



**Department
of Health**

ANDREW M. CUOMO
Governor

HOWARD A. ZUCKER, M.D., J.D.
Commissioner

SALLY DRESLIN, M.S., R.N.
Executive Deputy Commissioner

Hematology Proficiency Test Program

Statistical Summary – October 2015 (Event 15-3)

This statistical report summarizes participant data for the Hematology proficiency survey shipped 6 October 2015.

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

Routine Blood Counts (B16, B17, B18, B19, B20)

Routine Coagulation (C16, C17, C18, C19, C20)

Cell Identification (416, 417, 418, 419, 420)

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 (x 10⁹/L)

| Specimen: B16 | Specimen: B17 | Specimen: B18 | Specimen: B19 | Specimen: B20 | Number | [Code] Instrument or Reagent System |
|----------------------------|---------------|---------------|---------------|---------------|---------|--|
| 4.07 ± 0.21 | 24.61 ± 0.96 | 9.25 ± 0.47 | 3.23 ± 0.18 | 8.19 ± 0.39 | n = 415 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 4.36 ± 0.14 | 25.90 ± 0.93 | 10.14 ± 0.30 | 3.55 ± 0.08 | 9.05 ± 0.06 | n = 5 | [ABG] Abbott Cell Dyn 1700 |
| 4.19 ± 0.08 | 24.58 ± 0.27 | 9.25 ± 0.24 | 3.27 ± 0.05 | 8.35 ± 0.24 | n = 4 | [ABK] Abbott Cell Dyn 3200 |
| 4.15 ± 0.16 | 25.01 ± 0.51 | 9.32 ± 0.26 | 3.20 ± 0.11 | 8.25 ± 0.18 | n = 10 | [ABM] Abbott Cell Dyn 3700 |
| 4.14 ± 0.11 | 24.76 ± 0.47 | 9.25 ± 0.24 | 3.28 ± 0.10 | 8.27 ± 0.13 | n = 12 | [ABS] Abbott Cell Dyn Sapphire |
| 4.11 ± 0.12 | 25.05 ± 0.71 | 9.43 ± 0.18 | 3.33 ± 0.10 | 8.43 ± 0.24 | n = 17 | [ABT] Abbott Cell Dyn Ruby |
| 4.07 ± 0.05 | 22.61 ± 0.56 | 8.97 ± 0.31 | 3.33 ± 0.14 | 8.35 ± 0.27 | n = 3 | [ABU] Abbott Cell Dyn Emerald |
| 3.86 ± 0.07 | 24.03 ± 0.60 | 8.99 ± 0.36 | 3.02 ± 0.07 | 7.57 ± 0.25 | n = 9 | [BTD] Siemens Advia 120 |
| 3.95 ± 0.16 | 24.18 ± 0.84 | 9.01 ± 0.28 | 3.03 ± 0.12 | 7.63 ± 0.24 | n = 32 | [BTE] Siemens Advia 2120 |
| 4.19 ± 0.09 | 24.76 ± 0.48 | 9.50 ± 0.22 | 3.31 ± 0.06 | 8.46 ± 0.13 | n = 59 | [CUL] Coulter UniCel DxH 600,800 |
| 3.89 ± 0.11 | 24.42 ± 0.41 | 9.07 ± 0.18 | 3.04 ± 0.08 | 7.92 ± 0.09 | n = 6 | [CUS] Coulter ACT 5 diff |
| 4.23 ± 0.11 | 25.16 ± 0.42 | 9.67 ± 0.16 | 3.47 ± 0.09 | 8.57 ± 0.16 | n = 19 | [CUT] Coulter ACT series,not ACT5 diff |
| 4.24 ± 0.11 | 25.26 ± 0.77 | 9.62 ± 0.23 | 3.50 ± 0.10 | 8.94 ± 0.26 | n = 5 | [CUW] Coulter HMX |
| 4.20 ± 0.10 | 25.10 ± 0.39 | 9.65 ± 0.20 | 3.36 ± 0.07 | 8.29 ± 0.28 | n = 28 | [CUX] Coulter LH750,755 |
| 4.19 ± 0.08 | 25.05 ± 0.36 | 9.57 ± 0.25 | 3.35 ± 0.11 | 8.25 ± 0.22 | n = 15 | [CUY] Coulter LH 780 |
| 4.26 ± 0.14 | 25.37 ± 0.64 | 9.65 ± 0.25 | 3.51 ± 0.08 | 9.08 ± 0.38 | n = 15 | [CUZ] Coulter LH500 |
| 4.23 ± 0.09 | 25.61 ± 1.24 | 9.47 ± 0.53 | 3.17 ± 0.09 | 8.39 ± 0.11 | n = 4 | [MEB] Medonic M-series |
| 3.97 ± 0.09 | 23.96 ± 0.64 | 9.13 ± 0.20 | 3.13 ± 0.09 | 7.95 ± 0.12 | n = 4 | [ROB] ABX Pentra series |
| 3.97 ± 0.16 | 23.81 ± 0.61 | 9.01 ± 0.20 | 3.20 ± 0.08 | 8.21 ± 0.23 | n = 4 | [ROC] ABX Micro |
| 3.78 ± 0.11 | 23.02 ± 0.83 | 8.59 ± 0.33 | 3.10 ± 0.12 | 7.97 ± 0.32 | n = 23 | [SYA] Sysmex XE 5000 |
| 3.63 ± 0.28 | 23.90 ± 0.72 | 8.73 ± 0.31 | 3.11 ± 0.07 | 7.96 ± 0.14 | n = 26 | [SYC] Sysmex XN-series |
| 3.68 ± 0.15 | 22.28 ± 0.77 | 8.27 ± 0.23 | 3.03 ± 0.05 | 7.63 ± 0.23 | n = 3 | [SYG] Sysmex POCHI |
| 4.00 ± 0.11 | 24.49 ± 0.48 | 8.95 ± 0.24 | 3.09 ± 0.09 | 7.95 ± 0.20 | n = 19 | [SYI] Sysmex XT-2000i,XT-1800i |
| 3.94 ± 0.18 | 23.93 ± 1.31 | 8.86 ± 0.34 | 3.14 ± 0.08 | 8.10 ± 0.14 | n = 6 | [SYL] Sysmex XE 2100C |
| 3.72 ± 0.10 | 23.34 ± 0.34 | 8.75 ± 0.27 | 3.07 ± 0.05 | 8.08 ± 0.07 | n = 3 | [SYN] Sysmex XE 2100DC |
| 3.86 ± 0.18 | 23.39 ± 0.88 | 8.71 ± 0.34 | 3.15 ± 0.09 | 7.94 ± 0.16 | n = 17 | [SYO] Sysmex XE2100 |
| 4.14 ± 0.15 | 25.44 ± 0.74 | 9.49 ± 0.26 | 3.23 ± 0.08 | 8.33 ± 0.22 | n = 36 | [SYP] Sysmex XS-1000i,XS-1000iAL |
| 3.79 ± 0.13 | 22.88 ± 0.50 | 8.53 ± 0.31 | 3.04 ± 0.11 | 7.84 ± 0.10 | n = 6 | [SYQ] Sysmex XE 2100D(Blood Center) |
| 3.96 ± 0.10 | 24.33 ± 0.51 | 8.99 ± 0.22 | 3.07 ± 0.09 | 7.88 ± 0.20 | n = 18 | [SYV] Sysmex XT 4000i |

Summary of Participant Responses

Mean ± One Standard Deviation

Red Cell Count (x 10¹²/L)

