

## **Hematology Proficiency Test Program**

### **Statistical Summary – October 2013 (Event 13-3)**

This statistical report summarizes participant data for the Hematology proficiency survey shipped 7 October 2013.

Five test samples were distributed to participants for each test category:

Routine Blood Counts (B81, B82, B83, B84, B85)

Routine Coagulation (C81, C82, C83, C84, C85)

Cell Identification (381, 382, 383, 384, 385)

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 ( $\pm 1$  SD) values are calculated by a robust statistical technique that does not assume a Gaussian distribution.

#### Disclaimer:

Note: 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 Hematology Section at (518) 474-9878.

Summary of Participant Responses  
 Mean ± One Standard Deviation

White Cell Count (x10<sup>9</sup>/L)

Specimen: B81	Specimen: B82	Specimen: B83	Specimen: B84	Specimen: B85	Number	[Code] Instrument
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13.05 ± 0.58	25.67 ± 0.96	9.38 ± 0.38	5.03 ± 0.22	16.31 ± 0.95	n = 412	[---] All Methods & Instruments
						<b>&lt;Instruments&gt;</b>
13.35 ± 0.83	25.85 ± 0.19	9.53 ± 0.23	5.10 ± 0.27	17.35 ± 0.90	n = 3	[ABG] Abbott Cell Dyn 1700
12.78 ± 0.21	25.47 ± 0.99	9.25 ± 0.06	4.76 ± 0.16	16.77 ± 0.27	n = 4	[ABJ] Abbott Cell Dyn 1800
13.01 ± 0.57	26.50 ± 0.75	9.27 ± 0.16	5.09 ± 0.12	16.36 ± 0.31	n = 5	[ABK] Abbott Cell Dyn 3200
13.37 ± 0.32	26.33 ± 0.51	9.49 ± 0.24	5.15 ± 0.14	16.45 ± 0.36	n = 11	[ABM] Abbott Cell Dyn 3700
13.23 ± 0.26	25.46 ± 0.60	9.30 ± 0.28	4.95 ± 0.12	16.58 ± 0.45	n = 11	[ABS] Abbott Cell Dyn Sapphire
13.14 ± 0.24	26.49 ± 0.66	9.43 ± 0.21	5.09 ± 0.10	16.23 ± 0.37	n = 20	[ABT] Abbott Cell Dyn Ruby
12.53 ± 0.16	23.05 ± 0.28	8.83 ± 0.25	4.99 ± 0.11	16.62 ± 0.32	n = 4	[ABU] Abbott Cell Dyn Emerald
12.51 ± 0.49	24.01 ± 0.55	9.01 ± 0.22	4.67 ± 0.16	15.97 ± 0.76	n = 16	[BTD] Siemens Advia 120
12.75 ± 0.56	24.26 ± 0.95	8.93 ± 0.33	4.73 ± 0.19	15.73 ± 0.75	n = 31	[BTE] Siemens Advia 2120
13.22 ± 0.26	26.03 ± 0.54	9.44 ± 0.18	5.14 ± 0.13	16.28 ± 0.42	n = 45	[CUL] Coulter UniCel DxH 800
13.06 ± 0.57	25.44 ± 0.95	9.16 ± 0.27	4.79 ± 0.13	16.78 ± 0.97	n = 6	[CUS] Coulter ACT 5 diff
13.31 ± 0.24	26.15 ± 0.48	9.69 ± 0.18	5.23 ± 0.14	17.87 ± 0.38	n = 17	[CUT] Coulter ACT series,not ACT5 diff
13.85 ± 0.35	26.78 ± 0.37	9.82 ± 0.17	5.26 ± 0.11	18.68 ± 0.74	n = 10	[CUW] Coulter HMX
13.12 ± 0.33	25.46 ± 0.46	9.63 ± 0.20	5.12 ± 0.11	16.10 ± 0.41	n = 42	[CUX] Coulter LH750,755
13.06 ± 0.33	25.35 ± 0.49	9.63 ± 0.22	5.09 ± 0.12	15.97 ± 0.39	n = 21	[CUY] Coulter LH 780
13.74 ± 0.29	26.66 ± 0.85	9.67 ± 0.20	5.31 ± 0.12	18.72 ± 0.47	n = 16	[CUZ] Coulter LH500
13.00 ± 0.23	25.63 ± 0.45	9.16 ± 0.06	4.86 ± 0.06	16.88 ± 0.27	n = 5	[ROB] ABX Pentra series
12.97 ± 0.26	25.73 ± 0.25	9.26 ± 0.15	4.98 ± 0.07	17.41 ± 0.59	n = 6	[ROC] ABX Micro
12.33 ± 0.39	25.18 ± 0.67	8.93 ± 0.29	4.87 ± 0.16	15.39 ± 0.59	n = 28	[SYA] Sysmex XE 5000
12.64 ± 0.10	24.07 ± 0.41	9.07 ± 0.05	4.83 ± 0.14	16.40 ± 0.18	n = 3	[SYB] Sysmex KX-21N
13.04 ± 0.15	25.67 ± 0.22	9.14 ± 0.31	4.62 ± 0.19	15.39 ± 0.72	n = 3	[SYC] Sysmex XN-series
13.03 ± 0.54	25.97 ± 0.44	9.41 ± 0.16	5.04 ± 0.11	16.45 ± 0.76	n = 21	[SYI] Sysmex XT-1800i,XT-2000i
12.94 ± 0.66	25.93 ± 0.64	9.44 ± 0.54	5.05 ± 0.18	16.01 ± 0.91	n = 5	[SYL] Sysmex XE 2100C
12.27 ± 0.48	25.13 ± 0.65	8.99 ± 0.32	4.87 ± 0.14	15.28 ± 0.55	n = 21	[SYO] Sysmex XE2100
13.74 ± 0.34	26.63 ± 0.60	9.70 ± 0.26	5.17 ± 0.12	17.12 ± 0.38	n = 24	[SYP] Sysmex XS-1000i,XS-1000iAL
12.23 ± 0.36	25.12 ± 0.45	8.95 ± 0.21	4.86 ± 0.15	15.18 ± 0.27	n = 7	[SYQ] Sysmex XE 2100D(Blood Center)
12.94 ± 0.29	25.65 ± 0.59	9.39 ± 0.27	4.98 ± 0.11	16.14 ± 0.58	n = 15	[SYV] Sysmex XT 4000i

Summary of Participant Responses  
 Mean ± One Standard Deviation

Red Cell Count (x10<sup>12</sup>/L)

