

Hematology Proficiency Test Program
Statistical Summary – October 2014 (Event 14-3)

This statistical report summarizes participant data for the Hematology proficiency survey shipped 6 October 2014.

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

Routine Blood Counts (B01, B02, B03, B04, B05)

Routine Coagulation (C01, C02, C03, C04, C05)

Cell Identification (401, 402, 403, 404, 405)

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

Disclaimer:

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 (x10⁹/L)

Specimen: B01	Specimen: B02	Specimen: B03	Specimen: B04	Specimen: B05	Number	[Code] Instrument or Reagent System
2.94 ± 0.18	25.40 ± 1.30	9.42 ± 0.45	14.42 ± 0.86	2.96 ± 0.16	n = 411	[---] All Methods & Instruments
<Instruments>						
3.11 ± 0.19	25.62 ± 1.01	9.47 ± 0.32	14.72 ± 0.91	3.07 ± 0.09	n = 4	[ABG] Abbott Cell Dyn 1700
3.10 ± 0.09	25.08 ± 0.24	9.55 ± 0.36	14.60 ± 0.46	3.06 ± 0.10	n = 3	[ABJ] Abbott Cell Dyn 1800
2.90 ± 0.09	24.89 ± 1.05	9.42 ± 0.35	13.95 ± 0.65	2.97 ± 0.02	n = 5	[ABK] Abbott Cell Dyn 3200
2.90 ± 0.11	24.59 ± 0.95	9.37 ± 0.41	14.07 ± 0.41	2.97 ± 0.11	n = 11	[ABM] Abbott Cell Dyn 3700
2.95 ± 0.11	26.04 ± 0.67	9.48 ± 0.27	14.65 ± 0.35	2.94 ± 0.10	n = 11	[ABS] Abbott Cell Dyn Sapphire
2.89 ± 0.09	24.95 ± 0.74	9.33 ± 0.27	14.11 ± 0.37	2.95 ± 0.11	n = 20	[ABT] Abbott Cell Dyn Ruby
2.73 ± 0.12	24.84 ± 0.97	9.19 ± 0.18	14.03 ± 0.47	2.82 ± 0.12	n = 12	[BTD] Siemens Advia 120
2.73 ± 0.11	24.51 ± 1.00	9.08 ± 0.32	13.96 ± 0.64	2.81 ± 0.13	n = 32	[BTE] Siemens Advia 2120
3.05 ± 0.08	26.32 ± 0.60	9.69 ± 0.21	15.06 ± 0.32	3.01 ± 0.05	n = 52	[CUL] Coulter UniCel DxH 800
2.80 ± 0.00	25.60 ± 0.46	9.06 ± 0.16	14.15 ± 0.27	2.77 ± 0.07	n = 6	[CUS] Coulter ACT 5 diff
3.21 ± 0.10	26.74 ± 0.52	9.88 ± 0.19	15.43 ± 0.30	3.21 ± 0.10	n = 20	[CUT] Coulter ACT series,not ACT5 diff
3.15 ± 0.13	26.80 ± 0.64	9.80 ± 0.28	15.61 ± 0.33	3.21 ± 0.15	n = 7	[CUW] Coulter HMX
3.07 ± 0.11	25.79 ± 0.46	9.76 ± 0.19	14.88 ± 0.28	3.07 ± 0.12	n = 32	[CUX] Coulter LH750,755
3.08 ± 0.09	25.73 ± 0.32	9.81 ± 0.19	14.85 ± 0.24	3.08 ± 0.09	n = 18	[CUY] Coulter LH 780
3.21 ± 0.16	26.80 ± 0.71	9.77 ± 0.18	15.36 ± 0.39	3.22 ± 0.15	n = 17	[CUZ] Coulter LH500
2.82 ± 0.04	25.28 ± 0.82	9.06 ± 0.19	14.04 ± 0.45	2.80 ± 0.08	n = 4	[ROB] ABX Pentra series
2.97 ± 0.11	25.34 ± 0.57	9.34 ± 0.17	14.44 ± 0.29	2.95 ± 0.08	n = 5	[ROC] ABX Micro
2.80 ± 0.10	23.62 ± 0.78	8.84 ± 0.29	13.15 ± 0.33	2.86 ± 0.13	n = 27	[SYA] Sysmex XE 5000
2.84 ± 0.09	24.71 ± 0.32	8.95 ± 0.38	13.79 ± 0.36	2.89 ± 0.10	n = 14	[SYC] Sysmex XN-series
2.88 ± 0.09	25.17 ± 0.95	9.28 ± 0.26	13.98 ± 0.35	2.87 ± 0.08	n = 21	[SYI] Sysmex XT-2000i,XT-1800i
2.83 ± 0.15	23.72 ± 1.69	9.04 ± 0.57	13.21 ± 0.80	2.94 ± 0.14	n = 4	[SYL] Sysmex XE 2100C
2.80 ± 0.11	23.77 ± 1.09	8.87 ± 0.50	13.18 ± 0.61	2.85 ± 0.11	n = 19	[SYO] Sysmex XE2100
2.93 ± 0.09	26.47 ± 0.80	9.64 ± 0.19	14.97 ± 0.42	2.96 ± 0.11	n = 29	[SYP] Sysmex XS-1000i,XS-1000iAL
2.82 ± 0.13	23.37 ± 0.66	8.80 ± 0.25	13.10 ± 0.45	2.90 ± 0.13	n = 7	[SYQ] Sysmex XE 2100D(Blood Center)
2.82 ± 0.06	24.68 ± 0.67	9.20 ± 0.16	13.89 ± 0.35	2.85 ± 0.09	n = 17	[SYV] Sysmex XT 4000i