| Specimen: B16 | Specimen: B17 | Specimen: B18 | Specimen: B19 | Specimen: B20 | Number | [Code] Instrument or Reagent System |
|----------------------------|---------------|---------------|---------------|---------------|---------|--|
| 4.190 ± 0.068 | 4.723 ± 0.072 | 4.593 ± 0.068 | 2.638 ± 0.054 | 2.144 ± 0.052 | n = 416 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 4.204 ± 0.063 | 4.767 ± 0.089 | 4.667 ± 0.086 | 2.702 ± 0.054 | 2.208 ± 0.053 | n = 5 | [ABG] Abbott Cell Dyn 1700 |
| 4.217 ± 0.060 | 4.789 ± 0.132 | 4.602 ± 0.045 | 2.667 ± 0.054 | 2.174 ± 0.061 | n = 4 | [ABK] Abbott Cell Dyn 3200 |
| 4.178 ± 0.056 | 4.669 ± 0.098 | 4.599 ± 0.091 | 2.667 ± 0.029 | 2.176 ± 0.049 | n = 9 | [ABM] Abbott Cell Dyn 3700 |
| 4.272 ± 0.096 | 4.829 ± 0.109 | 4.685 ± 0.123 | 2.676 ± 0.058 | 2.176 ± 0.053 | n = 12 | [ABS] Abbott Cell Dyn Sapphire |
| 4.307 ± 0.096 | 4.869 ± 0.129 | 4.740 ± 0.084 | 2.672 ± 0.042 | 2.165 ± 0.033 | n = 17 | [ABT] Abbott Cell Dyn Ruby |
| 4.106 ± 0.061 | 4.659 ± 0.093 | 4.504 ± 0.093 | 2.622 ± 0.032 | 2.174 ± 0.047 | n = 3 | [ABU] Abbott Cell Dyn Emerald |
| 4.215 ± 0.070 | 4.745 ± 0.088 | 4.605 ± 0.048 | 2.660 ± 0.045 | 2.207 ± 0.039 | n = 9 | [BTD] Siemens Advia 120 |
| 4.170 ± 0.073 | 4.715 ± 0.080 | 4.565 ± 0.085 | 2.646 ± 0.050 | 2.204 ± 0.043 | n = 33 | [BTE] Siemens Advia 2120 |
| 4.192 ± 0.043 | 4.717 ± 0.041 | 4.591 ± 0.050 | 2.637 ± 0.039 | 2.127 ± 0.033 | n = 59 | [CUL] Coulter UniCel DxH 600,800 |
| 4.143 ± 0.088 | 4.740 ± 0.092 | 4.535 ± 0.082 | 2.637 ± 0.048 | 2.159 ± 0.049 | n = 6 | [CUS] Coulter ACT 5 diff |
| 4.195 ± 0.078 | 4.754 ± 0.051 | 4.589 ± 0.090 | 2.658 ± 0.064 | 2.161 ± 0.039 | n = 19 | [CUT] Coulter ACT series,not ACT5 diff |
| 4.213 ± 0.009 | 4.800 ± 0.068 | 4.651 ± 0.090 | 2.704 ± 0.030 | 2.194 ± 0.031 | n = 5 | [CUW] Coulter HMX |
| 4.213 ± 0.036 | 4.773 ± 0.041 | 4.625 ± 0.041 | 2.634 ± 0.022 | 2.144 ± 0.020 | n = 28 | [CUX] Coulter LH750,755 |
| 4.214 ± 0.051 | 4.777 ± 0.060 | 4.618 ± 0.039 | 2.633 ± 0.028 | 2.141 ± 0.026 | n = 15 | [CUY] Coulter LH 780 |
| 4.278 ± 0.083 | 4.813 ± 0.090 | 4.626 ± 0.081 | 2.693 ± 0.036 | 2.198 ± 0.041 | n = 15 | [CUZ] Coulter LH500 |
| 4.206 ± 0.118 | 4.678 ± 0.102 | 4.529 ± 0.157 | 2.623 ± 0.095 | 2.102 ± 0.053 | n = 4 | [MEB] Medonic M-series |
| 4.080 ± 0.086 | 4.667 ± 0.053 | 4.513 ± 0.054 | 2.565 ± 0.055 | 2.096 ± 0.034 | n = 4 | [ROB] ABX Pentra series |
| 4.089 ± 0.108 | 4.627 ± 0.072 | 4.471 ± 0.076 | 2.543 ± 0.034 | 2.069 ± 0.011 | n = 4 | [ROC] ABX Micro |
| 4.216 ± 0.046 | 4.712 ± 0.053 | 4.603 ± 0.049 | 2.670 ± 0.041 | 2.165 ± 0.030 | n = 23 | [SYA] Sysmex XE 5000 |
| 4.150 ± 0.046 | 4.712 ± 0.050 | 4.580 ± 0.045 | 2.579 ± 0.026 | 2.085 ± 0.030 | n = 26 | [SYC] Sysmex XN-series |
| 4.200 ± 0.027 | 4.735 ± 0.036 | 4.614 ± 0.039 | 2.645 ± 0.019 | 2.155 ± 0.027 | n = 3 | [SYG] Sysmex POCHi |
| 4.144 ± 0.035 | 4.649 ± 0.040 | 4.557 ± 0.047 | 2.609 ± 0.023 | 2.115 ± 0.018 | n = 19 | [SYI] Sysmex XT-2000i,XT-1800i |
| 4.220 ± 0.046 | 4.702 ± 0.016 | 4.581 ± 0.015 | 2.664 ± 0.033 | 2.169 ± 0.036 | n = 6 | [SYL] Sysmex XE 2100C |
| 4.195 ± 0.045 | 4.715 ± 0.046 | 4.579 ± 0.057 | 2.637 ± 0.023 | 2.149 ± 0.020 | n = 3 | [SYN] Sysmex XE 2100DC |
| 4.209 ± 0.055 | 4.712 ± 0.047 | 4.610 ± 0.044 | 2.672 ± 0.025 | 2.160 ± 0.027 | n = 17 | [SYO] Sysmex XE2100 |
| 4.122 ± 0.040 | 4.691 ± 0.047 | 4.561 ± 0.037 | 2.566 ± 0.031 | 2.076 ± 0.022 | n = 36 | [SYP] Sysmex XS-1000i,XS-1000iAL |
| 4.232 ± 0.018 | 4.750 ± 0.028 | 4.654 ± 0.030 | 2.684 ± 0.021 | 2.177 ± 0.015 | n = 6 | [SYQ] Sysmex XE 2100D(Blood Center) |
| 4.191 ± 0.032 | 4.699 ± 0.039 | 4.592 ± 0.043 | 2.640 ± 0.029 | 2.131 ± 0.034 | n = 18 | [SYV] Sysmex XT 4000i |

Summary of Participant Responses

Mean ± One Standard Deviation

Hemoglobin (g/dL)

| Specimen: B16 | Specimen: B17 | Specimen: B18 | Specimen: B19 | Specimen: B20 | Number | [Code] Instrument or Reagent System |
|----------------------------|---------------|---------------|---------------|---------------|---------|--|
| 12.68 ± 0.18 | 13.49 ± 0.25 | 13.61 ± 0.19 | 6.47 ± 0.14 | 5.35 ± 0.17 | n = 421 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 12.62 ± 0.18 | 13.74 ± 0.25 | 13.74 ± 0.13 | 6.72 ± 0.17 | 5.66 ± 0.11 | n = 5 | [ABG] Abbott Cell Dyn 1700 |
| 12.98 ± 0.13 | 13.97 ± 0.34 | 13.82 ± 0.34 | 6.65 ± 0.06 | 5.62 ± 0.08 | n = 4 | [ABK] Abbott Cell Dyn 3200 |
| 12.79 ± 0.19 | 13.80 ± 0.24 | 13.79 ± 0.22 | 6.66 ± 0.09 | 5.67 ± 0.10 | n = 10 | [ABM] Abbott Cell Dyn 3700 |
| 13.04 ± 0.17 | 13.90 ± 0.17 | 13.98 ± 0.17 | 6.77 ± 0.05 | 5.57 ± 0.06 | n = 12 | [ABS] Abbott Cell Dyn Sapphire |
| 12.85 ± 0.21 | 13.88 ± 0.27 | 13.81 ± 0.24 | 6.57 ± 0.14 | 5.48 ± 0.10 | n = 17 | [ABT] Abbott Cell Dyn Ruby |
| 12.93 ± 0.05 | 14.00 ± 0.09 | 13.97 ± 0.14 | 6.63 ± 0.05 | 5.56 ± 0.10 | n = 3 | [ABU] Abbott Cell Dyn Emerald |
| 12.87 ± 0.22 | 13.63 ± 0.25 | 13.70 ± 0.18 | 6.65 ± 0.10 | 5.48 ± 0.09 | n = 9 | [BTD] Siemens Advia 120 |
| 12.64 ± 0.22 | 13.69 ± 0.21 | 13.64 ± 0.17 | 6.63 ± 0.10 | 5.49 ± 0.11 | n = 33 | [BTE] Siemens Advia 2120 |
| 12.66 ± 0.13 | 13.27 ± 0.13 | 13.60 ± 0.13 | 6.43 ± 0.08 | 5.41 ± 0.08 | n = 59 | [CUL] Coulter UniCel DxH 600,800 |
| 12.74 ± 0.09 | 13.63 ± 0.05 | 13.67 ± 0.10 | 6.52 ± 0.07 | 5.42 ± 0.07 | n = 6 | [CUS] Coulter ACT 5 diff |
| 12.53 ± 0.16 | 13.44 ± 0.22 | 13.44 ± 0.24 | 6.42 ± 0.09 | 5.34 ± 0.13 | n = 19 | [CUT] Coulter ACT series,not ACT5 diff |
| 12.66 ± 0.11 | 13.60 ± 0.15 | 13.57 ± 0.14 | 6.54 ± 0.11 | 5.50 ± 0.00 | n = 5 | [CUW] Coulter HMX |
| 12.65 ± 0.10 | 13.48 ± 0.09 | 13.55 ± 0.07 | 6.46 ± 0.06 | 5.30 ± 0.06 | n = 28 | [CUX] Coulter LH750,755 |
| 12.68 ± 0.15 | 13.49 ± 0.15 | 13.59 ± 0.19 | 6.49 ± 0.08 | 5.33 ± 0.06 | n = 15 | [CUY] Coulter LH 780 |
| 12.67 ± 0.13 | 13.61 ± 0.24 | 13.60 ± 0.22 | 6.55 ± 0.14 | 5.52 ± 0.10 | n = 15 | [CUZ] Coulter LH500 |
| 12.57 ± 0.23 | 13.36 ± 0.25 | 13.55 ± 0.27 | 6.53 ± 0.14 | 5.28 ± 0.15 | n = 3 | [HQC] HemoCue Hb201+/B-Hb |
| 12.92 ± 0.37 | 14.08 ± 0.49 | 13.67 ± 0.36 | 6.73 ± 0.16 | 5.90 ± 0.18 | n = 4 | [MEB] Medonic M-series |
| 12.73 ± 0.27 | 13.65 ± 0.22 | 13.79 ± 0.24 | 6.40 ± 0.08 | 5.30 ± 0.08 | n = 4 | [ROB] ABX Pentra series |
| 12.53 ± 0.20 | 13.50 ± 0.18 | 13.57 ± 0.16 | 6.51 ± 0.11 | 5.45 ± 0.06 | n = 4 | [ROC] ABX Micro |
| 12.58 ± 0.11 | 13.31 ± 0.11 | 13.50 ± 0.14 | 6.46 ± 0.07 | 5.25 ± 0.06 | n = 23 | [SYA] Sysmex XE 5000 |
| 12.56 ± 0.14 | 13.41 ± 0.11 | 13.50 ± 0.13 | 6.30 ± 0.08 | 5.17 ± 0.08 | n = 26 | [SYC] Sysmex XN-series |
| 12.53 ± 0.14 | 13.36 ± 0.10 | 13.38 ± 0.15 | 6.37 ± 0.05 | 5.23 ± 0.05 | n = 3 | [SYG] Sysmex POChI |
| 12.68 ± 0.09 | 13.31 ± 0.14 | 13.53 ± 0.15 | 6.39 ± 0.07 | 5.20 ± 0.07 | n = 19 | [SYI] Sysmex XT-2000i,XT-1800i |
| 12.64 ± 0.13 | 13.35 ± 0.20 | 13.62 ± 0.07 | 6.45 ± 0.07 | 5.25 ± 0.07 | n = 7 | [SYL] Sysmex XE 2100C |
| 12.57 ± 0.14 | 13.23 ± 0.23 | 13.47 ± 0.05 | 6.37 ± 0.14 | 5.20 ± 0.00 | n = 3 | [SYN] Sysmex XE 2100DC |
| 12.68 ± 0.15 | 13.39 ± 0.20 | 13.55 ± 0.16 | 6.46 ± 0.11 | 5.24 ± 0.07 | n = 17 | [SYO] Sysmex XE2100 |
| 12.71 ± 0.12 | 13.59 ± 0.10 | 13.69 ± 0.11 | 6.39 ± 0.07 | 5.20 ± 0.00 | n = 36 | [SYP] Sysmex XS-1000i,XS-1000iAL |
| 12.72 ± 0.17 | 13.39 ± 0.18 | 13.73 ± 0.19 | 6.50 ± 0.06 | 5.30 ± 0.00 | n = 6 | [SYQ] Sysmex XE 2100D(Blood Center) |
| 12.70 ± 0.14 | 13.36 ± 0.17 | 13.54 ± 0.12 | 6.37 ± 0.07 | 5.18 ± 0.06 | n = 18 | [SYV] Sysmex XT 4000i |

