

To: Laboratory Directors and Laboratory Staff
From: Robert Rej, Ph.D.
Date: July 8, 2011
Subject: Results of the June 6, 2011 Hematology Proficiency Test

Enclosed are results from the hematology proficiency testing survey shipped June 6, 2011. Five samples were distributed for each test category:

Routine Blood Counts (B46, B47, B48, B49, B50)

Routine Coagulation (C46, C47, C48, C49, C50 - APTT, PT/INR and Fibrinogen assays)

Cell Identification (346, 347, 348, 349, 350)

Evaluation of Proficiency Test Results:

Note: This report includes evaluation of the International Normalized Ratio (INR).

Outlined below is a description of the process used to evaluate your laboratory's proficiency test results. A summary of your laboratory's performance for the three most recent surveys is also included with this report.

Target Value: When possible, targets utilized are derived from all-participant mean values calculated by a robust statistical technique. In some cases, however, it is recognized that reagent, and/or instrument specific targets may be required and "peer group" specific targets are used where appropriate. An asterisk placed adjacent to the manufacturer name or instrument name indicates that a peer group was used in establishing targets and acceptable ranges.

Not Gradable: Results for graded analytes for a few laboratories using unique instrument, reagent, or instrument/reagent combinations were considered "not gradable". For these laboratories pass credit (100%) has been issued. Since the laboratory is unable to participate in the NYS hematology proficiency test event as a graded participant, it is the responsibility of the laboratory to establish alternate means to verify the accuracy and precision of the test system for any ungraded analyte(s).

Acceptable Range: Represents limits established using criteria specified by CLIA '88 regulations, allowing for rounding to appropriate significant digits. Results falling within this range are scored as 100%. Any result exceeding these limits is considered unsatisfactory and receives a score of 0%.

Range Plots: The range plots graphically represent the relative distance of all results reported by your laboratory from the target value. Any result exceeding the high or low limit by >20% of the acceptable range is indicated by an asterisk (*).

Analyte Score: Scores for both individual samples and overall analyte performance are provided. Laboratories must achieve an overall analyte score >80% in order to meet performance criteria for that analyte.

Statistical Summary: Also enclosed is a statistical summary of participant data for the survey specimens. Mean and standard deviation (1 SD) values shown on the attached sheets are calculated by a robust statistical technique that does not assume a Gaussian distribution. Please note that standard deviation values are not used to determine acceptable ranges; CLIA '88 regulations established percentage limits for cellular and coagulation analytes.

Cellular Hematology (CBC): Results for individual instruments, where the number of laboratories using those systems is three or greater, are provided.

Coagulation: Results for individual instrument and reagent systems as well as instrument/reagent combinations, where the number of laboratories using those systems is three or greater, are provided.

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.

So that this analysis can be as complete as possible, please review all future testings carefully and properly identify reagent and instrument systems used.

If you have any questions regarding these reports or wish to obtain an additional copy, please contact the Hematology Laboratory at (518) 474-9878. You may also contact us by E-mail: heme@wadsworth.org

World Wide Web: Results from this proficiency test event and selected previous proficiency test events are available on the Hematology and Clinical Chemistry web page at: <http://www.wadsworth.org/chemheme>

Summary of Participant Responses

Mean ± One Standard Deviation

White Cell Count (x 10⁹/L)