Specimen: B81	Specimen: B82	Specimen: B83	Specimen: B84	Specimen: B85	Number	[Code] Instrument
5.962 ± 0.103	2.633 ± 0.053	4.493 ± 0.075	3.072 ± 0.070	5.030 ± 0.078	n = 413	[---] All Methods & Instruments
<b>&lt;Instruments&gt;</b>						
5.983 ± 0.104	2.665 ± 0.027	4.510 ± 0.046	3.023 ± 0.005	5.068 ± 0.032	n = 3	[ABG] Abbott Cell Dyn 1700
5.885 ± 0.200	2.695 ± 0.073	4.464 ± 0.072	3.124 ± 0.093	5.009 ± 0.053	n = 4	[ABJ] Abbott Cell Dyn 1800
6.071 ± 0.040	2.662 ± 0.031	4.549 ± 0.114	3.134 ± 0.073	5.131 ± 0.119	n = 5	[ABK] Abbott Cell Dyn 3200
6.069 ± 0.042	2.665 ± 0.031	4.540 ± 0.049	3.122 ± 0.028	5.091 ± 0.053	n = 10	[ABM] Abbott Cell Dyn 3700
6.199 ± 0.100	2.705 ± 0.018	4.605 ± 0.066	3.149 ± 0.035	5.218 ± 0.063	n = 11	[ABS] Abbott Cell Dyn Sapphire
6.248 ± 0.145	2.656 ± 0.051	4.577 ± 0.093	3.108 ± 0.073	5.164 ± 0.127	n = 20	[ABT] Abbott Cell Dyn Ruby
5.757 ± 0.066	2.521 ± 0.024	4.289 ± 0.060	2.952 ± 0.049	4.889 ± 0.064	n = 4	[ABU] Abbott Cell Dyn Emerald
5.978 ± 0.077	2.663 ± 0.033	4.533 ± 0.059	3.112 ± 0.047	5.063 ± 0.084	n = 16	[BTD] Siemens Advia 120
5.956 ± 0.112	2.668 ± 0.053	4.491 ± 0.076	3.082 ± 0.066	5.060 ± 0.097	n = 32	[BTE] Siemens Advia 2120
5.967 ± 0.062	2.603 ± 0.036	4.418 ± 0.053	3.032 ± 0.044	4.989 ± 0.051	n = 45	[CUL] Coulter UniCel DxH 800
5.970 ± 0.115	2.634 ± 0.039	4.547 ± 0.068	3.077 ± 0.078	5.087 ± 0.069	n = 6	[CUS] Coulter ACT 5 diff
5.903 ± 0.170	2.596 ± 0.048	4.426 ± 0.094	3.002 ± 0.070	5.011 ± 0.097	n = 17	[CUT] Coulter ACT series,not ACT5 diff
5.950 ± 0.094	2.643 ± 0.051	4.490 ± 0.045	3.085 ± 0.039	5.045 ± 0.053	n = 10	[CUW] Coulter HMX
5.908 ± 0.051	2.618 ± 0.022	4.475 ± 0.044	3.044 ± 0.033	4.995 ± 0.044	n = 42	[CUX] Coulter LH750,755
5.893 ± 0.044	2.615 ± 0.025	4.471 ± 0.027	3.027 ± 0.023	4.984 ± 0.032	n = 21	[CUY] Coulter LH 780
5.939 ± 0.118	2.662 ± 0.058	4.463 ± 0.064	3.078 ± 0.055	5.058 ± 0.093	n = 16	[CUZ] Coulter LH500
5.986 ± 0.214	2.603 ± 0.089	4.503 ± 0.099	3.017 ± 0.062	5.047 ± 0.098	n = 5	[ROB] ABX Pentra series
6.043 ± 0.067	2.588 ± 0.048	4.472 ± 0.063	3.002 ± 0.056	5.063 ± 0.050	n = 6	[ROC] ABX Micro
5.921 ± 0.059	2.663 ± 0.031	4.540 ± 0.045	3.129 ± 0.041	5.028 ± 0.047	n = 28	[SYA] Sysmex XE 5000
5.945 ± 0.019	2.603 ± 0.014	4.436 ± 0.010	3.033 ± 0.023	4.985 ± 0.019	n = 3	[SYB] Sysmex KX-21N
6.145 ± 0.019	2.597 ± 0.023	4.540 ± 0.027	3.093 ± 0.005	5.154 ± 0.010	n = 3	[SYC] Sysmex XN-series
5.974 ± 0.068	2.623 ± 0.037	4.508 ± 0.065	3.084 ± 0.049	5.038 ± 0.067	n = 21	[SYI] Sysmex XT-1800i,XT-2000i
5.963 ± 0.045	2.649 ± 0.021	4.516 ± 0.041	3.123 ± 0.034	5.032 ± 0.041	n = 5	[SYL] Sysmex XE 2100C
5.928 ± 0.044	2.664 ± 0.032	4.528 ± 0.038	3.141 ± 0.031	5.016 ± 0.039	n = 21	[SYO] Sysmex XE2100
5.976 ± 0.050	2.546 ± 0.026	4.445 ± 0.050	2.988 ± 0.028	5.029 ± 0.052	n = 25	[SYP] Sysmex XS-1000i,XS-1000iAL
5.939 ± 0.012	2.680 ± 0.014	4.545 ± 0.015	3.152 ± 0.029	5.026 ± 0.028	n = 7	[SYQ] Sysmex XE 2100D(Blood Center)
6.012 ± 0.059	2.634 ± 0.037	4.521 ± 0.047	3.086 ± 0.031	5.030 ± 0.052	n = 15	[SYV] Sysmex XT 4000i

Summary of Participant Responses  
 Mean ± One Standard Deviation

Hemoglobin (g/dL)

Specimen: B81	Specimen: B82	Specimen: B83	Specimen: B84	Specimen: B85	Number	[Code] Instrument
17.99 ± 0.38	8.10 ± 0.28	13.45 ± 0.21	9.84 ± 0.18	16.19 ± 0.36	n = 423	[---] All Methods & Instruments
<b>&lt;Instruments&gt;</b>						
18.03 ± 0.05	8.27 ± 0.14	13.43 ± 0.05	9.66 ± 0.10	16.54 ± 0.10	n = 3	[ABG] Abbott Cell Dyn 1700
18.17 ± 0.43	8.40 ± 0.08	13.58 ± 0.26	9.81 ± 0.11	16.55 ± 0.34	n = 4	[ABJ] Abbott Cell Dyn 1800
18.29 ± 0.31	8.53 ± 0.20	13.79 ± 0.17	10.09 ± 0.13	16.64 ± 0.28	n = 5	[ABK] Abbott Cell Dyn 3200
18.32 ± 0.28	8.55 ± 0.16	13.74 ± 0.14	10.11 ± 0.16	16.75 ± 0.18	n = 11	[ABM] Abbott Cell Dyn 3700
18.46 ± 0.21	8.50 ± 0.09	13.87 ± 0.15	10.17 ± 0.08	16.60 ± 0.13	n = 11	[ABS] Abbott Cell Dyn Sapphire
18.73 ± 0.27	8.56 ± 0.18	13.77 ± 0.18	10.07 ± 0.13	16.84 ± 0.28	n = 20	[ABT] Abbott Cell Dyn Ruby
18.61 ± 0.40	8.18 ± 0.21	13.67 ± 0.25	9.99 ± 0.20	16.75 ± 0.23	n = 4	[ABU] Abbott Cell Dyn Emerald
18.37 ± 0.32	8.52 ± 0.15	13.63 ± 0.21	10.04 ± 0.17	16.48 ± 0.28	n = 16	[BTD] Siemens Advia 120
18.14 ± 0.27	8.58 ± 0.18	13.51 ± 0.21	10.02 ± 0.21	16.29 ± 0.23	n = 32	[BTE] Siemens Advia 2120
17.77 ± 0.20	7.99 ± 0.10	13.32 ± 0.14	9.85 ± 0.13	15.93 ± 0.18	n = 45	[CUL] Coulter UniCel DxH 800
18.00 ± 0.00	8.10 ± 0.14	13.45 ± 0.18	9.75 ± 0.12	16.25 ± 0.19	n = 6	[CUS] Coulter ACT 5 diff
17.92 ± 0.28	8.09 ± 0.13	13.41 ± 0.19	9.74 ± 0.15	16.30 ± 0.21	n = 17	[CUT] Coulter ACT series,not ACT5 diff
17.92 ± 0.21	8.18 ± 0.07	13.47 ± 0.14	9.85 ± 0.10	16.28 ± 0.16	n = 10	[CUW] Coulter HMX
17.65 ± 0.18	7.98 ± 0.12	13.36 ± 0.12	9.76 ± 0.10	15.98 ± 0.18	n = 42	[CUX] Coulter LH750,755
17.60 ± 0.17	8.02 ± 0.11	13.36 ± 0.11	9.75 ± 0.11	15.97 ± 0.15	n = 21	[CUY] Coulter LH 780
17.98 ± 0.25	8.33 ± 0.17	13.42 ± 0.20	9.85 ± 0.16	16.34 ± 0.22	n = 16	[CUZ] Coulter LH500
>19.00	<10.50	15.83 ± 0.23	11.63 ± 0.05	>19.00	n = 3	[HQB] HemoCue Donor Hb Checker
17.89 ± 0.26	8.06 ± 0.25	13.48 ± 0.28	10.00 ± 0.25	16.21 ± 0.46	n = 5	[HQC] HemoCue Hb201+/B-Hb
18.18 ± 0.23	7.96 ± 0.06	13.40 ± 0.09	9.68 ± 0.08	16.28 ± 0.18	n = 5	[ROB] ABX Pentra series
17.97 ± 0.32	8.12 ± 0.07	13.45 ± 0.14	9.78 ± 0.07	16.20 ± 0.23	n = 6	[ROC] ABX Micro
17.95 ± 0.21	7.92 ± 0.08	13.35 ± 0.14	9.75 ± 0.10	15.97 ± 0.19	n = 28	[SYA] Sysmex XE 5000
18.30 ± 0.18	8.17 ± 0.05	13.53 ± 0.05	9.93 ± 0.05	16.50 ± 0.09	n = 3	[SYB] Sysmex KX-21N
18.10 ± 0.00	7.87 ± 0.05	13.35 ± 0.19	9.66 ± 0.10	16.26 ± 0.10	n = 3	[SYC] Sysmex XN-series
17.81 ± 0.27	7.92 ± 0.10	13.41 ± 0.11	9.76 ± 0.13	15.95 ± 0.28	n = 21	[SYI] Sysmex XT-1800i,XT-2000i
18.13 ± 0.26	7.97 ± 0.05	13.37 ± 0.10	9.78 ± 0.09	16.13 ± 0.22	n = 6	[SYL] Sysmex XE 2100C
18.04 ± 0.28	7.97 ± 0.10	13.36 ± 0.13	9.78 ± 0.14	16.08 ± 0.21	n = 21	[SYO] Sysmex XE2100
18.29 ± 0.14	7.98 ± 0.05	13.55 ± 0.09	9.77 ± 0.09	16.42 ± 0.13	n = 25	[SYP] Sysmex XS-1000i,XS-1000iAL
17.95 ± 0.14	7.93 ± 0.05	13.45 ± 0.10	9.81 ± 0.15	16.10 ± 0.16	n = 6	[SYQ] Sysmex XE 2100D(Blood Center)
17.72 ± 0.23	7.87 ± 0.10	13.44 ± 0.16	9.73 ± 0.14	15.85 ± 0.24	n = 15	[SYV] Sysmex XT 4000i