Summary of Participant Responses

Mean ± One Standard Deviation

Red Cell Count	(x10 ¹² /L)					
Specimen: B01	Specimen: B02	Specimen: B03	Specimen: B04	Specimen: B05	Number	[Code] Instrument or Reagent System
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2.051 ± 0.049	5.903 ± 0.112	4.515 ± 0.068	5.405 ± 0.088	2.051 ± 0.048	n = 412	[---] All Methods & Instruments
						<Instruments>
2.074 ± 0.069	5.911 ± 0.155	4.502 ± 0.047	5.493 ± 0.332	2.096 ± 0.044	n = 4	[ABG] Abbott Cell Dyn 1700
2.165 ± 0.046	5.808 ± 0.104	4.462 ± 0.132	5.311 ± 0.020	2.136 ± 0.026	n = 3	[ABJ] Abbott Cell Dyn 1800
2.114 ± 0.049	5.928 ± 0.090	4.542 ± 0.041	5.400 ± 0.031	2.059 ± 0.038	n = 5	[ABK] Abbott Cell Dyn 3200
2.092 ± 0.031	5.930 ± 0.084	4.527 ± 0.052	5.450 ± 0.046	2.091 ± 0.033	n = 10	[ABM] Abbott Cell Dyn 3700
2.094 ± 0.028	6.152 ± 0.088	4.645 ± 0.061	5.620 ± 0.081	2.104 ± 0.020	n = 11	[ABS] Abbott Cell Dyn Sapphire
2.091 ± 0.044	6.168 ± 0.082	4.610 ± 0.061	5.603 ± 0.074	2.083 ± 0.051	n = 20	[ABT] Abbott Cell Dyn Ruby
2.100 ± 0.039	5.845 ± 0.101	4.500 ± 0.077	5.377 ± 0.083	2.095 ± 0.036	n = 12	[BTD] Siemens Advia 120
2.099 ± 0.031	5.869 ± 0.103	4.503 ± 0.070	5.408 ± 0.074	2.082 ± 0.031	n = 33	[BTE] Siemens Advia 2120
2.019 ± 0.026	5.936 ± 0.082	4.474 ± 0.046	5.385 ± 0.069	2.023 ± 0.026	n = 52	[CUL] Coulter UniCel DxH 800
2.037 ± 0.039	5.906 ± 0.039	4.508 ± 0.078	5.434 ± 0.054	2.027 ± 0.043	n = 6	[CUS] Coulter ACT 5 diff
2.044 ± 0.049	5.916 ± 0.138	4.506 ± 0.073	5.406 ± 0.095	2.048 ± 0.059	n = 20	[CUT] Coulter ACT series,not ACT5 diff
2.051 ± 0.032	5.873 ± 0.090	4.541 ± 0.060	5.468 ± 0.033	2.052 ± 0.039	n = 7	[CUW] Coulter HMX
2.030 ± 0.023	5.862 ± 0.062	4.513 ± 0.043	5.392 ± 0.061	2.025 ± 0.026	n = 32	[CUX] Coulter LH750,755
2.023 ± 0.020	5.859 ± 0.053	4.520 ± 0.044	5.398 ± 0.047	2.027 ± 0.027	n = 18	[CUY] Coulter LH 780
2.067 ± 0.027	5.899 ± 0.087	4.536 ± 0.066	5.385 ± 0.089	2.056 ± 0.033	n = 17	[CUZ] Coulter LH500
1.937 ± 0.038	5.773 ± 0.119	4.384 ± 0.097	5.247 ± 0.155	1.926 ± 0.050	n = 4	[ROB] ABX Pentra series
2.013 ± 0.044	5.961 ± 0.091	4.470 ± 0.081	5.418 ± 0.088	2.008 ± 0.034	n = 5	[ROC] ABX Micro
2.072 ± 0.024	5.813 ± 0.077	4.524 ± 0.042	5.349 ± 0.061	2.075 ± 0.021	n = 27	[SYA] Sysmex XE 5000
2.012 ± 0.028	5.997 ± 0.062	4.533 ± 0.060	5.502 ± 0.062	2.003 ± 0.023	n = 14	[SYC] Sysmex XN-series
2.037 ± 0.023	5.921 ± 0.104	4.525 ± 0.057	5.399 ± 0.045	2.046 ± 0.023	n = 21	[SYI] Sysmex XT-2000i,XT-1800i
2.083 ± 0.027	5.878 ± 0.080	4.546 ± 0.069	5.392 ± 0.084	2.078 ± 0.015	n = 4	[SYL] Sysmex XE 2100C
2.087 ± 0.026	5.834 ± 0.076	4.536 ± 0.055	5.369 ± 0.065	2.090 ± 0.020	n = 19	[SYO] Sysmex XE2100
1.994 ± 0.017	5.932 ± 0.054	4.475 ± 0.039	5.423 ± 0.052	1.995 ± 0.032	n = 29	[SYP] Sysmex XS-1000i,XS-1000iAL
2.096 ± 0.033	5.815 ± 0.051	4.533 ± 0.067	5.341 ± 0.031	2.090 ± 0.027	n = 7	[SYQ] Sysmex XE 2100D(Blood Center)
2.044 ± 0.022	5.905 ± 0.066	4.531 ± 0.050	5.400 ± 0.055	2.062 ± 0.023	n = 17	[SYV] Sysmex XT 4000i

Summary of Participant Responses

Mean ± One Standard Deviation

Hemoglobin (g/dL)

Specimen: B01	Specimen: B02	Specimen: B03	Specimen: B04	Specimen: B05	Number	[Code] Instrument or Reagent System
6.13 ± 0.15	17.55 ± 0.39	13.43 ± 0.21	16.06 ± 0.31	6.09 ± 0.16	n = 419	[---] All Methods & Instruments
<Instruments>						
6.50 ± 0.18	18.35 ± 0.45	13.99 ± 0.11	16.74 ± 0.30	6.45 ± 0.22	n = 4	[ABG] Abbott Cell Dyn 1700
6.20 ± 0.09	18.07 ± 0.42	13.47 ± 0.34	16.35 ± 0.19	6.14 ± 0.10	n = 3	[ABJ] Abbott Cell Dyn 1800
6.35 ± 0.13	18.24 ± 0.28	13.98 ± 0.23	16.48 ± 0.17	6.31 ± 0.12	n = 5	[ABK] Abbott Cell Dyn 3200
6.31 ± 0.13	17.82 ± 0.17	13.55 ± 0.13	16.39 ± 0.22	6.30 ± 0.13	n = 11	[ABM] Abbott Cell Dyn 3700
6.43 ± 0.08	18.04 ± 0.17	13.94 ± 0.13	16.52 ± 0.13	6.38 ± 0.08	n = 11	[ABS] Abbott Cell Dyn Sapphire
6.30 ± 0.17	18.31 ± 0.35	13.74 ± 0.19	16.54 ± 0.32	6.22 ± 0.16	n = 20	[ABT] Abbott Cell Dyn Ruby
6.27 ± 0.13	17.71 ± 0.36	13.53 ± 0.27	16.15 ± 0.37	6.25 ± 0.12	n = 12	[BTD] Siemens Advia 120
6.28 ± 0.11	17.78 ± 0.32	13.60 ± 0.18	16.19 ± 0.24	6.32 ± 0.11	n = 33	[BTE] Siemens Advia 2120
6.07 ± 0.09	17.33 ± 0.26	13.36 ± 0.14	15.85 ± 0.22	6.04 ± 0.09	n = 52	[CUL] Coulter UniCel DxH 800
6.17 ± 0.11	17.63 ± 0.21	13.47 ± 0.10	16.22 ± 0.08	6.05 ± 0.10	n = 6	[CUS] Coulter ACT 5 diff
6.10 ± 0.11	17.58 ± 0.25	13.35 ± 0.23	16.10 ± 0.27	6.10 ± 0.13	n = 20	[CUT] Coulter ACT series,not ACT5 diff
6.23 ± 0.07	17.73 ± 0.12	13.54 ± 0.19	16.21 ± 0.20	6.11 ± 0.10	n = 7	[CUW] Coulter HMX
6.13 ± 0.09	17.25 ± 0.16	13.41 ± 0.12	15.96 ± 0.14	6.11 ± 0.08	n = 32	[CUX] Coulter LH750,755
6.11 ± 0.10	17.19 ± 0.16	13.38 ± 0.10	15.90 ± 0.13	6.10 ± 0.07	n = 18	[CUI] Coulter LH 780
6.24 ± 0.10	17.71 ± 0.24	13.37 ± 0.15	16.23 ± 0.19	6.16 ± 0.11	n = 17	[CUZ] Coulter LH500
6.12 ± 0.04	17.09 ± 0.24	13.05 ± 0.53	16.00 ± 0.17	6.13 ± 0.09	n = 4	[HQC] HemoCue Hb201+/B-Hb
5.85 ± 0.12	17.57 ± 0.16	13.32 ± 0.21	16.00 ± 0.17	5.82 ± 0.04	n = 4	[ROB] ABX Pentra series
6.26 ± 0.17	17.79 ± 0.18	13.63 ± 0.20	16.35 ± 0.22	6.19 ± 0.14	n = 5	[ROC] ABX Micro
6.11 ± 0.08	17.39 ± 0.20	13.35 ± 0.11	15.93 ± 0.15	6.04 ± 0.08	n = 27	[SYA] Sysmex XE 5000
6.00 ± 0.08	17.71 ± 0.17	13.40 ± 0.13	16.21 ± 0.15	5.94 ± 0.08	n = 14	[SYC] Sysmex XN-series
6.02 ± 0.08	17.20 ± 0.34	13.32 ± 0.14	15.72 ± 0.25	5.93 ± 0.08	n = 21	[SYI] Sysmex XT-2000i,XT-1800i
6.10 ± 0.00	17.48 ± 0.04	13.42 ± 0.08	16.01 ± 0.18	6.00 ± 0.00	n = 5	[SYL] Sysmex XE 2100C
6.10 ± 0.07	17.45 ± 0.23	13.29 ± 0.18	15.89 ± 0.24	6.00 ± 0.00	n = 19	[SYO] Sysmex XE2100
6.00 ± 0.08	17.79 ± 0.15	13.47 ± 0.11	16.22 ± 0.13	5.96 ± 0.07	n = 29	[SYP] Sysmex XS-1000i,XS-1000iAL
6.10 ± 0.00	17.30 ± 0.00	13.29 ± 0.15	15.90 ± 0.16	6.04 ± 0.08	n = 6	[SYQ] Sysmex XE 2100D(Blood Center)
6.02 ± 0.06	17.09 ± 0.13	13.39 ± 0.14	15.70 ± 0.20	5.95 ± 0.12	n = 17	[SYV] Sysmex XT 4000i

