

Endocrinology Proficiency Test – January 2013

Enclosed is a statistical summary of participant data for the five endocrinology proficiency survey specimens (E86, E87, E88, E89, and E90) shipped 28 January 2013. Test specimens 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 each participant 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 shown on the attached sheets are calculated by a robust statistical technique that does not assume a Gaussian distribution. These statistical reports are also available on the internet at: <http://www.wadsworth.org/chemheme>

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.

Outlined below is a description of the process utilized in the evaluation of your laboratory's proficiency test results.

Target value

In general, targets utilized are derived from all-participant mean values calculated by robust statistical technique. In some cases, however, it is recognized that method, reagent, and/or instrument specific targets may be required and "peer group" specific targets are used where appropriate. Should an alternate target be required to evaluate your laboratory's data, an asterisk will be placed adjacent to the method, reagent, and/or instrument listing(s) corresponding to the peer group utilized.

In evaluation on CDC educational challenge samples for testosterone and vitamin D, single target value, derived from measurements using CDC LC-MS/MS reference method for testosterone and the LC-MS/MS group mean for Vitamin D, was used for this challenge. The samples #3 and #4 were prepared from authentic human serum of a male and a female single healthy donor, respectively. The serum samples were stored at –80°C before shipment on ice via overnight delivery.

Acceptable ranges

Limits of acceptable performance were established using criteria specified by CLIA'88 regulations, allowing for rounding to appropriate significant digits. Results falling within this range are scored as 100%. Any result exceeding these limits is considered unsatisfactory and receives a score of 0%. Laboratories must achieve an overall analyte score $\geq 80\%$ in order to meet performance criteria for that analyte.

Range plots

Plots show relative distance of your laboratory's results (represented by an "x") from the target for each sample analyzed. Any result exceeding the high or low limit by $> 20\%$ of the acceptable range is also indicated by a "x" symbol.

Should you have any questions regarding this report, please contact the Endocrinology Section at (518) 474-6930.

Statistical Summary (Mean and Standard Deviation)

Thyroxin (T4, µg/dL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
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3.53 ± 0.64	6.94 ± 0.93	8.59 ± 0.97	9.69 ± 1.13	12.27 ± 1.35	n = 234	All Methods & Instruments
3.47	6.80	8.60	9.40	12.10	n = 234	Median value, All Methods & Instruments
<Instruments>						
3.36 ± 0.19	5.87 ± 0.27	7.48 ± 0.36	8.60 ± 0.44	11.61 ± 0.66	n = 17	Abbott Architect i System
3.69 ± 0.95	6.40 ± 0.55	7.94 ± 0.49	9.15 ± 0.44	11.48 ± 0.30	n = 3	Abbott AxSym
3.29 ± 0.24	7.52 ± 0.53	8.87 ± 0.58	10.53 ± 0.53	12.67 ± 0.81	n = 17	Beckman Coulter ACCESS
3.74 ± 0.36	6.59 ± 0.40	8.28 ± 0.44	9.31 ± 0.44	12.27 ± 0.55	n = 9	Beckman Coulter AU Chemistry System
3.54 ± 0.25	8.10 ± 0.43	9.24 ± 0.58	11.13 ± 0.59	13.25 ± 0.91	n = 16	Beckman Coulter UniCel DxI 800
3.40 ± 0.12	6.42 ± 0.23	8.43 ± 0.30	9.18 ± 0.35	12.49 ± 0.58	n = 15	Ortho Vitros 5600
3.40 ± 0.23	6.54 ± 0.36	8.69 ± 0.65	9.46 ± 0.59	13.07 ± 0.81	n = 8	Ortho Vitros Eci/ECiQ
4.06 ± 0.06	6.22 ± 0.36	7.49 ± 0.10	8.40 ± 0.16	10.65 ± 0.15	n = 8	Roche cobas e601
4.62 ± 0.24	6.77 ± 0.77	8.59 ± 0.29	9.65 ± 0.19	12.23 ± 0.59	n = 3	Roche Elecsys
4.41 ± 0.42	6.45 ± 0.27	8.37 ± 0.56	9.20 ± 0.40	11.74 ± 0.58	n = 4	Roche MODULAR D/P
4.03 ± 0.13	6.17 ± 0.12	7.63 ± 0.20	8.67 ± 0.33	11.04 ± 0.53	n = 13	Roche MODULAR E
2.93 ± 0.35	6.73 ± 0.39	8.35 ± 0.44	9.25 ± 0.37	11.39 ± 0.49	n = 52	Siemens ADVIA Centaur
3.81 ± 0.52	7.79 ± 0.74	9.05 ± 0.81	10.57 ± 0.95	13.70 ± 1.44	n = 3	Siemens Dimension EXL
3.59 ± 0.32	7.42 ± 0.69	8.80 ± 0.68	10.40 ± 0.82	13.11 ± 0.99	n = 6	Siemens Dimension RxL
4.76 ± 0.55	8.62 ± 0.63	10.25 ± 0.56	11.64 ± 0.53	14.51 ± 0.58	n = 30	Siemens Dimension Vista
3.55 ± 0.41	7.61 ± 0.54	9.92 ± 0.49	10.41 ± 0.37	14.04 ± 1.23	n = 6	Siemens Immulite 1000
3.33 ± 0.20	7.26 ± 0.36	9.03 ± 0.63	10.05 ± 0.38	12.94 ± 0.58	n = 14	Siemens Immulite 2000
3.29 ± 0.27	6.15 ± 0.39	7.48 ± 0.38	8.97 ± 0.43	10.68 ± 0.53	n = 4	Tosoh Bioscience
3.65 ± 0.47	6.85 ± 0.77	8.51 ± 0.78	9.63 ± 0.92	12.36 ± 1.16	n = 18	Mean of Above Means
<Reagents>						
3.38 ± 0.25	5.92 ± 0.34	7.54 ± 0.42	8.68 ± 0.48	11.59 ± 0.60	n = 20	Abbott
3.41 ± 0.28	7.82 ± 0.56	9.05 ± 0.61	10.81 ± 0.63	12.93 ± 0.89	n = 33	Beckman Coulter
4.38 ± 0.50	6.43 ± 0.32	8.15 ± 0.45	9.05 ± 0.36	11.54 ± 0.65	n = 3	Microgenics CEDIA
3.74 ± 0.36	6.59 ± 0.40	8.28 ± 0.44	9.31 ± 0.44	12.27 ± 0.55	n = 9	Microgenics DRI
3.40 ± 0.16	6.45 ± 0.28	8.50 ± 0.46	9.26 ± 0.45	12.66 ± 0.71	n = 23	Ortho Clinical Diagnostics
4.12 ± 0.21	6.25 ± 0.35	7.71 ± 0.38	8.78 ± 0.53	11.06 ± 0.63	n = 28	Roche Elecsys/Modular E/e601/e411
2.93 ± 0.35	6.73 ± 0.39	8.35 ± 0.44	9.25 ± 0.37	11.39 ± 0.49	n = 52	Siemens ADVIA/ADVIA Centaur
4.50 ± 0.75	8.34 ± 0.81	9.98 ± 0.86	11.38 ± 0.74	14.29 ± 0.90	n = 35	Siemens Dimension
4.73 ± 0.51	8.85 ± 0.23	10.16 ± 0.28	11.94 ± 0.34	14.52 ± 0.50	n = 4	Siemens Dimension LOCI
3.37 ± 0.25	7.35 ± 0.45	9.35 ± 0.78	10.16 ± 0.41	13.08 ± 0.75	n = 20	Siemens Immulite
3.33 ± 0.31	6.04 ± 0.47	7.40 ± 0.46	8.85 ± 0.54	10.64 ± 0.65	n = 3	Tosoh ST AIA
3.72 ± 0.60	6.86 ± 0.95	8.53 ± 0.95	9.62 ± 1.10	12.28 ± 1.28	n = 11	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Free T4 (ng/dL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
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0.68 ± 0.17	1.74 ± 0.42	1.47 ± 0.27	2.57 ± 0.42	2.44 ± 0.35	n = 261	All Methods & Instruments
0.70	1.80	1.50	2.60	2.50	n = 261	Median value, All Methods & Instruments
						<Instruments>
0.67 ± 0.05	1.36 ± 0.08	1.25 ± 0.10	2.00 ± 0.14	2.00 ± 0.13	n = 17	Abbott Architect i System
0.61 ± 0.05	1.84 ± 0.09	1.59 ± 0.06	2.53 ± 0.12	2.31 ± 0.09	n = 19	Beckman Coulter ACCESS
0.70 ± 0.00	1.73 ± 0.11	1.53 ± 0.07	2.62 ± 0.11	2.47 ± 0.13	n = 15	Beckman Coulter UniCel DxI 800
0.63 ± 0.05	1.20 ± 0.09	1.10 ± 0.09	2.23 ± 0.14	2.55 ± 0.19	n = 3	bioMerieux Vidas
0.97 ± 0.05	2.78 ± 0.10	1.95 ± 0.11	4.98 ± 0.18	4.65 ± 0.16	n = 17	Ortho Vitros 5600
1.02 ± 0.06	2.85 ± 0.12	1.99 ± 0.13	4.99 ± 0.13	4.65 ± 0.20	n = 7	Ortho Vitros Eci/ECiQ
0.77 ± 0.05	1.90 ± 0.00	1.63 ± 0.05	2.97 ± 0.05	2.77 ± 0.14	n = 3	Roche cobas e411
0.80 ± 0.00	1.89 ± 0.10	1.62 ± 0.08	2.95 ± 0.10	2.81 ± 0.10	n = 10	Roche cobas e601
0.77 ± 0.04	1.88 ± 0.15	1.58 ± 0.09	2.90 ± 0.13	2.74 ± 0.17	n = 4	Roche Elecsys
0.80 ± 0.00	1.91 ± 0.05	1.61 ± 0.05	2.97 ± 0.11	2.84 ± 0.09	n = 16	Roche MODULAR E
0.72 ± 0.07	1.67 ± 0.12	1.41 ± 0.08	2.57 ± 0.13	2.49 ± 0.14	n = 64	Siemens ADVIA Centaur
0.40 ± 0.00	1.30 ± 0.07	1.15 ± 0.11	2.19 ± 0.08	2.20 ± 0.12	n = 9	Siemens Dimension EXL
0.51 ± 0.01	2.05 ± 0.18	1.47 ± 0.13	2.92 ± 0.23	2.33 ± 0.22	n = 8	Siemens Dimension RxL
0.40 ± 0.02	1.23 ± 0.07	1.10 ± 0.07	2.08 ± 0.10	2.05 ± 0.11	n = 34	Siemens Dimension Vista
0.48 ± 0.04	2.24 ± 0.11	1.55 ± 0.12	3.12 ± 0.14	2.58 ± 0.11	n = 4	Siemens Dimension Xpand
0.87 ± 0.14	2.47 ± 0.14	1.92 ± 0.15	3.16 ± 0.10	2.84 ± 0.10	n = 3	Siemens Immulite 1000
0.79 ± 0.06	2.23 ± 0.16	1.83 ± 0.10	3.08 ± 0.19	2.86 ± 0.22	n = 16	Siemens Immulite 2000
0.67 ± 0.08	1.95 ± 0.13	1.59 ± 0.09	3.28 ± 0.11	3.21 ± 0.22	n = 4	Tosoh Bioscience
0.70 ± 0.18	1.90 ± 0.48	1.55 ± 0.27	2.76 ± 0.46	2.57 ± 0.34	n = 18	Mean of Above Means
						<Reagents>
0.65 ± 0.06	1.34 ± 0.09	1.24 ± 0.11	1.98 ± 0.15	1.97 ± 0.16	n = 19	Abbott
0.65 ± 0.06	1.80 ± 0.11	1.55 ± 0.08	2.57 ± 0.12	2.37 ± 0.13	n = 36	Beckman Coulter
0.63 ± 0.05	1.20 ± 0.09	1.10 ± 0.09	2.23 ± 0.14	2.55 ± 0.19	n = 3	bioMerieux Vitek
0.98 ± 0.06	2.80 ± 0.11	1.96 ± 0.11	4.98 ± 0.17	4.65 ± 0.17	n = 24	Ortho Clinical Diagnostics
0.80 ± 0.00	1.90 ± 0.07	1.61 ± 0.06	2.96 ± 0.10	2.82 ± 0.10	n = 34	Roche Elecsys/Modular E/e601/e411
0.72 ± 0.07	1.68 ± 0.12	1.41 ± 0.08	2.57 ± 0.13	2.49 ± 0.15	n = 65	Siemens ADVIA/ADVIA Centaur
0.50 ± 0.00	2.08 ± 0.27	1.46 ± 0.18	2.93 ± 0.34	2.38 ± 0.24	n = 14	Siemens Dimension
0.40 ± 0.00	1.25 ± 0.08	1.11 ± 0.08	2.10 ± 0.11	2.07 ± 0.13	n = 41	Siemens Dimension LOCI
0.80 ± 0.08	2.26 ± 0.18	1.84 ± 0.11	3.10 ± 0.18	2.86 ± 0.19	n = 19	Siemens Immulite
0.65 ± 0.11	1.90 ± 0.09	1.61 ± 0.10	3.32 ± 0.12	3.19 ± 0.26	n = 3	Tosoh ST AIA
0.68 ± 0.15	1.79 ± 0.47	1.48 ± 0.29	2.66 ± 0.54	2.52 ± 0.40	n = 10	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