Summary of Participant Responses  
 Mean ± One Standard Deviation

Hematocrit (%)

Specimen: B81	Specimen: B82	Specimen: B83	Specimen: B84	Specimen: B85	Number	[Code] Instrument
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50.90 ± 2.45	23.32 ± 1.18	38.47 ± 1.80	28.41 ± 1.54	45.52 ± 2.38	n = 418	[---] All Methods & Instruments
<b>&lt;Instruments&gt;</b>						
51.91 ± 0.80	23.57 ± 0.32	39.16 ± 0.26	28.23 ± 0.14	46.80 ± 0.45	n = 3	[ABG] Abbott Cell Dyn 1700
53.55 ± 1.39	24.75 ± 0.40	40.08 ± 0.43	30.22 ± 0.69	47.89 ± 0.42	n = 4	[ABJ] Abbott Cell Dyn 1800
45.65 ± 0.60	20.26 ± 0.20	34.12 ± 0.87	24.59 ± 0.46	39.82 ± 0.64	n = 5	[ABK] Abbott Cell Dyn 3200
55.15 ± 0.79	24.81 ± 0.51	41.42 ± 0.46	30.55 ± 0.45	49.19 ± 1.09	n = 11	[ABM] Abbott Cell Dyn 3700
49.72 ± 0.86	22.09 ± 0.23	36.97 ± 0.63	26.91 ± 0.43	44.04 ± 0.70	n = 11	[ABS] Abbott Cell Dyn Sapphire
47.23 ± 1.16	20.29 ± 0.44	34.50 ± 0.67	24.43 ± 0.56	40.23 ± 1.09	n = 20	[ABT] Abbott Cell Dyn Ruby
53.17 ± 1.38	24.17 ± 0.43	39.59 ± 0.92	29.47 ± 0.15	47.93 ± 1.29	n = 4	[ABU] Abbott Cell Dyn Emerald
46.74 ± 1.12	20.74 ± 0.54	34.96 ± 0.89	25.48 ± 0.64	41.71 ± 1.22	n = 16	[BTD] Siemens Advia 120
46.91 ± 0.98	20.95 ± 0.58	35.00 ± 0.74	25.45 ± 0.68	42.08 ± 1.19	n = 32	[BTE] Siemens Advia 2120
53.34 ± 0.65	24.05 ± 0.33	39.67 ± 0.47	29.43 ± 0.42	47.75 ± 0.52	n = 45	[CUL] Coulter UniCel DxH 800
49.60 ± 1.22	22.44 ± 0.36	37.92 ± 0.76	27.38 ± 0.73	45.34 ± 0.79	n = 6	[CUS] Coulter ACT 5 diff
51.70 ± 1.43	23.39 ± 0.51	38.68 ± 0.89	28.24 ± 0.73	46.56 ± 1.05	n = 17	[CUT] Coulter ACT series,not ACT5 diff
52.04 ± 1.05	23.63 ± 0.32	39.18 ± 0.48	28.89 ± 0.32	46.73 ± 0.74	n = 10	[CUW] Coulter HMX
52.40 ± 0.73	23.64 ± 0.29	39.54 ± 0.49	28.93 ± 0.35	47.12 ± 0.62	n = 42	[CUX] Coulter LH750,755
52.23 ± 0.56	23.54 ± 0.25	39.42 ± 0.40	28.72 ± 0.27	46.93 ± 0.44	n = 21	[CUY] Coulter LH 780
52.08 ± 1.07	23.85 ± 0.57	39.14 ± 0.67	28.98 ± 0.72	47.00 ± 0.85	n = 16	[CUZ] Coulter LH500
47.64 ± 1.52	21.24 ± 0.80	34.85 ± 1.28	25.00 ± 0.00	41.17 ± 2.10	n = 5	[MHC] Microhematocrit
49.31 ± 1.34	22.44 ± 0.62	37.45 ± 0.67	27.16 ± 0.62	44.85 ± 1.27	n = 5	[ROB] ABX Pentra series
52.62 ± 0.38	22.87 ± 0.33	38.87 ± 0.53	27.64 ± 0.65	46.35 ± 0.48	n = 6	[ROC] ABX Micro
50.69 ± 0.60	23.77 ± 0.39	38.99 ± 0.55	29.00 ± 0.50	45.24 ± 0.56	n = 28	[SYA] Sysmex XE 5000
48.25 ± 0.54	21.92 ± 0.32	36.08 ± 0.32	26.40 ± 0.09	42.28 ± 0.59	n = 3	[SYB] Sysmex KX-21N
51.87 ± 0.05	22.82 ± 0.24	38.31 ± 0.37	28.23 ± 0.14	45.70 ± 0.27	n = 3	[SYC] Sysmex XN-series
50.15 ± 0.72	23.88 ± 0.32	38.44 ± 0.46	28.94 ± 0.38	44.70 ± 0.73	n = 21	[SYI] Sysmex XT-1800i,XT-2000i
48.75 ± 0.87	22.83 ± 0.33	37.17 ± 0.41	28.57 ± 0.36	43.40 ± 0.25	n = 5	[SYL] Sysmex XE 2100C
50.80 ± 0.62	23.72 ± 0.39	38.80 ± 0.46	29.10 ± 0.48	45.17 ± 0.56	n = 21	[SYO] Sysmex XE2100
50.14 ± 0.60	23.22 ± 0.27	38.06 ± 0.52	28.15 ± 0.39	44.73 ± 0.62	n = 25	[SYP] Sysmex XS-1000i,XS-1000iAL
50.67 ± 0.56	23.90 ± 0.22	39.06 ± 0.50	29.12 ± 0.41	45.28 ± 0.58	n = 7	[SYQ] Sysmex XE 2100D(Blood Center)
50.25 ± 0.52	23.88 ± 0.34	38.46 ± 0.44	28.92 ± 0.37	44.62 ± 0.63	n = 15	[SYV] Sysmex XT 4000i

Summary of Participant Responses  
 Mean ± One Standard Deviation

Platelet Count (x10<sup>9</sup>/L)