Summary of Participant Responses

Mean ± One Standard Deviation

Hematocrit (%)

Specimen: B01	Specimen: B02	Specimen: B03	Specimen: B04	Specimen: B05	Number	[Code] Instrument or Reagent System
17.86 ± 0.96	49.69 ± 2.44	38.44 ± 1.78	45.49 ± 2.12	18.05 ± 1.09	n = 416	[---] All Methods & Instruments
<Instruments>						
18.27 ± 0.46	51.13 ± 1.44	38.88 ± 0.72	46.64 ± 1.28	18.68 ± 0.38	n = 4	[ABG] Abbott Cell Dyn 1700
19.23 ± 0.31	51.00 ± 0.81	39.35 ± 0.90	46.45 ± 0.19	18.97 ± 0.42	n = 3	[ABJ] Abbott Cell Dyn 1800
15.96 ± 0.41	44.56 ± 1.12	34.40 ± 0.63	40.35 ± 0.44	15.82 ± 0.55	n = 5	[ABK] Abbott Cell Dyn 3200
19.09 ± 0.45	53.21 ± 0.98	41.04 ± 0.79	48.70 ± 0.88	19.22 ± 0.52	n = 11	[ABM] Abbott Cell Dyn 3700
16.89 ± 0.19	48.85 ± 0.65	37.20 ± 0.47	44.43 ± 0.58	17.04 ± 0.19	n = 11	[ABS] Abbott Cell Dyn Sapphire
15.66 ± 0.44	46.07 ± 1.14	34.52 ± 0.68	41.61 ± 0.94	15.76 ± 0.49	n = 20	[ABT] Abbott Cell Dyn Ruby
15.94 ± 0.47	44.86 ± 1.13	34.54 ± 1.08	41.11 ± 0.89	16.02 ± 0.41	n = 12	[BTD] Siemens Advia 120
16.09 ± 0.31	45.52 ± 1.10	34.89 ± 0.81	41.64 ± 0.85	16.06 ± 0.36	n = 33	[BTE] Siemens Advia 2120
18.33 ± 0.26	52.15 ± 0.83	39.68 ± 0.49	47.25 ± 0.64	18.37 ± 0.28	n = 52	[CUL] Coulter UniCel DxH 800
16.42 ± 0.32	47.82 ± 0.88	36.81 ± 0.54	43.72 ± 0.83	16.48 ± 0.33	n = 6	[CUS] Coulter ACT 5 diff
18.01 ± 0.30	51.06 ± 1.16	39.14 ± 0.76	46.26 ± 1.12	18.16 ± 0.57	n = 20	[CUT] Coulter ACT series,not ACT5 diff
18.13 ± 0.31	50.79 ± 0.65	39.68 ± 0.38	46.85 ± 0.47	18.21 ± 0.43	n = 7	[CUW] Coulter HMX
17.95 ± 0.25	51.11 ± 0.63	39.47 ± 0.54	46.75 ± 0.59	17.99 ± 0.25	n = 32	[CUX] Coulter LH750,755
17.88 ± 0.25	51.15 ± 0.71	39.43 ± 0.49	46.81 ± 0.58	17.95 ± 0.28	n = 18	[CUY] Coulter LH 780
18.13 ± 0.39	50.67 ± 0.89	39.27 ± 0.55	46.36 ± 0.82	18.16 ± 0.33	n = 17	[CUZ] Coulter LH500
16.00 ± 0.75	47.76 ± 3.72	36.00 ± 2.28	43.50 ± 3.45	16.15 ± 0.41	n = 4	[MHC] Microhematocrit
16.55 ± 0.28	47.02 ± 0.54	36.49 ± 0.67	42.93 ± 0.75	16.59 ± 0.43	n = 4	[ROB] ABX Pentra series
17.59 ± 0.37	51.73 ± 0.87	39.09 ± 1.03	46.52 ± 0.87	17.76 ± 0.36	n = 5	[ROC] ABX Micro
18.25 ± 0.27	49.34 ± 0.75	38.73 ± 0.46	45.45 ± 0.53	18.74 ± 0.25	n = 27	[SYA] Sysmex XE 5000
17.43 ± 0.33	50.07 ± 0.47	38.24 ± 0.50	45.93 ± 0.64	17.67 ± 0.29	n = 14	[SYC] Sysmex XN-series
18.31 ± 0.19	48.71 ± 0.61	38.21 ± 0.42	44.81 ± 0.36	18.89 ± 0.29	n = 21	[SYI] Sysmex XT-2000i,XT-1800i
17.80 ± 0.42	47.28 ± 0.50	36.83 ± 0.68	43.81 ± 0.72	18.15 ± 0.22	n = 4	[SYL] Sysmex XE 2100C
18.29 ± 0.36	49.40 ± 0.76	38.79 ± 0.53	45.50 ± 0.83	18.88 ± 0.21	n = 19	[SYO] Sysmex XE2100
18.20 ± 0.34	49.69 ± 0.75	38.30 ± 0.53	45.62 ± 0.73	18.64 ± 0.40	n = 29	[SYP] Sysmex XS-1000i,XS-1000iAL
18.53 ± 0.28	49.59 ± 0.58	38.96 ± 0.58	45.59 ± 0.61	18.94 ± 0.22	n = 7	[SYQ] Sysmex XE 2100D(Blood Center)
18.50 ± 0.22	48.88 ± 0.52	38.38 ± 0.45	45.00 ± 0.49	18.97 ± 0.26	n = 17	[SYV] Sysmex XT 4000i

Summary of Participant Responses

Mean ± One Standard Deviation

Platelet Count (x10⁹/L)