T3-Uptake (%)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
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30.52 ± 3.24	41.62 ± 6.85	36.61 ± 5.41	43.14 ± 6.87	39.36 ± 5.59	n = 142	All Methods & Instruments
30.00	42.90	37.50	44.00	40.25	n = 142	Median value, All Methods & Instruments
						<Instruments>
28.18 ± 1.38	36.11 ± 1.32	28.93 ± 1.38	36.50 ± 1.67	29.66 ± 1.46	n = 9	Abbott Architect i System
37.17 ± 4.05	44.75 ± 4.37	40.88 ± 3.57	46.68 ± 4.21	42.43 ± 4.38	n = 12	Beckman Coulter ACCESS
28.17 ± 1.05	44.72 ± 0.69	38.86 ± 2.31	46.04 ± 0.69	41.42 ± 1.90	n = 9	Beckman Coulter AU Chemistry System
39.94 ± 1.89	45.48 ± 1.31	40.57 ± 2.14	46.22 ± 2.04	42.82 ± 1.64	n = 10	Beckman Coulter UniCel DxI 800
32.91 ± 1.26	52.00 ± 1.25	41.97 ± 1.34	54.43 ± 1.38	45.51 ± 1.27	n = 8	Ortho Vitros 5600
31.30 ± 1.69	51.99 ± 1.19	42.29 ± 0.45	53.76 ± 1.60	45.26 ± 1.36	n = 6	Ortho Vitros Eci/ECiQ
28.73 ± 1.08	44.49 ± 1.75	39.63 ± 1.30	46.31 ± 0.72	40.91 ± 1.30	n = 4	Roche MODULAR D/P
32.89 ± 0.77	36.37 ± 0.81	34.17 ± 1.13	39.21 ± 1.13	37.09 ± 0.49	n = 4	Roche MODULAR E
31.91 ± 1.61	46.75 ± 2.62	40.40 ± 2.06	47.82 ± 2.12	42.98 ± 1.87	n = 29	Siemens ADVIA Centaur
29.69 ± 0.90	35.38 ± 1.80	32.98 ± 1.65	38.35 ± 1.58	36.13 ± 1.13	n = 4	Siemens Dimension EXL
30.14 ± 1.27	37.00 ± 1.54	33.36 ± 1.52	38.27 ± 1.38	36.36 ± 1.09	n = 5	Siemens Dimension RxL
29.17 ± 1.08	36.15 ± 1.82	32.55 ± 1.33	38.26 ± 1.68	36.36 ± 1.66	n = 21	Siemens Dimension Vista
28.25 ± 0.27	35.25 ± 1.10	30.78 ± 1.15	36.08 ± 1.59	32.09 ± 2.88	n = 5	Siemens Immulite 1000
27.73 ± 1.23	33.46 ± 1.77	29.94 ± 1.46	34.24 ± 1.15	31.37 ± 1.68	n = 13	Siemens Immulite 2000
30.33 ± 2.85	41.12 ± 6.75	36.33 ± 5.19	42.69 ± 6.80	38.81 ± 5.38	n = 14	Mean of Above Means
						<Reagents>
28.18 ± 1.38	36.11 ± 1.32	28.93 ± 1.38	36.50 ± 1.67	29.66 ± 1.46	n = 9	Abbott
38.90 ± 2.97	45.49 ± 2.56	40.84 ± 2.72	46.77 ± 3.19	42.89 ± 2.45	n = 22	Beckman Coulter
28.46 ± 1.03	44.79 ± 1.03	39.58 ± 1.40	46.17 ± 0.75	41.64 ± 1.49	n = 10	Microgenics CEDIA
32.33 ± 1.54	51.99 ± 1.22	42.00 ± 1.25	54.18 ± 1.45	45.43 ± 1.24	n = 14	Ortho Clinical Diagnostics
33.05 ± 0.73	36.57 ± 0.82	34.33 ± 1.04	39.41 ± 1.07	37.41 ± 0.81	n = 5	Roche Elecsys/Modular E/e601/e411
31.91 ± 1.61	46.75 ± 2.62	40.40 ± 2.06	47.82 ± 2.12	42.98 ± 1.87	n = 29	Siemens ADVIA/ADVIA Centaur
29.41 ± 1.06	36.38 ± 1.78	32.86 ± 1.37	38.41 ± 1.58	36.42 ± 1.45	n = 28	Siemens Dimension
27.98 ± 1.06	34.24 ± 1.56	30.32 ± 1.27	34.70 ± 1.46	31.54 ± 1.95	n = 17	Siemens Immulite
30.65 ± 3.09	41.29 ± 6.67	36.31 ± 5.36	42.75 ± 6.79	38.82 ± 5.78	n = 8	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

T Uptake (Unit)

Specimen: E86 -----	Specimen: E87 -----	Specimen: E88 -----	Specimen: E89 -----	Specimen: E90 -----	Number -----	Instrument or Reagent System -----
1.099 ± 0.036	0.993 ± 0.217	1.081 ± 0.031	0.849 ± 0.051	0.962 ± 0.051	n = 19	All Methods & Instruments
1.090	0.990	1.090	0.870	0.960	n = 19	Median value, All Methods & Instruments
<Instruments>						
1.111 ± 0.024	0.800 ± 0.017	1.089 ± 0.035	0.786 ± 0.018	1.020 ± 0.029	n = 4	Abbott Architect i System
1.098 ± 0.015	0.976 ± 0.030	1.074 ± 0.031	0.875 ± 0.039	0.947 ± 0.044	n = 7	Roche MODULAR E
1.043 ± 0.030	1.518 ± 0.072	1.330 ± 0.046	1.552 ± 0.100	1.424 ± 0.096	n = 4	Siemens ADVIA Centaur
1.087 ± 0.032	1.072 ± 0.334	1.151 ± 0.127	1.035 ± 0.372	1.109 ± 0.229	n = 3	Mean of Above Means
<Reagents>						
1.111 ± 0.024	0.800 ± 0.017	1.089 ± 0.035	0.786 ± 0.018	1.020 ± 0.029	n = 4	Abbott
1.104 ± 0.019	0.981 ± 0.026	1.079 ± 0.029	0.873 ± 0.032	0.941 ± 0.038	n = 11	Roche Elecsys/Modular E/e601/e411
1.043 ± 0.030	1.518 ± 0.072	1.330 ± 0.046	1.552 ± 0.100	1.424 ± 0.096	n = 4	Siemens ADVIA/ADVIA Centaur
1.089 ± 0.033	1.075 ± 0.334	1.153 ± 0.126	1.034 ± 0.373	1.107 ± 0.231	n = 3	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Triiodothyronine (T3, ng/dL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
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56.0 ± 12.58	99.8 ± 14.33	114.5 ± 17.36	141.6 ± 17.08	168.4 ± 26.28	n = 184	All Methods & Instruments
54.0	100.0	117.0	143.8	172.0	n = 184	Median value, All Methods & Instruments
						<Instruments>
53.5 ± 7.37	78.8 ± 9.07	92.0 ± 4.88	117.5 ± 4.55	139.5 ± 6.30	n = 13	Abbott Architect i System
64.2 ± 15.14	90.4 ± 11.46	96.1 ± 7.82	125.7 ± 18.65	132.1 ± 8.09	n = 4	Abbott AxSym
52.0 ± 9.20	81.7 ± 9.86	89.7 ± 10.20	115.3 ± 10.41	127.4 ± 11.04	n = 12	Beckman Coulter ACCESS
50.3 ± 5.79	76.9 ± 6.39	80.4 ± 7.10	109.5 ± 9.39	124.0 ± 11.20	n = 14	Beckman Coulter UniCel DxI 800
61.4 ± 1.58	112.9 ± 3.82	115.8 ± 2.96	154.0 ± 5.87	166.5 ± 6.63	n = 13	Ortho Vitros 5600
85.2 ± 5.37	105.2 ± 7.37	127.1 ± 4.28	146.1 ± 5.81	170.4 ± 7.33	n = 8	Roche cobas e601
95.0 ± 3.58	110.9 ± 5.15	131.3 ± 1.37	155.0 ± 2.97	181.1 ± 4.42	n = 3	Roche Elecsys
88.6 ± 4.04	110.4 ± 4.01	128.8 ± 4.05	150.6 ± 5.84	178.5 ± 5.66	n = 14	Roche MODULAR E
53.7 ± 5.40	100.9 ± 8.44	122.3 ± 8.99	145.8 ± 8.74	188.7 ± 11.68	n = 64	Siemens ADVIA Centaur
61.1 ± 15.70	105.0 ± 14.48	121.4 ± 7.94	147.2 ± 11.53	172.9 ± 8.46	n = 3	Siemens Dimension Vista
44.6 ± 4.49	104.3 ± 8.58	112.7 ± 5.32	155.4 ± 15.44	168.1 ± 6.29	n = 5	Siemens Immulite 1000
45.7 ± 3.62	107.3 ± 8.16	110.3 ± 9.35	149.4 ± 8.90	160.7 ± 8.77	n = 14	Siemens Immulite 2000
50.7 ± 4.22	88.0 ± 1.80	97.7 ± 2.26	124.3 ± 4.06	140.1 ± 2.86	n = 3	Tosoh Bioscience
59.4 ± 15.98	98.8 ± 13.49	110.3 ± 17.49	139.4 ± 17.70	158.6 ± 23.28	n = 13	Mean of Above Means
						<Reagents>
54.4 ± 8.22	81.0 ± 9.75	92.7 ± 5.88	117.1 ± 5.64	138.0 ± 6.93	n = 17	Abbott
51.3 ± 7.23	78.9 ± 7.88	84.8 ± 9.34	113.0 ± 10.51	126.4 ± 11.17	n = 28	Beckman Coulter
61.5 ± 1.82	113.9 ± 4.36	116.6 ± 3.48	154.4 ± 6.39	167.3 ± 6.41	n = 15	Ortho Clinical Diagnostics
88.0 ± 5.66	108.8 ± 5.70	128.4 ± 4.67	149.0 ± 6.42	175.9 ± 7.24	n = 28	Roche Elecsys/Modular E/e601/e411
53.7 ± 5.37	100.7 ± 8.31	122.2 ± 8.80	145.6 ± 8.64	188.8 ± 11.50	n = 66	Siemens ADVIA/ADVIA Centaur
59.0 ± 13.71	106.2 ± 12.08	120.4 ± 9.06	145.7 ± 10.71	170.9 ± 13.01	n = 6	Siemens Dimension
45.5 ± 3.93	106.6 ± 8.46	111.0 ± 8.34	150.0 ± 9.32	162.8 ± 8.59	n = 19	Siemens Immulite
54.4 ± 5.59	100.9 ± 13.63	112.5 ± 15.75	141.5 ± 16.20	163.2 ± 21.19	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Free T-3 (pg/mL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
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1.99 ± 0.33	3.20 ± 0.60	3.06 ± 0.47	4.52 ± 0.64	4.31 ± 0.83	n = 137	All Methods & Instruments
2.00	3.30	3.00	4.60	4.30	n = 137	Median value, All Methods & Instruments
						<Instruments>
1.53 ± 0.27	2.71 ± 0.13	2.75 ± 0.26	4.16 ± 0.22	4.03 ± 0.24	n = 11	Abbott Architect i System
1.95 ± 0.26	3.13 ± 0.20	2.75 ± 0.20	4.27 ± 0.22	3.95 ± 0.16	n = 5	Beckman Coulter ACCESS
1.93 ± 0.19	3.01 ± 0.34	2.73 ± 0.40	4.10 ± 0.32	3.90 ± 0.37	n = 12	Beckman Coulter UniCel DxI 800
1.29 ± 0.14	5.71 ± 0.39	3.69 ± 0.38	8.40 ± 0.52	6.23 ± 0.32	n = 5	Ortho Vitros 5600
1.46 ± 0.10	5.57 ± 0.41	3.63 ± 0.32	8.57 ± 0.86	6.15 ± 0.54	n = 3	Ortho Vitros ECI/ECiQ
2.05 ± 0.19	4.00 ± 0.18	3.78 ± 0.21	5.80 ± 0.15	5.67 ± 0.20	n = 4	Roche cobas e601
1.96 ± 0.10	3.89 ± 0.20	3.61 ± 0.15	5.64 ± 0.16	5.55 ± 0.13	n = 12	Roche MODULAR E
2.10 ± 0.12	3.37 ± 0.10	3.06 ± 0.11	4.67 ± 0.13	4.42 ± 0.14	n = 48	Siemens ADVIA Centaur
0.50 ± 0.00	2.39 ± 0.16	1.17 ± 0.24	4.37 ± 0.19	3.01 ± 0.22	n = 14	Siemens Dimension Vista
2.34 ± 0.32	2.48 ± 0.47	2.89 ± 0.23	3.38 ± 0.46	3.67 ± 0.39	n = 13	Siemens Immulite 2000
1.81 ± 0.44	3.47 ± 1.13	3.16 ± 0.58	5.04 ± 1.66	4.63 ± 1.19	n = 10	Mean of Above Means
						<Reagents>
1.53 ± 0.27	2.71 ± 0.13	2.75 ± 0.26	4.16 ± 0.22	4.03 ± 0.24	n = 11	Abbott
1.93 ± 0.20	3.05 ± 0.28	2.72 ± 0.30	4.16 ± 0.30	3.90 ± 0.30	n = 19	Beckman Coulter
1.36 ± 0.15	5.66 ± 0.40	3.66 ± 0.35	8.47 ± 0.67	6.24 ± 0.40	n = 8	Ortho Clinical Diagnostics
1.97 ± 0.12	3.92 ± 0.19	3.63 ± 0.18	5.69 ± 0.17	5.56 ± 0.14	n = 18	Roche Elecsys/Modular E/e601/e411
2.09 ± 0.13	3.37 ± 0.10	3.06 ± 0.11	4.66 ± 0.13	4.42 ± 0.14	n = 48	Siemens ADVIA/ADVIA Centaur
0.50 ± 0.00	2.37 ± 0.16	1.16 ± 0.25	4.35 ± 0.18	2.98 ± 0.18	n = 13	Siemens Dimension LOCI
2.35 ± 0.29	2.48 ± 0.42	2.87 ± 0.26	3.40 ± 0.43	3.72 ± 0.38	n = 15	Siemens Immulite
1.77 ± 0.54	3.10 ± 0.87	3.00 ± 0.63	4.35 ± 0.69	4.32 ± 1.09	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