Specimen: B81	Specimen: B82	Specimen: B83	Specimen: B84	Specimen: B85	Number	[Code] Instrument
218.8 ± 18.36	112.1 ± 8.18	235.7 ± 15.73	87.0 ± 6.80	549.3 ± 37.02	n = 413	[---] All Methods & Instruments
<b>&lt;Instruments&gt;</b>						
253.2 ± 18.49	118.4 ± 9.68	260.3 ± 16.72	85.6 ± 3.87	590.7 ± 13.98	n = 3	[ABG] Abbott Cell Dyn 1700
244.8 ± 20.65	113.8 ± 5.30	247.9 ± 5.47	91.3 ± 6.64	594.8 ± 17.03	n = 4	[ABJ] Abbott Cell Dyn 1800
249.7 ± 15.81	126.6 ± 6.68	256.8 ± 19.62	105.7 ± 9.17	590.4 ± 31.67	n = 5	[ABK] Abbott Cell Dyn 3200
239.5 ± 7.32	125.0 ± 7.78	262.8 ± 14.34	96.9 ± 6.72	588.2 ± 28.73	n = 11	[ABM] Abbott Cell Dyn 3700
226.7 ± 13.87	118.2 ± 3.09	240.7 ± 7.56	93.1 ± 4.03	542.8 ± 17.61	n = 11	[ABS] Abbott Cell Dyn Sapphire
262.3 ± 11.88	124.4 ± 4.72	250.4 ± 12.01	109.2 ± 7.91	592.7 ± 23.51	n = 20	[ABT] Abbott Cell Dyn Ruby
244.4 ± 17.11	129.5 ± 10.85	257.1 ± 15.24	97.2 ± 4.62	586.6 ± 26.92	n = 4	[ABU] Abbott Cell Dyn Emerald
227.6 ± 15.50	118.3 ± 9.39	241.0 ± 14.78	91.1 ± 5.62	576.5 ± 35.44	n = 16	[BTD] Siemens Advia 120
229.0 ± 11.71	117.1 ± 7.22	246.5 ± 13.89	92.1 ± 4.94	586.9 ± 34.17	n = 31	[BTE] Siemens Advia 2120
215.1 ± 5.42	110.0 ± 2.46	230.5 ± 6.00	85.8 ± 2.78	538.4 ± 8.16	n = 45	[CUL] Coulter UniCel DxH 800
233.3 ± 12.00	122.5 ± 4.90	259.7 ± 9.98	94.3 ± 3.78	579.2 ± 14.16	n = 6	[CUS] Coulter ACT 5 diff
217.5 ± 11.34	109.7 ± 6.07	234.8 ± 11.51	83.7 ± 5.38	565.3 ± 25.90	n = 18	[CUT] Coulter ACT series,not ACT5 diff
207.8 ± 9.14	109.1 ± 5.48	221.8 ± 4.89	83.5 ± 3.63	523.6 ± 19.14	n = 10	[CUW] Coulter HMX
215.7 ± 6.35	110.9 ± 2.93	231.7 ± 7.72	86.1 ± 2.18	534.8 ± 15.73	n = 42	[CUX] Coulter LH750,755
218.4 ± 7.04	113.1 ± 3.70	233.7 ± 7.51	88.0 ± 2.08	531.4 ± 14.85	n = 21	[CUY] Coulter LH 780
210.9 ± 6.48	107.3 ± 4.03	226.2 ± 7.48	85.5 ± 3.60	538.1 ± 11.39	n = 16	[CUZ] Coulter LH500
225.2 ± 10.77	116.9 ± 4.62	251.3 ± 1.59	90.5 ± 3.46	566.4 ± 17.89	n = 5	[ROB] ABX Pentra series
233.0 ± 7.24	124.9 ± 3.24	250.7 ± 7.90	99.2 ± 5.35	570.4 ± 24.55	n = 6	[ROC] ABX Micro
184.8 ± 7.91	100.6 ± 3.00	211.7 ± 5.51	78.2 ± 2.95	482.1 ± 13.77	n = 28	[SYA] Sysmex XE 5000
249.3 ± 6.85	111.0 ± 0.90	244.5 ± 8.12	82.4 ± 6.14	614.6 ± 28.28	n = 3	[SYB] Sysmex KX-21N
218.8 ± 6.79	102.4 ± 1.02	229.6 ± 2.56	80.0 ± 0.90	543.0 ± 6.37	n = 3	[SYC] Sysmex XN-series
223.1 ± 6.87	113.6 ± 4.58	244.5 ± 7.01	87.8 ± 4.39	559.5 ± 20.24	n = 21	[SYI] Sysmex XT-1800i,XT-2000i
196.2 ± 10.90	105.1 ± 4.77	224.3 ± 12.76	83.5 ± 2.53	515.8 ± 25.41	n = 6	[SYL] Sysmex XE 2100C
188.9 ± 9.94	101.3 ± 4.99	215.6 ± 6.75	79.0 ± 3.41	491.1 ± 20.66	n = 20	[SYO] Sysmex XE2100
213.8 ± 7.09	109.0 ± 3.44	233.4 ± 7.84	82.7 ± 2.56	548.5 ± 10.26	n = 25	[SYP] Sysmex XS-1000i,XS-1000iAL
224.4 ± 5.38	124.5 ± 1.11	256.0 ± 4.50	93.1 ± 2.57	584.4 ± 5.63	n = 7	[SYQ] Sysmex XE 2100D(Blood Center)
224.3 ± 7.48	114.2 ± 2.97	246.1 ± 6.20	88.8 ± 2.98	565.5 ± 16.66	n = 15	[SYV] Sysmex XT 4000i

Summary of Participant Responses  
 Mean ± One Standard Deviation

Prothrombin Time (seconds)