Summary of Participant Responses

Mean ± One Standard Deviation

Hematocrit (%)

| Specimen: B16 | Specimen: B17 | Specimen: B18 | Specimen: B19 | Specimen: B20 | Number | [Code] Instrument or Reagent System |
|----------------------------|---------------|---------------|---------------|---------------|---------|--|
| 36.58 ± 1.85 | 38.49 ± 1.94 | 39.23 ± 1.94 | 20.33 ± 1.17 | 16.27 ± 0.88 | n = 421 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 37.36 ± 0.90 | 39.53 ± 0.74 | 40.57 ± 0.39 | 20.71 ± 0.78 | 16.58 ± 0.23 | n = 5 | [ABG] Abbott Cell Dyn 1700 |
| 31.73 ± 0.67 | 34.59 ± 1.26 | 34.50 ± 0.46 | 17.83 ± 0.49 | 14.41 ± 0.41 | n = 4 | [ABK] Abbott Cell Dyn 3200 |
| 38.17 ± 0.83 | 39.86 ± 1.13 | 41.31 ± 0.87 | 21.00 ± 0.52 | 16.94 ± 0.48 | n = 10 | [ABM] Abbott Cell Dyn 3700 |
| 34.63 ± 0.88 | 36.75 ± 0.96 | 37.57 ± 1.19 | 18.70 ± 0.47 | 14.98 ± 0.37 | n = 12 | [ABS] Abbott Cell Dyn Sapphire |
| 32.13 ± 1.00 | 34.90 ± 1.10 | 35.32 ± 0.93 | 17.68 ± 0.44 | 14.24 ± 0.36 | n = 17 | [ABT] Abbott Cell Dyn Ruby |
| 37.59 ± 0.94 | 40.03 ± 0.79 | 40.50 ± 1.33 | 20.77 ± 0.33 | 17.02 ± 0.51 | n = 4 | [ABU] Abbott Cell Dyn Emerald |
| 32.73 ± 0.98 | 34.59 ± 1.24 | 35.53 ± 1.03 | 17.47 ± 0.42 | 14.32 ± 0.14 | n = 9 | [BTD] Siemens Advia 120 |
| 32.54 ± 0.92 | 34.49 ± 0.86 | 35.32 ± 0.78 | 17.30 ± 0.39 | 14.22 ± 0.34 | n = 33 | [BTE] Siemens Advia 2120 |
| 38.15 ± 0.45 | 40.22 ± 0.40 | 40.92 ± 0.46 | 20.70 ± 0.34 | 16.66 ± 0.29 | n = 59 | [CUL] Coulter UniCel DxH 600,800 |
| 34.31 ± 0.22 | 37.22 ± 0.47 | 37.19 ± 0.76 | 18.60 ± 0.27 | 15.05 ± 0.33 | n = 6 | [CUS] Coulter ACT 5 diff |
| 37.40 ± 0.70 | 39.71 ± 0.64 | 40.01 ± 0.93 | 20.47 ± 0.48 | 16.52 ± 0.31 | n = 19 | [CUT] Coulter ACT series,not ACT5 diff |
| 37.61 ± 0.51 | 40.05 ± 0.77 | 40.51 ± 1.03 | 20.75 ± 0.32 | 16.60 ± 0.08 | n = 5 | [CUW] Coulter HMX |
| 37.75 ± 0.43 | 40.08 ± 0.51 | 40.54 ± 0.54 | 20.34 ± 0.27 | 16.39 ± 0.25 | n = 28 | [CUX] Coulter LH750,755 |
| 37.78 ± 0.51 | 40.17 ± 0.57 | 40.60 ± 0.58 | 20.38 ± 0.25 | 16.38 ± 0.19 | n = 15 | [CUY] Coulter LH 780 |
| 37.82 ± 0.73 | 39.84 ± 0.62 | 40.13 ± 0.73 | 20.63 ± 0.37 | 16.66 ± 0.34 | n = 15 | [CUZ] Coulter LH500 |
| 36.23 ± 1.07 | 37.15 ± 0.90 | 37.55 ± 1.19 | 19.68 ± 0.78 | 15.37 ± 0.38 | n = 4 | [MEB] Medonic M-series |
| 34.73 ± 1.51 | 37.03 ± 1.17 | 37.50 ± 1.22 | 18.50 ± 0.57 | 15.00 ± 0.75 | n = 4 | [MHC] Microhematocrit |
| 34.34 ± 0.69 | 36.95 ± 0.68 | 37.23 ± 0.77 | 18.93 ± 0.43 | 15.40 ± 0.32 | n = 4 | [ROB] ABX Pentra series |
| 35.68 ± 1.07 | 37.76 ± 0.66 | 38.50 ± 0.88 | 19.16 ± 0.35 | 15.59 ± 0.30 | n = 4 | [ROC] ABX Micro |
| 36.87 ± 0.43 | 38.54 ± 0.41 | 39.49 ± 0.36 | 21.00 ± 0.30 | 16.72 ± 0.20 | n = 23 | [SYA] Sysmex XE 5000 |
| 35.87 ± 0.53 | 38.10 ± 0.55 | 38.88 ± 0.48 | 19.96 ± 0.33 | 15.81 ± 0.27 | n = 26 | [SYC] Sysmex XN-series |
| 36.19 ± 0.72 | 38.17 ± 0.59 | 38.93 ± 0.68 | 21.20 ± 0.18 | 16.87 ± 0.14 | n = 3 | [SYG] Sysmex POChI |
| 35.94 ± 0.43 | 37.44 ± 0.48 | 38.51 ± 0.44 | 20.93 ± 0.21 | 16.70 ± 0.23 | n = 19 | [SYI] Sysmex XT-2000i,XT-1800i |
| 35.73 ± 0.31 | 36.42 ± 0.39 | 36.47 ± 0.58 | 19.75 ± 0.28 | 15.89 ± 0.27 | n = 6 | [SYL] Sysmex XE 2100C |
| 34.97 ± 0.86 | 36.08 ± 0.68 | 36.13 ± 0.77 | 19.37 ± 0.42 | 15.65 ± 0.54 | n = 3 | [SYN] Sysmex XE 2100DC |
| 37.03 ± 0.62 | 38.65 ± 0.67 | 39.63 ± 0.68 | 21.16 ± 0.38 | 16.75 ± 0.28 | n = 17 | [SYO] Sysmex XE2100 |
| 36.48 ± 0.52 | 38.45 ± 0.51 | 39.35 ± 0.54 | 20.92 ± 0.27 | 16.60 ± 0.26 | n = 36 | [SYP] Sysmex XS-1000i,XS-1000iAL |
| 37.26 ± 0.34 | 39.08 ± 0.25 | 40.29 ± 0.31 | 21.23 ± 0.37 | 16.93 ± 0.23 | n = 6 | [SYQ] Sysmex XE 2100D(Blood Center) |
| 36.39 ± 0.34 | 37.77 ± 0.22 | 38.89 ± 0.32 | 21.19 ± 0.19 | 16.75 ± 0.20 | n = 18 | [SYV] Sysmex XT 4000i |