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

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
0.58 $\pm$ 0.09	1.43 $\pm$ 0.20	1.46 $\pm$ 0.22	3.59 $\pm$ 0.45	1.91 $\pm$ 0.26	n = 296	All Methods & Instruments
0.60	1.40	1.45	3.60	1.90	n = 296	Median value, All Methods & Instruments
<Instruments>						
0.50 $\pm$ 0.01	1.26 $\pm$ 0.06	1.42 $\pm$ 0.08	3.07 $\pm$ 0.14	1.79 $\pm$ 0.11	n = 18	Abbott Architect i System
0.49 $\pm$ 0.01	1.35 $\pm$ 0.05	1.54 $\pm$ 0.10	3.26 $\pm$ 0.17	1.83 $\pm$ 0.05	n = 3	Abbott AxSym
0.51 $\pm$ 0.05	1.29 $\pm$ 0.09	1.20 $\pm$ 0.08	3.27 $\pm$ 0.26	1.63 $\pm$ 0.13	n = 24	Beckman Coulter ACCESS
0.50 $\pm$ 0.00	1.28 $\pm$ 0.09	1.18 $\pm$ 0.10	3.18 $\pm$ 0.19	1.58 $\pm$ 0.11	n = 16	Beckman Coulter UniCel DxI 800
0.50 $\pm$ 0.00	1.30 $\pm$ 0.09	1.07 $\pm$ 0.05	3.07 $\pm$ 0.14	1.43 $\pm$ 0.05	n = 3	bioMerieux Vidas
0.55 $\pm$ 0.05	1.42 $\pm$ 0.04	1.47 $\pm$ 0.05	4.32 $\pm$ 0.14	2.05 $\pm$ 0.07	n = 17	Ortho Vitros 5600
0.53 $\pm$ 0.05	1.42 $\pm$ 0.05	1.48 $\pm$ 0.05	4.33 $\pm$ 0.14	2.08 $\pm$ 0.08	n = 10	Ortho Vitros Eci/ECiQ
0.68 $\pm$ 0.04	1.62 $\pm$ 0.04	1.72 $\pm$ 0.04	3.75 $\pm$ 0.12	2.13 $\pm$ 0.08	n = 4	Roche cobas e411
0.66 $\pm$ 0.05	1.61 $\pm$ 0.04	1.67 $\pm$ 0.05	3.72 $\pm$ 0.10	2.12 $\pm$ 0.08	n = 13	Roche cobas e601
0.65 $\pm$ 0.05	1.53 $\pm$ 0.07	1.63 $\pm$ 0.05	3.62 $\pm$ 0.11	2.02 $\pm$ 0.04	n = 7	Roche Elecsys
0.67 $\pm$ 0.05	1.60 $\pm$ 0.00	1.67 $\pm$ 0.05	3.70 $\pm$ 0.11	2.10 $\pm$ 0.07	n = 18	Roche MODULAR E
0.57 $\pm$ 0.05	1.39 $\pm$ 0.12	1.41 $\pm$ 0.07	3.56 $\pm$ 0.18	1.87 $\pm$ 0.08	n = 65	Siemens ADVIA Centaur
0.73 $\pm$ 0.05	1.78 $\pm$ 0.10	1.82 $\pm$ 0.09	4.13 $\pm$ 0.16	2.32 $\pm$ 0.11	n = 15	Siemens Dimension EXL
0.47 $\pm$ 0.05	1.17 $\pm$ 0.15	1.25 $\pm$ 0.10	2.96 $\pm$ 0.37	1.70 $\pm$ 0.09	n = 9	Siemens Dimension RxL
0.67 $\pm$ 0.04	1.70 $\pm$ 0.09	1.72 $\pm$ 0.10	4.03 $\pm$ 0.17	2.19 $\pm$ 0.11	n = 37	Siemens Dimension Vista
0.50 $\pm$ 0.01	1.20 $\pm$ 0.08	1.23 $\pm$ 0.08	2.99 $\pm$ 0.23	1.66 $\pm$ 0.10	n = 4	Siemens Dimension Xpand
0.58 $\pm$ 0.05	1.25 $\pm$ 0.06	1.30 $\pm$ 0.00	3.23 $\pm$ 0.13	1.65 $\pm$ 0.05	n = 7	Siemens Immulite 1000
0.57 $\pm$ 0.04	1.26 $\pm$ 0.07	1.25 $\pm$ 0.06	3.20 $\pm$ 0.13	1.66 $\pm$ 0.11	n = 18	Siemens Immulite 2000
0.65 $\pm$ 0.05	1.51 $\pm$ 0.07	1.61 $\pm$ 0.09	3.84 $\pm$ 0.18	2.00 $\pm$ 0.13	n = 3	Tosoh Bioscience
0.57 $\pm$ 0.09	1.40 $\pm$ 0.19	1.46 $\pm$ 0.23	3.51 $\pm$ 0.47	1.89 $\pm$ 0.26	n = 19	Mean of Above Means
<Reagents>						
0.50 $\pm$ 0.01	1.27 $\pm$ 0.07	1.43 $\pm$ 0.09	3.09 $\pm$ 0.15	1.80 $\pm$ 0.10	n = 21	Abbott
0.50 $\pm$ 0.04	1.28 $\pm$ 0.09	1.18 $\pm$ 0.09	3.22 $\pm$ 0.24	1.60 $\pm$ 0.13	n = 42	Beckman Coulter
0.50 $\pm$ 0.00	1.30 $\pm$ 0.09	1.07 $\pm$ 0.05	3.07 $\pm$ 0.14	1.43 $\pm$ 0.05	n = 3	bioMerieux Vitek
0.54 $\pm$ 0.05	1.42 $\pm$ 0.04	1.48 $\pm$ 0.05	4.32 $\pm$ 0.14	2.06 $\pm$ 0.08	n = 27	Ortho Clinical Diagnostics
0.66 $\pm$ 0.05	1.60 $\pm$ 0.04	1.66 $\pm$ 0.06	3.69 $\pm$ 0.11	2.09 $\pm$ 0.08	n = 43	Roche Elecsys/Modular E/e601/e411
0.57 $\pm$ 0.05	1.44 $\pm$ 0.14	1.43 $\pm$ 0.08	3.58 $\pm$ 0.20	1.87 $\pm$ 0.09	n = 39	Siemens ADVIA/ADVIA Centaur
0.50 $\pm$ 0.01	1.18 $\pm$ 0.13	1.25 $\pm$ 0.09	2.98 $\pm$ 0.32	1.69 $\pm$ 0.09	n = 13	Siemens Dimension
0.68 $\pm$ 0.05	1.72 $\pm$ 0.10	1.75 $\pm$ 0.11	4.06 $\pm$ 0.18	2.23 $\pm$ 0.13	n = 52	Siemens Dimension LOCI
0.58 $\pm$ 0.04	1.25 $\pm$ 0.07	1.26 $\pm$ 0.05	3.21 $\pm$ 0.13	1.66 $\pm$ 0.10	n = 25	Siemens Immulite
0.57 $\pm$ 0.04	1.35 $\pm$ 0.06	1.40 $\pm$ 0.05	3.54 $\pm$ 0.16	1.88 $\pm$ 0.07	n = 27	Siemens TSH-3
0.55 $\pm$ 0.06	1.36 $\pm$ 0.15	1.38 $\pm$ 0.21	3.43 $\pm$ 0.44	1.83 $\pm$ 0.25	n = 10	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Vitamin B12 (pg/mL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
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359.4 ± 42.16	418.1 ± 48.80	346.3 ± 43.02	417.0 ± 46.19	341.6 ± 42.38	n = 229	All Methods & Instruments
357.0	419.0	348.0	414.0	342.0	n = 229	Median value, All Methods & Instruments
						<Instruments>
405.9 ± 28.23	460.5 ± 15.36	377.0 ± 28.35	448.1 ± 32.79	377.4 ± 25.17	n = 14	Abbott Architect i System
378.9 ± 12.42	463.9 ± 19.53	375.5 ± 11.73	455.4 ± 9.79	376.4 ± 19.60	n = 3	Abbott AxSym
326.6 ± 18.83	392.8 ± 24.80	325.2 ± 19.58	397.4 ± 15.65	317.3 ± 19.24	n = 20	Beckman Coulter ACCESS
304.9 ± 20.37	361.9 ± 10.65	294.2 ± 12.32	363.3 ± 17.43	295.5 ± 16.17	n = 4	Beckman Coulter UniCel DxI 600
303.9 ± 30.82	354.5 ± 26.33	286.3 ± 27.18	355.4 ± 24.65	286.7 ± 19.09	n = 18	Beckman Coulter UniCel DxI 800
348.8 ± 14.59	439.8 ± 10.33	359.8 ± 10.18	439.2 ± 13.50	356.8 ± 10.66	n = 14	Ortho Vitros 5600
367.2 ± 24.67	446.2 ± 23.62	364.3 ± 15.68	448.1 ± 17.88	361.0 ± 15.13	n = 11	Ortho Vitros Eci/ECiQ
394.3 ± 22.60	425.2 ± 41.35	372.0 ± 47.96	437.2 ± 56.55	372.7 ± 41.49	n = 4	Roche cobas e411
406.4 ± 16.13	470.5 ± 17.80	399.1 ± 18.24	466.8 ± 19.07	392.3 ± 15.74	n = 11	Roche cobas e601
394.2 ± 16.70	463.0 ± 16.99	387.1 ± 18.28	459.2 ± 16.88	378.0 ± 19.26	n = 15	Roche MODULAR E
361.3 ± 32.27	395.9 ± 30.74	330.0 ± 29.36	395.1 ± 31.55	325.8 ± 31.90	n = 80	Siemens ADVIA Centaur
359.1 ± 38.91	414.0 ± 51.03	329.7 ± 42.68	402.9 ± 50.15	331.3 ± 39.78	n = 8	Siemens ADVIA Centaur CP
341.8 ± 3.23	490.9 ± 31.75	408.1 ± 14.65	487.8 ± 19.28	404.2 ± 29.30	n = 3	Siemens Immulite 1000
323.4 ± 26.11	432.8 ± 34.24	347.5 ± 30.20	424.5 ± 29.19	340.1 ± 30.47	n = 16	Siemens Immulite 2000
380.3 ± 30.46	518.0 ± 45.34	412.1 ± 13.74	500.5 ± 31.05	410.5 ± 24.39	n = 4	Tosoh Bioscience
361.0 ± 35.63	436.6 ± 45.77	360.0 ± 39.05	434.0 ± 42.44	356.8 ± 38.63	n = 15	Mean of Above Means
						<Reagents>
400.2 ± 27.83	461.2 ± 17.63	376.2 ± 24.72	450.5 ± 29.07	377.2 ± 24.18	n = 17	Abbott
316.5 ± 27.43	373.5 ± 30.21	307.2 ± 29.61	378.7 ± 30.69	302.7 ± 24.47	n = 42	Beckman Coulter
355.0 ± 20.22	440.9 ± 15.39	361.1 ± 11.32	442.6 ± 16.13	358.3 ± 12.76	n = 25	Ortho Clinical Diagnostics
401.1 ± 21.24	466.7 ± 23.02	394.4 ± 25.63	463.8 ± 24.67	385.8 ± 25.76	n = 34	Roche Elecsys/Modular E/e601/e411
361.3 ± 32.99	397.1 ± 33.58	330.1 ± 30.85	395.8 ± 33.87	326.3 ± 32.96	n = 88	Siemens ADVIA/ADVIA Centaur
327.4 ± 24.72	440.2 ± 39.17	356.1 ± 36.80	433.0 ± 36.10	348.6 ± 37.84	n = 19	Siemens Immulite
380.3 ± 30.46	518.0 ± 45.34	412.1 ± 13.74	500.5 ± 31.05	410.5 ± 24.39	n = 4	Tosoh AIA
363.7 ± 33.57	442.4 ± 45.55	363.3 ± 35.54	438.2 ± 39.89	359.2 ± 36.07	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Folic Acid (ng/mL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
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0.86 ± 0.41	1.18 ± 0.62	3.95 ± 1.22	6.99 ± 1.96	12.99 ± 3.85	n = 229	All Methods & Instruments
0.88	1.19	3.90	7.00	12.40	n = 229	Median value, All Methods & Instruments
						<Instruments>
1.21 ± 0.41	1.40 ± 0.31	4.56 ± 0.52	8.88 ± 0.99	18.03 ± 1.56	n = 13	Abbott Architect i System
1.50 ± 0.45	1.87 ± 0.32	4.78 ± 0.68	8.46 ± 0.47	15.60 ± 0.55	n = 3	Abbott AxSym
0.96 ± 0.22	1.41 ± 0.26	5.38 ± 0.39	9.44 ± 0.53	18.05 ± 1.09	n = 20	Beckman Coulter ACCESS
1.07 ± 0.46	1.45 ± 0.34	4.99 ± 0.36	8.78 ± 0.60	16.51 ± 1.40	n = 18	Beckman Coulter UniCel DxI 800
0.93 ± 0.13	1.52 ± 0.17	3.82 ± 0.35	7.81 ± 0.70	15.15 ± 1.18	n = 14	Ortho Vitros 5600
0.77 ± 0.15	1.35 ± 0.27	3.70 ± 0.41	7.66 ± 0.66	14.99 ± 1.59	n = 11	Ortho Vitros Eci/ECiQ
2.04 ± 0.71	2.50 ± 0.55	4.42 ± 0.24	6.78 ± 0.41	11.07 ± 0.42	n = 3	Roche cobas e411
2.10 ± 0.14	2.92 ± 0.20	4.88 ± 0.36	7.05 ± 0.37	11.44 ± 0.73	n = 10	Roche cobas e601
2.18 ± 0.35	2.99 ± 0.34	4.96 ± 0.26	7.11 ± 0.37	11.45 ± 0.49	n = 13	Roche MODULAR E
0.64 ± 0.15	0.83 ± 0.17	3.25 ± 0.37	5.92 ± 0.55	11.54 ± 1.50	n = 66	Siemens ADVIA Centaur
0.80 ± 0.09	0.83 ± 0.14	3.90 ± 0.09	7.25 ± 0.36	14.53 ± 1.23	n = 3	Siemens ADVIA Centaur CP
0.50 ± 0.00	0.50 ± 0.00	1.43 ± 0.22	2.68 ± 0.25	5.75 ± 0.46	n = 28	Siemens Dimension Vista
1.00 ± 0.00	1.13 ± 0.18	3.83 ± 0.42	7.34 ± 0.85	12.70 ± 1.74	n = 15	Siemens Immulite 2000
0.97 ± 0.48	2.67 ± 0.90	4.91 ± 1.34	7.18 ± 1.60	11.22 ± 2.45	n = 4	Tosoh Bioscience
1.12 ± 0.54	1.62 ± 0.82	4.41 ± 0.73	7.61 ± 1.03	13.64 ± 3.17	n = 14	Mean of Above Means
						<Reagents>
1.25 ± 0.43	1.47 ± 0.36	4.59 ± 0.55	8.78 ± 0.92	17.52 ± 1.77	n = 16	Abbott
0.98 ± 0.28	1.42 ± 0.29	5.18 ± 0.41	9.15 ± 0.64	17.34 ± 1.38	n = 40	Beckman Coulter
0.86 ± 0.16	1.45 ± 0.24	3.77 ± 0.39	7.74 ± 0.68	15.08 ± 1.36	n = 25	Ortho Clinical Diagnostics
2.12 ± 0.40	2.93 ± 0.41	4.92 ± 0.35	7.09 ± 0.39	11.51 ± 0.57	n = 30	Roche Elecsys/Modular E/e601/e411
0.65 ± 0.15	0.83 ± 0.16	3.29 ± 0.41	5.97 ± 0.60	11.66 ± 1.63	n = 69	Siemens ADVIA/ADVIA Centaur
0.50 ± 0.00	0.50 ± 0.00	1.43 ± 0.22	2.68 ± 0.25	5.75 ± 0.46	n = 28	Siemens Dimension LOCI
1.00 ± 0.00	1.19 ± 0.25	3.95 ± 0.58	7.63 ± 1.08	13.26 ± 1.94	n = 16	Siemens Immulite
0.97 ± 0.48	2.67 ± 0.90	4.91 ± 1.34	7.18 ± 1.60	11.22 ± 2.45	n = 4	Tosoh AIA
0.91 ± 0.28	1.48 ± 0.81	4.24 ± 0.99	7.53 ± 1.35	13.16 ± 3.62	n = 8	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Cortisol (µg/dL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
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2.65 ± 0.27	8.03 ± 1.12	9.35 ± 1.35	13.98 ± 1.77	22.97 ± 3.02	n = 159	All Methods & Instruments
2.70	8.00	9.30	13.80	23.00	n = 159	Median value, All Methods & Instruments
						<Instruments>
2.37 ± 0.11	6.69 ± 0.27	8.28 ± 0.10	10.94 ± 0.37	17.81 ± 0.50	n = 9	Abbott Architect i System
2.60 ± 0.12	7.88 ± 0.26	9.22 ± 0.30	12.80 ± 0.49	21.84 ± 1.01	n = 6	Beckman Coulter ACCESS
2.51 ± 0.44	7.60 ± 1.00	8.90 ± 0.81	12.70 ± 0.54	21.07 ± 1.58	n = 3	Beckman Coulter UniCel DxI 600
2.60 ± 0.21	7.46 ± 0.50	8.70 ± 0.49	12.46 ± 0.59	20.61 ± 1.38	n = 15	Beckman Coulter UniCel DxI 800
2.93 ± 0.33	8.27 ± 1.56	10.03 ± 1.40	13.05 ± 1.82	22.97 ± 4.02	n = 4	LC/MS/MS
2.32 ± 0.10	6.32 ± 0.28	7.30 ± 0.43	12.05 ± 0.22	19.93 ± 0.39	n = 9	Ortho Vitros 5600
2.51 ± 0.13	6.88 ± 0.25	7.67 ± 0.12	12.89 ± 0.82	20.22 ± 1.32	n = 5	Ortho Vitros Eci/ECiQ
2.85 ± 0.24	7.49 ± 0.59	9.00 ± 0.53	14.33 ± 0.93	23.84 ± 1.18	n = 6	Roche cobas e601
2.85 ± 0.19	7.55 ± 0.46	9.08 ± 0.51	14.46 ± 0.73	24.33 ± 1.22	n = 3	Roche Elecsys
2.73 ± 0.12	7.36 ± 0.25	8.84 ± 0.33	13.99 ± 0.46	23.69 ± 0.75	n = 11	Roche MODULAR E
2.62 ± 0.21	8.39 ± 0.61	9.67 ± 0.66	14.47 ± 1.14	23.22 ± 1.48	n = 57	Siemens ADVIA Centaur
2.86 ± 0.10	8.74 ± 0.19	10.10 ± 0.37	15.41 ± 0.64	24.13 ± 1.17	n = 3	Siemens ADVIA Centaur CP
3.19 ± 0.37	10.53 ± 0.23	14.06 ± 0.71	17.10 ± 1.27	28.49 ± 1.81	n = 3	Siemens Immulite 1000
2.88 ± 0.25	9.66 ± 0.76	12.81 ± 1.01	16.18 ± 1.41	28.39 ± 1.57	n = 19	Siemens Immulite 2000
2.70 ± 0.24	7.76 ± 1.02	8.98 ± 0.97	13.68 ± 1.67	22.70 ± 2.89	n = 14	Mean of Above Means
						<Reagents>
2.37 ± 0.11	6.69 ± 0.27	8.28 ± 0.10	10.94 ± 0.37	17.81 ± 0.50	n = 9	Abbott
2.62 ± 0.18	7.57 ± 0.55	8.86 ± 0.54	12.58 ± 0.58	21.02 ± 1.45	n = 24	Beckman Coulter
2.93 ± 0.33	8.27 ± 1.56	10.03 ± 1.40	13.05 ± 1.82	22.97 ± 4.02	n = 4	In-House
2.40 ± 0.17	6.59 ± 0.47	7.52 ± 0.53	12.28 ± 0.62	19.93 ± 0.54	n = 14	Ortho Clinical Diagnostics
2.79 ± 0.18	7.44 ± 0.38	8.96 ± 0.43	14.18 ± 0.65	23.84 ± 0.92	n = 22	Roche Elecsys/Modular E/e601/e411
2.63 ± 0.21	8.41 ± 0.60	9.70 ± 0.65	14.53 ± 1.14	23.28 ± 1.47	n = 60	Siemens ADVIA/ADVIA Centaur
2.92 ± 0.29	9.76 ± 0.79	12.93 ± 1.07	16.29 ± 1.39	28.50 ± 1.63	n = 23	Siemens Immulite
2.67 ± 0.23	7.73 ± 1.05	9.13 ± 1.35	13.34 ± 1.68	22.27 ± 3.15	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Insulin (μU/mL)