Specimen: C81	Specimen: C82	Specimen: C83	Specimen: C84	Specimen: C85	Number	[Code] Instrument or Reagent System
28.64 ± 3.52	47.83 ± 7.17	11.95 ± 0.80	11.92 ± 0.77	10.90 ± 0.47	n = 318	[---] All Methods & Instruments
<b>&lt;Instruments&gt;</b>						
26.65 ± 0.84	43.58 ± 1.94	11.12 ± 0.18	11.09 ± 0.22	10.82 ± 0.22	n = 19	[BEB] Siemens BCS,BCSXP
31.64 ± 1.05	54.02 ± 2.33	13.53 ± 0.28	13.53 ± 0.28	12.51 ± 0.22	n = 29	[DGC] Diagnostica Stago STA Compact
31.81 ± 1.00	53.57 ± 2.37	14.16 ± 0.46	14.18 ± 0.44	12.96 ± 0.55	n = 16	[DGD] Diagnostica Stago STA-R, STA-R Ev
20.66 ± 0.70	30.34 ± 1.48	11.86 ± 0.29	11.88 ± 0.26	11.36 ± 0.30	n = 13	[ILA] IL ACL(All models except 810,ELIT
29.93 ± 6.21	49.91 ± 12.32	12.43 ± 0.74	12.46 ± 0.70	11.00 ± 0.46	n = 20	[ILC] IL ACL Futura/Advance
28.19 ± 4.88	46.58 ± 10.43	12.00 ± 0.39	12.09 ± 0.38	11.10 ± 0.38	n = 35	[ILD] IL ACL(ELITE,ELITE PRO,8/9/10000)
30.68 ± 1.54	52.12 ± 3.12	12.25 ± 0.35	12.11 ± 0.31	10.76 ± 0.25	n = 72	[ILE] IL ACL TOP Series
26.92 ± 1.10	44.06 ± 2.61	11.34 ± 0.33	11.29 ± 0.33	10.55 ± 0.31	n = 38	[SYW] Sysmex CA500/CA600 series
26.60 ± 0.88	43.99 ± 1.95	11.44 ± 0.17	11.47 ± 0.16	10.82 ± 0.16	n = 51	[SYX] Sysmex CA 1500
26.97 ± 0.67	44.13 ± 1.41	11.73 ± 0.20	11.71 ± 0.20	11.02 ± 0.21	n = 17	[SYY] Sysmex CA 7000
<b>&lt;Reagents&gt;</b>						
31.79 ± 0.99	54.10 ± 2.19	13.72 ± 0.41	13.73 ± 0.44	12.62 ± 0.34	n = 44	[TA3] STA Neoplastine CL+
26.74 ± 0.96	43.96 ± 2.15	11.39 ± 0.29	11.39 ± 0.30	10.78 ± 0.26	n = 127	[TD2] Siemens Innovin
20.58 ± 0.79	30.21 ± 1.72	11.71 ± 0.33	11.77 ± 0.34	11.23 ± 0.52	n = 29	[TJ2] HemosIL PT-Fibrinogen
30.88 ± 1.63	52.35 ± 3.18	12.27 ± 0.39	12.20 ± 0.37	10.86 ± 0.32	n = 110	[TJ8] HemosIL RecombiPlasTin 2G
<b>&lt;Reagent &amp; Instrument&gt;</b>						
31.64 ± 1.05	54.02 ± 2.33	13.53 ± 0.28	13.53 ± 0.28	12.51 ± 0.22	n = 29	[TA3]&[DGC] STA Neoplastin & Diagnostic
31.95 ± 0.74	54.03 ± 1.87	14.17 ± 0.40	14.19 ± 0.38	13.00 ± 0.45	n = 14	[TA3]&[DGD] STA Neoplastin & Diagnostic
26.65 ± 0.84	43.58 ± 1.94	11.12 ± 0.18	11.09 ± 0.22	10.82 ± 0.22	n = 19	[TD2]&[BEB] Siemens Innovi & Siemens BC
26.92 ± 1.10	44.06 ± 2.61	11.34 ± 0.33	11.29 ± 0.33	10.55 ± 0.31	n = 38	[TD2]&[SYW] Siemens Innovi & Sysmex CA5
26.60 ± 0.88	43.99 ± 1.95	11.44 ± 0.17	11.47 ± 0.16	10.82 ± 0.16	n = 51	[TD2]&[SYX] Siemens Innovi & Sysmex CA
26.97 ± 0.67	44.13 ± 1.41	11.73 ± 0.20	11.71 ± 0.20	11.02 ± 0.21	n = 17	[TD2]&[SYY] Siemens Innovi & Sysmex CA
20.66 ± 0.70	30.34 ± 1.48	11.86 ± 0.29	11.88 ± 0.26	11.36 ± 0.30	n = 13	[TJ2]&[ILA] HemosIL PT-Fib & IL ACL(All
20.33 ± 1.10	31.12 ± 2.45	11.41 ± 0.30	11.45 ± 0.46	10.43 ± 0.35	n = 6	[TJ2]&[ILC] HemosIL PT-Fib & IL ACL Fut
20.55 ± 0.68	29.72 ± 1.41	11.64 ± 0.21	11.73 ± 0.27	11.40 ± 0.41	n = 10	[TJ2]&[ILD] HemosIL PT-Fib & IL ACL(ELI
32.95 ± 1.33	56.11 ± 2.99	12.82 ± 0.40	12.78 ± 0.35	11.23 ± 0.23	n = 13	[TJ8]&[ILC] HemosIL Recomb & IL ACL Fut
30.51 ± 1.23	51.57 ± 2.12	12.14 ± 0.32	12.25 ± 0.28	11.00 ± 0.33	n = 25	[TJ8]&[ILD] HemosIL Recomb & IL ACL(ELI
30.71 ± 1.53	52.18 ± 3.11	12.25 ± 0.35	12.10 ± 0.31	10.76 ± 0.25	n = 71	[TJ8]&[ILE] HemosIL Recomb & IL ACL TOP

Summary of Participant Responses  
 Mean ± One Standard Deviation

Act Partial Thromboplastin Time (seconds)

Specimen: C81	Specimen: C82	Specimen: C83	Specimen: C84	Specimen: C85	Number	[Code] Instrument or Reagent System
54.16 ± 7.29	80.88 ± 10.23	31.65 ± 2.11	31.65 ± 2.12	28.77 ± 2.55	n = 310	[---] All Methods & Instruments
<b>&lt;Instruments&gt;</b>						
48.71 ± 1.61	72.34 ± 1.96	27.70 ± 0.74	27.66 ± 0.92	25.74 ± 0.67	n = 20	[BEB] Siemens BCS,BCSXP
51.87 ± 2.35	76.93 ± 3.00	33.98 ± 1.30	34.42 ± 1.40	30.26 ± 1.07	n = 27	[DGC] Diagnostica Stago STA Compact
49.89 ± 1.26	73.31 ± 2.74	33.35 ± 1.11	33.83 ± 0.96	29.87 ± 0.71	n = 16	[DGD] Diagnostica Stago STA-R, STA-R Ev
51.25 ± 9.10	76.90 ± 11.90	30.59 ± 1.00	30.15 ± 0.96	28.11 ± 1.51	n = 14	[ILA] IL ACL(All models except 810,ELIT
64.05 ± 2.38	96.38 ± 3.07	32.01 ± 0.96	31.76 ± 0.63	30.55 ± 0.67	n = 19	[ILC] IL ACL Futura/Advance
57.38 ± 8.54	86.30 ± 12.13	29.85 ± 1.10	29.92 ± 0.96	29.07 ± 1.22	n = 33	[ILD] IL ACL(ELITE,ELITE PRO,8/9/10000)
60.96 ± 1.89	89.98 ± 2.61	33.09 ± 1.11	32.92 ± 0.98	31.19 ± 0.87	n = 74	[ILE] IL ACL TOP Series (ACLTOP,ACLTOP
47.79 ± 2.65	73.40 ± 3.74	29.75 ± 1.29	29.84 ± 1.08	25.70 ± 1.13	n = 36	[SYW] Sysmex CA500/CA600 series
50.88 ± 1.41	76.99 ± 2.45	31.44 ± 0.84	31.54 ± 0.85	27.05 ± 0.55	n = 51	[SYX] Sysmex CA 1500
50.36 ± 1.66	74.68 ± 2.64	31.15 ± 1.18	31.39 ± 1.21	27.06 ± 0.98	n = 15	[SYY] Sysmex CA 7000
<b>&lt;Reagents&gt;</b>						
50.69 ± 1.77	75.12 ± 3.00	33.55 ± 1.04	33.93 ± 1.02	29.94 ± 0.78	n = 37	[AA2] Diagnostica Stago STA PTT-Auto
55.68 ± 2.66	80.74 ± 2.48	35.73 ± 2.53	36.35 ± 2.04	32.28 ± 2.18	n = 6	[AA3] Diagnostica Stago PTT-LA
93.76 ± 12.71	126.41 ± 13.46	29.53 ± 1.82	29.41 ± 1.74	26.19 ± 0.98	n = 4	[AD3] Siemens Actin FS
49.70 ± 2.22	74.95 ± 3.46	30.50 ± 1.76	30.61 ± 1.76	26.53 ± 1.07	n = 116	[AD4] Siemens Actin FSL
47.52 ± 1.75	71.74 ± 1.92	30.72 ± 1.50	30.32 ± 1.41	27.63 ± 1.49	n = 26	[AJ3] HemosIL Test APTT-SP
61.84 ± 2.43	91.47 ± 4.07	32.31 ± 1.75	32.15 ± 1.61	30.79 ± 1.05	n = 113	[AO4] HemosIL SynthASil
<b>&lt;Reagent &amp; Instrument&gt;</b>						
51.34 ± 1.84	76.19 ± 2.67	33.80 ± 1.16	34.13 ± 1.20	30.04 ± 0.88	n = 22	[AA2]&[DGC] Diagnostica St & Diagnostic
49.89 ± 1.25	73.31 ± 2.73	33.26 ± 0.94	33.78 ± 0.80	29.87 ± 0.71	n = 14	[AA2]&[DGD] Diagnostica St & Diagnostic
55.02 ± 2.49	79.38 ± 0.28	34.95 ± 1.64	35.77 ± 1.45	31.57 ± 1.49	n = 5	[AA3]&[DGC] Diagnostica St & Diagnostic
97.44 ± 16.06	130.90 ± 16.21	30.28 ± 0.49	30.04 ± 0.26	26.57 ± 0.23	n = 3	[AD3]&[SYX] Siemens Actin & Sysmex CA
48.71 ± 1.59	72.34 ± 1.93	27.70 ± 0.71	27.65 ± 0.85	25.73 ± 0.61	n = 17	[AD4]&[BEB] Siemens Actin & Siemens BC
47.80 ± 2.65	73.40 ± 3.74	29.73 ± 1.23	29.83 ± 1.05	25.68 ± 1.05	n = 35	[AD4]&[SYW] Siemens Actin & Sysmex CA5
50.89 ± 1.40	77.00 ± 2.45	31.51 ± 0.79	31.61 ± 0.78	27.09 ± 0.54	n = 48	[AD4]&[SYX] Siemens Actin & Sysmex CA
50.36 ± 1.66	74.68 ± 2.64	31.15 ± 1.18	31.39 ± 1.21	27.06 ± 0.98	n = 15	[AD4]&[SYY] Siemens Actin & Sysmex CA
47.22 ± 3.28	71.47 ± 2.38	30.90 ± 1.19	30.22 ± 1.10	27.46 ± 1.08	n = 10	[AJ3]&[ILA] HemosIL Test A & IL ACL(All
47.86 ± 0.79	72.26 ± 1.06	30.52 ± 1.29	30.44 ± 1.13	28.02 ± 1.08	n = 12	[AJ3]&[ILD] HemosIL Test A & IL ACL(ELI
64.62 ± 0.80	96.48 ± 1.60	30.17 ± 0.31	29.98 ± 0.55	29.82 ± 0.82	n = 4	[AO4]&[ILA] HemosIL SynthA & IL ACL(All
63.82 ± 2.25	96.33 ± 3.29	32.17 ± 0.74	31.79 ± 0.62	30.59 ± 0.68	n = 16	[AO4]&[ILC] HemosIL SynthA & IL ACL Fut
63.09 ± 2.77	93.50 ± 4.83	29.56 ± 0.82	29.70 ± 0.80	29.57 ± 0.97	n = 21	[AO4]&[ILD] HemosIL SynthA & IL ACL(ELI
60.95 ± 1.84	89.94 ± 2.57	33.07 ± 1.10	32.91 ± 0.98	31.19 ± 0.84	n = 71	[AO4]&[ILE] HemosIL SynthA & IL ACL TOP



