ± 0.20	n = 3	Beckman Coulter UniCel DxI 600
0.67 ± 0.25	1.30 ± 0.06	2.93 ± 0.22	4.74 ± 0.20	5.47 ± 0.33	n = 4	Beckman Coulter UniCel DxI 800
0.50 ± 0.00	0.84 ± 0.03	3.45 ± 0.28	5.42 ± 0.57	7.59 ± 0.18	n = 3	Ortho Vitros 5600
0.25 ± 0.16	1.16 ± 0.15	3.66 ± 0.12	6.01 ± 0.20	6.71 ± 0.17	n = 14	Siemens ADVIA Centaur
0.50 ± 0.00	0.50 ± 0.00	2.77 ± 0.11	5.10 ± 0.14	6.11 ± 0.11	n = 12	Siemens Dimension Vista
1.00 ± 0.00	1.82 ± 0.26	4.67 ± 0.29	6.36 ± 0.43	7.85 ± 0.31	n = 6	Siemens Immulite 2000
0.65 ± 0.25	1.16 ± 0.36	3.23 ± 0.41	5.21 ± 0.58	6.37 ± 0.85	n = 8	Mean of Above Means
						<Reagents>
1.00 ± 0.00	1.03 ± 0.05	2.99 ± 0.23	4.68 ± 0.34	5.74 ± 0.39	n = 8	Abbott
0.70 ± 0.25	1.30 ± 0.08	3.21 ± 0.23	4.94 ± 0.23	5.93 ± 0.41	n = 12	Beckman Coulter
0.50 ± 0.00	0.81 ± 0.06	3.43 ± 0.22	5.34 ± 0.51	7.48 ± 0.29	n = 4	Ortho Clinical Diagnostics
0.67 ± 0.19	1.40 ± 0.00	4.10 ± 0.00	6.63 ± 0.17	8.00 ± 0.09	n = 6	Roche Elecsys/Modular E/e601/e411
0.25 ± 0.16	1.16 ± 0.15	3.66 ± 0.12	6.01 ± 0.20	6.71 ± 0.17	n = 14	Siemens ADVIA/ADVIA Centaur
0.50 ± 0.00	0.50 ± 0.00	2.75 ± 0.10	5.09 ± 0.12	6.08 ± 0.09	n = 10	Siemens Dimension LOCI
1.00 ± 0.00	1.81 ± 0.23	4.62 ± 0.29	6.28 ± 0.43	7.77 ± 0.40	n = 7	Siemens Immulite
0.66 ± 0.27	1.14 ± 0.40	3.49 ± 0.63	5.54 ± 0.76	6.80 ± 0.97	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Thyrotropin (TSH, $\mu\text{U/mL}$)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
1.68 \pm 0.14	0.37 \pm 0.04	8.28 \pm 0.95	3.09 \pm 0.22	6.47 \pm 0.73	n = 161	All Methods & Instruments
1.66	0.38	8.20	3.10	6.48	n = 161	Median value, All Methods & Instruments
<Instruments>						
1.53 \pm 0.08	0.33 \pm 0.02	7.21 \pm 0.44	2.82 \pm 0.13	5.60 \pm 0.27	n = 12	Abbott Architect i System
1.63 \pm 0.09	0.38 \pm 0.04	8.12 \pm 0.52	3.06 \pm 0.16	6.31 \pm 0.41	n = 16	Beckman Coulter ACCESS
1.66 \pm 0.13	0.37 \pm 0.04	8.05 \pm 0.72	3.10 \pm 0.24	6.29 \pm 0.48	n = 10	Beckman Coulter UniCel DxI 600
1.62 \pm 0.09	0.38 \pm 0.03	8.14 \pm 0.39	3.02 \pm 0.13	6.39 \pm 0.33	n = 8	Beckman Coulter UniCel DxI 800
1.95 \pm 0.08	0.30 \pm 0.00	11.12 \pm 0.49	4.17 \pm 0.15	8.53 \pm 0.31	n = 10	Ortho Vitros 5600
1.84 \pm 0.07	0.42 \pm 0.03	7.81 \pm 0.37	3.08 \pm 0.18	6.09 \pm 0.38	n = 6	Roche cobas e411
1.74 \pm 0.05	0.41 \pm 0.01	7.30 \pm 0.19	2.96 \pm 0.08	5.79 \pm 0.18	n = 9	Roche cobas e601
1.77 \pm 0.05	0.41 \pm 0.01	7.26 \pm 0.10	2.93 \pm 0.05	5.70 \pm 0.09	n = 3	Roche cobas e602
1.84 \pm 0.05	0.41 \pm 0.02	7.60 \pm 0.18	3.05 \pm 0.05	6.02 \pm 0.06	n = 3	Roche MODULAR E
1.69 \pm 0.12	0.36 \pm 0.03	8.16 \pm 0.30	3.19 \pm 0.11	6.42 \pm 0.26	n = 16	Siemens ADVIA Centaur
1.67 \pm 0.07	0.40 \pm 0.02	9.17 \pm 0.26	3.24 \pm 0.13	7.10 \pm 0.31	n = 17	Siemens Dimension EXL
1.60 \pm 0.05	0.37 \pm 0.02	8.77 \pm 0.25	3.09 \pm 0.11	6.78 \pm 0.25	n = 25	Siemens Dimension Vista
1.53 \pm 0.08	0.30 \pm 0.02	7.26 \pm 0.30	2.84 \pm 0.13	5.51 \pm 0.16	n = 4	Siemens Dimension Xpand
1.67 \pm 0.12	0.40 \pm 0.01	9.13 \pm 0.62	3.49 \pm 0.20	7.16 \pm 0.43	n = 4	Siemens Immulite 1000
1.73 \pm 0.14	0.35 \pm 0.04	8.02 \pm 0.51	3.11 \pm 0.21	6.31 \pm 0.39	n = 10	Siemens Immulite 2000
1.84 \pm 0.05	0.42 \pm 0.04	6.40 \pm 4.38	3.50 \pm 0.01	7.08 \pm 0.59	n = 3	Tosoh Bioscience
1.70 \pm 0.12	0.38 \pm 0.04	7.92 \pm 0.83	3.08 \pm 0.18	6.32 \pm 0.62	n = 16	Mean of Above Means
<Reagents>						
1.53 \pm 0.08	0.33 \pm 0.02	7.21 \pm 0.44	2.82 \pm 0.13	5.60 \pm 0.27	n = 12	Abbott
1.64 \pm 0.11	0.38 \pm 0.04	8.11 \pm 0.56	3.06 \pm 0.19	6.33 \pm 0.41	n = 34	Beckman Coulter
1.94 \pm 0.07	0.30 \pm 0.00	11.05 \pm 0.46	4.15 \pm 0.14	8.50 \pm 0.29	n = 12	Ortho Clinical Diagnostics
1.78 \pm 0.07	0.41 \pm 0.01	7.44 \pm 0.27	2.98 \pm 0.10	5.87 \pm 0.25	n = 22	Roche Elecsys/Modular E/e601/e411
1.75 \pm 0.10	0.38 \pm 0.03	8.33 \pm 0.25	3.27 \pm 0.05	6.58 \pm 0.16	n = 10	Siemens ADVIA/ADVIA Centaur
1.55 \pm 0.09	0.31 \pm 0.02	7.32 \pm 0.27	2.88 \pm 0.20	5.70 \pm 0.46	n = 6	Siemens Dimension
1.62 \pm 0.07	0.39 \pm 0.02	8.91 \pm 0.34	3.14 \pm 0.14	6.89 \pm 0.32	n = 41	Siemens Dimension LOCI
1.71 \pm 0.14	0.36 \pm 0.04	8.37 \pm 0.78	3.23 \pm 0.29	6.59 \pm 0.61	n = 14	Siemens Immulite
1.59 \pm 0.05	0.34 \pm 0.01	7.93 \pm 0.10	3.08 \pm 0.07	6.23 \pm 0.11	n = 6	Siemens TSH-3
1.67 \pm 0.12	0.35 \pm 0.04	7.96 \pm 0.65	3.06 \pm 0.16	6.26 \pm 0.55	n = 9	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Vitamin B12 (pg/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
391.3 ± 50.84	307.8 ± 46.42	357.7 ± 52.74	333.3 ± 49.59	359.3 ± 53.77	n = 112	All Methods & Instruments
396.0	307.0	354.0	332.0	364.0	n = 112	Median value, All Methods & Instruments
<Instruments>						
448.9 ± 23.81	357.0 ± 24.09	404.3 ± 29.35	388.7 ± 21.62	410.7 ± 25.18	n = 10	Abbott Architect i System
339.9 ± 21.80	264.1 ± 9.70	309.5 ± 13.56	291.7 ± 13.52	312.8 ± 15.78	n = 12	Beckman Coulter ACCESS
316.3 ± 16.37	252.2 ± 16.47	291.0 ± 8.90	280.0 ± 14.78	293.7 ± 17.88	n = 8	Beckman Coulter UniCel DxI 600
319.1 ± 16.81	249.5 ± 14.75	286.1 ± 21.43	268.1 ± 12.59	291.7 ± 10.24	n = 9	Beckman Coulter UniCel DxI 800
414.8 ± 14.23	314.0 ± 12.25	372.2 ± 20.70	338.9 ± 19.62	366.8 ± 19.59	n = 9	Ortho Vitros 5600
425.3 ± 11.09	334.3 ± 17.04	379.3 ± 19.25	363.6 ± 12.31	397.7 ± 20.36	n = 7	Roche cobas e601
404.3 ± 25.17	343.0 ± 25.96	402.7 ± 28.42	372.0 ± 26.97	405.9 ± 27.64	n = 22	Siemens ADVIA Centaur
390.5 ± 10.32	291.2 ± 18.20	338.0 ± 10.70	315.9 ± 12.87	341.0 ± 16.47	n = 16	Siemens Dimension Vista
364.1 ± 31.86	274.4 ± 28.44	331.1 ± 22.53	301.1 ± 31.96	330.2 ± 35.56	n = 7	Siemens Immulite 2000
525.9 ± 47.62	389.9 ± 31.98	461.5 ± 50.00	414.0 ± 38.24	448.0 ± 37.08	n = 3	Tosoh Bioscience
390.2 ± 61.19	305.1 ± 49.41	355.1 ± 56.44	332.0 ± 51.25	358.7 ± 55.97	n = 10	Mean of Above Means
<Reagents>						
448.9 ± 23.81	357.0 ± 24.09	404.3 ± 29.35	388.7 ± 21.62	410.7 ± 25.18	n = 10	Abbott
325.8 ± 21.11	257.5 ± 15.61	298.8 ± 16.53	281.0 ± 16.88	300.5 ± 18.22	n = 29	Beckman Coulter
412.8 ± 15.05	313.2 ± 10.56	374.2 ± 19.25	341.4 ± 18.17	364.0 ± 16.77	n = 11	Ortho Clinical Diagnostics
433.2 ± 14.08	339.6 ± 19.49	390.5 ± 21.91	370.5 ± 14.08	400.7 ± 24.15	n = 12	Roche Elecsys/Modular E/e601/e411
405.9 ± 26.92	344.6 ± 26.91	404.0 ± 27.82	373.9 ± 28.46	407.6 ± 27.63	n = 23	Siemens ADVIA/ADVIA Centaur
392.6 ± 11.87	293.2 ± 18.54	336.7 ± 11.19	317.4 ± 13.45	339.9 ± 17.40	n = 16	Siemens Dimension LOCI