Specimen: B01	Specimen: B02	Specimen: B03	Specimen: B04	Specimen: B05	Number	[Code] Instrument or Reagent System
137.2 ± 7.87	444.7 ± 28.48	233.3 ± 13.19	452.6 ± 26.87	42.7 ± 3.81	n = 412	[---] All Methods & Instruments
<Instruments>						
135.7 ± 11.28	493.6 ± 21.25	247.6 ± 18.79	477.5 ± 9.38	42.9 ± 2.33	n = 4	[ABG] Abbott Cell Dyn 1700
137.3 ± 4.06	492.7 ± 16.68	241.0 ± 5.48	487.5 ± 13.65	44.5 ± 1.86	n = 3	[ABJ] Abbott Cell Dyn 1800
146.0 ± 6.60	470.2 ± 21.98	241.0 ± 8.66	464.4 ± 13.97	54.2 ± 6.48	n = 5	[ABK] Abbott Cell Dyn 3200
147.8 ± 6.60	469.8 ± 12.86	254.7 ± 8.63	488.8 ± 18.61	45.1 ± 2.58	n = 11	[ABM] Abbott Cell Dyn 3700
143.8 ± 4.90	462.8 ± 22.33	239.7 ± 9.39	470.3 ± 13.27	48.9 ± 2.46	n = 11	[ABS] Abbott Cell Dyn Sapphire
142.1 ± 8.32	470.8 ± 21.14	236.6 ± 14.51	472.8 ± 17.61	56.9 ± 4.47	n = 20	[ABT] Abbott Cell Dyn Ruby
156.2 ± 12.27	433.8 ± 23.07	239.4 ± 19.46	437.3 ± 30.02	38.3 ± 4.06	n = 3	[ABU] Abbott Cell Dyn Emerald
141.5 ± 14.39	445.3 ± 39.84	222.0 ± 22.58	450.9 ± 38.02	45.9 ± 5.44	n = 12	[BTD] Siemens Advia 120
136.2 ± 10.09	437.3 ± 32.10	218.4 ± 17.93	442.8 ± 35.04	41.8 ± 3.89	n = 32	[BTE] Siemens Advia 2120
136.2 ± 3.43	440.3 ± 14.12	231.9 ± 6.68	449.1 ± 13.09	42.4 ± 1.45	n = 52	[CUL] Coulter UniCel DxH 800
154.3 ± 5.69	453.7 ± 7.67	244.8 ± 7.61	461.1 ± 16.77	43.1 ± 2.97	n = 6	[CUS] Coulter ACT 5 diff
133.7 ± 8.26	443.4 ± 17.85	229.0 ± 11.01	450.8 ± 18.42	42.1 ± 3.61	n = 20	[CUT] Coulter ACT series,not ACT5 diff
133.0 ± 4.34	427.4 ± 27.63	225.5 ± 4.52	429.6 ± 16.22	41.8 ± 0.86	n = 7	[CUW] Coulter HMX
137.1 ± 3.96	437.9 ± 17.37	231.6 ± 8.72	444.4 ± 14.66	44.0 ± 2.23	n = 32	[CUX] Coulter LH750,755
136.5 ± 4.45	433.0 ± 18.56	230.4 ± 7.82	442.6 ± 12.24	45.1 ± 1.75	n = 18	[CUY] Coulter LH 780
134.3 ± 4.57	430.4 ± 13.54	223.4 ± 8.86	440.2 ± 12.33	41.4 ± 2.28	n = 17	[CUZ] Coulter LH500
137.0 ± 6.98	428.1 ± 16.71	230.1 ± 15.95	449.7 ± 18.35	40.2 ± 2.11	n = 4	[ROB] ABX Pentra series
143.7 ± 10.21	439.0 ± 19.49	242.7 ± 3.18	459.3 ± 11.51	46.5 ± 4.06	n = 5	[ROC] ABX Micro
128.1 ± 4.84	402.2 ± 17.29	222.7 ± 8.01	414.2 ± 16.86	39.1 ± 2.35	n = 27	[SYA] Sysmex XE 5000
128.9 ± 3.59	462.9 ± 16.81	238.1 ± 5.43	471.3 ± 10.25	38.9 ± 1.56	n = 14	[SYC] Sysmex XN-series
140.8 ± 6.31	467.4 ± 13.92	246.4 ± 7.61	473.3 ± 14.19	43.9 ± 1.91	n = 21	[SYI] Sysmex XT-2000i,XT-1800i
136.5 ± 4.37	417.1 ± 5.29	235.2 ± 2.80	433.4 ± 13.84	40.2 ± 1.46	n = 4	[SYL] Sysmex XE 2100C
131.1 ± 3.79	404.5 ± 13.16	224.2 ± 8.85	411.2 ± 18.46	40.1 ± 1.95	n = 19	[SYO] Sysmex XE2100
139.4 ± 3.34	452.1 ± 8.54	238.2 ± 4.84	462.5 ± 9.73	39.5 ± 1.91	n = 29	[SYP] Sysmex XS-1000i,XS-1000iAL
147.5 ± 4.11	467.1 ± 10.38	253.5 ± 7.07	484.0 ± 8.67	46.1 ± 1.01	n = 7	[SYQ] Sysmex XE 2100D(Blood Center)
142.6 ± 4.53	466.7 ± 13.65	244.4 ± 8.71	469.0 ± 14.68	44.7 ± 2.80	n = 17	[SYV] Sysmex XT 4000i

Summary of Participant Responses

Mean ± One Standard Deviation

Prothrombin Time (seconds)

Specimen: C01	Specimen: C02	Specimen: C03	Specimen: C04	Specimen: C05	Number	[Code] Instrument or Reagent System
10.97 ± 0.58	29.10 ± 3.72	12.05 ± 0.95	48.88 ± 7.63	10.97 ± 0.62	n = 316	[---] All Methods & Instruments
<Instruments>						
10.75 ± 0.24	26.18 ± 1.29	11.04 ± 0.35	42.94 ± 2.57	10.72 ± 0.23	n = 19	[BEB] Siemens BCS,BCSXP
12.62 ± 0.40	31.95 ± 1.00	13.75 ± 0.45	54.47 ± 2.26	12.71 ± 0.39	n = 29	[DGC] Diagnostica Stago STA Compact
12.89 ± 0.29	31.90 ± 0.57	13.99 ± 0.39	53.36 ± 1.10	12.96 ± 0.37	n = 16	[DGD] Diagnostica Stago STA-R, STA-R Ev
11.58 ± 0.75	20.32 ± 0.50	11.86 ± 0.28	28.87 ± 0.73	11.42 ± 0.44	n = 11	[ILA] IL ACL(All except810,ELITE,EPRO,8
11.08 ± 0.44	28.95 ± 7.66	12.28 ± 0.81	47.26 ± 15.55	10.99 ± 0.47	n = 13	[ILC] IL ACL Futura/Advance
10.91 ± 0.32	30.00 ± 1.13	12.15 ± 0.34	51.11 ± 2.24	11.12 ± 0.32	n = 26	[ILD] IL ACL(ELITE,ELITE PRO,8/9/10000)
11.03 ± 0.33	31.70 ± 1.51	12.42 ± 0.38	54.48 ± 2.94	10.99 ± 0.36	n = 89	[ILE] IL ACL TOP Series(ACLTOP,ACLTOP C
10.46 ± 0.28	26.55 ± 1.48	11.19 ± 0.28	43.79 ± 3.27	10.40 ± 0.22	n = 38	[SYW] Sysmex CA500/CA600 series
10.73 ± 0.18	26.33 ± 1.15	11.42 ± 0.27	43.29 ± 2.31	10.76 ± 0.20	n = 48	[SYX] Sysmex CA 1500
10.98 ± 0.20	26.90 ± 0.93	11.63 ± 0.22	43.89 ± 1.67	10.95 ± 0.20	n = 19	[SYY] Sysmex CA 7000
<Reagents>						
12.74 ± 0.39	31.95 ± 0.85	13.86 ± 0.45	54.05 ± 1.88	12.80 ± 0.39	n = 44	[TA3] STA Neoplastine CL+
10.71 ± 0.30	26.46 ± 1.32	11.33 ± 0.36	43.39 ± 2.67	10.68 ± 0.31	n = 127	[TD2] Siemens Innovin
11.12 ± 0.46	20.31 ± 0.71	11.69 ± 0.35	29.19 ± 1.44	11.17 ± 0.52	n = 18	[TJ2] HemosIL PT-Fibrinogen
11.03 ± 0.35	31.49 ± 1.74	12.41 ± 0.39	54.02 ± 3.30	11.04 ± 0.35	n = 119	[TJ8] HemosIL RecombiPlasTin 2G
<Reagent & Instrument>						
12.62 ± 0.40	31.95 ± 1.00	13.75 ± 0.45	54.47 ± 2.26	12.71 ± 0.39	n = 29	[TA3]&[DGC] STA Neoplastin & Diagnostic
12.91 ± 0.27	31.90 ± 0.55	14.02 ± 0.34	53.44 ± 1.00	12.98 ± 0.32	n = 14	[TA3]&[DGD] STA Neoplastin & Diagnostic
10.75 ± 0.24	26.18 ± 1.29	11.04 ± 0.35	42.94 ± 2.57	10.72 ± 0.23	n = 19	[TD2]&[BEB] Siemens Innovi & Siemens BC
10.46 ± 0.28	26.55 ± 1.48	11.19 ± 0.28	43.79 ± 3.27	10.40 ± 0.22	n = 38	[TD2]&[SYW] Siemens Innovi & Sysmex CA5
10.73 ± 0.18	26.33 ± 1.15	11.42 ± 0.27	43.29 ± 2.31	10.76 ± 0.20	n = 48	[TD2]&[SYX] Siemens Innovi & Sysmex CA
10.98 ± 0.20	26.90 ± 0.93	11.63 ± 0.22	43.89 ± 1.67	10.95 ± 0.20	n = 19	[TD2]&[SYY] Siemens Innovi & Sysmex CA
11.38 ± 0.40	20.32 ± 0.50	11.86 ± 0.28	28.86 ± 0.72	11.35 ± 0.31	n = 9	[TJ2]&[ILA] HemosIL PT-Fib & IL ACL(All
10.59 ± 0.35	20.01 ± 0.69	11.37 ± 0.26	29.27 ± 1.59	10.53 ± 0.10	n = 5	[TJ2]&[ILC] HemosIL PT-Fib & IL ACL Fut
11.13 ± 0.08	20.68 ± 1.04	11.71 ± 0.27	29.87 ± 2.18	11.50 ± 0.34	n = 4	[TJ2]&[ILD] HemosIL PT-Fib & IL ACL(ELI
11.31 ± 0.20	34.33 ± 0.89	12.79 ± 0.32	57.90 ± 2.92	11.28 ± 0.24	n = 8	[TJ8]&[ILC] HemosIL Recomb & IL ACL Fut
10.86 ± 0.32	30.00 ± 1.13	12.21 ± 0.30	51.11 ± 2.24	11.06 ± 0.28	n = 22	[TJ8]&[ILD] HemosIL Recomb & IL ACL(ELI
11.03 ± 0.33	31.69 ± 1.52	12.42 ± 0.38	54.51 ± 2.96	10.99 ± 0.36	n = 88	[TJ8]&[ILE] HemosIL Recomb & IL ACL TOP