| Specimen: B46 | Specimen: B47 | Specimen: B48 | Specimen: B49 | Specimen: B50 | Number | [Code] Instrument |
|----------------------------|---------------|---------------|---------------|---------------|---------|-----------------------------------|
| 2.05 ± 0.12 | 16.37 ± 0.75 | 9.54 ± 0.33 | 3.13 ± 0.19 | 4.08 ± 0.17 | n = 397 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 2.14 ± 0.35 | 16.13 ± 0.23 | 9.61 ± 0.24 | 3.10 ± 0.08 | 4.00 ± 0.08 | n = 4 | [ABF] Abbott Cell Dyn 3500 |
| 2.10 ± 0.09 | 15.74 ± 0.62 | 9.34 ± 0.26 | 3.22 ± 0.24 | 3.97 ± 0.05 | n = 3 | [ABG] Abbott Cell Dyn 1700 |
| 2.10 ± 0.09 | 16.45 ± 0.45 | 9.57 ± 0.23 | 3.37 ± 0.14 | 4.00 ± 0.09 | n = 3 | [ABJ] Abbott Cell Dyn 1800 |
| 1.99 ± 0.07 | 16.17 ± 0.63 | 9.64 ± 0.37 | 3.18 ± 0.13 | 4.12 ± 0.21 | n = 11 | [ABK] Abbott Cell Dyn 3200 |
| 2.06 ± 0.06 | 16.47 ± 0.36 | 9.59 ± 0.20 | 3.11 ± 0.09 | 4.05 ± 0.13 | n = 12 | [ABM] Abbott Cell Dyn 3700 |
| 2.04 ± 0.06 | 16.56 ± 0.49 | 9.65 ± 0.23 | 3.11 ± 0.10 | 4.07 ± 0.13 | n = 14 | [ABS] Abbott Cell Dyn Sapphire |
| 2.00 ± 0.10 | 16.26 ± 0.37 | 9.56 ± 0.17 | 3.16 ± 0.11 | 4.03 ± 0.13 | n = 18 | [ABT] Abbott Cell Dyn Ruby |
| 1.94 ± 0.08 | 16.22 ± 0.87 | 9.43 ± 0.36 | 2.96 ± 0.17 | 3.86 ± 0.10 | n = 23 | [BTD] Siemens (Bayer)Advia 120 |
| 1.91 ± 0.09 | 16.12 ± 0.48 | 9.17 ± 0.29 | 2.86 ± 0.18 | 3.84 ± 0.20 | n = 21 | [BTE] Siemens (Bayer)Advia 2120 |
| 2.09 ± 0.06 | 16.73 ± 0.38 | 9.52 ± 0.26 | 3.17 ± 0.07 | 4.22 ± 0.10 | n = 8 | [CUL] Coulter UniCel DxH 800 |
| 1.97 ± 0.05 | 16.48 ± 0.24 | 9.37 ± 0.22 | 3.05 ± 0.08 | 4.01 ± 0.11 | n = 6 | [CUS] Coulter ACT 5 diff |
| 2.17 ± 0.07 | 16.88 ± 0.30 | 9.57 ± 0.20 | 3.39 ± 0.12 | 4.20 ± 0.10 | n = 24 | [CUT] Coulter ACT series,not ACT5 |
| 2.18 ± 0.04 | 17.97 ± 0.45 | 9.79 ± 0.27 | 3.73 ± 0.11 | 4.27 ± 0.06 | n = 11 | [CUW] Coulter HMX |
| 2.09 ± 0.09 | 16.15 ± 0.51 | 9.65 ± 0.21 | 3.09 ± 0.09 | 4.12 ± 0.09 | n = 76 | [CUX] Coulter LH750,755 |
| 2.11 ± 0.09 | 16.03 ± 0.52 | 9.68 ± 0.13 | 3.07 ± 0.07 | 4.12 ± 0.08 | n = 19 | [CUY] Coulter LH 780 |
| 2.18 ± 0.09 | 17.49 ± 0.36 | 9.72 ± 0.19 | 3.75 ± 0.18 | 4.27 ± 0.12 | n = 22 | [CUZ] Coulter LH500 |
| 2.00 ± 0.08 | 16.59 ± 0.36 | 9.55 ± 0.22 | 3.10 ± 0.00 | 4.04 ± 0.14 | n = 8 | [ROB] ABX Pentra series |
| 2.00 ± 0.09 | 15.80 ± 0.72 | 9.40 ± 0.18 | 3.43 ± 0.14 | 4.03 ± 0.05 | n = 3 | [ROC] ABX Micro |
| 1.94 ± 0.10 | 15.96 ± 0.26 | 9.10 ± 0.18 | 3.07 ± 0.14 | 3.84 ± 0.10 | n = 3 | [SYB] Sysmex KX-21N |
| 1.96 ± 0.10 | 15.57 ± 0.52 | 9.11 ± 0.33 | 3.06 ± 0.11 | 3.96 ± 0.14 | n = 27 | [SYO] Sysmex XE2100 |
| 2.01 ± 0.10 | 15.52 ± 0.28 | 9.11 ± 0.18 | 3.08 ± 0.07 | 3.95 ± 0.11 | n = 7 | [SYQ] Sysmex XE 2100D |
| 1.93 ± 0.09 | 15.76 ± 0.75 | 9.19 ± 0.32 | 3.08 ± 0.12 | 4.01 ± 0.19 | n = 19 | [SYA] Sysmex XE 5000 |
| 1.99 ± 0.05 | 16.50 ± 0.49 | 9.55 ± 0.25 | 3.07 ± 0.10 | 4.06 ± 0.10 | n = 24 | [SYI] Sysmex XT-1800i,XT-2000i |
| 2.00 ± 0.00 | 16.63 ± 0.37 | 9.65 ± 0.08 | 3.06 ± 0.06 | 4.06 ± 0.06 | n = 5 | [SYV] Sysmex XT 4000i |
| 2.10 ± 0.00 | 17.12 ± 0.41 | 10.03 ± 0.20 | 3.23 ± 0.07 | 4.20 ± 0.09 | n = 13 | [SYP] Sysmex XS-1000i,XS-1000iAL |