364.1 ± 31.86	274.4 ± 28.44	331.1 ± 22.53	301.1 ± 31.96	330.2 ± 35.56	n = 7	Siemens Immulite
525.9 ± 47.62	389.9 ± 31.98	461.5 ± 50.00	414.0 ± 38.24	448.0 ± 37.08	n = 3	Tosoh AIA
409.8 ± 54.36	321.2 ± 44.98	374.5 ± 50.59	349.2 ± 46.79	375.8 ± 50.17	n = 8	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Folic Acid (ng/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
2.70 ± 0.78	1.24 ± 0.49	2.03 ± 0.60	6.89 ± 1.86	4.83 ± 1.32	n = 108	All Methods & Instruments
2.80	1.30	2.10	7.20	5.00	n = 108	Median value, All Methods & Instruments
						<Instruments>
3.26 ± 0.28	1.49 ± 0.17	2.33 ± 0.17	7.58 ± 0.38	5.65 ± 0.49	n = 10	Abbott Architect i System
3.15 ± 0.20	1.29 ± 0.19	2.33 ± 0.19	8.13 ± 0.64	5.67 ± 0.56	n = 12	Beckman Coulter ACCESS
2.97 ± 0.28	1.43 ± 0.24	2.27 ± 0.13	7.80 ± 0.47	5.19 ± 0.39	n = 7	Beckman Coulter UniCel DxI 600
3.12 ± 0.36	1.38 ± 0.26	2.30 ± 0.31	7.94 ± 0.57	5.54 ± 0.52	n = 9	Beckman Coulter UniCel DxI 800
2.73 ± 0.27	1.50 ± 0.26	2.29 ± 0.19	7.29 ± 1.11	4.55 ± 0.51	n = 9	Ortho Vitros 5600
3.34 ± 0.93	2.53 ± 0.55	3.24 ± 0.87	6.79 ± 1.13	5.49 ± 1.27	n = 7	Roche cobas e601
2.42 ± 0.49	1.05 ± 0.27	1.90 ± 0.29	7.02 ± 1.02	5.00 ± 0.71	n = 19	Siemens ADVIA Centaur
1.53 ± 0.22	0.55 ± 0.10	1.00 ± 0.22	3.32 ± 0.22	2.46 ± 0.24	n = 19	Siemens Dimension Vista
3.10 ± 0.33	1.24 ± 0.20	1.97 ± 0.18	7.65 ± 1.12	5.15 ± 0.84	n = 7	Siemens Immulite 2000
3.05 ± 0.29	1.35 ± 0.18	2.21 ± 0.44	7.55 ± 0.46	5.32 ± 0.37	n = 9	Mean of Above Means
						<Reagents>
3.26 ± 0.28	1.49 ± 0.17	2.33 ± 0.17	7.58 ± 0.38	5.65 ± 0.49	n = 10	Abbott
3.10 ± 0.29	1.35 ± 0.22	2.30 ± 0.20	7.97 ± 0.58	5.50 ± 0.55	n = 28	Beckman Coulter
2.75 ± 0.26	1.49 ± 0.24	2.29 ± 0.17	7.27 ± 1.04	4.63 ± 0.53	n = 10	Ortho Clinical Diagnostics
3.24 ± 1.02	2.46 ± 0.63	3.16 ± 1.06	6.68 ± 1.37	5.18 ± 1.40	n = 10	Roche Elecsys/Modular E/e601/e411
2.38 ± 0.50	1.04 ± 0.25	1.88 ± 0.29	6.96 ± 1.01	5.00 ± 0.68	n = 20	Siemens ADVIA/ADVIA Centaur
1.53 ± 0.22	0.57 ± 0.12	1.01 ± 0.21	3.34 ± 0.22	2.47 ± 0.23	n = 19	Siemens Dimension LOCI
3.10 ± 0.33	1.24 ± 0.20	1.97 ± 0.18	7.65 ± 1.12	5.15 ± 0.84	n = 7	Siemens Immulite
2.90 ± 0.51	1.32 ± 0.49	2.16 ± 0.57	7.36 ± 0.47	5.19 ± 0.35	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Cortisol ($\mu\text{g/dL}$)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
2.30 \pm 0.24 2.32	2.46 \pm 0.31 2.40	33.81 \pm 3.69 33.30	13.32 \pm 1.25 13.20	11.49 \pm 1.60 11.30	n = 71 n = 71	All Methods & Instruments Median value, All Methods & Instruments
2.38 \pm 0.08	2.44 \pm 0.19	28.53 \pm 1.71	12.65 \pm 0.32	10.09 \pm 0.43	n = 7	<Instruments> Abbott Architect i System
2.45 \pm 0.22	2.63 \pm 0.27	31.27 \pm 1.08	13.06 \pm 0.83	11.14 \pm 0.86	n = 6	Beckman Coulter ACCESS
2.20 \pm 0.26	2.24 \pm 0.32	31.99 \pm 1.99	12.20 \pm 0.83	9.55 \pm 0.43	n = 6	Beckman Coulter UniCel DxI 600
2.30 \pm 0.20	2.43 \pm 0.41	31.79 \pm 0.70	12.39 \pm 0.93	9.60 \pm 0.68	n = 6	Beckman Coulter UniCel DxI 800
1.98 \pm 0.10	2.13 \pm 0.10	32.20 \pm 1.84	11.84 \pm 0.55	11.02 \pm 0.56	n = 6	Ortho Vitros 5600
2.30 \pm 0.22	2.45 \pm 0.24	35.68 \pm 2.58	13.70 \pm 0.92	11.83 \pm 1.09	n = 21	Siemens ADVIA Centaur
2.42 \pm 0.23	2.91 \pm 0.32	35.55 \pm 1.80	14.80 \pm 0.83	12.82 \pm 0.47	n = 6	Siemens Immulite 2000
2.32 \pm 0.14	2.44 \pm 0.24	32.40 \pm 2.43	12.83 \pm 0.94	10.81 \pm 1.20	n = 7	Mean of Above Means
2.38 \pm 0.08	2.44 \pm 0.19	28.53 \pm 1.71	12.65 \pm 0.32	10.09 \pm 0.43	n = 7	<Reagents> Abbott
2.32 \pm 0.24	2.44 \pm 0.37	31.54 \pm 1.36	12.55 \pm 0.95	10.00 \pm 0.96	n = 18	Beckman Coulter
1.98 \pm 0.10	2.13 \pm 0.10	32.20 \pm 1.84	11.84 \pm 0.55	11.02 \pm 0.56	n = 6	Ortho Clinical Diagnostics
2.26 \pm 0.13	2.41 \pm 0.18	38.32 \pm 1.22	14.61 \pm 0.95	13.77 \pm 0.50	n = 7	Roche Elecsys/Modular E/e601/e411
2.31 \pm 0.22	2.46 \pm 0.24	35.88 \pm 2.70	13.77 \pm 0.95	11.90 \pm 1.11	n = 22	Siemens ADVIA/ADVIA Centaur
2.38 \pm 0.30	2.85 \pm 0.29	35.65 \pm 1.55	14.48 \pm 0.93	12.84 \pm 0.55	n = 8	Siemens Immulite
2.33 \pm 0.05	2.44 \pm 0.20	33.76 \pm 3.52	13.32 \pm 1.15	11.55 \pm 1.51	n = 6	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Insulin ($\mu\text{U/mL}$)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
44.54 \pm 11.35 42.37	127.51 \pm 51.80 123.80	74.81 \pm 30.54 73.20	86.97 \pm 35.38 84.50	270.13 \pm 93.84 285.40	n = 40 n = 40	All Methods & Instruments Median value, All Methods & Instruments
<Instruments>						
41.71 \pm 1.06	121.65 \pm 0.89	69.03 \pm 0.45	79.80 \pm 0.47	254.74 \pm 2.20	n = 5	Abbott Architect i System
41.68 \pm 1.79	127.43 \pm 5.28	73.41 \pm 1.19	84.39 \pm 3.36	292.72 \pm 13.81	n = 3	Beckman Coulter ACCESS
41.43 \pm 1.88	122.02 \pm 4.40	72.99 \pm 3.84	82.17 \pm 3.55	287.22 \pm 12.23	n = 5	Beckman Coulter UniCel DxI 800
57.49 \pm 2.08	195.89 \pm 6.47	122.97 \pm 2.72	139.78 \pm 8.57	357.53 \pm 36.08	n = 7	Siemens ADVIA Centaur
26.88 \pm 1.05	39.95 \pm 2.90	26.56 \pm 2.37	32.47 \pm 1.82	82.95 \pm 7.88	n = 7	Siemens Immulite 2000
41.67 \pm 9.82	123.03 \pm 50.06	72.15 \pm 30.99	82.58 \pm 34.45	272.21 \pm 85.86	n = 5	Mean of Above Means
<Reagents>						
41.71 \pm 1.06	121.65 \pm 0.89	69.03 \pm 0.45	79.80 \pm 0.47	254.74 \pm 2.20	n = 5	Abbott
41.55 \pm 1.71	124.20 \pm 4.99	73.63 \pm 3.39	83.89 \pm 3.64	284.91 \pm 14.29	n = 10	Beckman Coulter
52.28 \pm 2.26	144.24 \pm 5.38	85.01 \pm 3.46	99.14 \pm 3.28	303.87 \pm 14.10	n = 5	Roche Elecsys/Modular E/e601/e411
57.49 \pm 2.08	195.89 \pm 6.47	122.97 \pm 2.72	139.78 \pm 8.57	357.53 \pm 36.08	n = 7	Siemens ADVIA/ADVIA Centaur
27.60 \pm 0.63	42.33 \pm 3.11	27.87 \pm 2.12	33.40 \pm 1.55	86.04 \pm 5.55	n = 3	Siemens Immulite
29.25 \pm 4.77	46.80 \pm 12.66	30.21 \pm 8.10	36.84 \pm 8.28	95.25 \pm 24.91	n = 5	Siemens Immulite-Insulin lot# > 400
41.58 \pm 11.95	112.89 \pm 58.16	67.11 \pm 34.62	77.72 \pm 38.79	237.32 \pm 113.16	n = 6	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Free Estriol (ng/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
1.17 ± 0.80 0.80	0.17 ± 0.27 0.10	3.14 ± 2.27 2.60	0.17 ± 0.27 0.10	2.85 ± 2.26 2.50	n = 3 n = 3	All Methods & Instruments Median value, All Methods & Instruments
1.0	< 0.1	2.6	< 0.1	2.5	n = 1	<Instruments> Beckman Coulter UniCel DxI 800
0.8	< 0.7	3.2	> 0.7	2.5	n = 1	Siemens Immulite 2000
2.8	< 0.1	6.8	< 0.1	6.8	n = 1	LC/MS/MS