Summary of Participant Responses

Mean ± One Standard Deviation

INR (International Normalized Ratio)

Specimen: C01	Specimen: C02	Specimen: C03	Specimen: C04	Specimen: C05	Number	[Code] Instrument or Reagent System
0.999 ± 0.049	2.705 ± 0.310	1.092 ± 0.056	4.603 ± 0.846	0.998 ± 0.050	n = 318	[---] All Methods & Instruments
<Instruments>						
1.040 ± 0.052	2.636 ± 0.128	1.060 ± 0.050	4.229 ± 0.194	1.017 ± 0.037	n = 18	[BEB] Siemens BCS,BCSXP
0.968 ± 0.042	3.229 ± 0.162	1.079 ± 0.046	6.432 ± 0.404	0.976 ± 0.041	n = 29	[DGC] Diagnostica Stago STA Compact
0.992 ± 0.021	3.140 ± 0.117	1.092 ± 0.030	6.136 ± 0.375	0.985 ± 0.041	n = 16	[DGD] Diagnostica Stago STA-R, STA-R Ev
0.958 ± 0.099	2.846 ± 0.248	1.022 ± 0.082	5.509 ± 0.407	0.946 ± 0.078	n = 11	[ILA] IL ACL(All except810,ELITE,EPRO,8
0.967 ± 0.061	2.839 ± 0.135	1.081 ± 0.064	4.933 ± 0.475	0.946 ± 0.068	n = 13	[ILC] IL ACL Futura/Advance
0.963 ± 0.071	2.729 ± 0.236	1.086 ± 0.095	4.770 ± 0.408	0.989 ± 0.060	n = 26	[ILD] IL ACL(ELITE,ELITE PRO,8/9/10000)
1.001 ± 0.043	2.808 ± 0.146	1.123 ± 0.047	4.782 ± 0.302	0.992 ± 0.047	n = 89	[ILE] IL ACL TOP Series (ACLTOP,ACLTOP
1.010 ± 0.043	2.475 ± 0.135	1.088 ± 0.033	3.986 ± 0.275	1.009 ± 0.038	n = 38	[SYW] Sysmex CA500/CA600 series
1.014 ± 0.033	2.401 ± 0.123	1.081 ± 0.041	3.837 ± 0.244	1.018 ± 0.038	n = 50	[SYX] Sysmex CA 1500
1.018 ± 0.039	2.477 ± 0.119	1.093 ± 0.036	4.019 ± 0.211	1.023 ± 0.046	n = 19	[SYY] Sysmex CA 7000
<Reagents>						
0.974 ± 0.040	3.195 ± 0.152	1.084 ± 0.041	6.325 ± 0.402	0.976 ± 0.045	n = 44	[TA3] STA Neoplastine CL+
1.016 ± 0.040	2.467 ± 0.151	1.082 ± 0.042	3.970 ± 0.290	1.016 ± 0.039	n = 127	[TD2] Siemens Innovin
0.900 ± 0.068	2.777 ± 0.214	0.990 ± 0.056	5.412 ± 0.496	0.910 ± 0.058	n = 18	[TJ2] HemosIL PT-Fibrinogen
0.998 ± 0.041	2.807 ± 0.157	1.122 ± 0.049	4.779 ± 0.319	0.994 ± 0.045	n = 119	[TJ8] HemosIL RecombiPlasTin 2G
<Reagent & Instrument>						
0.968 ± 0.042	3.229 ± 0.162	1.079 ± 0.046	6.432 ± 0.404	0.976 ± 0.041	n = 29	[TA3]&[DGC] STA Neoplastin & Diagnostic
0.988 ± 0.027	3.152 ± 0.110	1.094 ± 0.024	6.176 ± 0.316	0.981 ± 0.045	n = 14	[TA3]&[DGD] STA Neoplastin & Diagnostic
1.040 ± 0.052	2.636 ± 0.128	1.060 ± 0.050	4.229 ± 0.194	1.017 ± 0.037	n = 18	[TD2]&[BEB] Siemens Innovi & Siemens BC
1.008 ± 0.042	2.472 ± 0.136	1.087 ± 0.034	3.981 ± 0.279	1.008 ± 0.039	n = 37	[TD2]&[SYW] Siemens Innovi & Sysmex CA5
1.014 ± 0.033	2.401 ± 0.123	1.081 ± 0.041	3.837 ± 0.244	1.018 ± 0.038	n = 50	[TD2]&[SYX] Siemens Innovi & Sysmex CA
1.018 ± 0.039	2.477 ± 0.119	1.093 ± 0.036	4.019 ± 0.211	1.023 ± 0.046	n = 19	[TD2]&[SYY] Siemens Innovi & Sysmex CA
0.935 ± 0.081	2.797 ± 0.189	1.001 ± 0.058	5.474 ± 0.354	0.931 ± 0.062	n = 9	[TJ2]&[ILA] HemosIL PT-Fib & IL ACL(All
0.890 ± 0.054	2.805 ± 0.175	1.010 ± 0.039	5.480 ± 0.538	0.879 ± 0.030	n = 5	[TJ2]&[ILC] HemosIL PT-Fib & IL ACL Fut
0.858 ± 0.027	2.673 ± 0.282	0.938 ± 0.044	5.251 ± 0.754	0.911 ± 0.058	n = 4	[TJ2]&[ILD] HemosIL PT-Fib & IL ACL(ELI
0.996 ± 0.017	2.862 ± 0.102	1.119 ± 0.029	4.730 ± 0.296	0.991 ± 0.034	n = 8	[TJ8]&[ILC] HemosIL Recomb & IL ACL Fut
0.983 ± 0.051	2.740 ± 0.224	1.111 ± 0.071	4.734 ± 0.388	1.000 ± 0.045	n = 22	[TJ8]&[ILD] HemosIL Recomb & IL ACL(ELI
1.002 ± 0.042	2.810 ± 0.145	1.124 ± 0.046	4.787 ± 0.297	0.993 ± 0.047	n = 88	[TJ8]&[ILE] HemosIL Recomb & IL ACL TOP