Summary of Participant Responses

Mean ± One Standard Deviation

Red Cell Count (x 10¹²/L)

| Specimen: B46 | Specimen: B47 | Specimen: B48 | Specimen: B49 | Specimen: B50 | Number | [Code] Instrument |
|----------------------------|---------------|---------------|---------------|---------------|---------|-----------------------------------|
| 3.457 ± 0.093 | 4.997 ± 0.105 | 4.604 ± 0.100 | 2.035 ± 0.062 | 3.010 ± 0.086 | n = 396 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 3.510 ± 0.053 | 5.077 ± 0.065 | 4.702 ± 0.047 | 2.075 ± 0.042 | 3.103 ± 0.043 | n = 4 | [ABF] Abbott Cell Dyn 3500 |
| 3.500 ± 0.064 | 5.152 ± 0.024 | 4.782 ± 0.051 | 2.053 ± 0.067 | 2.967 ± 0.050 | n = 3 | [ABG] Abbott Cell Dyn 1700 |
| 3.553 ± 0.050 | 5.035 ± 0.027 | 4.603 ± 0.068 | 2.167 ± 0.032 | 3.060 ± 0.046 | n = 3 | [ABJ] Abbott Cell Dyn 1800 |
| 3.519 ± 0.073 | 5.098 ± 0.072 | 4.673 ± 0.093 | 2.079 ± 0.028 | 3.092 ± 0.075 | n = 11 | [ABK] Abbott Cell Dyn 3200 |
| 3.514 ± 0.049 | 5.066 ± 0.050 | 4.662 ± 0.062 | 2.076 ± 0.040 | 3.061 ± 0.050 | n = 12 | [ABM] Abbott Cell Dyn 3700 |
| 3.529 ± 0.060 | 5.140 ± 0.092 | 4.712 ± 0.074 | 2.065 ± 0.034 | 3.074 ± 0.062 | n = 14 | [ABS] Abbott Cell Dyn Sapphire |
| 3.496 ± 0.053 | 5.128 ± 0.106 | 4.672 ± 0.105 | 2.056 ± 0.044 | 3.019 ± 0.059 | n = 18 | [ABT] Abbott Cell Dyn Ruby |
| 3.496 ± 0.085 | 5.012 ± 0.124 | 4.606 ± 0.076 | 2.102 ± 0.046 | 3.044 ± 0.078 | n = 23 | [BTD] Siemens (Bayer)Advia 120 |
| 3.492 ± 0.072 | 5.046 ± 0.076 | 4.632 ± 0.106 | 2.112 ± 0.046 | 3.061 ± 0.066 | n = 21 | [BTE] Siemens (Bayer)Advia 2120 |
| 3.390 ± 0.036 | 4.846 ± 0.050 | 4.467 ± 0.034 | 1.966 ± 0.025 | 2.927 ± 0.038 | n = 8 | [CUL] Coulter UniCel DxH 800 |
| 3.440 ± 0.072 | 5.066 ± 0.081 | 4.655 ± 0.083 | 2.052 ± 0.056 | 3.013 ± 0.062 | n = 6 | [CUS] Coulter ACT 5 diff |
| 3.378 ± 0.065 | 4.943 ± 0.084 | 4.551 ± 0.081 | 1.997 ± 0.037 | 2.954 ± 0.063 | n = 23 | [CUT] Coulter ACT series,not ACT5 |
| 3.434 ± 0.070 | 5.004 ± 0.054 | 4.564 ± 0.066 | 2.004 ± 0.026 | 2.980 ± 0.057 | n = 11 | [CUW] Coulter HMX |
| 3.372 ± 0.034 | 4.906 ± 0.053 | 4.529 ± 0.044 | 1.981 ± 0.021 | 2.933 ± 0.029 | n = 76 | [CUX] Coulter LH750,755 |
| 3.373 ± 0.043 | 4.895 ± 0.052 | 4.521 ± 0.049 | 1.980 ± 0.020 | 2.932 ± 0.033 | n = 19 | [CUY] Coulter LH 780 |
| 3.458 ± 0.058 | 4.960 ± 0.068 | 4.533 ± 0.051 | 2.010 ± 0.028 | 2.982 ± 0.044 | n = 22 | [CUZ] Coulter LH500 |
| 3.429 ± 0.044 | 5.014 ± 0.053 | 4.596 ± 0.061 | 2.027 ± 0.066 | 2.980 ± 0.062 | n = 8 | [ROB] ABX Pentra series |
| 3.319 ± 0.210 | 4.845 ± 0.282 | 4.567 ± 0.106 | 1.983 ± 0.014 | 2.918 ± 0.086 | n = 3 | [ROC] ABX Micro |
| 3.458 ± 0.050 | 5.047 ± 0.041 | 4.637 ± 0.059 | 2.055 ± 0.046 | 3.044 ± 0.010 | n = 3 | [SYB] Sysmex KX-21N |
| 3.561 ± 0.033 | 5.033 ± 0.057 | 4.676 ± 0.049 | 2.097 ± 0.021 | 3.109 ± 0.032 | n = 27 | [SYO] Sysmex XE2100 |
| 3.592 ± 0.019 | 5.040 ± 0.031 | 4.710 ± 0.029 | 2.097 ± 0.013 | 3.129 ± 0.018 | n = 7 | [SYQ] Sysmex XE 2100D |
| 3.551 ± 0.047 | 5.007 ± 0.038 | 4.683 ± 0.037 | 2.080 ± 0.024 | 3.099 ± 0.036 | n = 19 | [SYA] Sysmex XE 5000 |
| 3.483 ± 0.029 | 5.018 ± 0.050 | 4.634 ± 0.051 | 2.037 ± 0.024 | 3.045 ± 0.040 | n = 24 | [SYI] Sysmex XT-1800i,XT-2000i |
| 3.588 ± 0.069 | 5.075 ± 0.092 | 4.737 ± 0.089 | 2.074 ± 0.048 | 3.079 ± 0.048 | n = 5 | [SYV] Sysmex XT 4000i |
| 3.463 ± 0.040 | 5.112 ± 0.060 | 4.681 ± 0.044 | 2.014 ± 0.025 | 2.998 ± 0.019 | n = 13 | [SYP] Sysmex XS-1000i,XS-1000iAL |

Summary of Participant Responses

Mean ± One Standard Deviation

Hemoglobin (g/dL)