Statistical Summary (Mean and Standard Deviation)

Estradiol (pg/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
34.3 ± 7.84	65.7 ± 21.05	122.6 ± 14.28	22.4 ± 6.31	173.3 ± 24.56	n = 79	All Methods & Instruments
34.9	69.0	124.0	20.0	172.0	n = 79	Median value, All Methods & Instruments
<Instruments>						
34.5 ± 1.23	81.7 ± 3.89	109.7 ± 3.25	30.0 ± 3.77	150.1 ± 5.42	n = 5	Abbott Architect i System
25.2 ± 4.91	53.1 ± 7.20	124.5 ± 2.30	14.8 ± 6.51	169.6 ± 16.54	n = 4	Beckman Coulter ACCESS
34.6 ± 5.87	57.7 ± 7.36	118.1 ± 5.67	23.3 ± 9.25	165.0 ± 17.36	n = 4	Beckman Coulter UniCel DxI 600
28.2 ± 14.26	45.6 ± 14.83	111.5 ± 10.83	21.0 ± 7.93	154.7 ± 23.08	n = 5	Beckman Coulter UniCel DxI 800
33.3 ± 0.43	69.1 ± 3.52	107.4 ± 1.83	19.9 ± 2.14	149.0 ± 1.14	n = 4	Roche cobas e411
37.1 ± 2.35	71.2 ± 2.11	109.0 ± 1.76	25.1 ± 1.88	150.2 ± 3.42	n = 4	Roche cobas e601
37.8 ± 0.41	72.4 ± 1.56	110.9 ± 4.38	26.3 ± 0.96	149.2 ± 1.32	n = 3	Roche cobas e602
33.6 ± 5.10	86.5 ± 6.73	131.1 ± 6.56	28.0 ± 5.34	196.4 ± 10.40	n = 18	Siemens ADVIA Centaur
28.8 ± 3.24	70.8 ± 6.05	114.9 ± 6.37	18.5 ± 2.08	171.0 ± 8.32	n = 6	Siemens Dimension Vista
44.8 ± 8.79	48.1 ± 5.27	140.6 ± 12.01	20.0 ± 0.00	184.4 ± 11.77	n = 11	Siemens Immulite 2000
108.0 ± 10.91	28.0 ± 5.78	289.0 ± 26.46	23.6 ± 2.56	324.8 ± 33.42	n = 3	Tosoh Bioscience
33.6 ± 5.25	63.3 ± 17.11	116.0 ± 10.04	22.8 ± 4.47	162.1 ± 15.95	n = 11	Mean of Above Means
<Reagents>						
34.5 ± 1.23	81.7 ± 3.89	109.7 ± 3.25	30.0 ± 3.77	150.1 ± 5.42	n = 5	Abbott
28.4 ± 9.36	52.2 ± 11.76	118.3 ± 8.76	19.3 ± 8.54	162.9 ± 20.26	n = 13	Beckman Coulter
15.8 ± 10.27	52.1 ± 35.47	82.4 ± 54.92	13.7 ± 8.77	115.1 ± 79.61	n = 3	In-House
32.5 ± 1.86	35.0 ± 0.90	133.7 ± 3.16	12.2 ± 0.61	193.7 ± 43.10	n = 3	Ortho Clinical Diagnostics
36.0 ± 2.49	71.8 ± 3.11	108.0 ± 2.35	23.7 ± 3.12	150.0 ± 2.30	n = 13	Roche Elecsys/Modular E/e601/e411
34.6 ± 5.57	88.4 ± 6.70	132.2 ± 6.84	28.6 ± 5.69	199.4 ± 11.82	n = 14	Siemens ADVIA Centaur Enhanced Estr
30.2 ± 0.41	81.1 ± 0.77	129.8 ± 5.33	26.0 ± 2.98	191.1 ± 9.61	n = 5	Siemens ADVIA/ADVIA Centaur
28.8 ± 3.24	70.8 ± 6.05	114.9 ± 6.37	18.5 ± 2.08	171.0 ± 8.32	n = 6	Siemens Dimension LOCI
44.2 ± 7.48	47.6 ± 5.81	139.4 ± 11.79	20.0 ± 0.00	183.2 ± 11.84	n = 13	Siemens Immulite
32.3 ± 6.24	65.0 ± 18.87	120.7 ± 16.13	21.4 ± 6.36	171.0 ± 25.84	n = 9	Mean of Above Means