Summary of Participant Responses

Mean ± One Standard Deviation

Platelet Count (x 10⁹/L)

| Specimen: B16 | Specimen: B17 | Specimen: B18 | Specimen: B19 | Specimen: B20 | Number | [Code] Instrument or Reagent System |
|----------------------------|---------------|---------------|---------------|---------------|---------|--|
| 163.8 ± 10.08 | 408.6 ± 21.66 | 227.1 ± 11.88 | 117.1 ± 9.27 | 452.5 ± 29.97 | n = 416 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 171.2 ± 8.70 | 431.8 ± 10.67 | 244.7 ± 13.33 | 118.5 ± 6.97 | 446.8 ± 26.54 | n = 5 | [ABG] Abbott Cell Dyn 1700 |
| 177.7 ± 20.44 | 402.6 ± 24.73 | 228.8 ± 11.91 | 149.6 ± 8.54 | 447.4 ± 23.39 | n = 4 | [ABK] Abbott Cell Dyn 3200 |
| 174.2 ± 6.68 | 427.3 ± 18.98 | 248.0 ± 11.14 | 129.6 ± 5.60 | 487.4 ± 22.50 | n = 10 | [ABM] Abbott Cell Dyn 3700 |
| 172.0 ± 6.79 | 403.4 ± 16.84 | 229.8 ± 10.47 | 131.8 ± 7.66 | 439.6 ± 20.76 | n = 12 | [ABS] Abbott Cell Dyn Sapphire |
| 178.9 ± 7.88 | 411.1 ± 20.22 | 235.6 ± 10.82 | 140.5 ± 6.22 | 433.6 ± 20.67 | n = 17 | [ABT] Abbott Cell Dyn Ruby |
| 188.0 ± 7.05 | 420.6 ± 9.40 | 245.3 ± 4.90 | 144.5 ± 8.61 | 476.7 ± 13.40 | n = 4 | [ABU] Abbott Cell Dyn Emerald |
| 157.0 ± 7.01 | 389.8 ± 16.39 | 219.2 ± 10.08 | 110.1 ± 4.56 | 455.4 ± 15.53 | n = 9 | [BTD] Siemens Advia 120 |
| 158.4 ± 13.70 | 400.5 ± 32.27 | 223.8 ± 16.48 | 114.0 ± 6.58 | 471.5 ± 29.93 | n = 32 | [BTE] Siemens Advia 2120 |
| 164.4 ± 5.07 | 403.6 ± 10.24 | 224.2 ± 5.49 | 116.0 ± 3.66 | 441.9 ± 12.49 | n = 59 | [CUL] Coulter UniCel DxH 600,800 |
| 171.0 ± 8.86 | 426.4 ± 11.17 | 232.1 ± 11.68 | 127.7 ± 5.52 | 490.8 ± 18.29 | n = 6 | [CUS] Coulter ACT 5 diff |
| 163.0 ± 7.86 | 414.8 ± 15.47 | 220.8 ± 12.25 | 118.4 ± 7.29 | 456.3 ± 11.16 | n = 19 | [CUT] Coulter ACT series,not ACT5 diff |
| 161.3 ± 7.63 | 399.7 ± 15.36 | 222.5 ± 7.01 | 117.4 ± 3.79 | 448.0 ± 15.59 | n = 5 | [CUW] Coulter HMX |
| 163.3 ± 4.00 | 410.7 ± 10.61 | 226.9 ± 6.52 | 121.3 ± 5.56 | 454.9 ± 13.21 | n = 28 | [CUX] Coulter LH750,755 |
| 165.9 ± 3.66 | 409.1 ± 11.20 | 224.0 ± 3.93 | 120.5 ± 3.52 | 458.4 ± 13.09 | n = 15 | [CUY] Coulter LH 780 |
| 161.4 ± 11.43 | 403.8 ± 21.03 | 220.6 ± 13.19 | 114.4 ± 4.86 | 454.6 ± 24.05 | n = 15 | [CUZ] Coulter LH500 |
| 154.0 ± 5.77 | 383.7 ± 13.62 | 210.7 ± 10.47 | 106.3 ± 4.02 | 428.0 ± 14.45 | n = 4 | [MEB] Medonic M-series |
| 163.7 ± 8.25 | 417.9 ± 10.19 | 227.1 ± 16.19 | 115.6 ± 7.53 | 459.2 ± 32.76 | n = 4 | [ROB] ABX Pentra series |
| 183.3 ± 13.16 | 436.1 ± 26.20 | 244.3 ± 19.89 | 140.5 ± 25.98 | 513.6 ± 43.90 | n = 4 | [ROC] ABX Micro |
| 149.8 ± 5.25 | 372.6 ± 13.26 | 213.0 ± 7.03 | 106.6 ± 4.34 | 414.6 ± 15.72 | n = 23 | [SYA] Sysmex XE 5000 |
| 159.4 ± 5.77 | 404.9 ± 9.76 | 227.7 ± 4.48 | 108.3 ± 4.52 | 415.5 ± 11.34 | n = 26 | [SYC] Sysmex XN-series |
| 158.8 ± 5.12 | 427.0 ± 0.90 | 230.0 ± 4.60 | 117.7 ± 1.37 | 457.9 ± 3.72 | n = 3 | [SYG] Sysmex POCHI |
| 169.2 ± 5.64 | 426.1 ± 12.48 | 236.9 ± 8.83 | 120.8 ± 5.70 | 476.4 ± 13.26 | n = 19 | [SYI] Sysmex XT-2000i,XT-1800i |
| 160.0 ± 4.60 | 394.2 ± 15.66 | 223.8 ± 7.74 | 112.6 ± 4.62 | 444.0 ± 14.43 | n = 6 | [SYL] Sysmex XE 2100C |
| 159.5 ± 5.43 | 401.5 ± 5.40 | 223.8 ± 5.90 | 111.4 ± 1.02 | 445.8 ± 14.88 | n = 3 | [SYN] Sysmex XE 2100DC |
| 151.7 ± 5.82 | 377.2 ± 13.67 | 215.1 ± 7.95 | 105.6 ± 4.65 | 417.1 ± 9.75 | n = 17 | [SYO] Sysmex XE2100 |
| 162.7 ± 5.26 | 418.1 ± 10.55 | 231.4 ± 5.38 | 116.4 ± 5.47 | 477.8 ± 12.06 | n = 36 | [SYP] Sysmex XS-1000i,XS-1000iAL |
| 173.3 ± 5.08 | 437.2 ± 4.87 | 242.8 ± 10.15 | 125.6 ± 4.81 | 502.3 ± 13.72 | n = 6 | [SYQ] Sysmex XE 2100D(Blood Center) |
| 170.6 ± 5.65 | 428.1 ± 9.48 | 236.2 ± 5.14 | 121.3 ± 4.87 | 475.2 ± 9.94 | n = 18 | [SYV] Sysmex XT 4000i |

Summary of Participant Responses

Mean ± One Standard Deviation

Prothrombin Time (seconds)