Summary of Participant Responses  
 Mean ± One Standard Deviation

Fibrinogen (mg/dL)

Specimen: C81	Specimen: C82	Specimen: C83	Specimen: C84	Specimen: C85	Number	[Code] Instrument or Reagent System
285.8 ± 32.84	271.3 ± 31.96	603.1 ± 86.68	602.3 ± 79.53	295.7 ± 30.64	n = 209	[---] All Methods & Instruments
<b>&lt;Instruments&gt;</b>						
342.3 ± 26.61	326.0 ± 25.19	732.6 ± 68.57	734.5 ± 76.60	345.6 ± 25.35	n = 20	[BEB] Siemens BCS,BCSXP
285.9 ± 15.57	277.2 ± 15.59	634.6 ± 38.12	630.4 ± 30.24	306.9 ± 14.08	n = 26	[DGC] Diagnostica Stago STA Compact
277.0 ± 6.28	267.1 ± 12.31	618.5 ± 30.59	613.4 ± 20.18	297.5 ± 11.11	n = 14	[DGD] Diagnostica Stago STA-R, STA-R Ev
337.8 ± 32.51	351.8 ± 38.23	537.8 ± 44.01	537.7 ± 39.96	266.3 ± 29.65	n = 13	[ILC] IL ACL Futura/Advance
333.6 ± 59.65	324.7 ± 79.17	740.7 ± 63.29	731.3 ± 44.05	310.7 ± 21.44	n = 10	[ILD] IL ACL(ELITE,ELITE PRO,8/9/10000)
290.7 ± 27.87	271.9 ± 27.30	625.1 ± 49.12	624.7 ± 45.32	300.9 ± 30.47	n = 65	[ILE] IL ACL TOP Series (ACLTOP,ACLTOP
272.8 ± 6.47	254.8 ± 11.80	496.2 ± 53.45	552.4 ± 11.72	281.6 ± 19.26	n = 5	[SYW] Sysmex CA500/CA600 series
260.6 ± 10.51	249.3 ± 9.45	523.1 ± 48.56	531.7 ± 36.33	273.1 ± 12.17	n = 38	[SYX] Sysmex CA 1500
262.1 ± 12.50	252.8 ± 12.13	524.8 ± 57.12	523.3 ± 58.46	277.4 ± 12.64	n = 13	[SYY] Sysmex CA 7000
<b>&lt;Reagents&gt;</b>						
392.5 ± 15.25	381.3 ± 20.90	668.1 ± 65.15	652.1 ± 59.20	334.0 ± 27.70	n = 7	[TJ2] HemosIL PT-Fibrinogen
317.9 ± 15.75	301.3 ± 27.77	598.9 ± 45.23	599.4 ± 41.39	316.1 ± 26.66	n = 39	[TJ8] HemosIL RecombiPlasTin 2G
282.6 ± 13.69	273.7 ± 15.69	628.5 ± 36.57	623.5 ± 27.78	303.4 ± 13.73	n = 40	[FA4] Stago STA-Fibrinogen 5
347.8 ± 21.16	331.3 ± 19.97	745.8 ± 44.96	750.8 ± 50.52	351.7 ± 19.43	n = 17	[FB2] Siemens Multifibren U
262.6 ± 11.72	250.9 ± 10.88	522.2 ± 53.09	530.5 ± 45.20	275.5 ± 14.01	n = 59	[FD2] Siemens Fibrinogen Determination
280.9 ± 16.79	260.4 ± 17.55	645.9 ± 85.84	640.2 ± 88.55	284.9 ± 18.87	n = 23	[FJ2] HemosIL Fibrinogen C,XL
267.3 ± 19.25	251.0 ± 19.36	650.6 ± 74.46	654.4 ± 59.26	280.1 ± 24.54	n = 21	[FO3] HemosIL QFA(bovine)
<b>&lt;Reagent &amp; Instrument&gt;</b>						
386.6 ± 22.58	399.2 ± 13.99	603.5 ± 149.01	616.6 ± 154.28	335.9 ± 31.75	n = 3	[TJ2]&[ILD] HemosIL PT-Fib & IL ACL(ELI
342.8 ± 10.86	361.8 ± 8.73	510.2 ± 19.59	516.2 ± 23.35	248.5 ± 11.17	n = 8	[TJ8]&[ILC] HemosIL Recomb & IL ACL Fut
312.5 ± 9.52	291.4 ± 9.99	612.7 ± 21.52	613.2 ± 18.46	323.0 ± 11.06	n = 30	[TJ8]&[ILE] HemosIL Recomb & IL ACL TOP
285.9 ± 15.57	277.2 ± 15.59	634.6 ± 38.12	630.4 ± 30.24	306.9 ± 14.08	n = 26	[FA4]&[DGC] Stago STA-Fibr & Diagnostic
277.0 ± 6.28	267.1 ± 12.31	618.5 ± 30.59	613.4 ± 20.18	297.5 ± 11.11	n = 14	[FA4]&[DGD] Stago STA-Fibr & Diagnostic
347.8 ± 21.16	331.3 ± 19.97	745.8 ± 44.96	750.8 ± 50.52	351.7 ± 19.43	n = 17	[FB2]&[BEB] Siemens Multif & Siemens BC
292.7 ± 25.57	279.5 ± 22.57	558.2 ± 64.42	560.6 ± 79.11	301.3 ± 10.56	n = 3	[FD2]&[BEB] Siemens Fibrin & Siemens BC
272.8 ± 6.47	254.8 ± 11.80	496.2 ± 53.45	552.4 ± 11.72	281.6 ± 19.26	n = 5	[FD2]&[SYW] Siemens Fibrin & Sysmex CA5
260.6 ± 10.51	249.3 ± 9.45	523.1 ± 48.56	531.7 ± 36.33	273.1 ± 12.17	n = 38	[FD2]&[SYX] Siemens Fibrin & Sysmex CA
262.1 ± 12.50	252.8 ± 12.13	524.8 ± 57.12	523.3 ± 58.46	277.4 ± 12.64	n = 13	[FD2]&[SYY] Siemens Fibrin & Sysmex CA
293.7 ± 13.19	272.7 ± 11.20	745.7 ± 57.12	726.5 ± 41.15	298.9 ± 10.34	n = 5	[FJ2]&[ILD] HemosIL Fibrin & IL ACL(ELI
275.3 ± 16.49	254.1 ± 17.04	630.0 ± 73.04	622.9 ± 76.53	279.2 ± 18.27	n = 16	[FJ2]&[ILE] HemosIL Fibrin & IL ACL TOP
264.7 ± 16.61	248.1 ± 17.28	649.7 ± 67.84	654.3 ± 53.15	275.9 ± 21.08	n = 19	[FO3]&[ILE] HemosIL QFA(bo & IL ACL TOP