Estradiol (pg/mL) - CDC educational samples

Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Number	Instrument or Reagent System
33.5 ± 8.5	122.4 ± 17.0	40.3 ± 14.6	71.7 ± 17.2	98.8 ± 17.3	n = 76	Target values defined using RMP by CDC*
32.7	122.5	38.6	71.5	98.0		Median value, All Methods & Instruments
<Instruments>						
29.0 ± 6.6	123.0 ± 4.7	43.8 ± 8.0	74.8 ± 5.1	91.4 ± 4.0	n = 5	Abbott Architect i System
37.5 ± 11.3	128.5 ± 18.1	36.8 ± 4.6	77.8 ± 10.8	97.0 ± 12.3	n = 4	Beckman Coulter ACCESS
34.7 ± 3.8	113.0 ± 7.0	30.3 ± 10.0	77.5 ± 3.5	92.5 ± 8.9	n = 4	Beckman Coulter UniCel DxI 600
35.4 ± 17.5	106.0 ± 27.4	32.4 ± 10.4	66.9 ± 19.8	100.2 ± 24.5	n = 5	Beckman Coulter UniCel DxI 800
31.7 ± 2.5	123.5 ± 4.3	35.4 ± 2.2	70.4 ± 2.6	95.0 ± 3.5	n = 4	Roche cobas e411
28.3 ± 7.2	122.5 ± 5.3	33.6 ± 6.0	68.3 ± 4.1	95.0 ± 3.6	n = 3	Roche cobas e601
29.0 ± 2.7	121.8 ± 4.0	34.2 ± 3.9	69.4 ± 3.2	97.1 ± 4.5	n = 3	Roche cobas e602
38.1 ± 5.9	135.7 ± 15.1	55.1 ± 23.6	76.1 ± 15.1	114.9 ± 25.6	n = 18	Siemens ADVIA Centaur
34.0 ± 6.6	133.2 ± 6.3	42.9 ± 4.4	71.7 ± 5.1	102.3 ± 6.3	n = 6	Siemens Dimension Vista
21.3 ± 1.4	105.0 ± 8.4	36.1 ± 4.3	58.4 ± 8.6	99.9 ± 7.5	n = 11	Siemens Immulite 2000
45.2 ± 6.7	136.5 ± 11.8	48.4 ± 12.8	73.8 ± 7.8	76.7 ± 6.9	n = 3	Tosoh Bioscience

*Analysis using RMP by CDC is currently in progress. Target values will be provided at a later date.

Statistical Summary (Mean and Standard Deviation)

Testosterone (ng/dL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
114.2 ± 26.87 110.0	110.9 ± 22.83 110.0	31.4 ± 10.00 31.9	346.7 ± 61.80 348.0	141.4 ± 17.63 138.3	n = 69 n = 69	All Methods & Instruments Median value, All Methods & Instruments
						<Instruments>
184.0 ± 14.17	139.5 ± 8.87	18.6 ± 1.48	414.6 ± 33.36	135.3 ± 6.28	n = 5	Abbott Architect i System
111.6 ± 4.99	115.0 ± 2.85	40.2 ± 3.67	378.1 ± 18.27	153.5 ± 3.44	n = 7	Beckman Coulter ACCESS
106.8 ± 6.14	112.9 ± 6.48	39.2 ± 1.74	361.0 ± 15.56	147.9 ± 4.76	n = 8	Beckman Coulter UniCel DxI 600
107.6 ± 4.28	113.5 ± 8.93	41.6 ± 3.41	369.8 ± 21.47	148.0 ± 5.37	n = 6	Beckman Coulter UniCel DxI 800
150.7 ± 1.55	141.7 ± 3.26	27.8 ± 1.77	366.1 ± 118.52	165.1 ± 3.00	n = 3	Roche cobas e601
160.5 ± 5.82	148.9 ± 7.07	30.7 ± 2.49	453.1 ± 20.39	169.6 ± 5.93	n = 3	Roche cobas e602
114.9 ± 9.50	104.5 ± 8.16	34.6 ± 7.20	297.1 ± 25.74	132.0 ± 11.39	n = 17	Siemens ADVIA Centaur
102.9 ± 15.14	92.9 ± 9.04	22.2 ± 2.16	289.5 ± 28.67	135.3 ± 6.57	n = 8	Siemens Immulite 2000
64.0 ± 7.59	59.2 ± 4.20	22.2 ± 1.76	305.8 ± 15.58	98.3 ± 3.03	n = 4	Tosoh Bioscience
121.1 ± 35.20	116.5 ± 26.00	30.9 ± 8.97	358.2 ± 54.63	145.2 ± 18.58	n = 9	Mean of Above Means
						<Reagents>
184.0 ± 14.17	139.5 ± 8.87	18.6 ± 1.48	414.6 ± 33.36	135.3 ± 6.28	n = 5	Abbott
108.7 ± 5.73	113.6 ± 6.44	40.3 ± 3.15	369.0 ± 19.62	149.4 ± 5.69	n = 21	Beckman Coulter
153.7 ± 6.13	144.8 ± 6.00	29.4 ± 2.34	437.4 ± 18.51	166.4 ± 4.19	n = 8	Roche Elecsys/Modular E/e601/e411
114.9 ± 9.50	104.5 ± 8.16	34.6 ± 7.20	297.1 ± 25.74	132.0 ± 11.39	n = 17	Siemens ADVIA/ADVIA Centaur
100.0 ± 17.49	93.5 ± 8.31	21.8 ± 2.14	289.4 ± 26.75	133.8 ± 7.43	n = 9	Siemens Immulite
129.3 ± 34.11	118.8 ± 22.12	28.9 ± 8.79	361.9 ± 67.03	141.6 ± 13.41	n = 5	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Progesterone (ng/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
8.51 ± 1.48	4.64 ± 0.64	6.77 ± 1.16	12.59 ± 2.66	18.20 ± 3.66	n = 77	All Methods & Instruments
8.81	4.71	6.50	12.40	18.25	n = 77	Median value, All Methods & Instruments
<Instruments>						
9.53 ± 0.34	5.25 ± 0.19	7.19 ± 0.44	14.44 ± 0.88	19.17 ± 0.59	n = 3	Abbott Architect i System
8.10 ± 0.58	4.66 ± 0.59	7.89 ± 0.78	12.03 ± 0.71	19.08 ± 0.96	n = 4	Beckman Coulter ACCESS
7.43 ± 0.70	4.83 ± 0.91	7.89 ± 0.57	11.39 ± 0.92	17.96 ± 0.69	n = 4	Beckman Coulter UniCel DxI 600
8.89 ± 0.36	4.82 ± 0.34	8.19 ± 0.11	13.60 ± 1.16	20.69 ± 1.13	n = 5	Beckman Coulter UniCel DxI 800
9.61 ± 0.37	5.00 ± 0.23	7.91 ± 0.35	16.63 ± 1.10	23.46 ± 1.91	n = 5	Roche cobas e411
9.35 ± 0.46	4.97 ± 0.27	7.81 ± 0.55	16.63 ± 1.23	23.32 ± 1.48	n = 3	Roche cobas e601
9.41 ± 0.35	5.12 ± 0.14	8.06 ± 0.27	17.16 ± 0.34	24.20 ± 0.54	n = 3	Roche cobas e602
9.27 ± 0.56	4.73 ± 0.30	6.28 ± 0.40	12.88 ± 1.00	18.36 ± 1.45	n = 17	Siemens ADVIA Centaur
7.60 ± 0.22	3.78 ± 0.08	5.41 ± 0.15	10.48 ± 0.26	14.43 ± 0.47	n = 4	Siemens Dimension Vista
7.26 ± 0.60	4.46 ± 0.45	6.42 ± 0.32	10.70 ± 0.83	15.30 ± 1.00	n = 3	Siemens Immulite 1000
6.67 ± 0.45	4.07 ± 0.26	5.74 ± 0.35	10.25 ± 0.47	14.59 ± 1.04	n = 13	Siemens Immulite 2000
9.05 ± 2.15	4.81 ± 1.50	7.31 ± 1.27	14.25 ± 2.52	20.67 ± 2.76	n = 3	Tosoh Bioscience
8.59 ± 1.08	4.78 ± 0.37	7.27 ± 0.98	13.28 ± 2.61	19.29 ± 3.48	n = 12	Mean of Above Means
<Reagents>						
9.53 ± 0.34	5.25 ± 0.19	7.19 ± 0.44	14.44 ± 0.88	19.17 ± 0.59	n = 3	Abbott
8.27 ± 0.85	4.78 ± 0.61	8.01 ± 0.51	12.35 ± 1.31	19.27 ± 1.51	n = 13	Beckman Coulter
4.45 ± 0.19	2.64 ± 0.10	6.02 ± 0.32	8.33 ± 0.59	13.85 ± 0.46	n = 3	Ortho Clinical Diagnostics
9.49 ± 0.37	5.03 ± 0.20	7.99 ± 0.35	16.82 ± 0.86	23.82 ± 1.19	n = 13	Roche Elecsys/Modular E/e601/e411
9.32 ± 0.58	4.76 ± 0.30	6.30 ± 0.39	12.88 ± 0.96	18.32 ± 1.41	n = 18	Siemens ADVIA/ADVIA Centaur
7.60 ± 0.22	3.78 ± 0.08	5.41 ± 0.15	10.48 ± 0.26	14.43 ± 0.47	n = 4	Siemens Dimension LOCI
6.75 ± 0.48	4.11 ± 0.30	5.85 ± 0.43	10.29 ± 0.53	14.73 ± 1.07	n = 16	Siemens Immulite Progesterone (LKPW)
8.17 ± 1.68	4.46 ± 0.82	6.64 ± 1.07	12.12 ± 2.77	17.42 ± 3.47	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