Specimen: E86 -----	Specimen: E87 -----	Specimen: E88 -----	Specimen: E89 -----	Specimen: E90 -----	Number -----	Instrument or Reagent System -----
15.18 ± 5.64	223.14 ± 85.11	84.65 ± 50.12	93.53 ± 40.93	289.07 ± 162.35	n = 103	All Methods & Instruments
15.40	223.20	86.60	90.80	302.40	n = 103	Median value, All Methods & Instruments
<Instruments>						
14.35 ± 0.51	214.99 ± 4.04	80.35 ± 1.86	84.89 ± 1.18	321.27 ± 21.73	n = 7	Abbott Architect i System
14.25 ± 0.46	221.59 ± 5.46	85.17 ± 7.42	86.90 ± 5.49	302.95 ± 7.34	n = 3	Beckman Coulter UniCel DxI 600
14.56 ± 0.74	215.48 ± 6.10	80.95 ± 4.01	88.11 ± 3.19	302.79 ± 14.03	n = 7	Beckman Coulter UniCel DxI 800
17.86 ± 0.63	268.42 ± 9.35	107.15 ± 0.41	111.36 ± 2.05	395.36 ± 10.79	n = 5	Roche cobas e601
18.26 ± 1.05	272.46 ± 11.54	110.05 ± 5.76	110.92 ± 4.87	394.25 ± 13.00	n = 5	Roche Elecsys
17.61 ± 0.56	264.79 ± 6.64	106.72 ± 1.99	108.89 ± 2.24	388.25 ± 7.93	n = 11	Roche MODULAR E
21.77 ± 1.60	325.79 ± 30.73	145.73 ± 9.47	150.63 ± 9.11	443.44 ± 88.55	n = 22	Siemens ADVIA Centaur
8.37 ± 0.50	125.76 ± 3.78	24.76 ± 1.67	51.65 ± 3.91	84.58 ± 8.78	n = 5	Siemens Immulite 1000
8.57 ± 1.69	129.83 ± 10.13	25.15 ± 2.75	50.18 ± 4.35	87.60 ± 8.52	n = 29	Siemens Immulite 2000
15.28 ± 4.38	229.93 ± 65.08	87.50 ± 38.38	93.20 ± 30.26	321.04 ± 123.61	n = 9	Mean of Above Means
<Reagents>						
14.35 ± 0.51	214.99 ± 4.04	80.35 ± 1.86	84.89 ± 1.18	321.27 ± 21.73	n = 7	Abbott
14.55 ± 0.75	217.45 ± 6.96	82.63 ± 4.94	88.09 ± 3.61	301.84 ± 7.47	n = 12	Beckman Coulter
17.86 ± 0.72	266.91 ± 8.70	107.39 ± 2.93	109.89 ± 3.15	390.64 ± 10.64	n = 23	Roche Elecsys/Modular E/e601/e411
21.69 ± 1.59	326.54 ± 30.06	145.94 ± 9.13	150.63 ± 8.78	442.50 ± 86.20	n = 23	Siemens ADVIA/ADVIA Centaur
8.35 ± 2.00	128.06 ± 12.49	25.16 ± 2.49	51.24 ± 5.68	89.04 ± 10.74	n = 16	Siemens Immulite
8.64 ± 1.22	129.34 ± 7.39	24.92 ± 2.43	49.68 ± 3.56	85.68 ± 7.26	n = 18	Siemens Immulite-Insulin lot# > 400
14.17 ± 5.13	212.48 ± 76.35	77.24 ± 46.42	86.49 ± 36.20	279.66 ± 151.56	n = 6	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Free Estriol (ng/mL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
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0.46 ± 0.07	0.10 ± 0.00	0.10 ± 0.02	1.96 ± 0.82	1.77 ± 0.77	n = 19	All Methods & Instruments
0.49	0.10	0.10	1.70	1.60	n = 19	Median value, All Methods & Instruments
						<Instruments>
0.45 ± 0.05	0.07 ± 0.04	0.07 ± 0.04	1.33 ± 0.09	1.23 ± 0.09	n = 4	Beckman Coulter UniCel DxI 800
0.47 ± 0.05	0.09 ± 0.02	0.09 ± 0.02	2.41 ± 0.24	2.09 ± 0.17	n = 6	Siemens Immulite 2000
0.46 ± 0.01	0.08 ± 0.01	0.08 ± 0.01	1.87 ± 0.61	1.66 ± 0.49	n = 2	Mean of Above Means
						<Reagents>
0.47 ± 0.05	0.08 ± 0.04	0.08 ± 0.04	1.38 ± 0.08	1.26 ± 0.06	n = 7	Beckman Coulter
2.08 ± 0.88	0.97 ± 1.59	0.39 ± 0.51	2.40 ± 1.81	2.85 ± 2.17	n = 3	In-House
0.45 ± 0.07	0.09 ± 0.02	0.09 ± 0.02	2.31 ± 0.35	2.04 ± 0.23	n = 7	Siemens Immulite
0.91 ± 0.83	0.33 ± 0.45	0.17 ± 0.15	2.08 ± 0.50	2.05 ± 0.72	n = 3	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Estradiol (pg/mL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
-----	-----	-----	-----	-----	-----	-----
36.5 ± 12.80	25.7 ± 9.99	36.7 ± 10.94	134.0 ± 20.68	176.4 ± 30.73	n = 164	All Methods & Instruments
35.0	25.0	37.0	131.0	172.0	n = 164	Median value, All Methods & Instruments
						<Instruments>
47.8 ± 3.17	40.1 ± 5.74	52.0 ± 4.79	117.4 ± 6.90	157.6 ± 5.31	n = 11	Abbott Architect i System
24.6 ± 7.85	13.7 ± 2.42	34.4 ± 7.10	142.1 ± 11.49	202.4 ± 23.32	n = 6	Beckman Coulter ACCESS
32.7 ± 8.87	26.8 ± 8.04	34.5 ± 6.77	138.3 ± 18.21	199.9 ± 24.54	n = 4	Beckman Coulter UniCel DxI 600
31.3 ± 9.48	21.1 ± 3.33	36.9 ± 8.49	132.9 ± 13.05	185.0 ± 25.01	n = 10	Beckman Coulter UniCel DxI 800
35.2 ± 4.89	16.4 ± 3.87	36.7 ± 4.96	127.6 ± 4.72	183.4 ± 13.86	n = 3	LC/MS/MS
25.9 ± 2.74	24.5 ± 2.14	35.4 ± 2.12	119.8 ± 1.93	154.6 ± 2.83	n = 4	Ortho Vitros 5600
58.5 ± 4.90	34.3 ± 2.35	43.2 ± 2.27	140.4 ± 5.80	180.5 ± 7.89	n = 7	Roche cobas e601
55.4 ± 2.74	27.9 ± 2.57	36.0 ± 2.33	137.9 ± 2.88	172.6 ± 5.27	n = 4	Roche Elecsys
58.8 ± 3.54	32.1 ± 2.86	42.9 ± 2.96	141.9 ± 6.09	182.6 ± 7.65	n = 10	Roche MODULAR E
33.0 ± 6.54	19.3 ± 4.79	29.5 ± 5.19	123.0 ± 6.92	156.4 ± 8.13	n = 48	Siemens ADVIA Centaur
27.9 ± 9.05	14.0 ± 3.59	22.0 ± 5.53	124.3 ± 13.89	159.6 ± 9.99	n = 5	Siemens ADVIA Centaur CP
17.0 ± 2.45	11.0 ± 0.00	11.0 ± 0.00	82.1 ± 3.42	86.7 ± 10.20	n = 5	Siemens Dimension Vista
36.4 ± 8.21	28.6 ± 5.95	39.5 ± 5.84	164.2 ± 11.24	213.0 ± 14.80	n = 9	Siemens Immulite 1000
34.8 ± 6.85	34.5 ± 6.58	46.9 ± 7.94	162.0 ± 13.12	213.2 ± 14.38	n = 27	Siemens Immulite 2000
36.0 ± 13.09	24.6 ± 9.31	37.1 ± 8.49	134.1 ± 16.62	180.2 ± 24.14	n = 14	Mean of Above Means
						<Reagents>
47.8 ± 3.17	40.1 ± 5.74	52.0 ± 4.79	117.4 ± 6.90	157.6 ± 5.31	n = 11	Abbott
29.5 ± 9.35	21.0 ± 7.94	35.5 ± 7.64	137.0 ± 14.53	193.5 ± 24.99	n = 20	Beckman Coulter
35.2 ± 4.89	16.4 ± 3.87	36.7 ± 4.96	127.6 ± 4.72	183.4 ± 13.86	n = 3	In-House
25.6 ± 2.20	25.0 ± 2.23	35.7 ± 1.80	120.0 ± 2.28	156.0 ± 3.01	n = 6	Ortho Clinical Diagnostics
58.2 ± 4.17	32.4 ± 3.55	42.1 ± 3.95	141.0 ± 6.35	180.4 ± 9.20	n = 24	Roche Elecsys/Modular E/e601/e411
32.9 ± 7.77	19.0 ± 5.24	28.7 ± 5.97	122.1 ± 7.80	155.4 ± 7.04	n = 40	Siemens ADVIA Centaur Enhanced Estr
32.2 ± 5.23	18.0 ± 3.93	30.0 ± 5.08	125.4 ± 3.04	161.1 ± 10.21	n = 13	Siemens ADVIA/ADVIA Centaur
16.5 ± 3.16	11.0 ± 0.00	11.0 ± 0.00	82.7 ± 3.77	86.3 ± 12.21	n = 4	Siemens Dimension LOCI
35.2 ± 7.20	33.0 ± 6.90	44.9 ± 8.23	162.7 ± 12.56	213.2 ± 14.48	n = 36	Siemens Immulite
33.7 ± 11.00	23.5 ± 9.43	36.4 ± 10.09	127.4 ± 18.00	170.9 ± 27.07	n = 9	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Testosterone (ng/dL)