| Specimen: C16 ----- | Specimen: C17 ----- | Specimen: C18 ----- | Specimen: C19 ----- | Specimen: C20 ----- | Number ----- | [Code] Instrument or Reagent System ----- |
|---|------------------------|------------------------|------------------------|------------------------|-----------------|--|
| 48.78 ± 8.24 | 11.32 ± 0.74 | 28.43 ± 3.84 | 48.81 ± 8.18 | 12.00 ± 1.01 | n = 308 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 40.84 ± 1.71 | 10.88 ± 0.20 | 24.61 ± 0.93 | 40.54 ± 1.85 | 10.80 ± 0.21 | n = 18 | [BEB] Siemens BCS,BCSXP |
| 54.32 ± 2.85 | 13.15 ± 0.25 | 31.10 ± 0.94 | 53.81 ± 2.81 | 13.64 ± 0.30 | n = 30 | [DGC] Diagnostica Stago STA Compact |
| 53.78 ± 2.54 | 13.30 ± 0.51 | 31.17 ± 0.67 | 53.38 ± 1.93 | 14.03 ± 0.44 | n = 17 | [DGD] Diagnostica Stago STA-R,STA-R Evo |
| 32.83 ± 1.07 | 11.72 ± 0.19 | 21.05 ± 0.42 | 32.32 ± 1.10 | 11.98 ± 0.13 | n = 10 | [ILA] IL ACL(All except810,ELITE,EPRO,8 |
| 44.83 ± 13.39 | 11.41 ± 0.19 | 26.75 ± 6.06 | 45.09 ± 13.58 | 12.23 ± 0.47 | n = 9 | [ILC] IL ACL Futura/Advance |
| 52.36 ± 2.57 | 11.32 ± 0.37 | 30.23 ± 1.35 | 52.25 ± 2.60 | 12.48 ± 0.30 | n = 24 | [ILD] IL ACL(ELITE,ELITE PRO,8/9/10000) |
| 55.13 ± 3.00 | 11.44 ± 0.30 | 31.28 ± 1.37 | 55.33 ± 2.70 | 12.29 ± 0.36 | n = 95 | [ILE] IL ACL TOP Series |
| 42.38 ± 1.90 | 10.61 ± 0.26 | 25.23 ± 0.98 | 42.14 ± 2.01 | 10.98 ± 0.23 | n = 37 | [SYW] Sysmex CA500/CA600 series |
| 41.55 ± 2.18 | 10.89 ± 0.30 | 25.14 ± 1.05 | 42.02 ± 2.42 | 11.22 ± 0.31 | n = 46 | [SYX] Sysmex CA 1500 |
| 43.56 ± 3.40 | 11.15 ± 0.23 | 25.92 ± 1.55 | 43.43 ± 3.41 | 11.46 ± 0.26 | n = 18 | [SYY] Sysmex CA 7000 |
| <Reagents> | | | | | | |
| 54.22 ± 2.73 | 13.20 ± 0.31 | 31.15 ± 0.90 | 53.68 ± 2.56 | 13.77 ± 0.37 | n = 47 | [TA3] STA Neoplastine CL+ |
| 41.98 ± 2.36 | 10.83 ± 0.33 | 25.19 ± 1.13 | 41.98 ± 2.48 | 11.11 ± 0.35 | n = 120 | [TD2] Siemens Innovin |
| 32.10 ± 1.54 | 11.61 ± 0.29 | 20.94 ± 0.51 | 31.76 ± 1.41 | 11.99 ± 0.23 | n = 16 | [TJ2] HemosIL PT-Fibrinogen |
| 54.55 ± 3.07 | 11.43 ± 0.32 | 31.08 ± 1.46 | 54.76 ± 2.96 | 12.35 ± 0.37 | n = 121 | [TJ8] HemosIL RecombiPlasTin 2G |
| <Reagent & Instrument> | | | | | | |
| 54.32 ± 2.85 | 13.15 ± 0.25 | 31.10 ± 0.94 | 53.81 ± 2.81 | 13.64 ± 0.30 | n = 30 | [TA3]&[DGC] STA Neoplastin & Diagnostic |
| 54.13 ± 2.26 | 13.35 ± 0.44 | 31.24 ± 0.60 | 53.63 ± 1.72 | 14.07 ± 0.39 | n = 15 | [TA3]&[DGD] STA Neoplastin & Diagnostic |
| 40.84 ± 1.71 | 10.88 ± 0.20 | 24.61 ± 0.93 | 40.54 ± 1.85 | 10.80 ± 0.21 | n = 18 | [TD2]&[BEB] Siemens Innovin & Siemens BC |
| 42.38 ± 1.90 | 10.61 ± 0.26 | 25.23 ± 0.98 | 42.14 ± 2.01 | 10.98 ± 0.23 | n = 37 | [TD2]&[SYW] Siemens Innovin & Sysmex CA5 |
| 41.55 ± 2.18 | 10.89 ± 0.30 | 25.14 ± 1.05 | 42.02 ± 2.42 | 11.22 ± 0.31 | n = 46 | [TD2]&[SYX] Siemens Innovin & Sysmex CA |
| 43.56 ± 3.40 | 11.15 ± 0.23 | 25.92 ± 1.55 | 43.43 ± 3.41 | 11.46 ± 0.26 | n = 18 | [TD2]&[SYY] Siemens Innovin & Sysmex CA |
| 32.83 ± 1.07 | 11.72 ± 0.19 | 21.05 ± 0.41 | 32.31 ± 1.10 | 11.98 ± 0.13 | n = 9 | [TJ2]&[ILA] HemosIL PT-Fib & IL ACL(All |
| 31.44 ± 1.77 | 11.37 ± 0.14 | 20.82 ± 0.59 | 31.47 ± 1.71 | 11.83 ± 0.24 | n = 4 | [TJ2]&[ILC] HemosIL PT-Fib & IL ACL Fut |
| 55.02 ± 2.47 | 11.49 ± 0.27 | 31.43 ± 1.83 | 55.55 ± 3.24 | 12.54 ± 0.34 | n = 5 | [TJ8]&[ILC] HemosIL Recomb & IL ACL Fut |
| 52.36 ± 2.56 | 11.31 ± 0.35 | 30.24 ± 1.35 | 52.26 ± 2.60 | 12.48 ± 0.29 | n = 22 | [TJ8]&[ILD] HemosIL Recomb & IL ACL(ELI |
| 55.08 ± 2.97 | 11.44 ± 0.30 | 31.27 ± 1.38 | 55.30 ± 2.69 | 12.29 ± 0.37 | n = 93 | [TJ8]&[ILE] HemosIL Recomb & IL ACL TOP |

Summary of Participant Responses

Mean ± One Standard Deviation

INR (International Normalized Ratio)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number | [Code] Instrument or Reagent System |
|---|---------------|---------------|---------------|---------------|---------|--|
| 4.652 ± 0.890 | 1.027 ± 0.049 | 2.651 ± 0.298 | 4.653 ± 0.877 | 1.082 ± 0.051 | n = 312 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 4.039 ± 0.185 | 1.056 ± 0.054 | 2.484 ± 0.111 | 4.007 ± 0.215 | 1.043 ± 0.053 | n = 18 | [BEB] Siemens BCS,BCSXP |
| 6.270 ± 0.552 | 0.998 ± 0.013 | 3.058 ± 0.149 | 6.240 ± 0.494 | 1.055 ± 0.055 | n = 30 | [DGC] Diagnostica Stago STA Compact |
| 6.123 ± 0.586 | 1.018 ± 0.050 | 3.033 ± 0.148 | 6.075 ± 0.436 | 1.094 ± 0.014 | n = 17 | [DGD] Diagnostica Stago STA-R,STA-R Evo |
| 5.982 ± 0.423 | 1.006 ± 0.072 | 2.799 ± 0.258 | 5.776 ± 0.476 | 1.026 ± 0.053 | n = 10 | [ILA] IL ACL(All except810,ELITE,EPRO,8 |
| 5.251 ± 0.849 | 1.007 ± 0.049 | 2.815 ± 0.231 | 5.279 ± 0.894 | 1.100 ± 0.058 | n = 9 | [ILC] IL ACL Futura/Advance |
| 4.977 ± 0.349 | 1.016 ± 0.042 | 2.780 ± 0.179 | 4.942 ± 0.357 | 1.126 ± 0.052 | n = 24 | [ILD] IL ACL(ELITE,ELITE PRO,8/9/10000) |
| 4.801 ± 0.282 | 1.025 ± 0.045 | 2.744 ± 0.141 | 4.803 ± 0.272 | 1.099 ± 0.042 | n = 98 | [ILE] IL ACL TOP Series |
| 4.036 ± 0.202 | 1.030 ± 0.047 | 2.419 ± 0.119 | 3.995 ± 0.229 | 1.074 ± 0.045 | n = 36 | [SYW] Sysmex CA500/CA600 series |
| 3.707 ± 0.173 | 1.038 ± 0.047 | 2.294 ± 0.094 | 3.738 ± 0.202 | 1.067 ± 0.047 | n = 47 | [SYX] Sysmex CA 1500 |
| 4.024 ± 0.160 | 1.067 ± 0.044 | 2.414 ± 0.096 | 4.011 ± 0.165 | 1.100 ± 0.000 | n = 18 | [SYY] Sysmex CA 7000 |
| <Reagents> | | | | | | |
| 6.215 ± 0.521 | 1.004 ± 0.031 | 3.042 ± 0.146 | 6.168 ± 0.443 | 1.067 ± 0.050 | n = 46 | [TA3] STA Neoplastine CL+ |
| 3.909 ± 0.248 | 1.042 ± 0.049 | 2.379 ± 0.129 | 3.902 ± 0.247 | 1.071 ± 0.047 | n = 121 | [TD2] Siemens Innovin |
| 5.820 ± 0.561 | 0.987 ± 0.057 | 2.760 ± 0.221 | 5.709 ± 0.623 | 1.038 ± 0.057 | n = 16 | [TJ2] HemosIL PT-Fibrinogen |
| 4.830 ± 0.315 | 1.024 ± 0.044 | 2.756 ± 0.151 | 4.828 ± 0.307 | 1.105 ± 0.044 | n = 124 | [TJ8] HemosIL RecombiPlasTin 2G |
| <Reagent & Instrument> | | | | | | |
| 6.250 ± 0.554 | 0.998 ± 0.013 | 3.051 ± 0.148 | 6.223 ± 0.495 | 1.052 ± 0.054 | n = 29 | [TA3]&[DGC] STA Neoplastin & Diagnostic |
| 6.196 ± 0.507 | 1.022 ± 0.054 | 3.049 ± 0.135 | 6.122 ± 0.381 | 1.094 ± 0.015 | n = 15 | [TA3]&[DGD] STA Neoplastin & Diagnostic |
| 4.039 ± 0.185 | 1.056 ± 0.054 | 2.484 ± 0.111 | 4.007 ± 0.215 | 1.043 ± 0.053 | n = 18 | [TD2]&[BEB] Siemens Innovin & Siemens BC |
| 4.036 ± 0.202 | 1.030 ± 0.047 | 2.419 ± 0.119 | 3.995 ± 0.229 | 1.074 ± 0.045 | n = 36 | [TD2]&[SYW] Siemens Innovin & Sysmex CA5 |
| 3.707 ± 0.173 | 1.038 ± 0.047 | 2.294 ± 0.094 | 3.738 ± 0.202 | 1.067 ± 0.047 | n = 47 | [TD2]&[SYX] Siemens Innovin & Sysmex CA |
| 4.024 ± 0.160 | 1.067 ± 0.044 | 2.414 ± 0.096 | 4.011 ± 0.165 | 1.100 ± 0.000 | n = 18 | [TD2]&[SYY] Siemens Innovin & Sysmex CA |
| 5.963 ± 0.450 | 0.996 ± 0.054 | 2.757 ± 0.213 | 5.780 ± 0.511 | 1.018 ± 0.046 | n = 9 | [TJ2]&[ILA] HemosIL PT-Fib & IL ACL(All |
| 6.042 ± 0.398 | 0.996 ± 0.046 | 2.930 ± 0.129 | 6.117 ± 0.557 | 1.085 ± 0.067 | n = 4 | [TJ2]&[ILC] HemosIL PT-Fib & IL ACL Fut |
| 4.662 ± 0.458 | 1.016 ± 0.049 | 2.687 ± 0.245 | 4.687 ± 0.419 | 1.111 ± 0.047 | n = 5 | [TJ8]&[ILC] HemosIL Recomb & IL ACL Fut |
| 4.961 ± 0.355 | 1.018 ± 0.040 | 2.801 ± 0.172 | 4.932 ± 0.376 | 1.131 ± 0.049 | n = 22 | [TJ8]&[ILD] HemosIL Recomb & IL ACL(ELI |
| 4.802 ± 0.286 | 1.026 ± 0.044 | 2.748 ± 0.138 | 4.805 ± 0.274 | 1.100 ± 0.041 | n = 96 | [TJ8]&[ILE] HemosIL Recomb & IL ACL TOP |