17-hydroxyprogesterone (ng/dL)

Specimen: E46 -----	Specimen: E47 -----	Specimen: E48 -----	Specimen: E49 -----	Specimen: E50 -----	Number -----	Instrument or Reagent System -----
44.52 ± 11.83 28.00	17.81 ± 8.77 12.00	79.48 ± 23.47 59.00	42.44 ± 12.64 34.00	82.58 ± 28.65 47.00	n = 3 n = 3	All Methods & Instruments Median value, All Methods & Instruments
50.0	30.0	110.0	60.0	110.0	n = 1	<Instruments> Gold Standard Diagnostics, Thunderbolt
52.0	14.0	59.0	34.0	47.0	n = 1	LC-MS/MS
28.0	12.0	74.0	37.0	87.0	n = 1	MP Biomedicals

Statistical Summary (Mean and Standard Deviation)

Dehydroepiandrosterone (DHEA, ng/dL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
277.7 ± 23.49	323.0 ± 55.82	883.1 ± 216.16	79.3 ± 44.79	210.8 ± 78.85	n = 8	All Methods & Instruments
273.0	300.0	840.0	82.2	210.0	n = 8	Median value, All Methods & Instruments
						<Instruments>
208.5 ± 117.68	278.4 ± 156.30	775.4 ± 545.16	77.1 ± 57.51	239.0 ± 181.09	n = 3	Automated microplate processor
282.8 ± 30.01	306.1 ± 40.75	847.8 ± 96.98	93.2 ± 7.98	209.0 ± 25.97	n = 5	LC/MS/MS
245.6 ± 42.33	292.2 ± 15.78	811.6 ± 41.23	85.1 ± 9.20	224.0 ± 17.12	n = 2	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Dehydroepiandrosterone sulfate (DHEA-S, µg/dL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
15.13 ± 3.11	25.03 ± 5.49	141.11 ± 18.26	30.19 ± 6.48	122.17 ± 16.35	n = 37	All Methods & Instruments
15.00	24.40	139.00	29.50	120.00	n = 37	Median value, All Methods & Instruments
<Instruments>						
16.00 ± 1.74	27.67 ± 1.80	154.35 ± 7.26	33.35 ± 2.54	134.23 ± 8.10	n = 4	Abbott Architect i System
14.19 ± 1.71	28.12 ± 2.91	144.50 ± 17.67	34.98 ± 3.46	130.96 ± 9.56	n = 4	Beckman Coulter ACCESS
15.80 ± 1.08	27.08 ± 1.42	145.88 ± 10.19	34.17 ± 1.76	126.86 ± 6.99	n = 3	Beckman Coulter UniCel DxI 800
7.28 ± 0.88	18.97 ± 1.16	123.48 ± 0.79	22.86 ± 3.52	106.31 ± 2.61	n = 4	Siemens ADVIA Centaur
15.00 ± 0.00	22.18 ± 3.01	132.67 ± 8.02	26.11 ± 2.53	113.88 ± 7.39	n = 13	Siemens Immulite 2000
15.29 ± 0.78	25.14 ± 3.91	140.68 ± 11.71	30.66 ± 5.37	123.10 ± 11.66	n = 5	Mean of Above Means
<Reagents>						
16.00 ± 1.74	27.67 ± 1.80	154.35 ± 7.26	33.35 ± 2.54	134.23 ± 8.10	n = 4	Abbott
14.80 ± 1.56	27.17 ± 2.52	145.19 ± 13.02	33.93 ± 3.24	127.58 ± 8.87	n = 8	Beckman Coulter
20.50 ± 0.99	37.16 ± 2.44	181.18 ± 6.57	42.10 ± 3.01	158.50 ± 6.18	n = 5	Roche Elecsys/Modular E/e601/e411
7.28 ± 0.88	18.97 ± 1.16	123.48 ± 0.79	22.86 ± 3.52	106.31 ± 2.61	n = 4	Siemens ADVIA/ADVIA Centaur
15.00 ± 0.00	22.39 ± 2.79	133.16 ± 8.19	26.56 ± 2.78	114.60 ± 7.06	n = 15	Siemens Immulite
15.11 ± 4.24	26.17 ± 6.36	145.77 ± 20.68	31.59 ± 7.12	126.86 ± 18.85	n = 5	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Lutropin (LH, mIU/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
10.97 ± 1.29	6.21 ± 0.94	162.38 ± 21.75	2.12 ± 0.35	123.16 ± 19.00	n = 90	All Methods & Instruments
10.80	6.30	160.00	2.10	119.90	n = 90	Median value, All Methods & Instruments
<Instruments>						
8.90 ± 0.09	4.82 ± 0.18	123.34 ± 3.60	1.67 ± 0.09	92.60 ± 1.83	n = 6	Abbott Architect i System
10.46 ± 0.23	5.46 ± 0.08	157.10 ± 4.12	1.92 ± 0.04	111.31 ± 3.84	n = 4	Beckman Coulter ACCESS
9.62 ± 0.70	4.97 ± 0.41	133.39 ± 4.16	1.75 ± 0.12	99.38 ± 11.07	n = 6	Beckman Coulter UniCel DxI 600
10.18 ± 0.71	5.21 ± 0.40	145.43 ± 7.75	1.84 ± 0.16	108.89 ± 4.49	n = 6	Beckman Coulter UniCel DxI 800
10.66 ± 0.95	9.69 ± 1.03	200.00 ± 0.00	3.09 ± 0.62	178.62 ± 9.85	n = 5	Ortho Vitros 5600
12.96 ± 0.33	7.26 ± 0.23	160.72 ± 3.55	2.73 ± 0.16	118.43 ± 3.91	n = 5	Roche cobas e411
12.46 ± 0.55	6.76 ± 0.29	153.89 ± 3.87	2.64 ± 0.18	117.99 ± 7.90	n = 5	Roche cobas e601
12.94 ± 0.39	7.13 ± 0.14	159.00 ± 3.10	2.77 ± 0.05	118.31 ± 0.57	n = 3	Roche cobas e602
10.52 ± 0.45	6.20 ± 0.31	181.54 ± 9.40	2.04 ± 0.15	139.29 ± 7.97	n = 18	Siemens ADVIA Centaur
11.52 ± 0.23	7.00 ± 0.16	150.00 ± 0.00	2.21 ± 0.06	137.22 ± 0.95	n = 6	Siemens Dimension Vista
11.65 ± 0.81	6.61 ± 0.27	187.39 ± 13.71	2.15 ± 0.19	131.96 ± 9.06	n = 3	Siemens Immulite 1000
11.64 ± 0.82	6.47 ± 0.46	167.56 ± 16.07	2.19 ± 0.11	122.21 ± 10.42	n = 12	Siemens Immulite 2000
10.48 ± 0.28	5.98 ± 0.57	157.02 ± 9.50	2.04 ± 0.14	116.58 ± 7.15	n = 5	Tosoh Bioscience
11.06 ± 1.27	6.26 ± 1.04	158.91 ± 20.28	2.20 ± 0.44	118.77 ± 15.72	n = 13	Mean of Above Means
<Reagents>						
8.90 ± 0.09	4.82 ± 0.18	123.34 ± 3.60	1.67 ± 0.09	92.60 ± 1.83	n = 6	Abbott
10.08 ± 0.70	5.21 ± 0.38	145.70 ± 12.70	1.84 ± 0.14	106.96 ± 8.95	n = 16	Beckman Coulter
10.65 ± 0.79	9.66 ± 0.92	200.00 ± 0.00	3.16 ± 0.57	176.82 ± 8.76	n = 6	Ortho Clinical Diagnostics
12.75 ± 0.49	7.03 ± 0.32	157.09 ± 4.98	2.70 ± 0.16	117.66 ± 3.48	n = 15	Roche Elecsys/Modular E/e601/e411
10.55 ± 0.46	6.17 ± 0.32	180.68 ± 9.85	2.05 ± 0.15	138.54 ± 8.57	n = 19	Siemens ADVIA/ADVIA Centaur
11.51 ± 0.27	6.98 ± 0.17	150.00 ± 0.00	2.20 ± 0.09	137.17 ± 1.08	n = 5	Siemens Dimension LOCI
11.64 ± 0.82	6.50 ± 0.42	171.80 ± 17.87	2.19 ± 0.13	124.48 ± 11.31	n = 15	Siemens Immulite
10.60 ± 0.18	5.93 ± 0.31	159.65 ± 11.08	2.00 ± 0.09	117.25 ± 9.63	n = 3	Tosoh AIA
10.83 ± 1.08	6.28 ± 1.16	160.63 ± 22.33	2.16 ± 0.44	123.51 ± 22.15	n = 8	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Follitropin (FSH, mIU/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
19.47 ± 1.97	6.08 ± 1.15	102.97 ± 18.57	6.15 ± 1.07	94.66 ± 16.63	n = 90	All Methods & Instruments
19.50	5.90	98.60	6.00	91.00	n = 90	Median value, All Methods & Instruments
<Instruments>						
17.83 ± 0.54	5.02 ± 0.22	84.09 ± 2.75	5.16 ± 0.19	80.08 ± 3.82	n = 6	Abbott Architect i System
20.69 ± 0.36	6.23 ± 0.25	96.73 ± 4.37	6.51 ± 0.28	88.07 ± 2.40	n = 4	Beckman Coulter ACCESS
22.55 ± 0.17	6.66 ± 0.20	96.28 ± 5.57	6.57 ± 0.36	91.90 ± 2.04	n = 6	Beckman Coulter UniCel DxI 600
21.49 ± 1.14	6.52 ± 0.36	94.92 ± 9.16	6.81 ± 0.43	85.42 ± 5.77	n = 6	Beckman Coulter UniCel DxI 800
16.91 ± 0.73	5.02 ± 0.38	91.37 ± 2.89	4.91 ± 0.44	84.02 ± 2.20	n = 5	Ortho Vitros 5600