Specimen: E86 -----	Specimen: E87 -----	Specimen: E88 -----	Specimen: E89 -----	Specimen: E90 -----	Number -----	Instrument or Reagent System -----
290.39 ± 40.48	233.05 ± 23.08	26.99 ± 9.64	567.33 ± 69.60	59.55 ± 14.98	n = 144	All Methods & Instruments
287.00	234.60	25.90	566.02	57.10	n = 144	Median value, All Methods & Instruments
294 & 287	221 & 223	15.8 & 15.7	536 & 544	49.0 & 50.2	n = 2	[---] Results of LC_MS_MS measurement*
						<Instruments>
235.70 ± 5.93	159.29 ± 7.39	9.75 ± 0.91	371.39 ± 11.49	33.16 ± 10.03	n = 3	Abbott AxSym
294.66 ± 8.26	210.59 ± 6.18	21.96 ± 4.11	511.47 ± 17.17	52.22 ± 0.78	n = 6	Beckman Coulter ACCESS
278.77 ± 21.27	197.74 ± 15.06	24.98 ± 4.98	482.32 ± 23.29	51.53 ± 1.86	n = 3	Beckman Coulter UniCel DxI 600
286.37 ± 12.72	202.35 ± 10.15	20.33 ± 6.85	483.52 ± 21.87	46.67 ± 4.33	n = 12	Beckman Coulter UniCel DxI 800
282.29 ± 28.39	216.43 ± 7.54	14.40 ± 3.39	501.24 ± 25.61	42.77 ± 3.42	n = 4	Gamma Counter
318.88 ± 18.64	221.44 ± 20.47	18.92 ± 3.28	521.33 ± 27.14	48.55 ± 3.09	n = 5	LC/MS/MS
273.79 ± 13.65	252.47 ± 14.02	33.83 ± 2.51	695.29 ± 39.31	62.60 ± 2.87	n = 4	Ortho Vitros 5600
259.26 ± 10.44	236.55 ± 10.79	28.88 ± 3.29	666.86 ± 34.43	55.97 ± 5.68	n = 3	Ortho Vitros Eci/ECiQ
342.13 ± 20.90	233.15 ± 14.04	24.30 ± 3.51	552.99 ± 30.23	48.30 ± 6.20	n = 6	Roche cobas e601
367.66 ± 25.08	244.57 ± 14.45	26.53 ± 3.89	591.85 ± 32.57	50.47 ± 5.07	n = 8	Roche Elecsys
349.09 ± 7.26	234.01 ± 6.35	23.55 ± 1.70	559.84 ± 12.94	49.33 ± 2.14	n = 12	Roche MODULAR E
274.19 ± 21.77	237.76 ± 15.91	38.50 ± 8.69	596.27 ± 45.70	75.00 ± 8.55	n = 45	Siemens ADVIA Centaur
273.97 ± 22.22	271.71 ± 14.52	28.43 ± 4.22	717.70 ± 126.24	71.11 ± 11.09	n = 4	Siemens Immulite 1000
263.62 ± 32.76	239.79 ± 23.50	22.15 ± 3.14	568.74 ± 54.83	63.37 ± 9.67	n = 23	Siemens Immulite 2000
288.84 ± 36.67	228.40 ± 24.09	24.00 ± 6.90	557.45 ± 89.80	52.99 ± 10.72	n = 14	Mean of Above Means
						<Reagents>
235.70 ± 5.93	159.29 ± 7.39	9.75 ± 0.91	371.39 ± 11.49	33.16 ± 10.03	n = 3	Abbott
288.59 ± 13.94	204.33 ± 11.08	21.57 ± 5.98	491.36 ± 24.29	48.91 ± 4.45	n = 21	Beckman Coulter
326.97 ± 29.78	221.51 ± 21.17	18.49 ± 3.07	533.14 ± 39.41	47.37 ± 5.28	n = 6	In-House
266.87 ± 14.06	244.96 ± 14.75	32.03 ± 3.78	682.35 ± 38.86	60.19 ± 4.73	n = 7	Ortho Clinical Diagnostics
352.07 ± 15.78	236.60 ± 10.77	24.16 ± 3.13	567.01 ± 26.00	49.24 ± 3.95	n = 27	Roche Elecsys/Modular E/e601/e411
274.19 ± 21.77	237.76 ± 15.91	38.50 ± 8.69	596.27 ± 45.70	75.00 ± 8.55	n = 45	Siemens ADVIA/ADVIA Centaur
282.29 ± 28.39	216.43 ± 7.54	14.40 ± 3.39	501.24 ± 25.61	42.77 ± 3.42	n = 4	Siemens Coat-A-Count
265.77 ± 31.65	245.01 ± 25.69	23.05 ± 4.14	579.91 ± 63.53	64.40 ± 10.16	n = 27	Siemens Immulite
283.17 ± 34.73	227.52 ± 21.11	22.27 ± 8.91	545.18 ± 82.95	52.05 ± 12.89	n = 8	Mean of Above Means

*The analyses on these specimens were performed in duplicate measurement using the HPLC-tandem mass spectrometry reference method at Clinical Chemistry Branch (CCB), Division of Laboratory Sciences (DLS), Centers for Disease Control and Prevention, Atlanta, Georgia.

Statistical Summary (Mean and Standard Deviation)

Testosterone (ng/dL)

CDC Educational challenge samples[†]

Sample #3

406.0 & 397.0

417.8 ± 19.0
 381.0 ± 50.7
 366.7 ± 12.3
 320.0; 347.0
 341.2 ± 12.0
 423.0
 421.4 ± 29.8
 430.0; 407.0
 381.1
 412.1 ± 12.0
 436.4 ± 28.0
 335.1 ± 37.9
 315.1 ± 15.7
 383.3 ± 31.5
 331.3 ± 37.6
 302.2 ± 31.5
 355.0; 392.4
 291.3 ± 8.5
 302.3 ± 16.3

Sample #4

30.4 & 29.9

30.9 ± 1.9
 41.9 ± 10.8
 35.6 ± 3.2
 30.0; 40.0
 34.7 ± 3.1
 36.0
 34.0 ± 5.7
 38.5; 33.0
 26.0
 35.5 ± 3.3
 35.6 ± 4.5
 36.4 ± 7.4
 29.4 ± 8.3
 27.3 ± 3.5
 34.1 ± 6.5
 32.9 ± 7.5
 31.8; 30.9
 24.7 ± 3.1
 28.9 ± 3.2

n= 2

Results of LC_MS_MS measurement*

n= 5 LC-MS/MS
 n= 3 Abbott AxSym
 n= 6 Beckman ACCESS
 n= 2 Beckman UniCel DxL 600
 n= 11 Beckman UniCel DxL 800
 n= 1 MP Biomedical
 n= 4 Roche Cobas E601
 n= 2 Roche Cobas E602
 n= 1 Roche Cobas E411
 n= 11 Roche Modular E
 n= 7 Roche Elecsys
 n= 39 Siemens ADVIA Centaur
 n= 3 Siemens ADVIA Centaur CP
 n= 3 Siemens Coat-A-Count
 n= 4 Siemens Immulite 1000
 n= 20 Siemens Immulite 2000
 n= 2 Tosoh Bioscience
 n= 3 Vitros ECI/ECiQ
 n= 3 Vitros 5600

*The analyses on these specimens were performed in duplicate measurement using the HPLC-tandem mass spectrometry reference method at Clinical Chemistry Branch (CCB), Division of Laboratory Sciences (DLS), Centers for Disease Control and Prevention, Atlanta, Georgia.

[†] Two CDC Educational challenge samples were prepared from authentic human serum of a male and a female single healthy donor, respectively. The serum samples were stored at -80°C before shipment on ice via overnight delivery.