Summary of Participant Responses
 Mean ± One Standard Deviation

Act Partial Thromboplastin Time (seconds)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number | [Code] Instrument or Reagent System |
|---|---------------|---------------|---------------|---------------|---------|---|
| 79.98 ± 10.75 | 29.64 ± 3.56 | 54.67 ± 6.85 | 80.65 ± 10.93 | 32.77 ± 2.28 | n = 304 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 67.39 ± 2.18 | 25.15 ± 0.65 | 47.04 ± 1.36 | 67.64 ± 2.37 | 27.64 ± 0.78 | n = 19 | [BEB] Siemens BCS,BCSXP |
| 76.08 ± 1.91 | 29.77 ± 0.64 | 52.48 ± 1.40 | 76.20 ± 1.95 | 34.82 ± 0.92 | n = 28 | [DGC] Diagnostica Stago STA Compact |
| 72.54 ± 1.74 | 29.43 ± 0.51 | 50.25 ± 0.76 | 72.90 ± 1.44 | 34.38 ± 0.71 | n = 17 | [DGD] Diagnostica Stago STA-R,STA-R Evo |
| 78.67 ± 11.25 | 28.78 ± 2.27 | 53.47 ± 7.54 | 80.84 ± 11.17 | 32.46 ± 1.82 | n = 9 | [ILA] IL ACL(All except810,ELITE,EPRO,8 |
| 93.97 ± 2.73 | 32.31 ± 0.93 | 62.32 ± 0.77 | 92.88 ± 1.32 | 33.40 ± 0.43 | n = 9 | [ILC] IL ACL Futura/Advance |
| 93.94 ± 2.58 | 30.46 ± 1.42 | 62.99 ± 1.34 | 94.15 ± 2.12 | 31.76 ± 0.94 | n = 23 | [ILD] IL ACL(ELITE,ELITE PRO,8/9/10000) |
| 89.26 ± 2.06 | 33.27 ± 0.84 | 60.62 ± 1.29 | 89.98 ± 2.08 | 34.23 ± 0.74 | n = 99 | [ILE] IL ACL TOP Series |
| 70.65 ± 1.94 | 25.85 ± 0.63 | 47.99 ± 1.15 | 70.80 ± 2.11 | 30.38 ± 0.88 | n = 32 | [SYW] Sysmex CA500/CA600 series |
| 73.06 ± 2.27 | 26.70 ± 0.70 | 50.25 ± 1.03 | 73.34 ± 2.11 | 31.41 ± 1.06 | n = 47 | [SYX] Sysmex CA 1500 |
| 72.21 ± 2.47 | 26.51 ± 0.71 | 49.25 ± 1.07 | 71.97 ± 2.06 | 30.99 ± 1.27 | n = 16 | [SYY] Sysmex CA 7000 |
| <Reagents> | | | | | | |
| 74.80 ± 2.83 | 29.66 ± 0.69 | 51.45 ± 1.78 | 74.76 ± 2.95 | 34.70 ± 0.90 | n = 40 | [AA2] Diagnostica Stago STA PTT-Auto |
| 76.06 ± 7.14 | 29.82 ± 0.27 | 52.61 ± 1.18 | 75.47 ± 0.23 | 34.33 ± 0.54 | n = 6 | [AA3] Diagnostica Stago PTT-LA |
| 127.45 ± 8.50 | 25.96 ± 1.43 | 79.78 ± 2.89 | 127.11 ± 8.14 | 29.62 ± 1.61 | n = 4 | [AD3] Siemens Actin FS |
| 71.43 ± 2.96 | 26.22 ± 0.88 | 49.00 ± 1.74 | 71.67 ± 2.89 | 30.67 ± 1.62 | n = 107 | [AD4] Siemens Actin FSL |
| 72.47 ± 3.77 | 27.22 ± 1.13 | 48.33 ± 1.36 | 72.69 ± 4.27 | 32.58 ± 1.80 | n = 12 | [AJ3] HemosIL Test APTT-SP |
| 90.25 ± 2.97 | 32.94 ± 1.22 | 61.12 ± 1.59 | 90.85 ± 2.69 | 33.91 ± 1.17 | n = 128 | [AO4] HemosIL SynthASil |
| <Reagent & Instrument> | | | | | | |
| 76.05 ± 2.06 | 29.77 ± 0.77 | 52.41 ± 1.50 | 76.17 ± 2.44 | 34.95 ± 0.96 | n = 23 | [AA2]&[DGC] Diagnostica St & Diagnostic |
| 72.54 ± 1.73 | 29.43 ± 0.50 | 50.25 ± 0.75 | 72.90 ± 1.43 | 34.32 ± 0.62 | n = 15 | [AA2]&[DGD] Diagnostica St & Diagnostic |
| 76.23 ± 1.19 | 29.81 ± 0.27 | 52.60 ± 1.18 | 75.47 ± 0.23 | 34.33 ± 0.54 | n = 5 | [AA3]&[DGC] Diagnostica St & Diagnostic |
| 130.72 ± 7.63 | 26.59 ± 0.83 | 80.91 ± 1.73 | 130.22 ± 7.34 | 30.25 ± 0.36 | n = 3 | [AD3]&[SYX] Siemens Actin & Sysmex CA |
| 67.40 ± 2.17 | 25.15 ± 0.65 | 47.04 ± 1.36 | 67.65 ± 2.37 | 27.64 ± 0.78 | n = 17 | [AD4]&[BEB] Siemens Actin & Siemens BC |
| 70.68 ± 1.99 | 25.87 ± 0.62 | 47.96 ± 1.22 | 70.87 ± 2.10 | 30.45 ± 0.86 | n = 30 | [AD4]&[SYW] Siemens Actin & Sysmex CA5 |
| 73.06 ± 2.27 | 26.70 ± 0.69 | 50.25 ± 1.03 | 73.34 ± 2.11 | 31.51 ± 1.03 | n = 44 | [AD4]&[SYX] Siemens Actin & Sysmex CA |
| 72.21 ± 2.47 | 26.51 ± 0.71 | 49.25 ± 1.07 | 71.97 ± 2.06 | 30.99 ± 1.27 | n = 16 | [AD4]&[SYY] Siemens Actin & Sysmex CA |
| 72.66 ± 6.43 | 27.44 ± 1.31 | 47.90 ± 1.15 | 74.25 ± 6.20 | 32.85 ± 2.16 | n = 6 | [AJ3]&[ILA] HemosIL Test A & IL ACL(All |
| 73.18 ± 1.86 | 27.70 ± 0.91 | 49.53 ± 1.76 | 72.80 ± 1.89 | 32.93 ± 0.05 | n = 3 | [AJ3]&[ILD] HemosIL Test A & IL ACL(ELI |
| 91.24 ± 1.98 | 31.22 ± 0.86 | 62.15 ± 0.81 | 93.66 ± 0.71 | 31.98 ± 0.86 | n = 3 | [AO4]&[ILA] HemosIL SynthA & IL ACL(All |
| 93.97 ± 2.72 | 32.32 ± 0.92 | 62.33 ± 0.77 | 92.88 ± 1.31 | 33.41 ± 0.41 | n = 8 | [AO4]&[ILC] HemosIL SynthA & IL ACL Fut |
| 93.94 ± 2.58 | 30.84 ± 0.88 | 62.99 ± 1.34 | 94.15 ± 2.11 | 31.59 ± 0.81 | n = 20 | [AO4]&[ILD] HemosIL SynthA & IL ACL(ELI |
| 89.25 ± 2.08 | 33.29 ± 0.83 | 60.61 ± 1.30 | 89.94 ± 2.08 | 34.25 ± 0.75 | n = 96 | [AO4]&[ILE] HemosIL SynthA & IL ACL TOP |