| Specimen: B46 | Specimen: B47 | Specimen: B48 | Specimen: B49 | Specimen: B50 | Number | [Code] Instrument |
|----------------------------|---------------|---------------|---------------|---------------|---------|-----------------------------------|
| ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 10.52 ± 0.19 | 15.24 ± 0.29 | 13.75 ± 0.21 | 6.12 ± 0.17 | 8.95 ± 0.16 | n = 411 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 12.63 ± 0.05 | 18.68 ± 0.24 | 17.50 ± 0.64 | < 10.50 | 11.07 ± 0.05 | n = 3 | [HQB] HemoCue Donor Hb Checker |
| 10.72 ± 0.13 | 15.36 ± 0.30 | 13.93 ± 0.28 | 6.19 ± 0.14 | 9.10 ± 0.13 | n = 8 | [HQC] HemoCue Hb201+/B-Hb |
| 13.83 ± 0.23 | 20.60 ± 0.27 | 18.97 ± 0.34 | 7.59 ± 0.20 | 11.68 ± 0.15 | n = 3 | [HQD] HemoCue Hb 301 |
| 10.41 ± 0.20 | 15.46 ± 0.46 | 13.86 ± 0.38 | 6.25 ± 0.12 | 9.04 ± 0.19 | n = 4 | [ABF] Abbott Cell Dyn 3500 |
| 10.33 ± 0.23 | 15.37 ± 0.23 | 13.91 ± 0.20 | 6.07 ± 0.32 | 8.73 ± 0.23 | n = 3 | [ABG] Abbott Cell Dyn 1700 |
| 10.33 ± 0.31 | 15.53 ± 0.31 | 13.93 ± 0.14 | 6.22 ± 0.15 | 8.99 ± 0.20 | n = 3 | [ABJ] Abbott Cell Dyn 1800 |
| 10.74 ± 0.24 | 15.50 ± 0.31 | 13.88 ± 0.35 | 6.22 ± 0.22 | 9.13 ± 0.24 | n = 11 | [ABK] Abbott Cell Dyn 3200 |
| 10.53 ± 0.17 | 15.41 ± 0.20 | 13.79 ± 0.14 | 6.30 ± 0.11 | 9.02 ± 0.10 | n = 12 | [ABM] Abbott Cell Dyn 3700 |
| 10.84 ± 0.13 | 15.60 ± 0.22 | 14.08 ± 0.17 | 6.35 ± 0.10 | 9.20 ± 0.13 | n = 14 | [ABS] Abbott Cell Dyn Sapphire |
| 10.58 ± 0.20 | 15.60 ± 0.27 | 13.87 ± 0.25 | 6.19 ± 0.16 | 8.98 ± 0.19 | n = 18 | [ABT] Abbott Cell Dyn Ruby |
| 10.71 ± 0.17 | 15.30 ± 0.31 | 13.85 ± 0.24 | 6.26 ± 0.11 | 9.15 ± 0.16 | n = 22 | [BTD] Siemens (Bayer)Advia 120 |
| 10.66 ± 0.22 | 15.39 ± 0.30 | 13.74 ± 0.30 | 6.32 ± 0.14 | 9.08 ± 0.21 | n = 22 | [BTE] Siemens (Bayer)Advia 2120 |