Summary of Participant Responses  
Mean ± One Standard Deviation

INR (International Normalized Ratio)

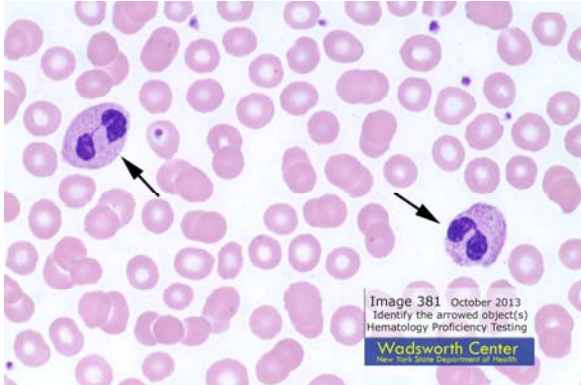
Specimen: C81	Specimen: C82	Specimen: C83	Specimen: C84	Specimen: C85	Number	[Code] Instrument or Reagent System
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2.713 ± 0.262	4.636 ± 0.782	1.086 ± 0.051	1.084 ± 0.048	0.994 ± 0.050	n = 321	[---] All Methods & Instruments
<b>&lt;Instruments&gt;</b>						
2.663 ± 0.090	4.264 ± 0.165	1.050 ± 0.052	1.044 ± 0.051	1.000 ± 0.000	n = 18	[BEB] Siemens BCS,BCSXP
3.163 ± 0.141	6.289 ± 0.356	1.052 ± 0.049	1.054 ± 0.047	0.953 ± 0.042	n = 29	[DGC] Diagnostica Stago STA Compact
3.141 ± 0.160	6.167 ± 0.352	1.095 ± 0.031	1.098 ± 0.014	0.994 ± 0.034	n = 16	[DGD] Diagnostica Stago STA-R, STA-R Ev
2.900 ± 0.321	6.008 ± 0.703	1.051 ± 0.106	1.037 ± 0.090	0.953 ± 0.095	n = 13	[ILA] IL ACL(All models except 810,ELIT
2.862 ± 0.147	4.999 ± 0.573	1.105 ± 0.070	1.109 ± 0.069	0.966 ± 0.076	n = 20	[ILC] IL ACL Futura/Advance
2.806 ± 0.173	4.839 ± 0.489	1.087 ± 0.065	1.094 ± 0.068	0.998 ± 0.056	n = 35	[ILD] IL ACL(ELITE,ELITE PRO,8/9/10000)
2.737 ± 0.156	4.602 ± 0.298	1.101 ± 0.052	1.093 ± 0.047	0.975 ± 0.048	n = 73	[ILE] IL ACL TOP Series (ACLTOP,ACLTOP
2.567 ± 0.125	4.187 ± 0.254	1.095 ± 0.029	1.088 ± 0.032	1.017 ± 0.034	n = 40	[SYW] Sysmex CA500/CA600 series
2.486 ± 0.098	4.089 ± 0.202	1.092 ± 0.017	1.093 ± 0.017	1.017 ± 0.033	n = 52	[SYX] Sysmex CA 1500
2.543 ± 0.085	4.176 ± 0.168	1.093 ± 0.028	1.100 ± 0.000	1.013 ± 0.031	n = 17	[SYY] Sysmex CA 7000
<b>&lt;Reagents&gt;</b>						
3.160 ± 0.134	6.249 ± 0.342	1.067 ± 0.050	1.070 ± 0.049	0.964 ± 0.045	n = 44	[TA3] STA Neoplastine CL+
2.541 ± 0.121	4.155 ± 0.221	1.087 ± 0.033	1.086 ± 0.033	1.014 ± 0.032	n = 128	[TD2] Siemens Innovin
2.852 ± 0.293	5.858 ± 0.683	1.019 ± 0.086	1.019 ± 0.080	0.932 ± 0.086	n = 29	[TJ2] HemosIL PT-Fibrinogen
2.772 ± 0.150	4.651 ± 0.296	1.109 ± 0.046	1.104 ± 0.045	0.987 ± 0.048	n = 111	[TJ8] HemosIL RecombiPlasTin 2G
<b>&lt;Reagent &amp; Instrument&gt;</b>						
3.163 ± 0.141	6.289 ± 0.356	1.052 ± 0.049	1.054 ± 0.047	0.953 ± 0.042	n = 29	[TA3]&[DGC] STA Neoplastin & Diagnostic
3.159 ± 0.126	6.175 ± 0.324	1.098 ± 0.025	1.099 ± 0.012	0.993 ± 0.039	n = 14	[TA3]&[DGD] STA Neoplastin & Diagnostic
2.663 ± 0.090	4.264 ± 0.165	1.050 ± 0.052	1.044 ± 0.051	1.000 ± 0.000	n = 18	[TD2]&[BEB] Siemens Innovi & Siemens BC
2.570 ± 0.126	4.192 ± 0.258	1.095 ± 0.030	1.087 ± 0.033	1.017 ± 0.035	n = 39	[TD2]&[SYW] Siemens Innovi & Sysmex CA5
2.486 ± 0.098	4.089 ± 0.202	1.092 ± 0.017	1.093 ± 0.017	1.017 ± 0.033	n = 52	[TD2]&[SYX] Siemens Innovi & Sysmex CA
2.543 ± 0.085	4.176 ± 0.168	1.093 ± 0.028	1.100 ± 0.000	1.013 ± 0.031	n = 17	[TD2]&[SYY] Siemens Innovi & Sysmex CA
2.900 ± 0.321	6.008 ± 0.703	1.051 ± 0.106	1.037 ± 0.090	0.953 ± 0.095	n = 13	[TJ2]&[ILA] HemosIL PT-Fib & IL ACL(All
2.769 ± 0.254	5.857 ± 0.615	1.024 ± 0.063	1.029 ± 0.086	0.858 ± 0.074	n = 6	[TJ2]&[ILC] HemosIL PT-Fib & IL ACL Fut
2.849 ± 0.273	5.675 ± 0.661	0.985 ± 0.061	0.997 ± 0.058	0.945 ± 0.059	n = 10	[TJ2]&[ILD] HemosIL PT-Fib & IL ACL(ELI
2.889 ± 0.095	4.807 ± 0.318	1.133 ± 0.050	1.126 ± 0.044	0.993 ± 0.041	n = 13	[TJ8]&[ILC] HemosIL Recomb & IL ACL Fut
2.797 ± 0.129	4.701 ± 0.240	1.113 ± 0.028	1.120 ± 0.032	1.015 ± 0.039	n = 25	[TJ8]&[ILD] HemosIL Recomb & IL ACL(ELI
2.740 ± 0.154	4.607 ± 0.299	1.102 ± 0.051	1.093 ± 0.047	0.976 ± 0.048	n = 72	[TJ8]&[ILE] HemosIL Recomb & IL ACL TOP

# NEW YORK STATE HEMATOLOGY PROFICIENCY TESTING PROGRAM

October 7, 2013

Images on the Hematology and Clinical Chemistry web page: <http://www.wadsworth.org/chemheme/cellPT> were used to test all laboratories that perform manual white cell differentials. A summary of responses appear below, acceptable responses are shown in shaded areas.