Summary of Participant Responses

Mean ± One Standard Deviation

Fibrinogen (mg/dL)

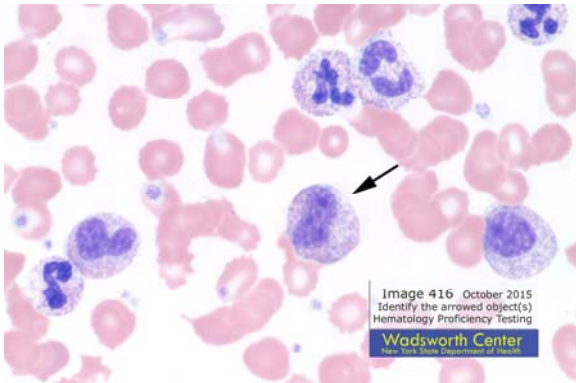
| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number | [Code] Instrument or Reagent System |
|---|---------------|---------------|---------------|---------------|---------|---|
| 284.9 ± 21.18 | 307.3 ± 22.79 | 288.7 ± 23.10 | 282.4 ± 22.87 | 523.6 ± 85.27 | n = 206 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 307.0 ± 22.80 | 315.6 ± 17.68 | 318.4 ± 17.60 | 308.2 ± 17.77 | 512.6 ± 37.01 | n = 19 | [BEB] Siemens BCS,BCSXP |
| 288.1 ± 13.96 | 312.6 ± 16.15 | 291.6 ± 14.24 | 284.2 ± 14.66 | 552.7 ± 27.90 | n = 27 | [DGC] Diagnostica Stago STA Compact |
| 278.6 ± 8.21 | 301.0 ± 8.69 | 283.3 ± 11.11 | 275.9 ± 7.63 | 550.3 ± 22.33 | n = 16 | [DGD] Diagnostica Stago STA-R,STA-R Evo |
| 392.5 ± 27.18 | 276.0 ± 27.83 | 366.0 ± 31.83 | 387.9 ± 27.69 | 447.3 ± 35.89 | n = 4 | [ILC] IL ACL Futura/Advance |
| 302.1 ± 12.80 | 347.2 ± 16.14 | 302.1 ± 2.06 | 301.8 ± 8.32 | 678.6 ± 34.66 | n = 6 | [ILD] IL ACL(ELITE,ELITE PRO,8/9/10000) |
| 293.2 ± 16.02 | 317.4 ± 16.68 | 295.1 ± 15.95 | 290.4 ± 18.73 | 574.0 ± 97.44 | n = 78 | [ILE] IL ACL TOP Series |
| 269.9 ± 13.93 | 296.7 ± 12.41 | 272.5 ± 13.18 | 270.7 ± 23.36 | 431.6 ± 68.25 | n = 4 | [SYW] Sysmex CA500/CA600 series |
| 264.5 ± 13.13 | 284.2 ± 13.49 | 263.2 ± 13.47 | 259.7 ± 12.61 | 433.9 ± 23.63 | n = 33 | [SYX] Sysmex CA 1500 |
| 262.0 ± 14.55 | 283.2 ± 13.19 | 268.4 ± 12.79 | 264.8 ± 10.14 | 461.8 ± 18.13 | n = 14 | [SYY] Sysmex CA 7000 |
| <Reagents> | | | | | | |
| 372.2 ± 38.92 | 334.6 ± 26.08 | 370.2 ± 35.91 | 365.0 ± 46.99 | 511.1 ± 84.43 | n = 6 | [TJ2] HemosIL PT-Fibrinogen |
| 293.3 ± 9.43 | 321.0 ± 9.30 | 300.4 ± 11.16 | 292.1 ± 12.24 | 488.8 ± 22.92 | n = 37 | [TJ8] HemosIL RecombiPlasTin 2G |
| 283.8 ± 12.55 | 307.5 ± 14.70 | 288.5 ± 13.96 | 280.1 ± 12.20 | 551.5 ± 25.66 | n = 43 | [FA4] Stago STA-Fibrinogen 5 |
| 312.1 ± 17.50 | 318.0 ± 17.73 | 321.9 ± 14.09 | 312.4 ± 13.84 | 520.9 ± 28.71 | n = 16 | [FB2] Siemens Multifibren U |
| 264.5 ± 13.45 | 285.4 ± 14.03 | 266.0 ± 14.02 | 262.7 ± 13.60 | 443.6 ± 32.96 | n = 53 | [FD2] Siemens Fibrinogen Determination |
| 301.9 ± 15.31 | 327.1 ± 26.31 | 301.3 ± 13.81 | 301.4 ± 15.91 | 661.6 ± 61.76 | n = 21 | [FJ2] HemosIL Fibrinogen C,XL |
| 288.1 ± 20.31 | 311.1 ± 20.20 | 283.7 ± 17.93 | 279.0 ± 22.06 | 645.1 ± 46.14 | n = 26 | [FO3] HemosIL QFA(bovine) |
| <Reagent & Instrument> | | | | | | |
| 400.7 ± 32.14 | 265.5 ± 10.41 | 353.5 ± 28.02 | 395.3 ± 34.13 | 431.6 ± 14.73 | n = 3 | [TJ8]&[ILC] HemosIL Recomb & IL ACL Fut |
| 293.3 ± 9.42 | 321.1 ± 9.08 | 299.8 ± 10.16 | 292.1 ± 12.19 | 491.5 ± 19.05 | n = 34 | [TJ8]&[ILE] HemosIL Recomb & IL ACL TOP |
| 288.1 ± 13.96 | 312.6 ± 16.15 | 291.6 ± 14.24 | 284.2 ± 14.66 | 552.7 ± 27.90 | n = 27 | [FA4]&[DGC] Stago STA-Fibr & Diagnostic |
| 278.6 ± 8.21 | 301.0 ± 8.69 | 283.3 ± 11.11 | 275.9 ± 7.63 | 550.3 ± 22.33 | n = 16 | [FA4]&[DGD] Stago STA-Fibr & Diagnostic |
| 312.1 ± 17.50 | 318.0 ± 17.73 | 321.9 ± 14.09 | 312.4 ± 13.84 | 520.9 ± 28.71 | n = 16 | [FB2]&[BEB] Siemens Multif & Siemens BC |
| 277.2 ± 11.36 | 304.2 ± 12.77 | 291.6 ± 17.99 | 282.2 ± 9.88 | 451.5 ± 39.30 | n = 3 | [FD2]&[BEB] Siemens Fibrin & Siemens BC |
| 269.9 ± 13.93 | 296.7 ± 12.41 | 272.5 ± 13.18 | 270.7 ± 23.36 | 431.6 ± 68.25 | n = 4 | [FD2]&[SYW] Siemens Fibrin & Sysmex CA5 |
| 263.8 ± 12.39 | 283.6 ± 12.62 | 262.6 ± 12.44 | 259.4 ± 11.81 | 433.3 ± 24.02 | n = 32 | [FD2]&[SYX] Siemens Fibrin & Sysmex CA |
| 262.0 ± 14.55 | 283.2 ± 13.19 | 268.4 ± 12.79 | 264.8 ± 10.14 | 461.8 ± 18.13 | n = 14 | [FD2]&[SYY] Siemens Fibrin & Sysmex CA |
| 302.1 ± 12.75 | 342.6 ± 13.89 | 302.1 ± 2.04 | 301.9 ± 8.30 | 678.6 ± 34.59 | n = 5 | [FJ2]&[ILD] HemosIL Fibrin & IL ACL(ELI |
| 302.0 ± 16.13 | 320.5 ± 26.48 | 299.1 ± 15.44 | 301.1 ± 18.66 | 653.0 ± 68.42 | n = 16 | [FJ2]&[ILE] HemosIL Fibrin & IL ACL TOP |
| 288.1 ± 20.31 | 311.1 ± 20.20 | 283.7 ± 17.93 | 279.0 ± 22.06 | 645.1 ± 46.14 | n = 26 | [FO3]&[ILE] HemosIL QFA(bo & IL ACL TOP |

NEW YORK STATE HEMATOLOGY PROFICIENCY TEST PROGRAM

Test event of October 6, 2015

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.