| 10.53 ± 0.12 | 15.07 ± 0.19 | 13.58 ± 0.20 | 6.14 ± 0.07 | 8.93 ± 0.09 | n = 8 | [CUL] Coulter UniCel DxH 800 |
| 10.47 ± 0.17 | 15.29 ± 0.24 | 13.85 ± 0.25 | 6.12 ± 0.09 | 8.93 ± 0.18 | n = 6 | [CUS] Coulter ACT 5 diff |
| 10.38 ± 0.20 | 15.23 ± 0.27 | 13.71 ± 0.26 | 6.08 ± 0.12 | 8.91 ± 0.14 | n = 23 | [CUT] Coulter ACT series,not ACT5 |
| 10.63 ± 0.10 | 15.55 ± 0.10 | 13.86 ± 0.19 | 6.24 ± 0.08 | 9.04 ± 0.09 | n = 11 | [CUW] Coulter HMX |
| 10.44 ± 0.11 | 15.13 ± 0.18 | 13.68 ± 0.14 | 6.08 ± 0.11 | 8.86 ± 0.09 | n = 76 | [CUX] Coulter LH750,755 |
| 10.43 ± 0.09 | 15.14 ± 0.15 | 13.69 ± 0.16 | 6.07 ± 0.08 | 8.87 ± 0.09 | n = 19 | [CUY] Coulter LH 780 |
| 10.60 ± 0.17 | 15.42 ± 0.17 | 13.77 ± 0.11 | 6.25 ± 0.07 | 9.04 ± 0.13 | n = 22 | [CUZ] Coulter LH500 |
| 10.37 ± 0.12 | 15.27 ± 0.22 | 13.73 ± 0.15 | 5.97 ± 0.07 | 8.80 ± 0.10 | n = 8 | [ROB] ABX Pentra series |
| 10.07 ± 0.69 | 14.65 ± 0.91 | 13.65 ± 0.46 | 6.04 ± 0.10 | 8.82 ± 0.24 | n = 3 | [ROC] ABX Micro |
| 10.56 ± 0.10 | 15.16 ± 0.10 | 13.74 ± 0.10 | 6.13 ± 0.14 | 8.93 ± 0.23 | n = 3 | [SYB] Sysmex KX-21N |
| 10.50 ± 0.11 | 15.10 ± 0.21 | 13.69 ± 0.16 | 5.99 ± 0.07 | 8.91 ± 0.11 | n = 27 | [SYO] Sysmex XE2100 |
| 10.57 ± 0.07 | 15.12 ± 0.07 | 13.67 ± 0.12 | 6.04 ± 0.08 | 8.97 ± 0.10 | n = 6 | [SYQ] Sysmex XE 2100D |
| 10.41 ± 0.10 | 14.97 ± 0.14 | 13.62 ± 0.13 | 5.97 ± 0.05 | 8.87 ± 0.08 | n = 19 | [SYA] Sysmex XE 5000 |
| 10.54 ± 0.12 | 15.01 ± 0.19 | 13.69 ± 0.14 | 5.95 ± 0.07 | 8.89 ± 0.08 | n = 24 | [SYI] Sysmex XT-1800i,XT-2000i |
| 10.54 ± 0.06 | 14.93 ± 0.14 | 13.79 ± 0.13 | 5.94 ± 0.06 | 8.88 ± 0.08 | n = 5 | [SYV] Sysmex XT 4000i |
| 10.43 ± 0.13 | 15.34 ± 0.13 | 13.80 ± 0.11 | 5.97 ± 0.07 | 8.86 ± 0.08 | n = 13 | [SYP] Sysmex XS-1000i,XS-1000iAL |