Statistical Summary (Mean and Standard Deviation)

Progesterone (ng/mL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
-----	-----	-----	-----	-----	-----	-----
8.75 ± 1.43	0.35 ± 0.15	0.49 ± 0.14	17.63 ± 1.99	21.88 ± 2.59	n = 159	All Methods & Instruments
8.30	0.30	0.50	17.50	22.20	n = 159	Median value, All Methods & Instruments
<Instruments>						
10.67 ± 0.61	0.22 ± 0.07	0.43 ± 0.07	19.53 ± 0.83	23.93 ± 1.12	n = 7	Abbott Architect i System
9.97 ± 0.26	0.31 ± 0.12	0.54 ± 0.07	19.08 ± 1.09	21.24 ± 0.95	n = 7	Beckman Coulter ACCESS
10.52 ± 1.36	0.36 ± 0.18	0.53 ± 0.19	19.41 ± 2.27	22.14 ± 1.67	n = 4	Beckman Coulter UniCel DxI 600
10.44 ± 0.79	0.38 ± 0.20	0.53 ± 0.19	19.37 ± 1.65	23.28 ± 1.07	n = 11	Beckman Coulter UniCel DxI 800
8.92 ± 1.14	0.07 ± 0.05	0.17 ± 0.05	18.81 ± 2.96	22.36 ± 3.33	n = 3	LC/MS/MS
7.31 ± 0.19	0.84 ± 0.06	0.90 ± 0.05	16.32 ± 0.39	20.22 ± 0.15	n = 5	Ortho Vitros 5600
10.72 ± 0.41	0.47 ± 0.05	0.57 ± 0.05	20.17 ± 0.77	23.12 ± 1.13	n = 3	Roche cobas e411
10.72 ± 0.57	0.50 ± 0.04	0.58 ± 0.03	19.80 ± 0.57	23.05 ± 0.89	n = 8	Roche cobas e601
10.28 ± 0.32	0.48 ± 0.05	0.55 ± 0.05	19.18 ± 0.62	22.80 ± 0.86	n = 10	Roche MODULAR E
7.89 ± 0.40	0.30 ± 0.12	0.47 ± 0.09	17.30 ± 1.02	23.08 ± 1.31	n = 48	Siemens ADVIA Centaur
7.82 ± 0.46	0.34 ± 0.15	0.49 ± 0.14	17.41 ± 0.41	22.62 ± 0.36	n = 5	Siemens ADVIA Centaur CP
8.94 ± 0.53	0.38 ± 0.11	0.57 ± 0.17	16.90 ± 0.76	19.63 ± 1.44	n = 7	Siemens Immulite 1000
8.02 ± 0.68	0.32 ± 0.07	0.44 ± 0.08	15.35 ± 1.24	17.25 ± 1.51	n = 30	Siemens Immulite 2000
9.47 ± 1.37	0.36 ± 0.12	0.52 ± 0.05	18.50 ± 1.53	22.34 ± 1.44	n = 13	Mean of Above Means
<Reagents>						
10.55 ± 0.65	0.21 ± 0.06	0.43 ± 0.07	19.46 ± 0.79	23.63 ± 1.34	n = 8	Abbott
10.30 ± 0.80	0.35 ± 0.17	0.55 ± 0.16	19.27 ± 1.59	22.32 ± 1.60	n = 22	Beckman Coulter
7.39 ± 3.78	0.05 ± 0.05	0.14 ± 0.08	17.66 ± 3.15	21.73 ± 3.01	n = 4	In-House
7.30 ± 0.16	0.83 ± 0.07	0.88 ± 0.07	16.30 ± 0.45	20.34 ± 0.56	n = 7	Ortho Clinical Diagnostics
10.47 ± 0.46	0.48 ± 0.05	0.56 ± 0.05	19.56 ± 0.77	22.93 ± 0.91	n = 25	Roche Elecsys/Modular E/e601/e411
7.88 ± 0.40	0.31 ± 0.12	0.48 ± 0.10	17.31 ± 0.96	23.02 ± 1.24	n = 53	Siemens ADVIA/ADVIA Centaur
8.12 ± 0.47	0.58 ± 0.57	0.57 ± 0.23	16.66 ± 0.61	20.11 ± 1.70	n = 4	Siemens Immulite Progesterone (LKPG)
8.20 ± 0.79	0.33 ± 0.08	0.45 ± 0.09	15.51 ± 1.33	17.44 ± 1.59	n = 33	Siemens Immulite Progesterone (LKPW)
8.70 ± 1.47	0.38 ± 0.22	0.50 ± 0.17	17.71 ± 1.61	21.70 ± 1.88	n = 8	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Dehydroepiandrosterone sulfate (DHEA-S, µg/dL)