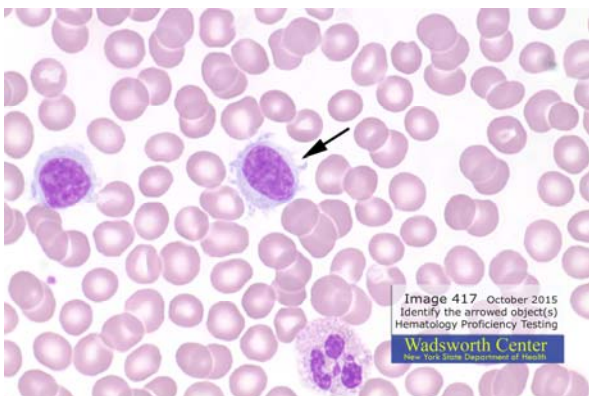
Image 416



| Number of Responses | Percent of Laboratories | Cell type or finding |
|---------------------|-------------------------|--|
| 338 | 96.0% | Metamyelocyte |
| 9 | 2.6% | Myelocyte |
| 2 | 0.6% | Promyelocyte |
| 2 | 0.6% | Segmented/band neutrophil with toxic granulation |
| 1 | 0.3% | Monocyte |

The arrowed white blood cell in Image 416 is composed of granular cytoplasm and an elongated, slightly indented nucleus. The cell is best described as a metamyelocyte as 338 participants reported. The image was obtained from the peripheral blood smear of an 84-year old male with a preliminary diagnosis of unexplained leukocytosis; the white blood cell count in this case was 63.2 K/uL and the differential included immature white blood cells. Image 416 was taken from the same case of leukocytosis used in the November 2013 New York State Cytohematology glass slide proficiency test challenge (Slide 003) where the participant range for metamyelocyte was 0 – 5 cells/100. <http://www.wadsworth.org/chemheme/heme/glass/1311cytofull.pdf>

Image 417

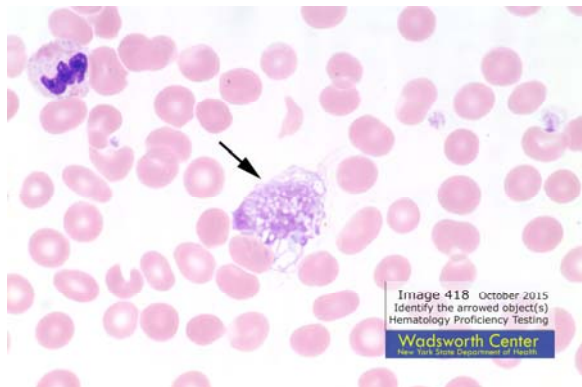


| Number of Responses | Percent of Laboratories | Cell type or finding |
|---------------------|-------------------------|------------------------------|
| 319 | 90.6% | Hairy cell |
| 16 | 4.5% | Reactive/Atypical lymphocyte |
| 12 | 3.4% | Normal lymphocyte |
| 3 | 0.9% | Monocyte |
| 2 | 0.6% | Myelocyte |

The arrowed white blood cell in Image 417 possesses a large, oval nucleus and ample, moderately basophilic, cytoplasm with irregular projections. The cell is best described as a hairy cell as correctly reported by 319 participants. The image was obtained from the peripheral blood smear of an individual diagnosed with Hairy Cell Leukemia Variant (HCL-v). "Circulating HCL-v cells are readily apparent on the PB smear; commonly these cells exhibit the hybrid features of prolymphocytic leukaemia and classic HCL, although several other morphologic subtypes (blastic, convoluted) have also been described. Nuclear features range from condensed chromatin with prominent central nucleoli of a prolymphocytic cell to dispersed chromatin with highly irregular nuclear contours. Cytoplasmic features are similarly variable, although some degree of hairy projections is typically noted".

Swerdlow S.H., Campo E., Harris N.L., Jaffe E.S., Pileri S.A., Stein H., Thiele J., Vardiman J.W. WHO Classification of Tumours of Haematopoietic and Lymphoid Tissues. IARC: Lyon, 2008. p.193

Image 418

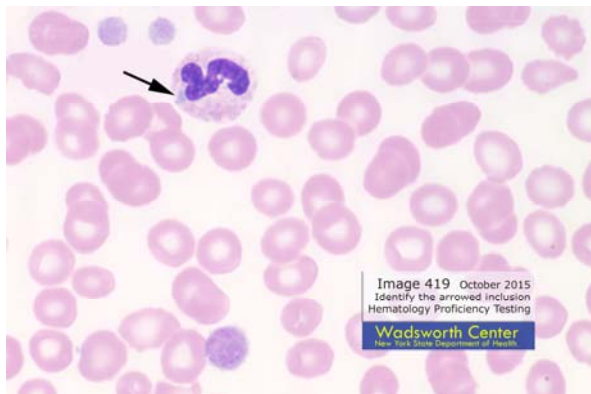


| Number of Responses | Percent of Laboratories | Cell type or finding |
|---------------------|-------------------------|--------------------------|
| 347 | 98.6% | Smudge cell/ Basket cell |
| 5 | 1.4% | Stain precipitate |

The arrowed object in Image 418 has an irregular shape with no distinct cellular features. The object possesses remnants of nuclear chromatin supporting the identification of the object as a smudge or basket cell as 98.6% of participants concur. Smudge or basket cells are not always an artifact of smear preparation, they are often lymphocytes that are damaged during smear preparation. Research suggests that cell damage during mechanical preparation of the smear is indirectly related to the cellular content of the cytoskeletal protein vimentin, present in leukemic cells.

Nowakowski, G.S., et al. Percentage of Smudge Cells on Routine Blood Smear Predicts Survival in Chronic Lymphocytic Leukemia. *J Clin Oncol.* 2009;27: 1844–9.

Image 419

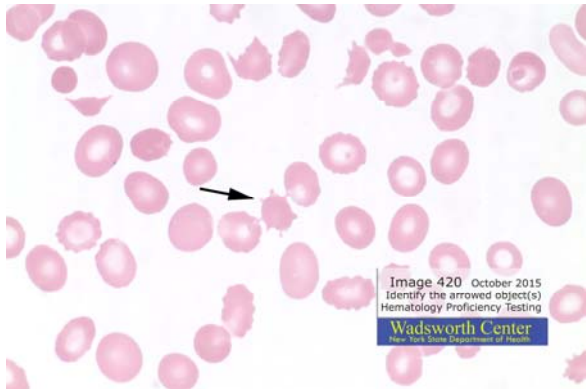


| Number of Responses | Percent of Laboratories | Cell type or finding |
|---------------------|-------------------------|----------------------|
| 347 | 98.6% | Döhle body |
| 4 | 1.1% | Segmented neutrophil |
| 1 | 0.3% | Acanthocyte |

The arrowed finding in Image 419 is oval, blue-gray, and is located in the peripheral cytoplasm of the neutrophil. The arrowed inclusion is best described as a Döhle body as correctly identified by 347 participating laboratories. Döhle bodies are thought to be remnants of the rough endoplasmic reticulum.

The image was obtained from the peripheral blood smear of an 86 year-old male diagnosed with thrombocytopenia associated with May-Hegglin Anomaly. An autosomal dominant disorder, May-Hegglin Anomaly is described by the presence of large, poorly granulated but functional platelets (shown in Image 419) and Döhle bodies. Döhle bodies are also observed in toxic conditions, the distinct differences between the Döhle bodies of May-Hegglin Anomaly and those of toxic conditions are that the Döhle bodies of May-Hegglin Anomaly are larger (2-5µm), are randomly distributed about the cell and involve all mature granulocytes, monocytes, and lymphocytes, whereas, the Döhle bodies of toxic conditions are smaller in size (1-2µm), are usually located on the periphery of the cell and are observed only in neutrophils.

Image 420



| Number of Responses | Percent of Laboratories | Cell type or finding |
|---------------------|-------------------------|---|
| 291 | 82.7% | Acanthocyte |
| 60 | 17.0% | Echinocyte (crenated cell) or burr cell |
| 1 | 0.3% | Döhle body |

The arrowed red blood cell in Image 420, in comparison to a normal red blood cell, is smaller in size, lacks central pallor and has irregular shaped and unevenly distributed cell membrane projections. The cell is best described as an acanthocyte as reported by 83% of the participating laboratories and 89% of the referee laboratories. The image was obtained from the peripheral blood smear of an individual diagnosed with anemia due to renal failure. Anemia is often present in renal failure due in part to the kidneys decreased ability to produce erythropoietin, a hormone that stimulates the bone marrow to produce red blood cells.

Sixty participants identified the arrowed cell in Image 420 as an echinocyte. An echinocyte is a red blood cell possessing central pallor with evenly distributed, short blunt cell membrane projections. The characteristics of the red blood cell in Image 379 (below), taken from the June 2013 proficiency test, include the aforementioned characteristics of an echinocyte, in contrast, the cell in Image 420 lacks an area of central pallor and has irregularly spaced cell membrane projections of differing size and shape. Ninety-nine percent of the participants, from the June 2013 proficiency test challenge, identified the red blood cell in Image 379 as an echinocyte. <http://www.wadsworth.org/chemheme/heme/cytoheme/ans379.htm>