19.67 ± 0.72	5.99 ± 0.28	102.45 ± 3.56	6.08 ± 0.04	93.82 ± 3.61	n = 5	Roche cobas e411
18.37 ± 0.44	5.54 ± 0.14	96.40 ± 1.98	5.70 ± 0.15	87.84 ± 2.44	n = 5	Roche cobas e601
18.77 ± 0.34	5.64 ± 0.10	97.37 ± 1.69	5.67 ± 0.14	88.71 ± 3.07	n = 3	Roche cobas e602
20.50 ± 0.71	7.65 ± 0.46	141.86 ± 5.64	7.37 ± 0.39	129.44 ± 4.74	n = 18	Siemens ADVIA Centaur
18.73 ± 0.31	5.67 ± 0.19	97.12 ± 1.92	5.71 ± 0.18	88.32 ± 1.12	n = 6	Siemens Dimension Vista
18.00 ± 1.18	4.73 ± 0.24	100.40 ± 4.67	4.99 ± 0.34	89.56 ± 4.85	n = 3	Siemens Immulite 1000
18.00 ± 0.88	4.99 ± 0.24	103.86 ± 6.75	5.09 ± 0.24	97.93 ± 6.97	n = 12	Siemens Immulite 2000
25.66 ± 1.66	7.71 ± 0.56	96.63 ± 6.79	7.76 ± 0.17	89.27 ± 3.68	n = 5	Tosoh Bioscience
19.37 ± 2.03	5.87 ± 0.97	97.15 ± 4.03	5.97 ± 0.94	88.65 ± 4.19	n = 13	Mean of Above Means
<Reagents>						
17.83 ± 0.54	5.02 ± 0.22	84.09 ± 2.75	5.16 ± 0.19	80.08 ± 3.82	n = 6	Abbott
21.56 ± 1.13	6.51 ± 0.32	95.40 ± 6.25	6.62 ± 0.33	88.15 ± 5.40	n = 16	Beckman Coulter
16.70 ± 0.81	4.97 ± 0.36	90.23 ± 3.82	4.86 ± 0.40	82.95 ± 3.34	n = 6	Ortho Clinical Diagnostics
18.87 ± 0.74	5.68 ± 0.23	98.50 ± 4.56	5.84 ± 0.29	90.17 ± 4.42	n = 15	Roche Elecsys/Modular E/e601/e411
20.48 ± 0.76	7.63 ± 0.51	141.42 ± 6.16	7.34 ± 0.44	129.02 ± 5.20	n = 19	Siemens ADVIA/ADVIA Centaur
18.66 ± 0.30	5.63 ± 0.18	96.62 ± 1.48	5.74 ± 0.19	87.99 ± 0.88	n = 5	Siemens Dimension LOCI
18.01 ± 0.97	4.94 ± 0.27	102.92 ± 6.21	5.09 ± 0.27	96.25 ± 7.35	n = 15	Siemens Immulite
26.29 ± 2.17	7.93 ± 0.59	100.23 ± 7.35	7.72 ± 0.15	90.26 ± 4.34	n = 3	Tosoh AIA
19.07 ± 2.18	5.93 ± 1.19	96.09 ± 6.00	5.98 ± 1.08	88.03 ± 5.05	n = 8	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Prolactin (µg/L)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
4.90 ± 0.80 4.95	2.96 ± 0.47 3.00	32.14 ± 2.63 32.20	1.62 ± 0.28 1.70	18.90 ± 1.23 19.00	n = 81 n = 81	All Methods & Instruments Median value, All Methods & Instruments
<Instruments>						
5.23 ± 0.18	3.27 ± 0.17	33.23 ± 0.56	1.81 ± 0.15	20.15 ± 0.55	n = 7	Abbott Architect i System
5.09 ± 0.18	2.90 ± 0.11	33.09 ± 1.36	1.58 ± 0.08	19.46 ± 0.70	n = 4	Beckman Coulter ACCESS
4.90 ± 0.23	3.00 ± 0.15	31.44 ± 0.46	1.45 ± 0.11	18.75 ± 0.45	n = 5	Beckman Coulter UniCel DxI 600
4.63 ± 0.20	2.70 ± 0.10	30.70 ± 2.08	1.50 ± 0.03	18.25 ± 0.72	n = 6	Beckman Coulter UniCel DxI 800
5.55 ± 0.37	5.60 ± 1.40	32.40 ± 2.14	3.83 ± 1.36	19.70 ± 1.32	n = 5	Ortho Vitros 5600
7.43 ± 0.30	4.26 ± 0.16	47.10 ± 3.07	2.33 ± 0.15	28.05 ± 1.48	n = 4	Roche cobas e411
6.73 ± 0.31	3.92 ± 0.24	43.51 ± 2.88	3.50 ± 2.64	25.79 ± 1.57	n = 3	Roche cobas e601
4.98 ± 0.27	2.99 ± 0.15	31.17 ± 2.25	1.70 ± 0.00	18.12 ± 0.81	n = 17	Siemens ADVIA Centaur
4.15 ± 0.07	2.72 ± 0.13	35.73 ± 0.79	1.33 ± 0.05	20.07 ± 0.29	n = 7	Siemens Dimension Vista
4.00 ± 0.16	2.52 ± 0.10	30.80 ± 1.05	1.39 ± 0.08	18.00 ± 0.71	n = 11	Siemens Immulite 2000
4.87 ± 0.05	3.03 ± 0.14	31.38 ± 0.32	1.80 ± 0.09	19.50 ± 0.00	n = 3	Tosoh Bioscience
5.06 ± 0.88	3.06 ± 0.54	31.92 ± 1.35	1.60 ± 0.25	19.13 ± 0.88	n = 11	Mean of Above Means
<Reagents>						
5.23 ± 0.18	3.27 ± 0.17	33.23 ± 0.56	1.81 ± 0.15	20.15 ± 0.55	n = 7	Abbott
4.85 ± 0.29	2.85 ± 0.19	31.62 ± 1.68	1.50 ± 0.11	18.73 ± 0.78	n = 15	Beckman Coulter
5.59 ± 0.34	5.87 ± 1.39	32.36 ± 1.91	4.06 ± 1.31	19.78 ± 1.20	n = 6	Ortho Clinical Diagnostics
6.91 ± 0.51	4.02 ± 0.29	44.10 ± 3.33	2.23 ± 0.28	26.27 ± 1.94	n = 10	Roche Elecsys/Modular E/e601/e411
5.01 ± 0.26	3.00 ± 0.20	30.91 ± 2.29	1.72 ± 0.06	18.12 ± 1.00	n = 19	Siemens ADVIA/ADVIA Centaur
4.17 ± 0.07	2.70 ± 0.00	35.82 ± 0.84	1.34 ± 0.06	20.13 ± 0.29	n = 6	Siemens Dimension LOCI
4.02 ± 0.15	2.54 ± 0.10	31.10 ± 1.36	1.41 ± 0.08	18.18 ± 0.78	n = 13	Siemens Immulite
5.01 ± 0.87	2.99 ± 0.47	32.21 ± 1.58	1.64 ± 0.31	19.19 ± 0.98	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Intact Parathyrin (PTH, pg/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
3.03 ± 2.54 2.50	4.06 ± 3.60 3.40	13.95 ± 5.65 13.40	3.95 ± 3.06 3.40	26.32 ± 7.84 25.80	n = 81 n = 81	All Methods & Instruments Median value, All Methods & Instruments
<Instruments>						
2.13 ± 2.14	2.25 ± 2.04	18.33 ± 4.96	2.48 ± 1.74	31.86 ± 6.63	n = 4	Abbott Architect i System
1.89 ± 2.57	1.89 ± 2.57	10.82 ± 2.17	1.81 ± 2.58	21.17 ± 2.68	n = 7	Beckman Coulter ACCESS
2.79 ± 2.93	2.79 ± 2.93	10.35 ± 2.20	2.79 ± 2.93	19.18 ± 3.42	n = 6	Beckman Coulter UniCel DxI 600
1.00 ± 0.00	1.00 ± 0.00	9.68 ± 0.75	1.00 ± 0.00	19.43 ± 1.48	n = 8	Beckman Coulter UniCel DxI 800
3.40 ± 0.00	3.40 ± 0.00	14.88 ± 2.50	3.40 ± 0.00	29.41 ± 8.24	n = 5	Ortho Vitros 5600
1.65 ± 0.37	11.58 ± 0.92	19.64 ± 1.83	7.29 ± 1.56	27.00 ± 2.31	n = 5	Roche cobas e601
1.57 ± 0.32	11.38 ± 0.86	20.06 ± 0.91	7.66 ± 0.88	28.99 ± 1.36	n = 3	Roche MODULAR E
4.05 ± 2.71	4.05 ± 2.71	11.44 ± 3.93	4.05 ± 2.71	26.35 ± 4.42	n = 23	Siemens ADVIA Centaur
5.24 ± 1.95	5.24 ± 1.95	15.76 ± 1.54	5.24 ± 1.95	30.13 ± 1.77	n = 3	Siemens ADVIA Centaur CP
4.39 ± 2.39	4.91 ± 1.30	26.42 ± 4.70	6.00 ± 2.60	46.03 ± 5.26	n = 7	Siemens Immulite 2000
1.00 ± 0.00	1.06 ± 0.10	15.26 ± 1.08	1.00 ± 0.00	27.76 ± 2.42	n = 3	Tosoh Bioscience
2.55 ± 1.46	3.70 ± 3.11	15.26 ± 4.95	3.77 ± 2.45	26.79 ± 5.52	n = 11	Mean of Above Means
<Reagents>						
2.13 ± 2.14	2.25 ± 2.04	18.33 ± 4.96	2.48 ± 1.74	31.86 ± 6.63	n = 4	Abbott
1.67 ± 2.38	1.67 ± 2.38	10.17 ± 1.69	1.64 ± 2.38	19.93 ± 2.52	n = 21	Beckman Coulter
3.40 ± 0.00	3.40 ± 0.00	15.68 ± 2.91	3.40 ± 0.00	31.22 ± 8.23	n = 6	Ortho Clinical Diagnostics
1.62 ± 0.34	11.56 ± 0.82	19.88 ± 1.37	7.66 ± 1.14	27.98 ± 2.02	n = 9	Roche Elecsys/Modular E/e601/e411
4.19 ± 2.66	4.19 ± 2.66	12.01 ± 4.00	4.19 ± 2.66	26.97 ± 4.31	n = 26	Siemens ADVIA/ADVIA Centaur
4.02 ± 2.06	4.63 ± 1.39	26.18 ± 4.37	5.61 ± 2.30	45.86 ± 4.85	n = 8	Siemens Immulite
2.83 ± 1.20	3.26 ± 1.26	16.76 ± 5.56	4.01 ± 2.11	29.60 ± 7.35	n = 6	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