Specimen: E86 -----	Specimen: E87 -----	Specimen: E88 -----	Specimen: E89 -----	Specimen: E90 -----	Number -----	Instrument or Reagent System -----
48.14 ± 9.50 47.00	158.92 ± 19.63 157.00	139.79 ± 15.59 138.00	283.70 ± 48.66 282.00	138.87 ± 23.46 137.00	n = 78 n = 78	All Methods & Instruments Median value, All Methods & Instruments
<Instruments>						
51.97 ± 2.03	167.88 ± 4.45	126.31 ± 0.83	286.33 ± 7.86	125.00 ± 1.53	n = 4	Abbott Architect i System
49.80 ± 2.07	159.91 ± 11.43	128.71 ± 7.54	249.82 ± 3.38	121.72 ± 9.68	n = 3	Beckman Coulter UniCel DxI 800
66.31 ± 3.12	179.94 ± 6.37	150.52 ± 5.76	361.32 ± 15.13	163.55 ± 6.59	n = 9	Roche MODULAR E
47.50 ± 5.74	112.25 ± 8.96	87.26 ± 4.98	190.64 ± 7.38	84.69 ± 2.64	n = 5	Siemens ADVIA Centaur
47.58 ± 3.60	164.43 ± 12.64	149.46 ± 6.14	302.64 ± 18.09	148.79 ± 11.59	n = 5	Siemens Immulite 1000
43.43 ± 5.29	154.60 ± 14.87	139.46 ± 12.96	276.08 ± 23.31	137.82 ± 14.38	n = 42	Siemens Immulite 2000
48.20 ± 3.08	164.57 ± 9.30	134.59 ± 19.10	278.65 ± 52.65	132.41 ± 25.03	n = 6	Mean of Above Means
<Reagents>						
51.97 ± 2.03	167.88 ± 4.45	126.31 ± 0.83	286.33 ± 7.86	125.00 ± 1.53	n = 4	Abbott
50.03 ± 1.89	157.09 ± 9.74	131.45 ± 7.53	254.77 ± 9.28	124.95 ± 8.65	n = 5	Beckman Coulter
66.59 ± 2.76	179.30 ± 6.33	150.31 ± 6.08	363.45 ± 17.59	163.90 ± 7.50	n = 13	Roche Elecsys/Modular E/e601/e411
47.50 ± 5.74	112.25 ± 8.96	87.26 ± 4.98	190.64 ± 7.38	84.69 ± 2.64	n = 5	Siemens ADVIA/ADVIA Centaur
43.96 ± 5.30	155.74 ± 15.02	140.82 ± 12.80	278.82 ± 24.26	139.01 ± 14.55	n = 47	Siemens Immulite
50.45 ± 7.15	158.47 ± 21.50	130.98 ± 20.59	273.87 ± 57.45	128.86 ± 26.40	n = 5	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Lutropin (LH, mIU/mL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
-----	-----	-----	-----	-----	-----	-----
4.82 ± 0.69	2.99 ± 0.48	6.67 ± 1.53	10.92 ± 1.31	74.85 ± 9.22	n = 195	All Methods & Instruments
4.77	2.90	6.10	11.00	75.40	n = 195	Median value, All Methods & Instruments
						<Instruments>
3.77 ± 0.17	2.72 ± 0.10	5.74 ± 0.27	9.48 ± 0.31	65.01 ± 2.51	n = 13	Abbott Architect i System
4.34 ± 0.44	2.55 ± 0.17	5.25 ± 0.35	8.64 ± 0.69	61.62 ± 4.25	n = 8	Beckman Coulter ACCESS
4.26 ± 0.10	2.40 ± 0.09	4.90 ± 0.09	8.46 ± 0.84	58.03 ± 1.68	n = 3	Beckman Coulter UniCel DxI 600
4.19 ± 0.24	2.45 ± 0.11	4.98 ± 0.29	8.47 ± 0.34	60.41 ± 3.37	n = 16	Beckman Coulter UniCel DxI 800
4.80 ± 0.29	2.50 ± 0.41	5.76 ± 0.49	11.32 ± 0.66	86.53 ± 3.37	n = 10	Ortho Vitros 5600
5.23 ± 0.34	2.65 ± 0.15	6.34 ± 0.23	11.94 ± 0.34	88.83 ± 4.94	n = 4	Ortho Vitros Eci/EciQ
5.16 ± 0.10	3.77 ± 0.05	8.13 ± 0.05	12.06 ± 0.26	74.64 ± 2.75	n = 3	Roche cobas e411
4.96 ± 0.21	3.74 ± 0.18	8.00 ± 0.35	11.84 ± 0.57	74.56 ± 3.49	n = 10	Roche cobas e601
4.99 ± 0.29	3.78 ± 0.24	8.04 ± 0.43	11.97 ± 0.60	74.74 ± 2.98	n = 5	Roche Elecsys
5.02 ± 0.13	3.73 ± 0.12	7.88 ± 0.22	11.79 ± 0.24	73.64 ± 1.77	n = 11	Roche MODULAR E
4.62 ± 0.22	2.84 ± 0.17	5.87 ± 0.26	10.88 ± 0.57	75.61 ± 3.79	n = 56	Siemens ADVIA Centaur
4.75 ± 0.08	3.26 ± 0.11	6.46 ± 0.09	11.52 ± 0.19	79.20 ± 2.69	n = 4	Siemens ADVIA Centaur CP
5.40 ± 0.15	3.60 ± 0.09	7.98 ± 0.28	14.37 ± 0.39	105.28 ± 2.78	n = 8	Siemens Dimension Vista
5.87 ± 0.21	3.27 ± 0.14	9.17 ± 0.31	11.63 ± 0.23	86.93 ± 3.58	n = 8	Siemens Immulite 1000
6.00 ± 0.38	3.18 ± 0.23	8.74 ± 0.47	11.05 ± 0.71	78.14 ± 6.05	n = 29	Siemens Immulite 2000
4.30 ± 0.09	3.04 ± 0.10	6.77 ± 0.14	11.17 ± 0.23	77.73 ± 1.23	n = 3	Tosoh Bioscience
4.83 ± 0.60	3.09 ± 0.55	6.86 ± 1.48	11.11 ± 1.49	75.57 ± 11.12	n = 16	Mean of Above Means
						<Reagents>
3.77 ± 0.17	2.72 ± 0.10	5.74 ± 0.27	9.48 ± 0.31	65.01 ± 2.51	n = 13	Abbott
4.23 ± 0.29	2.47 ± 0.14	5.04 ± 0.34	8.49 ± 0.52	60.39 ± 3.52	n = 27	Beckman Coulter
4.91 ± 0.36	2.55 ± 0.35	5.96 ± 0.54	11.54 ± 0.68	86.95 ± 3.68	n = 14	Ortho Clinical Diagnostics
5.02 ± 0.17	3.74 ± 0.15	7.98 ± 0.30	11.86 ± 0.42	74.12 ± 2.69	n = 30	Roche Elecsys/Modular E/e601/e411
4.63 ± 0.21	2.86 ± 0.19	5.90 ± 0.29	10.93 ± 0.58	75.88 ± 3.84	n = 60	Siemens ADVIA/ADVIA Centaur
5.40 ± 0.15	3.60 ± 0.09	7.98 ± 0.28	14.37 ± 0.39	105.28 ± 2.78	n = 8	Siemens Dimension LOCI
5.97 ± 0.35	3.20 ± 0.21	8.85 ± 0.47	11.22 ± 0.71	80.18 ± 6.85	n = 37	Siemens Immulite
4.84 ± 0.71	2.99 ± 0.51	6.73 ± 1.49	11.05 ± 1.73	76.85 ± 13.66	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Follitropin (FSH, mIU/mL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
-----	-----	-----	-----	-----	-----	-----
23.11 ± 2.84	5.46 ± 0.99	17.75 ± 2.79	22.40 ± 4.59	119.37 ± 28.38	n = 198	All Methods & Instruments
23.50	5.50	18.00	21.80	114.00	n = 198	Median value, All Methods & Instruments
						<Instruments>
18.39 ± 0.56	5.11 ± 0.22	17.53 ± 0.34	18.46 ± 0.77	98.25 ± 4.90	n = 13	Abbott Architect i System
24.78 ± 0.73	6.58 ± 0.21	20.60 ± 0.60	22.46 ± 0.96	119.19 ± 10.26	n = 8	Beckman Coulter ACCESS
24.16 ± 0.88	6.53 ± 0.14	20.49 ± 1.01	22.97 ± 0.76	119.49 ± 3.93	n = 3	Beckman Coulter UniCel DxI 600
24.35 ± 1.38	6.58 ± 0.31	20.71 ± 1.13	22.68 ± 0.77	119.85 ± 6.22	n = 16	Beckman Coulter UniCel DxI 800
25.46 ± 1.12	4.40 ± 0.24	16.24 ± 0.45	18.89 ± 0.67	100.74 ± 3.27	n = 10	Ortho Vitros 5600
25.56 ± 0.72	4.61 ± 0.24	16.43 ± 0.38	19.23 ± 0.55	103.21 ± 1.96	n = 4	Ortho Vitros Eci/EciQ
22.65 ± 1.71	5.80 ± 0.27	19.10 ± 1.26	22.54 ± 1.00	120.09 ± 6.67	n = 3	Roche cobas e411
20.68 ± 0.48	5.54 ± 0.15	18.00 ± 0.41	21.69 ± 0.60	114.09 ± 3.39	n = 10	Roche cobas e601
20.92 ± 1.22	5.55 ± 0.29	17.98 ± 1.03	21.39 ± 1.08	114.15 ± 4.93	n = 5	Roche Elecsys
20.04 ± 0.44	5.41 ± 0.11	17.63 ± 0.43	20.97 ± 0.52	109.95 ± 3.26	n = 11	Roche MODULAR E
25.27 ± 1.32	5.93 ± 0.48	18.41 ± 1.03	28.14 ± 1.39	155.78 ± 9.02	n = 59	Siemens ADVIA Centaur
21.78 ± 1.18	5.69 ± 0.45	18.25 ± 0.77	27.20 ± 0.34	145.60 ± 11.94	n = 4	Siemens ADVIA Centaur CP
17.25 ± 0.37	5.48 ± 0.12	20.18 ± 0.48	20.52 ± 0.36	112.50 ± 2.22	n = 8	Siemens Dimension Vista
21.74 ± 1.31	3.77 ± 0.21	12.06 ± 0.48	16.71 ± 0.99	86.37 ± 6.85	n = 8	Siemens Immulite 1000
22.10 ± 1.06	3.98 ± 0.25	12.63 ± 0.69	17.53 ± 0.86	87.97 ± 3.80	n = 29	Siemens Immulite 2000
24.54 ± 0.98	7.45 ± 0.19	24.28 ± 0.41	22.92 ± 0.24	111.08 ± 1.76	n = 3	Tosoh Bioscience
22.65 ± 2.60	5.54 ± 0.99	18.32 ± 2.70	21.28 ± 2.93	111.68 ± 15.63	n = 16	Mean of Above Means
						<Reagents>
18.39 ± 0.56	5.11 ± 0.22	17.53 ± 0.34	18.46 ± 0.77	98.25 ± 4.90	n = 13	Abbott
24.46 ± 1.16	6.57 ± 0.27	20.67 ± 0.97	22.66 ± 0.85	119.79 ± 7.05	n = 27	Beckman Coulter
25.51 ± 1.01	4.47 ± 0.26	16.30 ± 0.43	18.99 ± 0.66	101.51 ± 3.18	n = 14	Ortho Clinical Diagnostics
20.43 ± 0.74	5.49 ± 0.17	17.88 ± 0.57	21.41 ± 0.82	112.84 ± 4.59	n = 30	Roche Elecsys/Modular E/e601/e411
25.14 ± 1.48	5.91 ± 0.48	18.40 ± 1.01	28.06 ± 1.37	155.32 ± 9.30	n = 63	Siemens ADVIA/ADVIA Centaur
17.25 ± 0.37	5.48 ± 0.12	20.18 ± 0.48	20.52 ± 0.36	112.50 ± 2.22	n = 8	Siemens Dimension LOCI
22.06 ± 1.10	3.93 ± 0.26	12.50 ± 0.68	17.37 ± 0.96	87.78 ± 4.60	n = 37	Siemens Immulite
21.99 ± 3.39	5.30 ± 0.86	17.97 ± 2.41	20.45 ± 2.97	108.82 ± 17.43	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Prolactin (µg/L)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
-----	-----	-----	-----	-----	-----	-----
1.82 ± 0.28	5.91 ± 0.98	13.52 ± 2.31	4.85 ± 0.80	6.41 ± 1.21	n = 174	All Methods & Instruments
1.80	6.00	13.50	4.90	6.60	n = 174	Median value, All Methods & Instruments
						<Instruments>
2.25 ± 0.18	8.20 ± 0.43	18.89 ± 1.18	6.70 ± 0.36	8.57 ± 0.43	n = 9	Abbott Architect i System
1.70 ± 0.12	5.48 ± 0.27	12.20 ± 0.82	4.39 ± 0.30	5.22 ± 0.30	n = 6	Beckman Coulter ACCESS
1.73 ± 0.14	5.40 ± 0.18	11.95 ± 0.36	4.43 ± 0.14	5.35 ± 0.27	n = 3	Beckman Coulter UniCel DxI 600
1.72 ± 0.16	5.29 ± 0.34	11.87 ± 0.38	4.27 ± 0.29	5.24 ± 0.29	n = 16	Beckman Coulter UniCel DxI 800
2.78 ± 0.12	7.16 ± 0.41	14.03 ± 0.73	6.00 ± 0.31	6.91 ± 0.28	n = 9	Ortho Vitros 5600
2.97 ± 0.14	7.20 ± 0.18	14.20 ± 0.09	5.83 ± 0.14	6.97 ± 0.14	n = 3	Ortho Vitros Eci/ECiQ
1.97 ± 0.11	6.62 ± 0.30	16.63 ± 0.75	5.35 ± 0.24	7.64 ± 0.35	n = 7	Roche cobas e601
1.97 ± 0.17	6.56 ± 0.71	16.31 ± 1.76	5.31 ± 0.55	7.74 ± 0.69	n = 6	Roche Elecsys
1.94 ± 0.07	6.59 ± 0.26	16.54 ± 0.47	5.25 ± 0.19	7.68 ± 0.22	n = 9	Roche MODULAR E
1.89 ± 0.13	6.02 ± 0.29	13.72 ± 0.76	5.00 ± 0.21	6.76 ± 0.31	n = 56	Siemens ADVIA Centaur
2.10 ± 0.14	6.37 ± 0.48	14.23 ± 1.77	5.28 ± 0.36	6.99 ± 0.57	n = 3	Siemens ADVIA Centaur CP
1.44 ± 0.06	5.64 ± 0.26	13.54 ± 0.82	4.59 ± 0.28	5.67 ± 0.35	n = 10	Siemens Dimension Vista
1.59 ± 0.11	4.53 ± 0.25	10.90 ± 0.15	3.65 ± 0.13	4.84 ± 0.35	n = 4	Siemens Immulite 1000
1.49 ± 0.09	4.39 ± 0.33	10.23 ± 0.60	3.58 ± 0.23	4.71 ± 0.31	n = 24	Siemens Immulite 2000
1.88 ± 0.38	6.09 ± 1.06	13.82 ± 2.46	4.96 ± 0.88	6.45 ± 1.32	n = 14	Mean of Above Means
						<Reagents>
2.21 ± 0.22	8.19 ± 0.44	18.87 ± 1.23	6.70 ± 0.36	8.53 ± 0.52	n = 10	Abbott
1.71 ± 0.14	5.35 ± 0.32	11.96 ± 0.55	4.32 ± 0.28	5.25 ± 0.29	n = 25	Beckman Coulter
2.84 ± 0.19	7.18 ± 0.35	14.10 ± 0.61	5.95 ± 0.28	6.94 ± 0.24	n = 12	Ortho Clinical Diagnostics
1.96 ± 0.12	6.66 ± 0.40	16.63 ± 0.84	5.33 ± 0.33	7.71 ± 0.42	n = 24	Roche Elecsys/Modular E/e601/e411
1.90 ± 0.13	6.03 ± 0.31	13.74 ± 0.84	5.01 ± 0.22	6.77 ± 0.33	n = 59	Siemens ADVIA/ADVIA Centaur
1.44 ± 0.06	5.64 ± 0.26	13.54 ± 0.82	4.59 ± 0.28	5.67 ± 0.35	n = 10	Siemens Dimension LOCI
1.51 ± 0.12	4.43 ± 0.32	10.39 ± 0.62	3.60 ± 0.20	4.74 ± 0.30	n = 28	Siemens Immulite
1.88 ± 0.43	6.18 ± 1.21	14.01 ± 2.71	5.04 ± 1.01	6.49 ± 1.37	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Intact Parathyrin (PTH, pg/mL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
-----	-----	-----	-----	-----	-----	-----
3.27 ± 2.15	17.76 ± 3.61	3.15 ± 2.71	208.80 ± 44.93	81.15 ± 15.97	n = 175	All Methods & Instruments
3.00	17.00	2.50	222.00	84.60	n = 175	Median value, All Methods & Instruments
						<Instruments>
2.38 ± 1.92	31.45 ± 1.07	2.41 ± 1.88	345.40 ± 6.99	128.93 ± 6.12	n = 7	Abbott Architect i System
0.23 ± 0.51	16.86 ± 1.02	0.20 ± 0.44	175.60 ± 13.17	71.59 ± 4.26	n = 9	Beckman Coulter ACCESS
0.85 ± 0.39	15.72 ± 1.10	0.85 ± 0.39	168.25 ± 13.29	68.03 ± 7.02	n = 11	Beckman Coulter UniCel DxI 800
3.40 ± 0.00	21.33 ± 1.41	3.40 ± 0.00	241.18 ± 12.76	90.50 ± 5.59	n = 7	Ortho Vitros 5600
5.86 ± 1.10	16.19 ± 1.27	2.74 ± 1.81	149.76 ± 8.71	62.66 ± 4.96	n = 12	Roche cobas e601
5.58 ± 2.18	18.50 ± 1.82	2.90 ± 0.30	173.04 ± 13.41	73.88 ± 6.88	n = 7	Roche Elecsys
4.82 ± 1.90	15.78 ± 0.97	1.67 ± 0.58	152.47 ± 8.33	64.46 ± 3.99	n = 12	Roche MODULAR E
2.13 ± 1.06	15.96 ± 1.53	2.12 ± 1.09	240.86 ± 13.25	90.26 ± 6.36	n = 49	Siemens ADVIA Centaur
2.68 ± 0.28	15.86 ± 1.90	2.68 ± 0.28	217.66 ± 24.81	75.46 ± 17.74	n = 5	Siemens ADVIA Centaur CP
5.17 ± 1.75	20.05 ± 2.23	7.88 ± 3.47	206.44 ± 22.14	80.49 ± 12.82	n = 8	Siemens Immulite 1000
4.13 ± 1.03	22.67 ± 2.01	6.81 ± 1.91	225.16 ± 12.01	89.88 ± 8.37	n = 34	Siemens Immulite 2000
1.00 ± 0.00	15.04 ± 1.80	1.00 ± 0.00	156.40 ± 8.71	66.13 ± 8.53	n = 4	Tosoh Bioscience
3.20 ± 2.03	17.33 ± 2.63	2.36 ± 1.76	193.60 ± 43.36	75.62 ± 11.84	n = 12	Mean of Above Means
						<Reagents>
2.38 ± 1.92	31.45 ± 1.07	2.41 ± 1.88	345.40 ± 6.99	128.93 ± 6.12	n = 7	Abbott
0.60 ± 0.58	16.25 ± 1.13	0.58 ± 0.56	172.79 ± 13.42	70.73 ± 5.09	n = 22	Beckman Coulter
3.40 ± 0.00	21.33 ± 1.18	3.40 ± 0.00	242.36 ± 15.02	90.23 ± 3.96	n = 9	Ortho Clinical Diagnostics
5.46 ± 1.67	16.44 ± 1.66	2.45 ± 1.38	154.18 ± 12.27	64.97 ± 6.16	n = 34	Roche Elecsys/Modular E/e601/e411
2.26 ± 0.98	15.94 ± 1.58	2.22 ± 1.00	239.68 ± 13.97	90.16 ± 6.42	n = 55	Siemens ADVIA/ADVIA Centaur
4.07 ± 1.04	22.29 ± 2.28	6.45 ± 2.06	222.76 ± 14.72	88.54 ± 9.08	n = 36	Siemens Immulite
6.25 ± 0.97	21.30 ± 1.70	10.30 ± 0.15	217.73 ± 22.07	84.57 ± 11.99	n = 5	Siemens Immulite Turbo
3.47 ± 1.94	19.79 ± 4.57	3.38 ± 2.83	220.36 ± 53.04	84.83 ± 16.15	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

25-OH Vitamin D2 (ng/ml)

Specimen: E86 -----	Specimen: E87 -----	Specimen: E88 -----	Specimen: E89 -----	Specimen: E90 -----	Number -----	Instrument or Reagent System -----
7.56 ± 1.16 7.40	13.57 ± 1.78 13.00	22.78 ± 2.45 22.70	2.43 ± 1.76 2.50	2.46 ± 1.72 2.50	n = 14 n = 14	All Methods & Instruments Median value, All Methods & Instruments
7.56 ± 1.16	13.55 ± 1.74	23.03 ± 2.35	2.43 ± 1.76	2.46 ± 1.72	n = 13	<Instruments> LC/MS/MS
7.56 ± 1.16	13.55 ± 1.74	23.03 ± 2.35	2.43 ± 1.76	2.46 ± 1.72	n = 13	<Reagents> In-House

CDC Educational challenge samples[¶]

Sample #3

<4.0 (range: 0.1 - <4.0)

Sample #4

<4.0 (range: 0.1 - <4.0)

n = 11 LC/MS/MS

[¶]Two CDC Educational challenge samples were prepared from authentic human serum of a male and a female single healthy donor, respectively. The serum samples were stored at -80°C before shipment on ice via overnight delivery.

Statistical Summary (Mean and Standard Deviation)

25-OH Vitamin D3 (ng/mL)

Specimen: E86 -----	Specimen: E87 -----	Specimen: E88 -----	Specimen: E89 -----	Specimen: E90 -----	Number -----	Instrument or Reagent System -----
22.60 ± 1.66 22.60	30.62 ± 4.24 28.00	32.34 ± 3.16 31.70	38.47 ± 3.19 38.60	78.43 ± 6.01 76.50	n = 13 n = 13	All Methods & Instruments Median value, All Methods & Instruments
22.60 ± 1.66	30.62 ± 4.24	32.34 ± 3.16	38.47 ± 3.19	78.43 ± 6.01	n = 13	<Instruments> LC/MS/MS
22.60 ± 1.66	30.62 ± 4.24	32.34 ± 3.16	38.47 ± 3.19	78.43 ± 6.01	n = 13	<Reagents> In-House

CDC Educational challenge samples[†]

Sample #3

41.6 ± 4.6

Sample #4

43.2 ± 4.8

n = 11 LC/MS/MS

[†]Two CDC Educational challenge samples were prepared from authentic human serum of a male and a female single healthy donor, respectively. The serum samples were stored at -80°C before shipment on ice via overnight delivery.