## Image 381



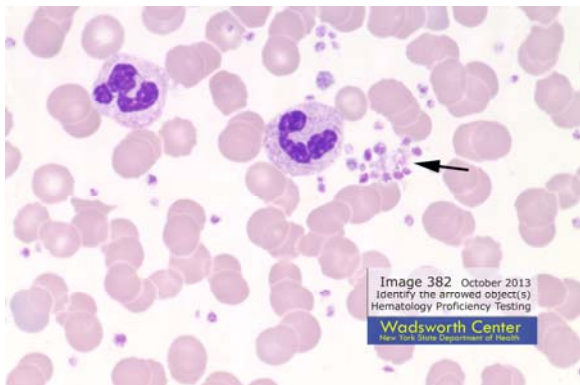
Number of Responses	Percent of Laboratories	Cell type or finding
344	96.6%	Neutrophil with Pelger-Huët nucleus
11	3.1%	Segmented neutrophil
1	0.3%	Band neutrophil

The striking characteristic of each arrowed neutrophil in Image 381 is the bilobed nucleus. The image was obtained from a case of Pelger-Huët anomaly where the majority of the neutrophils possess bilobed nuclei with coarsely clumped chromatin and normal cytoplasmic granules. The majority (96.6%) of participants correctly identified the arrowed cells in Image 381 as neutrophils with Pelger-Huët nuclei.

Pelger-Huët anomaly is a benign hereditary condition recognized by the bilobed nucleus of most neutrophils. The cells appear to function normally. Pseudo-Pelger-Huët is the term used to describe the acquired anomaly resembling Pelger-Huët. "The pseudo-Pelger-Huët anomaly is often acquired in the course of acute or chronic myelogenous leukemia and is a premonitory finding in myelodysplastic syndromes. The pseudo-Pelger-Huët anomaly may also be induced reversibly by cytotoxic agents. The acquired nuclear aberration can be differentiated from the constitutional form by 3 features: (1) among pseudo-Pelger-Huët cells, bilobate or pinc-nez nuclear forms are in the minority; (2) there is a much higher percentage of normal, 3-lobed granulocytes than is found in the Pelger-Huët anomaly; and (3) pseudo-Pelger-Huët anomalous cells are usually found in the company of immature or leukemic cells." Jandle, J.H. & Kapff, C.T. Blood: Atlas and Sourcebook of Hematology 2<sup>nd</sup> Ed. Boston: Little, Brown and Company, 1991, p.70.

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## Image 382



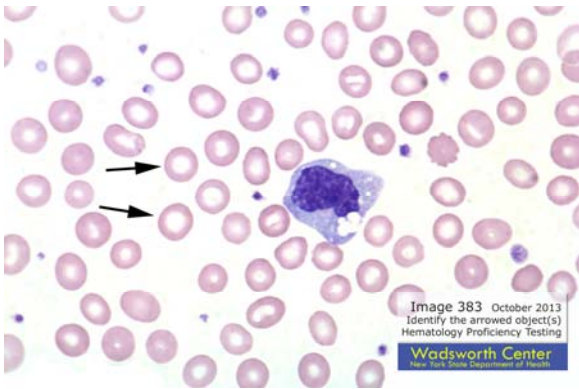
Number of Responses	Percent of Laboratories	Cell type or finding
352	98.9%	Platelet clump(s)
2	0.6%	Platelet satellitosis
2	0.6%	Platelet

Image 382 was taken from a 72 year-old male who presented with red palms and sporadic limb pain. The complete blood count revealed thrombocytosis; platelet count of  $867 \times 10^9/L$ . Thrombocytosis is often classified as primary, occurring as the result of a myeloproliferative disorder or secondary, as a reactive response of the bone marrow. In this case, the cause of the reactive thrombocytosis was not apparent and a bone marrow aspirate was indicated.

The arrowed object in Image 382 is a platelet clump as correctly identified by 352 participants. Platelet clumps are often discovered when a low automated platelet count is investigated. The pseudo-thrombocytopenia is commonly the result of the presence of cold agglutinins, EDTA dependent auto-antibodies or faulty phlebotomy. Collecting the specimen in an anticoagulant other than EDTA, such as sodium citrate or acid citrate dextrose, will often resolve the problem. If collection using these anticoagulants does not resolve the problem, the occurrence may be due to the presence of cold platelet agglutinins and warming the specimen may reverse the clumping.

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### Image 383



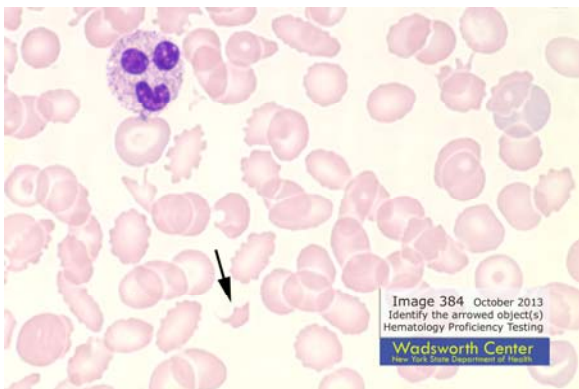
Number of Responses	Percent of Laboratories	Cell type or finding
353	99.2%	Erythrocyte - hypochromic
3	0.8%	Erythrocyte - normal

The arrowed erythrocyte(s) in Image 383 possess an extended area of central pallor and is best described as erythrocyte- hypochromic as 99.2% of participants concurred.

Image 383 was taken from a 69-year old female who presented with fatigue and weakness. The laboratory data (below) and the presence of hypochromic microcytes, suggests a diagnosis of iron deficiency anemia. Additional findings in a more severe iron deficiency anemia might include subpopulations of elliptocytes, fragmented red cells, target cells and tear-drop cells.

Analyte	Value	Analyte	Value
RBC	4.09 x 10 <sup>12</sup> /L	Serum Iron	8 µmol/L
Hemoglobin	8.3 g/dL	TIBC	80 µmol/L
Hematocrit	27.0%	Ferritin	4 µg/L
MCV	66 fL		
MCH	20.3 pg		
MCHC	30.7g/dL		
RDW	17.0%		

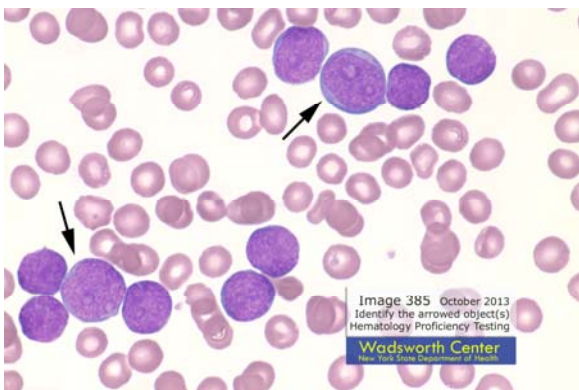
### Image 384



Number of Responses	Percent of Laboratories	Cell type or finding
347	97.5%	Schistocyte
8	2.2%	Acanthocyte
1	0.3%	Spherocyte

The arrowed object in Image 384 is a fragmented red blood cell or schistocyte as correctly identified by 347 participants. The image was captured from a case of β- thalassemia intermedia; findings include anisocytosis, poikilocytosis, hypochromia, target cells and many fragmented red blood cells as observed in Image 384.

### Image 385



Number of Responses	Percent of Laboratories	Cell type or finding
350	98.3%	Blast cell, not classified
5	1.4%	Lymphoblast
1	0.3%	Myeloblast

Image 385 was captured from a case of acute lymphocytic leukemia. The arrowed cells in the image are large, the chromatin is smooth and distinct nucleoli are present. Acceptable responses for the arrowed cells in Image 385 were blast cell, not classified and lymphoblast as reported by 355 participants.