25-OH Vitamin D2 (ng/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
2.72 ± 1.56 2.00	2.69 ± 1.65 2.00	29.51 ± 2.89 29.00	30.07 ± 4.00 29.50	29.20 ± 2.96 28.70	n = 6 n = 6	All Methods & Instruments Median value, All Methods & Instruments
2.72 ± 1.56	2.69 ± 1.65	29.51 ± 2.89	30.07 ± 4.00	29.20 ± 2.96	n = 6	<Instruments> LC/MS/MS
2.72 ± 1.56	2.69 ± 1.65	29.51 ± 2.89	30.07 ± 4.00	29.20 ± 2.96	n = 6	<Reagents> In-House

25-OH Vitamin D3 (ng/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
64.88 ± 2.20 65.90	63.93 ± 4.18 63.00	67.40 ± 7.72 66.50	66.85 ± 5.18 66.60	65.39 ± 2.80 64.20	n = 6 n = 6	All Methods & Instruments Median value, All Methods & Instruments
64.88 ± 2.20	63.93 ± 4.18	67.40 ± 7.72	66.85 ± 5.18	65.39 ± 2.80	n = 6	<Instruments> LC/MS/MS
64.88 ± 2.20	63.93 ± 4.18	67.40 ± 7.72	66.85 ± 5.18	65.39 ± 2.80	n = 6	<Reagents> In-House

Statistical Summary (Mean and Standard Deviation)

25-OH Vitamin D, Total (ng/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
64.78 ± 13.86	90.06 ± 29.89	113.49 ± 33.72	109.17 ± 29.61	114.58 ± 33.95	n = 92	All Methods & Instruments
64.10	89.20	120.00	114.20	120.00	n = 92	Median value, All Methods & Instruments
<Instruments>						
55.76 ± 2.56	69.76 ± 5.94	63.04 ± 16.69	84.34 ± 5.90	66.72 ± 14.52	n = 11	Abbott Architect i System
65.76 ± 1.08	90.55 ± 6.19	123.20 ± 4.63	121.91 ± 6.43	124.85 ± 7.28	n = 7	Beckman Coulter ACCESS
67.92 ± 1.05	106.02 ± 5.40	130.48 ± 15.90	127.50 ± 11.24	130.17 ± 15.26	n = 5	Beckman Coulter UniCel DxI 600
59.34 ± 4.86	87.23 ± 8.12	125.39 ± 12.59	119.58 ± 11.20	126.13 ± 12.52	n = 20	DiaSorin Liaison
40.62 ± 4.63	47.43 ± 3.87	65.41 ± 7.00	57.88 ± 6.37	63.55 ± 6.17	n = 4	Immunodiagnostic Systems-iSYS Immun
64.93 ± 2.43	63.96 ± 4.18	96.71 ± 10.32	98.27 ± 8.63	94.99 ± 4.75	n = 6	LC/MS/MS
80.42 ± 5.39	125.87 ± 8.03	126.00 ± 0.00	126.00 ± 0.00	126.00 ± 0.01	n = 7	Ortho Vitros 5600
42.71 ± 3.77	48.81 ± 3.90	58.89 ± 1.86	58.89 ± 6.18	60.23 ± 4.78	n = 5	Roche cobas e601
79.36 ± 5.39	128.73 ± 10.46	144.13 ± 12.16	128.45 ± 29.40	144.06 ± 10.72	n = 19	Siemens ADVIA Centaur
62.32 ± 14.03	84.61 ± 31.30	105.42 ± 34.67	105.28 ± 29.30	105.64 ± 34.47	n = 9	Mean of Above Means
<Reagents>						
55.76 ± 2.56	69.76 ± 5.94	63.04 ± 16.69	84.34 ± 5.90	66.72 ± 14.52	n = 11	Abbott
69.28 ± 6.98	99.47 ± 11.73	121.66 ± 3.91	124.48 ± 9.94	126.54 ± 11.94	n = 14	Beckman Coulter
59.34 ± 4.86	87.23 ± 8.12	125.39 ± 12.59	119.58 ± 11.20	126.13 ± 12.52	n = 20	DiaSorin Liaison
40.62 ± 4.63	47.43 ± 3.87	65.41 ± 7.00	57.88 ± 6.37	63.55 ± 6.17	n = 4	Immunodiagnostic Systems-iSYS chemi
64.61 ± 8.24	62.78 ± 6.00	94.00 ± 15.49	95.70 ± 13.18	94.98 ± 4.77	n = 7	In-House
80.42 ± 5.39	125.87 ± 8.03	126.00 ± 0.00	126.00 ± 0.00	126.00 ± 0.01	n = 7	Ortho Clinical Diagnostics
43.22 ± 3.53	49.73 ± 4.00	61.88 ± 5.90	59.92 ± 5.93	61.68 ± 5.40	n = 6	Roche Elecsys/Modular E/e601/e411
79.84 ± 5.38	128.81 ± 9.03	140.80 ± 15.20	122.62 ± 29.84	141.62 ± 12.38	n = 16	Siemens ADVIA Centaur - Vitamin D T
76.72 ± 5.50	128.20 ± 15.32	150.00 ± 0.00	150.00 ± 0.00	150.00 ± 0.00	n = 3	Siemens ADVIA/ADVIA Centaur
63.96 ± 15.16	88.43 ± 34.90	106.43 ± 36.43	106.01 ± 32.28	107.59 ± 36.67	n = 9	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Intact human Choriogonadotropin (intact hCG, mIU/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
37.9 ± 1.96 37.5	1.2 ± 0.72 1.0	39.7 ± 4.81 40.0	1.3 ± 0.69 1.0	45.7 ± 4.31 46.0	n = 29 n = 29	All Methods & Instruments Median value, All Methods & Instruments
36.0 ± 0.04	1.4 ± 0.56	33.0 ± 0.41	1.4 ± 0.56	39.9 ± 1.33	n = 6	<Instruments> Roche cobas e601
38.7 ± 1.82	1.1 ± 0.75	41.7 ± 2.25	1.2 ± 0.69	47.3 ± 2.67	n = 16	Siemens Dimension EXL
39.0 ± 0.00	1.7 ± 0.51	42.0 ± 0.00	1.7 ± 0.51	47.6 ± 1.02	n = 3	Siemens Dimension Xpand
38.0 ± 1.46	1.4 ± 0.27	39.4 ± 4.53	1.4 ± 0.24	45.3 ± 3.87	n = 3	Mean of Above Means
36.0 ± 0.11	1.2 ± 0.62	33.0 ± 0.00	1.2 ± 0.62	39.7 ± 1.28	n = 7	<Reagents> Roche Elecsys/Modular E/e601/e411
38.6 ± 1.63	1.2 ± 0.73	41.6 ± 1.95	1.3 ± 0.68	47.3 ± 2.33	n = 20	Siemens Dimension
37.3 ± 1.50	1.2 ± 0.01	37.3 ± 4.92	1.2 ± 0.02	43.5 ± 4.33	n = 2	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Total Beta hCG (mIU/mL)