Statistical Summary (Mean and Standard Deviation)

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

Specimen: E86 -----	Specimen: E87 -----	Specimen: E88 -----	Specimen: E89 -----	Specimen: E90 -----	Number -----	Instrument or Reagent System -----
36.31 ± 12.17 35.60	35.53 ± 15.12 30.10	36.98 ± 17.11 30.50	33.48 ± 12.97 29.80	51.40 ± 22.03 43.00	n = 144 n = 144	All Methods & Instruments Median value, All Methods & Instruments
<Instruments>						
25.94 ± 1.04	29.39 ± 1.67	28.75 ± 1.69	29.89 ± 1.53	41.16 ± 1.85	n = 17	Abbott Architect i System
37.37 ± 5.76	42.15 ± 4.82	43.18 ± 4.38	41.11 ± 4.33	62.50 ± 9.71	n = 7	Automated microplate processor
35.78 ± 2.84	26.35 ± 2.60	24.64 ± 2.55	25.01 ± 2.39	34.23 ± 3.32	n = 56	DiaSorin Liaison
26.30 ± 2.65	23.04 ± 7.01	26.74 ± 2.93	24.42 ± 4.36	38.57 ± 4.71	n = 3	Gamma Counter
23.65 ± 13.26	31.79 ± 4.10	35.92 ± 4.64	32.10 ± 5.99	52.88 ± 11.52	n = 4	Immunodiagnostic Systems-iSYS Immun
30.37 ± 1.82	43.82 ± 4.93	55.14 ± 3.84	38.06 ± 3.39	77.59 ± 6.19	n = 11	LC/MS/MS
25.75 ± 2.55	32.26 ± 2.87	36.60 ± 3.60	30.71 ± 3.38	52.67 ± 5.98	n = 5	Roche cobas e601
59.93 ± 7.21	63.93 ± 5.51	63.92 ± 5.98	57.77 ± 5.45	80.51 ± 5.28	n = 30	Siemens ADVIA Centaur
28.95 ± 5.55	34.16 ± 10.84	37.97 ± 13.60	32.71 ± 8.62	54.14 ± 17.60	n = 8	Mean of Above Means
<Reagents>						
25.94 ± 1.04	29.39 ± 1.67	28.75 ± 1.69	29.89 ± 1.53	41.16 ± 1.85	n = 17	Abbott
35.82 ± 2.72	26.31 ± 2.51	24.63 ± 2.45	25.02 ± 2.24	34.22 ± 3.22	n = 53	DiaSorin Liaison
30.93 ± 11.45	26.47 ± 8.87	28.80 ± 4.89	27.54 ± 7.23	41.09 ± 6.70	n = 4	DiaSorin Radioimmunoassay
36.09 ± 8.26	39.05 ± 6.15	40.67 ± 5.12	38.16 ± 5.98	61.31 ± 12.66	n = 18	Immunodiagnostic Systems Enzyme Imm
30.37 ± 1.82	43.82 ± 4.93	55.14 ± 3.84	38.06 ± 3.39	77.59 ± 6.19	n = 11	In-House
26.63 ± 1.82	31.11 ± 2.57	36.47 ± 3.33	30.26 ± 2.87	50.04 ± 5.23	n = 8	Roche Elecsys/Modular E/e601/e411
59.61 ± 7.22	64.04 ± 5.58	64.24 ± 6.15	58.25 ± 6.53	80.40 ± 5.97	n = 23	Siemens ADVIA Centaur - Vitamin D T
62.61 ± 8.08	64.18 ± 5.04	63.58 ± 5.14	57.68 ± 2.98	80.91 ± 3.33	n = 8	Siemens ADVIA/ADVIA Centaur
36.26 ± 13.55	38.86 ± 15.52	42.03 ± 16.59	36.58 ± 12.75	58.07 ± 20.19	n = 8	Mean of Above Means

CDC Educational challenge samples[†]

Sample #3

41.3 ± 4.7

Sample #4

42.8 ± 4.5

n = 10 LC/MS/MS

[†]Two CDC Educational challenge samples were prepared from authentic human serum of a male and a female single healthy donor, respectively. The serum samples were stored at -80°C before shipment on ice via overnight delivery.

Statistical Summary (Mean and Standard Deviation)

Intact human Choriogonadotropin (intact hCG, mIU/mL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
-----	-----	-----	-----	-----	-----	-----
52.7 ± 3.37	2.0 ± 0.00	1.3 ± 0.74	2.0 ± 0.00	52.1 ± 3.25	n = 48	All Methods & Instruments
53.0	2.0	1.0	2.0	52.0	n = 48	Median value, All Methods & Instruments
<Instruments>						
49.4 ± 1.58	2.8 ± 1.76	2.5 ± 2.95	2.8 ± 1.81	48.2 ± 1.90	n = 8	Roche cobas e601
53.4 ± 3.03	2.5 ± 0.70	1.6 ± 1.15	2.2 ± 0.65	51.8 ± 2.47	n = 9	Siemens Dimension EXL
53.6 ± 2.16	2.0 ± 0.00	1.3 ± 0.59	2.0 ± 0.00	53.8 ± 1.62	n = 17	Siemens Dimension RxL
52.5 ± 2.78	2.0 ± 0.00	1.4 ± 0.55	2.0 ± 0.00	52.5 ± 2.38	n = 10	Siemens Dimension Xpand
52.5 ± 1.72	2.3 ± 0.38	1.6 ± 0.48	2.2 ± 0.33	51.8 ± 2.14	n = 4	Mean of Above Means
<Reagents>						
49.5 ± 2.50	3.9 ± 3.27	3.4 ± 3.90	3.9 ± 3.29	48.5 ± 2.87	n = 9	Roche Elecsys/Modular E/e601/e411
53.3 ± 2.65	2.0 ± 0.00	1.4 ± 0.71	2.0 ± 0.00	53.0 ± 2.25	n = 36	Siemens Dimension
51.4 ± 2.20	3.0 ± 1.10	2.4 ± 1.17	3.0 ± 1.09	50.7 ± 2.57	n = 2	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Total Beta hCG (mIU/mL)

Specimen: E86	Specimen: E87	Specimen: E88	Specimen: E89	Specimen: E90	Number	Instrument or Reagent System
-----	-----	-----	-----	-----	-----	-----
60.0 ± 11.19	2.2 ± 0.65	1.4 ± 1.02	2.0 ± 0.41	59.1 ± 10.16	n = 250	All Methods & Instruments
61.0	2.0	1.0	2.0	59.8	n = 250	Median value, All Methods & Instruments
						<Instruments>
36.5 ± 2.94	2.1 ± 1.68	1.9 ± 1.79	2.0 ± 1.71	45.7 ± 2.95	n = 22	Abbott Architect i System
59.4 ± 4.04	2.3 ± 1.16	0.9 ± 0.18	2.2 ± 1.24	56.0 ± 3.65	n = 23	Beckman Coulter ACCESS
60.7 ± 3.39	4.1 ± 1.69	3.9 ± 2.10	4.1 ± 1.69	55.4 ± 2.02	n = 3	Beckman Coulter UniCel DxI 600
57.5 ± 4.19	2.0 ± 0.06	1.0 ± 0.00	2.0 ± 0.00	56.7 ± 3.26	n = 15	Beckman Coulter UniCel DxI 800
76.0 ± 3.51	2.7 ± 0.42	2.3 ± 0.36	2.5 ± 0.45	62.0 ± 2.58	n = 18	Ortho Vitros 5600
73.9 ± 5.13	2.2 ± 0.29	2.2 ± 0.29	2.2 ± 0.29	59.9 ± 2.59	n = 11	Ortho Vitros Eci/ECiQ
71.9 ± 2.04	2.5 ± 1.23	2.0 ± 1.65	2.5 ± 1.23	73.0 ± 2.88	n = 4	Roche cobas e411
67.6 ± 0.99	2.0 ± 0.00	1.0 ± 0.00	2.2 ± 1.24	68.8 ± 1.72	n = 9	Roche cobas e601
66.4 ± 4.26	1.8 ± 0.41	0.2 ± 0.12	1.6 ± 0.38	69.0 ± 3.83	n = 4	Roche Elecsys
66.6 ± 1.69	2.0 ± 0.00	0.8 ± 0.65	2.0 ± 0.00	68.9 ± 1.83	n = 16	Roche MODULAR E
54.0 ± 3.20	2.1 ± 0.89	1.8 ± 1.12	2.0 ± 0.00	50.7 ± 2.58	n = 53	Siemens ADVIA Centaur
45.8 ± 2.58	3.0 ± 0.42	2.0 ± 0.00	2.8 ± 0.41	51.5 ± 1.61	n = 5	Siemens ADVIA Centaur CP
61.5 ± 1.32	2.3 ± 0.51	1.0 ± 0.00	2.0 ± 0.00	66.0 ± 1.15	n = 39	Siemens Dimension Vista
106.5 ± 4.16	2.9 ± 0.95	1.0 ± 0.00	2.9 ± 0.97	73.1 ± 4.38	n = 5	Siemens Immulite 1000
116.2 ± 8.26	2.4 ± 0.59	1.0 ± 0.00	2.3 ± 0.67	93.7 ± 9.21	n = 17	Siemens Immulite 2000
64.1 ± 15.26	2.3 ± 0.35	1.4 ± 0.78	2.2 ± 0.32	62.1 ± 10.55	n = 15	Mean of Above Means
						<Reagents>
36.7 ± 2.93	2.3 ± 1.80	2.1 ± 1.92	2.2 ± 1.84	45.6 ± 2.85	n = 23	Abbott
58.8 ± 4.19	2.0 ± 0.00	0.9 ± 0.15	2.2 ± 1.19	56.2 ± 3.41	n = 41	Beckman Coulter
75.5 ± 3.82	2.5 ± 0.44	2.3 ± 0.34	2.4 ± 0.41	61.2 ± 2.67	n = 29	Ortho Clinical Diagnostics
67.2 ± 2.50	2.0 ± 0.00	0.8 ± 0.60	2.0 ± 0.00	69.2 ± 2.19	n = 33	Roche Elecsys/Modular E/e601/e411
53.6 ± 3.77	2.3 ± 1.00	2.0 ± 0.00	2.0 ± 0.00	50.7 ± 2.47	n = 58	Siemens ADVIA/ADVIA Centaur
61.5 ± 1.35	2.3 ± 0.50	1.0 ± 0.00	2.0 ± 0.00	66.0 ± 1.16	n = 38	Siemens Dimension LOCI
113.4 ± 8.87	2.4 ± 0.62	1.0 ± 0.00	2.4 ± 0.71	88.8 ± 12.87	n = 22	Siemens Immulite
62.8 ± 19.13	2.3 ± 0.20	1.4 ± 0.68	2.2 ± 0.18	61.0 ± 12.90	n = 7	Mean of Above Means

Statistical Summary (Mean and Standard Deviation)

Qualitative hCG report:

[AB1] Abbott		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	9	9	9	0
Indeterminant		0	0	0	0	0
Positive		9	0	0	0	9
[AD1] American Diagnostics		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	2	2	2	0
Indeterminant		0	0	0	0	0
Positive		2	0	0	0	2
[BC1] Beckman Coulter		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	30	30	30	0
Indeterminant		0	0	0	0	0
Positive		30	0	0	0	30
[CD1] Cardinal Health		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	11	11	11	1
Indeterminant		0	0	0	0	0
Positive		11	0	0	0	10
[CM1] CEN-MED Elite Plus hCG One Step		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	6	6	6	0
Indeterminant		0	0	0	0	0
Positive		6	0	0	0	6
[FI1] Fisher		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	49	49	49	0
Indeterminant		0	0	0	0	0
Positive		49	0	0	0	49
[IM1] Inverness Medical		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	4	4	4	0
Indeterminant		0	0	0	0	0
Positive		4	0	0	0	4

Statistical Summary (Mean and Standard Deviation)

[JJ1]	Ortho Clinical Diagnostics	Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
	Negative	0	2	2	2	0
	Indeterminant	0	0	0	0	0
	Positive	3	1	1	1	3
[PM1]	Polymedco	Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
	Negative	0	4	4	4	0
	Indeterminant	0	0	0	0	0
	Positive	4	0	0	0	4
[QQ2]	Quidel QuickVue One-Step hCG Combo	Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
	Negative	0	25	25	25	0
	Indeterminant	0	0	0	0	0
	Positive	25	0	0	0	25
[QQ1]	Quidel QuickVue± One-Step hCG Combo	Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
	Negative	0	18	18	18	0
	Indeterminant	0	0	0	0	0
	Positive	18	0	0	0	18
[R03]	Roche Elecsys/Modular E/e601/e411	Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
	Negative	0	8	8	8	0
	Indeterminant	0	0	0	0	0
	Positive	8	0	0	0	8
[GZ1]	Sekisui Diagnostics (Genzyme)	Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
	Negative	0	8	8	8	0
	Indeterminant	0	0	0	0	0
	Positive	8	0	0	0	8
[BY1]	Siemens ADVIA/ADVIA Centaur	Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
	Negative	0	24	24	24	0
	Indeterminant	0	0	0	0	0
	Positive	24	0	0	0	24

Statistical Summary (Mean and Standard Deviation)

[DA5] Siemens Dimension		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	5	5	5	0
Indeterminant		0	0	0	0	0
Positive		5	0	0	0	5
[DA6] Siemens Dimension LOCI		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	5	5	5	0
Indeterminant		0	0	0	0	0
Positive		5	0	0	0	5
[DP5] Siemens Immulite		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	4	4	4	1
Indeterminant		0	0	0	0	0
Positive		4	0	0	0	3
[SB1] Stanbio		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	10	10	10	0
Indeterminant		0	0	0	0	0
Positive		10	0	0	0	10
[TR1] TrueMedix		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	5	5	5	0
Indeterminant		0	0	0	0	0
Positive		5	0	0	0	5
[---] All Methods & Instruments		Specimen:E86	Specimen:E87	Specimen:E88	Specimen:E89	Specimen:E90
Negative		0	229	229	229	2
Indeterminant		0	0	0	0	0
Positive		230	1	1	1	228