Summary of Participant Responses

Mean ± One Standard Deviation

Act Partial Thromboplastin Time (seconds)

Specimen: C01	Specimen: C02	Specimen: C03	Specimen: C04	Specimen: C05	Number	[Code] Instrument or Reagent System
28.74 ± 3.29	53.94 ± 7.48	31.66 ± 2.40	80.26 ± 10.28	28.75 ± 3.15	n = 308	[---] All Methods & Instruments
<Instruments>						
25.11 ± 0.99	46.42 ± 1.27	27.09 ± 0.99	67.86 ± 2.53	24.86 ± 1.00	n = 20	[BEB] Siemens BCS,BCSXP
30.49 ± 1.29	52.14 ± 1.52	34.74 ± 1.46	76.65 ± 2.32	30.65 ± 1.46	n = 27	[DGC] Diagnostica Stago STA Compact
29.36 ± 0.77	49.74 ± 1.37	33.53 ± 0.95	73.88 ± 2.30	29.71 ± 0.68	n = 16	[DGD] Diagnostica Stago STA-R, STA-R Ev
27.95 ± 1.41	51.32 ± 8.07	30.34 ± 1.13	75.70 ± 10.25	28.27 ± 1.49	n = 11	[ILA] IL ACL(All except810,ELITE,EPRO,8
30.45 ± 0.92	62.77 ± 1.86	32.06 ± 1.05	90.45 ± 8.17	30.87 ± 1.07	n = 12	[ILC] IL ACL Futura/Advance
28.73 ± 1.65	59.96 ± 7.11	30.31 ± 1.54	88.77 ± 10.66	29.60 ± 1.57	n = 26	[ILD] IL ACL(ELITE,ELITE PRO,8/9/10000)
32.05 ± 0.89	60.99 ± 1.41	33.13 ± 0.94	90.01 ± 2.18	31.54 ± 0.81	n = 89	[ILE] IL ACL TOP Series (ACLTOP,ACLTOP
25.07 ± 0.58	47.21 ± 1.14	29.45 ± 0.68	72.50 ± 2.30	24.82 ± 0.67	n = 34	[SYW] Sysmex CA500/CA600 series
26.01 ± 0.87	48.87 ± 1.42	30.66 ± 1.39	74.50 ± 2.39	26.12 ± 0.85	n = 49	[SYX] Sysmex CA 1500
26.66 ± 0.92	49.45 ± 1.67	31.49 ± 1.14	73.43 ± 2.47	26.52 ± 1.01	n = 17	[SYY] Sysmex CA 7000
<Reagents>						
29.89 ± 1.08	51.05 ± 1.77	34.00 ± 1.24	75.41 ± 2.63	30.12 ± 1.06	n = 37	[AA2] Diagnostica Stago STA PTT-Auto
32.01 ± 2.15	53.73 ± 1.90	36.70 ± 2.08	78.49 ± 3.03	31.94 ± 2.51	n = 6	[AA3] Diagnostica Stago PTT-LA
25.36 ± 2.75	59.09 ± 16.50	31.73 ± 2.95	95.14 ± 31.75	27.31 ± 2.23	n = 3	[AD2] Siemens Actin
24.27 ± 0.08	83.36 ± 0.47	27.34 ± 0.75	123.91 ± 6.60	24.56 ± 0.34	n = 4	[AD3] Siemens Actin FS
25.71 ± 0.98	48.10 ± 1.75	29.96 ± 1.79	72.96 ± 3.24	25.65 ± 1.13	n = 114	[AD4] Siemens Actin FSL
27.38 ± 0.94	47.58 ± 1.77	30.93 ± 1.32	71.66 ± 2.30	28.24 ± 1.25	n = 18	[AJ3] HemosIL Test APTT-SP
31.59 ± 1.45	61.42 ± 1.98	32.71 ± 1.43	90.61 ± 3.15	31.32 ± 1.03	n = 118	[AO4] HemosIL SynthASil
<Reagent & Instrument>						
30.32 ± 1.15	51.87 ± 1.46	34.50 ± 1.32	76.33 ± 2.35	30.59 ± 1.30	n = 22	[AA2]&[DGC] Diagnostica St & Diagnostic
29.36 ± 0.77	49.73 ± 1.36	33.42 ± 0.87	73.88 ± 2.30	29.71 ± 0.68	n = 14	[AA2]&[DGD] Diagnostica St & Diagnostic
31.41 ± 1.60	53.21 ± 1.23	36.08 ± 1.68	77.73 ± 1.75	31.21 ± 2.01	n = 5	[AA3]&[DGC] Diagnostica St & Diagnostic
24.30 ± 0.00	83.20 ± 0.46	27.65 ± 0.19	126.11 ± 7.44	24.68 ± 0.15	n = 3	[AD3]&[SYX] Siemens Actin & Sysmex CA
25.11 ± 0.99	46.42 ± 1.27	27.10 ± 0.98	67.86 ± 2.52	24.86 ± 1.00	n = 18	[AD4]&[BEB] Siemens Actin & Siemens BC
25.10 ± 0.55	47.26 ± 1.13	29.46 ± 0.70	72.59 ± 2.29	24.84 ± 0.68	n = 32	[AD4]&[SYW] Siemens Actin & Sysmex CA5
26.09 ± 0.76	48.87 ± 1.41	30.81 ± 1.19	74.49 ± 2.39	26.19 ± 0.77	n = 46	[AD4]&[SYX] Siemens Actin & Sysmex CA
26.66 ± 0.92	49.45 ± 1.67	31.49 ± 1.14	73.43 ± 2.47	26.52 ± 1.01	n = 17	[AD4]&[SYY] Siemens Actin & Sysmex CA
27.12 ± 0.56	46.78 ± 1.25	30.32 ± 1.04	70.45 ± 1.74	27.50 ± 0.76	n = 7	[AJ3]&[ILA] HemosIL Test A & IL ACL(All
27.89 ± 1.17	48.87 ± 1.42	31.29 ± 0.98	73.29 ± 1.29	28.86 ± 0.77	n = 8	[AJ3]&[ILD] HemosIL Test A & IL ACL(ELI
29.25 ± 0.36	63.87 ± 0.86	29.99 ± 0.37	93.35 ± 3.43	29.68 ± 0.15	n = 3	[AO4]&[ILA] HemosIL SynthA & IL ACL(All
30.38 ± 0.86	62.53 ± 3.06	32.17 ± 0.91	90.84 ± 6.53	30.87 ± 1.03	n = 10	[AO4]&[ILC] HemosIL SynthA & IL ACL Fut
29.10 ± 1.65	63.50 ± 2.54	29.77 ± 1.52	94.26 ± 4.59	29.96 ± 1.70	n = 18	[AO4]&[ILD] HemosIL SynthA & IL ACL(ELI
32.06 ± 0.89	60.98 ± 1.44	33.14 ± 0.92	89.99 ± 2.13	31.55 ± 0.80	n = 86	[AO4]&[ILE] HemosIL SynthA & IL ACL TOP