Specimen: E46	Specimen: E47	Specimen: E48	Specimen: E49	Specimen: E50	Number	Instrument or Reagent System
38.0 ± 3.91	1.4 ± 1.26	43.4 ± 4.74	1.3 ± 1.18	50.4 ± 5.09	n = 133	All Methods & Instruments
38.0	1.0	44.1	1.0	51.5	n = 133	Median value, All Methods & Instruments
						<Instruments>
31.8 ± 1.80	2.6 ± 1.97	37.1 ± 2.35	2.6 ± 1.97	41.8 ± 1.69	n = 11	Abbott Architect i System
36.0 ± 1.40	0.5 ± 0.34	44.2 ± 1.83	0.5 ± 0.35	50.8 ± 2.27	n = 16	Beckman Coulter ACCESS
36.1 ± 1.16	0.6 ± 0.20	47.1 ± 1.50	0.6 ± 0.20	53.4 ± 2.56	n = 9	Beckman Coulter UniCel DxI 600
35.0 ± 1.40	1.3 ± 1.86	43.8 ± 1.82	1.2 ± 1.88	50.5 ± 2.04	n = 8	Beckman Coulter UniCel DxI 800
43.9 ± 2.43	2.4 ± 0.38	43.4 ± 2.92	2.4 ± 0.38	51.1 ± 2.73	n = 9	Ortho Vitros 5600
39.6 ± 1.70	1.0 ± 0.52	48.0 ± 3.75	1.0 ± 0.52	55.6 ± 3.17	n = 7	Roche cobas e411
38.0 ± 1.13	0.8 ± 0.76	47.0 ± 1.49	0.8 ± 0.76	46.9 ± 20.76	n = 4	Roche cobas e601
37.8 ± 0.22	1.0 ± 0.71	46.4 ± 0.42	1.0 ± 0.71	53.7 ± 0.36	n = 4	Roche MODULAR E
36.1 ± 1.37	2.5 ± 0.76	35.7 ± 1.54	2.3 ± 0.71	43.2 ± 2.38	n = 17	Siemens ADVIA Centaur
40.2 ± 0.72	1.0 ± 0.00	44.6 ± 1.28	1.0 ± 0.00	52.1 ± 1.02	n = 28	Siemens Dimension Vista
56.1 ± 4.93	1.0 ± 0.00	75.5 ± 5.72	1.0 ± 0.00	85.0 ± 5.07	n = 8	Siemens Immulite 2000
43.9 ± 1.22	0.8 ± 0.29	51.4 ± 2.16	0.8 ± 0.29	59.9 ± 2.37	n = 4	Tosoh Bioscience
38.0 ± 3.87	1.2 ± 0.72	44.9 ± 4.23	1.2 ± 0.70	51.0 ± 5.13	n = 12	Mean of Above Means
						<Reagents>
32.1 ± 1.98	2.8 ± 2.05	37.2 ± 2.70	2.8 ± 2.05	41.8 ± 1.69	n = 12	Abbott
35.9 ± 1.47	0.5 ± 0.42	45.0 ± 2.28	0.5 ± 0.42	51.1 ± 2.22	n = 19	Beckman Coulter
35.7 ± 1.43	0.6 ± 0.13	44.4 ± 1.97	0.5 ± 0.16	51.5 ± 3.03	n = 13	Beckman Coulter IFCC Standardized
43.8 ± 2.21	2.4 ± 0.35	43.4 ± 2.64	2.4 ± 0.35	51.2 ± 2.44	n = 11	Ortho Clinical Diagnostics
38.7 ± 1.56	0.9 ± 0.69	47.3 ± 2.31	0.9 ± 0.69	54.9 ± 2.47	n = 16	Roche Elecsys/Modular E/e601/e411
36.0 ± 1.44	2.5 ± 0.71	35.8 ± 1.48	2.3 ± 0.66	43.4 ± 2.43	n = 18	Siemens ADVIA/AD VIA Centaur
38.8 ± 1.46	0.8 ± 0.41	42.4 ± 3.55	0.8 ± 0.41	49.2 ± 4.34	n = 4	Siemens Dimension
40.2 ± 0.77	1.0 ± 0.00	44.6 ± 1.22	1.0 ± 0.00	52.0 ± 1.02	n = 26	Siemens Dimension LOCI
54.5 ± 5.48	1.0 ± 0.00	73.5 ± 6.91	1.0 ± 0.00	82.7 ± 7.15	n = 10	Siemens Immulite
43.4 ± 0.47	0.6 ± 0.26	50.6 ± 1.66	0.6 ± 0.26	59.0 ± 2.13	n = 3	Tosoh AIA
38.7 ± 4.69	1.2 ± 0.87	43.6 ± 4.45	1.2 ± 0.84	50.7 ± 5.12	n = 10	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Qualitative hCG report:

[AB1] Abbott	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	4	0	4	0
Indeterminant	0	0	0	0	0
Positive	4	0	4	0	4
[AR1] Alere hCG Combo Cassette	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	6	0	6	0
Indeterminant	0	0	0	0	0
Positive	6	0	6	0	6
[BC1] Beckman Coulter	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	17	0	17	0
Indeterminant	0	0	0	0	0
Positive	17	0	17	0	17
[CD1] Cardinal Health	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	14	0	14	0
Indeterminant	0	0	0	0	0
Positive	14	0	14	0	14
[CM1] CEN-MED Elite Plus hCG One Step	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	6	0	6	0
Indeterminant	0	0	0	0	0
Positive	6	0	6	0	6
[FI1] Fisher	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	26	0	26	0
Indeterminant	0	0	0	0	0
Positive	26	0	26	0	26
[JJ1] Ortho Clinical Diagnostics	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	2	0	2	0
Indeterminant	0	0	0	0	0
Positive	3	1	3	1	3

Statistical Summary (Mean and Standard Deviation)

[PM1] Polymedco	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	3	0	3	0
Indeterminant	0	0	0	0	0
Positive	3	0	3	0	3
[QQ2] Quidel QuickVue One-Step hCG Combo	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	12	0	12	0
Indeterminant	0	0	0	0	0
Positive	12	0	12	0	12
[QQ1] Quidel QuickVue± One-Step hCG Combo	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	12	0	12	0
Indeterminant	0	0	0	0	0
Positive	12	0	12	0	12
[RO3] Roche Elecsys/Modular E/e601/e411	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	4	0	4	0
Indeterminant	0	0	0	0	0
Positive	4	0	4	0	4
[GZ1] Sekisui Diagnostics (Genzyme)	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	5	0	5	0
Indeterminant	0	0	0	0	0
Positive	5	0	5	0	5
[BY1] Siemens ADVIA/ADVIA Centaur	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	8	0	8	0
Indeterminant	0	0	0	0	0
Positive	8	0	8	0	8
[DA5] Siemens Dimension	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	2	0	2	0
Indeterminant	0	0	0	0	0
Positive	2	0	2	0	2

Statistical Summary (Mean and Standard Deviation)

[DA6] Siemens Dimension LOCI	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	3	0	3	0
Indeterminant	0	0	0	0	0
Positive	3	0	3	0	3
[SB1] Stanbio	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	2	0	2	0
Indeterminant	0	0	0	0	0
Positive	2	0	2	0	2
[TR1] TrueMedix	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	3	0	3	0
Indeterminant	0	0	0	0	0
Positive	3	0	3	0	3
[---] All Methods & Instruments	Specimen:E46	Specimen:E47	Specimen:E48	Specimen:E49	Specimen:E50
Negative	0	129	0	129	0
Indeterminant	0	0	0	0	0
Positive	130	1	130	1	130