Summary of Participant Responses

Mean ± One Standard Deviation

Hematocrit (%)

| Specimen: B46 | Specimen: B47 | Specimen: B48 | Specimen: B49 | Specimen: B50 | Number | [Code] Instrument |
|----------------------------|---------------|---------------|---------------|---------------|---------|-----------------------------------|
| 30.08 ± 1.55 | 42.51 ± 1.96 | 38.83 ± 1.72 | 17.27 ± 0.88 | 25.60 ± 1.34 | n = 402 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 28.33 ± 1.85 | 40.05 ± 2.29 | 36.87 ± 2.17 | 16.00 ± 0.00 | 23.69 ± 1.55 | n = 6 | [MHC] Microhematocrit |
| 30.62 ± 0.61 | 43.86 ± 0.68 | 40.12 ± 0.87 | 17.66 ± 0.28 | 26.47 ± 0.27 | n = 4 | [ABF] Abbott Cell Dyn 3500 |
| 30.95 ± 0.83 | 44.59 ± 0.37 | 41.13 ± 0.95 | 17.40 ± 0.64 | 25.68 ± 0.49 | n = 3 | [ABG] Abbott Cell Dyn 1700 |
| 32.04 ± 0.39 | 44.54 ± 0.71 | 40.19 ± 0.92 | 18.73 ± 0.32 | 26.80 ± 0.36 | n = 3 | [ABJ] Abbott Cell Dyn 1800 |
| 26.80 ± 0.92 | 38.44 ± 0.74 | 34.90 ± 0.82 | 15.50 ± 0.29 | 23.08 ± 0.53 | n = 11 | [ABK] Abbott Cell Dyn 3200 |
| 31.15 ± 0.50 | 44.40 ± 0.76 | 40.43 ± 0.66 | 17.95 ± 0.47 | 26.48 ± 0.56 | n = 12 | [ABM] Abbott Cell Dyn 3700 |
| 28.41 ± 0.44 | 40.71 ± 0.75 | 36.95 ± 0.64 | 16.22 ± 0.27 | 24.13 ± 0.50 | n = 14 | [ABS] Abbott Cell Dyn Sapphire |
| 26.24 ± 0.52 | 38.24 ± 0.88 | 34.56 ± 0.82 | 15.26 ± 0.38 | 22.31 ± 0.64 | n = 18 | [ABT] Abbott Cell Dyn Ruby |
| 26.89 ± 0.97 | 38.66 ± 1.19 | 35.15 ± 0.95 | 15.74 ± 0.48 | 22.80 ± 0.79 | n = 22 | [BTD] Siemens (Bayer)Advia 120 |
| 27.11 ± 0.66 | 38.98 ± 0.60 | 35.40 ± 0.93 | 16.01 ± 0.28 | 23.10 ± 0.53 | n = 22 | [BTE] Siemens (Bayer)Advia 2120 |
| 31.06 ± 0.47 | 43.80 ± 0.56 | 39.67 ± 0.41 | 17.75 ± 0.29 | 26.38 ± 0.53 | n = 8 | [CUL] Coulter UniCel DxH 800 |