Summary of Participant Responses

Mean ± One Standard Deviation

Fibrinogen (mg/dL)

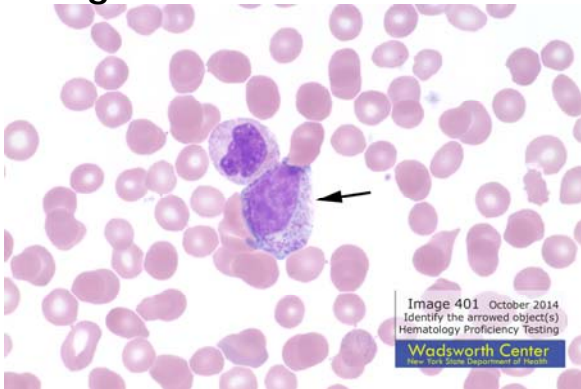
Specimen: C01	Specimen: C02	Specimen: C03	Specimen: C04	Specimen: C05	Number	[Code] Instrument or Reagent System
300.5 ± 26.56	286.7 ± 30.86	605.8 ± 87.97	273.1 ± 27.51	298.5 ± 27.93	n = 207	[---] All Methods & Instruments
<Instruments>						
333.0 ± 27.52	333.6 ± 29.65	713.1 ± 90.48	313.5 ± 28.65	333.1 ± 28.23	n = 20	[BEB] Siemens BCS,BCSXP
307.1 ± 13.09	291.6 ± 13.73	643.4 ± 29.56	279.5 ± 7.78	305.4 ± 9.61	n = 26	[DGC] Diagnostica Stago STA Compact
295.3 ± 6.17	278.3 ± 9.59	618.8 ± 14.61	268.2 ± 7.66	293.7 ± 6.18	n = 14	[DGD] Diagnostica Stago STA-R, STA-R Ev
324.0 ± 33.35	386.7 ± 33.85	696.8 ± 35.68	365.1 ± 29.64	310.2 ± 41.45	n = 3	[ILA] IL ACL(All except810,ELITE,EPRO,8
274.1 ± 47.29	337.7 ± 32.08	524.5 ± 80.95	349.7 ± 36.99	272.7 ± 42.41	n = 8	[ILC] IL ACL Futura/Advance
339.3 ± 21.65	336.1 ± 29.14	736.1 ±110.24	319.2 ± 48.90	330.9 ± 12.47	n = 7	[ILD] IL ACL(ELITE,ELITE PRO,8/9/10000)
306.8 ± 21.51	289.0 ± 26.49	624.4 ± 59.29	276.3 ± 21.97	303.6 ± 23.97	n = 72	[ILE] IL ACL TOP Series (ACLTOP,ACLTOP
289.9 ± 21.51	272.3 ± 16.08	528.8 ± 25.88	262.5 ± 22.29	278.5 ± 36.79	n = 4	[SYW] Sysmex CA500/CA600 series
279.6 ± 16.64	261.9 ± 13.85	518.3 ± 54.13	248.6 ± 14.25	272.3 ± 14.56	n = 36	[SYX] Sysmex CA 1500
279.8 ± 15.16	270.2 ± 14.72	527.2 ± 61.77	259.0 ± 12.26	286.5 ± 15.82	n = 14	[SYY] Sysmex CA 7000
<Reagents>						
331.4 ± 33.31	384.7 ± 11.73	630.3 ± 85.85	384.6 ± 13.85	328.0 ± 19.80	n = 7	[TJ2] HemosIL PT-Fibrinogen
315.4 ± 13.38	310.5 ± 16.22	600.5 ± 28.81	289.8 ± 15.73	316.0 ± 12.98	n = 37	[TJ8] HemosIL RecombiPlasTin 2G
301.8 ± 13.23	286.7 ± 14.50	634.1 ± 28.45	275.3 ± 9.97	302.2 ± 11.34	n = 40	[FA4] Stago STA-Fibrinogen 5
339.0 ± 25.35	340.6 ± 23.67	735.6 ± 60.79	319.9 ± 21.69	339.0 ± 23.25	n = 17	[FB2] Siemens Multifibren U
281.5 ± 17.16	265.5 ± 15.18	521.0 ± 52.87	252.9 ± 16.32	276.8 ± 17.79	n = 57	[FD2] Siemens Fibrinogen Determination
308.8 ± 21.71	289.0 ± 22.94	685.2 ± 78.06	275.9 ± 21.97	299.1 ± 23.68	n = 22	[FJ2] HemosIL Fibrinogen C,XL
288.6 ± 34.35	264.2 ± 22.91	649.3 ± 85.64	261.0 ± 23.60	287.4 ± 31.31	n = 23	[FO3] HemosIL QFA(bovine)
<Reagent & Instrument>						
235.5 ± 4.74	331.2 ± 11.08	482.9 ± 19.49	361.0 ± 19.62	236.6 ± 7.22	n = 4	[TJ8]&[ILC] HemosIL Recomb & IL ACL Fut
315.5 ± 13.12	308.0 ± 14.86	602.0 ± 23.91	288.8 ± 13.88	316.0 ± 12.71	n = 33	[TJ8]&[ILE] HemosIL Recomb & IL ACL TOP
307.1 ± 13.09	291.6 ± 13.73	643.4 ± 29.56	279.5 ± 7.78	305.4 ± 9.61	n = 26	[FA4]&[DGC] Stago STA-Fibr & Diagnostic
295.3 ± 6.17	278.3 ± 9.59	618.8 ± 14.61	268.2 ± 7.66	293.7 ± 6.18	n = 14	[FA4]&[DGD] Stago STA-Fibr & Diagnostic
339.0 ± 25.35	340.6 ± 23.67	735.6 ± 60.79	319.9 ± 21.69	339.0 ± 23.25	n = 17	[FB2]&[BEB] Siemens Multif & Siemens BC
302.5 ± 6.32	286.9 ± 13.83	523.5 ± 33.46	274.0 ± 22.56	287.7 ± 21.25	n = 3	[FD2]&[BEB] Siemens Fibrin & Siemens BC
289.9 ± 21.51	272.3 ± 16.08	528.8 ± 25.88	262.5 ± 22.29	278.5 ± 36.79	n = 4	[FD2]&[SYW] Siemens Fibrin & Sysmex CA5
279.6 ± 16.64	261.9 ± 13.85	518.3 ± 54.13	248.6 ± 14.25	272.3 ± 14.56	n = 36	[FD2]&[SYX] Siemens Fibrin & Sysmex CA
279.8 ± 15.16	270.2 ± 14.72	527.2 ± 61.77	259.0 ± 12.26	286.5 ± 15.82	n = 14	[FD2]&[SYY] Siemens Fibrin & Sysmex CA
333.9 ± 15.19	324.5 ± 12.12	779.9 ± 31.82	296.5 ± 8.04	326.4 ± 8.21	n = 5	[FJ2]&[ILD] HemosIL Fibrin & IL ACL(ELI
302.4 ± 17.54	279.6 ± 12.86	665.7 ± 53.59	268.0 ± 20.23	290.1 ± 19.26	n = 16	[FJ2]&[ILE] HemosIL Fibrin & IL ACL TOP
286.4 ± 32.80	262.9 ± 20.78	648.3 ± 88.24	259.5 ± 22.18	285.5 ± 30.71	n = 22	[FO3]&[ILE] HemosIL QFA(bo & IL ACL TOP

NEW YORK STATE HEMATOLOGY PROFICIENCY TEST PROGRAM

October 6, 2014

Images on the Hematology and Clinical Chemistry web page: <http://www.wadsworth.org/chemheme/cellIPT> 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 401



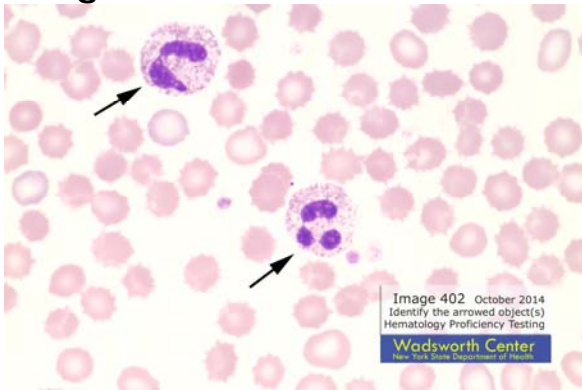
Number of Responses	Percent of Laboratories	Cell type or finding
230	65.3%	Myelocyte
96	27.3%	Promyelocyte
17	4.8%	Reactive/Atypical lymphocyte
6	1.7%	Metamyelocyte
2	0.6%	Blast Cell, not classified
1	0.3%	Normal lymphocyte

The arrowed white blood cell in Image 401 is large, the nuclear shape is oval and void of any nucleoli, the chromatin appears somewhat coarse and the cytoplasm contains secondary pink granules. The cell is best described as a myelocyte as most participants concur.

The image was captured from the peripheral blood smear of a 77 year-old male with a diagnosis of myeloproliferative dysplastic syndrome (MDS), the same case used in the November 2008 Cytohematology Proficiency Test Challenge, Slide 075 (<http://www.wadsworth.org/chemheme/heme/glass/slide075.pdf>). The expected range for myelocytes in the case of Slide 075 was 1 – 7. Other findings reported by participants included basophilic stippling and elliptocytes as observed in Image 401.

Ninety-six participants identified the arrowed cell in Image 401 as a promyelocyte. The lack of distinct nucleoli and pale blue cytoplasm identify the cell, more favorably, as a myelocyte and not a promyelocyte. There are a few granules present in the cell that could be disputed as being the darker primary granules characteristic of a promyelocyte, therefore, both myelocyte and promyelocyte were acceptable responses.

Image 402



Number of Responses	Percent of Laboratories	Cell type or finding
180	51.1%	Segmented/band neutrophil with toxic granulation
169	48.0%	Segmented neutrophil
2	0.6%	Eosinophil
1	0.3%	Neutrophil with Pelger-Huët nucleus

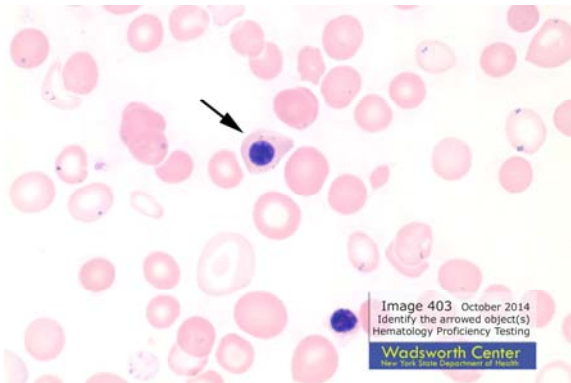
The arrowed white blood cells in Image 402 are segmented neutrophils and the presence of large, dark cytoplasmic granules and vacuoles suggest the cells are “toxic” and are best described as segmented/band neutrophil with toxic granulation as 180 participants agree.

The large dark primary granules known as toxic granulation are most commonly observed in the neutrophils of those with an inflammatory condition such as sepsis, as was the case presented in Image 402. The persistence of the primary granules, lysosomes composed of enzymes, is indicative of the bone marrow’s rushed maturation in response to infection.

Cells similar in appearance to those with toxic granulation are observed in a group of inherited metabolic disorders known as mucopolysaccharidoses. The group of disorders is collectively referred to as Alder-Reilly anomaly and includes Hurler’s syndrome, Hunter’s syndrome and polydystrophic dwarfism (Maroteaux-Lamy’s syndrome). Those afflicted with the disease either lack the enzymes necessary to break down mucopolysaccharides or the enzymes malfunction and accumulate in harmful amounts. The presence of the large granules in monocytes and lymphocytes as well as neutrophils, the lack of cytoplasmic vacuoles and Döhle bodies distinguishes the Alder-Reilly granulation from that of toxic granulation.

The preferred response for the arrowed cells in Image 402, given the attributes of the cells described in paragraph one, is segmented/band neutrophil with toxic granulation. Due to lack of 80% consensus for both participant and referee laboratories, pass credit was issued.

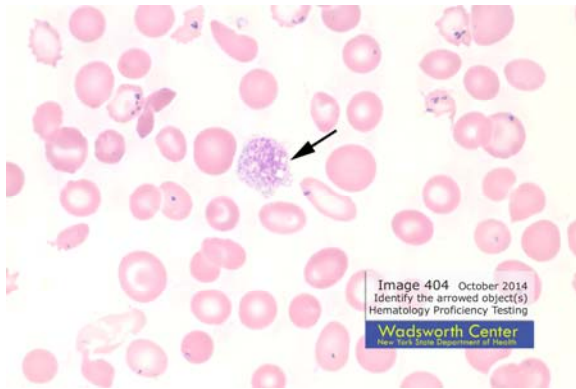
Image 403



Number of Responses	Percent of Laboratories	Cell type or finding
352	100.0%	Nucleated red cell

The arrowed cell in Image 403 was correctly identified by all participants as a nucleated red blood cell. The image was taken from a 76 year-old female with myeloproliferative dysplastic syndrome including red blood cell dyscrasia. The one hundred white blood cell differential included more than three hundred nucleated red blood cells and numerous additional red cell morphology including target cells, macrocytes, schistocytes, echinocytes, elliptocytes, Howell-Jolly bodies, and Pappenheimer bodies. Many of the red blood cell findings mentioned above are seen in Image 403.

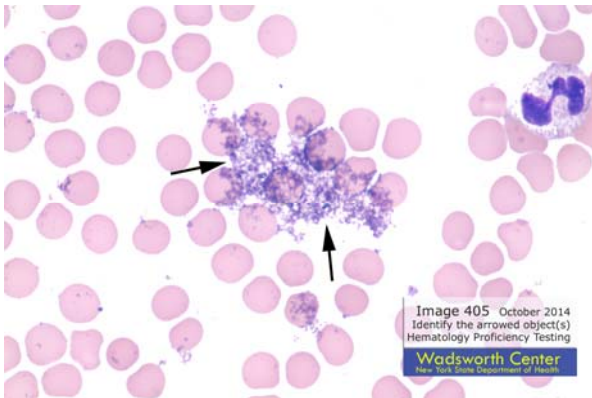
Image 404



Number of Responses	Percent of Laboratories	Cell type or finding
342	97.2%	Giant platelet
4	1.1%	Smudge cell/Basket cell
2	0.6%	Schuffner's granule(s)
2	0.6%	Platelet
1	0.3%	Basophilic stippling
1	0.3%	Parasite

Image 404 was obtained from the same case as Image 403, myeloproliferative dysplastic syndrome including red blood cell dyscrasia. The arrowed image, a giant platelet, was correctly reported by 97.2% of participants. A platelet is considered giant when it is equal to or greater than the size of a normal red blood cell. The presence of giant platelets would not be an unexpected finding in this case. The numerous nucleated red blood cells and the red blood cell inclusions, Holly-Jolly and Pappenheimer bodies, are suggestive of a hyperactive bone marrow where immature cells are prematurely released.

Image 405



Number of Responses	Percent of Laboratories	Cell type or finding
352	100.0%	Stain precipitate

The bluish color and nondescript shape of the arrowed object in Image 405 was correctly identified by all participants as stain precipitate.