| 28.71 ± 0.49 | 42.20 ± 0.43 | 38.12 ± 0.63 | 16.51 ± 0.20 | 24.54 ± 0.46 | n = 6 | [CUS] Coulter ACT 5 diff |
| 30.24 ± 0.62 | 43.42 ± 0.92 | 39.46 ± 0.79 | 17.40 ± 0.31 | 25.75 ± 0.58 | n = 23 | [CUT] Coulter ACT series,not ACT5 |
| 30.70 ± 0.60 | 43.92 ± 0.62 | 39.62 ± 0.62 | 17.43 ± 0.19 | 26.00 ± 0.51 | n = 11 | [CUW] Coulter HMX |
| 30.33 ± 0.30 | 43.53 ± 0.51 | 39.60 ± 0.45 | 17.37 ± 0.20 | 25.79 ± 0.29 | n = 75 | [CUX] Coulter LH750,755 |
| 30.32 ± 0.37 | 43.55 ± 0.55 | 39.63 ± 0.44 | 17.32 ± 0.22 | 25.76 ± 0.32 | n = 20 | [CUY] Coulter LH 780 |
| 30.83 ± 0.54 | 43.55 ± 0.61 | 39.29 ± 0.38 | 17.54 ± 0.29 | 26.01 ± 0.36 | n = 22 | [CUZ] Coulter LH500 |
| 28.85 ± 0.53 | 41.75 ± 0.83 | 37.90 ± 0.79 | 16.58 ± 0.38 | 24.49 ± 0.47 | n = 8 | [ROB] ABX Pentra series |
| 28.98 ± 1.58 | 41.57 ± 2.26 | 38.73 ± 0.67 | 16.73 ± 0.32 | 24.83 ± 0.41 | n = 3 | [ROC] ABX Micro |
| 28.80 ± 0.82 | 40.65 ± 0.81 | 37.09 ± 0.89 | 16.76 ± 0.56 | 24.83 ± 0.50 | n = 3 | [SYB] Sysmex KX-21N |
| 31.10 ± 0.32 | 42.67 ± 0.60 | 39.25 ± 0.48 | 18.01 ± 0.31 | 26.56 ± 0.38 | n = 27 | [SYO] Sysmex XE2100 |
| 31.34 ± 0.22 | 42.76 ± 0.57 | 39.60 ± 0.38 | 17.96 ± 0.15 | 26.78 ± 0.41 | n = 7 | [SYQ] Sysmex XE 2100D |
| 30.95 ± 0.56 | 42.48 ± 0.47 | 39.32 ± 0.53 | 17.86 ± 0.31 | 26.47 ± 0.37 | n = 19 | [SYA] Sysmex XE 5000 |
| 30.68 ± 0.36 | 42.03 ± 0.58 | 38.68 ± 0.59 | 17.99 ± 0.20 | 26.52 ± 0.39 | n = 24 | [SYI] Sysmex XT-1800i,XT-2000i |
| 31.56 ± 0.54 | 42.50 ± 0.66 | 39.65 ± 0.23 | 18.25 ± 0.46 | 26.73 ± 0.48 | n = 5 | [SYV] Sysmex XT 4000i |
| 30.40 ± 0.25 | 42.61 ± 0.62 | 38.92 ± 0.56 | 17.70 ± 0.28 | 25.99 ± 0.31 | n = 13 | [SYP] Sysmex XS-1000i,XS-1000iAL |

Summary of Participant Responses

Mean ± One Standard Deviation

Platelet Count (x 10⁹/L)

| Specimen: B46 | Specimen: B47 | Specimen: B48 | Specimen: B49 | Specimen: B50 | Number | [Code] Instrument |
|----------------------------|---------------|---------------|---------------|---------------|---------|-----------------------------------|
| 136.4 ± 12.69 | 537.3 ± 44.25 | 227.2 ± 18.87 | 431.9 ± 34.04 | 163.8 ± 14.85 | n = 397 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 149.1 ± 2.72 | 591.5 ± 21.93 | 250.4 ± 12.75 | 466.9 ± 23.93 | 177.6 ± 6.03 | n = 4 | [ABF] Abbott Cell Dyn 3500 |
| 141.0 ± 6.42 | 576.7 ± 30.20 | 242.3 ± 11.32 | 418.3 ± 12.22 | 157.5 ± 6.32 | n = 3 | [ABG] Abbott Cell Dyn 1700 |
| 145.7 ± 7.58 | 590.3 ± 2.26 | 251.3 ± 7.74 | 449.3 ± 12.34 | 171.1 ± 7.44 | n = 3 | [ABJ] Abbott Cell Dyn 1800 |
| 161.1 ± 12.28 | 588.3 ± 22.79 | 260.2 ± 8.22 | 455.8 ± 13.76 | 190.3 ± 10.52 | n = 11 | [ABK] Abbott Cell Dyn 3200 |
| 154.2 ± 6.90 | 590.4 ± 30.09 | 254.3 ± 9.00 | 484.1 ± 21.19 | 180.5 ± 6.35 | n = 12 | [ABM] Abbott Cell Dyn 3700 |
| 147.0 ± 5.64 | 543.3 ± 13.96 | 242.3 ± 10.04 | 438.1 ± 17.66 | 174.3 ± 7.80 | n = 14 | [ABS] Abbott Cell Dyn Sapphire |
| 159.6 ± 6.71 | 581.2 ± 29.59 | 255.1 ± 13.02 | 432.7 ± 21.09 | 184.7 ± 10.02 | n = 18 | [ABT] Abbott Cell Dyn Ruby |
| 151.5 ± 11.03 | 589.5 ± 27.34 | 248.9 ± 13.42 | 482.7 ± 23.95 | 181.1 ± 8.30 | n = 23 | [BTD] Siemens (Bayer)Advia 120 |
| 144.6 ± 6.96 | 593.4 ± 27.40 | 245.1 ± 13.23 | 489.4 ± 22.36 | 179.4 ± 9.34 | n = 21 | [BTE] Siemens (Bayer)Advia 2120 |
| 131.6 ± 0.96 | 509.8 ± 17.49 | 212.6 ± 5.32 | 405.4 ± 12.02 | 154.4 ± 3.93 | n = 8 | [CUL] Coulter UniCel DxH 800 |
| 146.2 ± 7.64 | 569.7 ± 16.74 | 245.8 ± 9.04 | 485.4 ± 21.33 | 181.0 ± 4.12 | n = 6 | [CUS] Coulter ACT 5 diff |
| 133.2 ± 7.28 | 537.5 ± 20.55 | 223.6 ± 11.88 | 425.2 ± 17.42 | 162.0 ± 8.69 | n = 24 | [CUT] Coulter ACT series,not ACT5 |
| 129.9 ± 4.04 | 516.3 ± 16.87 | 209.4 ± 5.13 | 403.5 ± 9.24 | 155.8 ± 6.52 | n = 11 | [CUW] Coulter HMX |
| 132.1 ± 4.18 | 519.6 ± 14.19 | 219.1 ± 5.71 | 418.7 ± 9.83 | 158.5 ± 3.51 | n = 76 | [CUX] Coulter LH750,755 |
| 132.1 ± 3.10 | 512.8 ± 14.38 | 217.9 ± 4.90 | 416.3 ± 7.98 | 158.1 ± 3.39 | n = 19 | [CUY] Coulter LH 780 |
| 132.8 ± 5.74 | 524.4 ± 13.47 | 211.3 ± 9.10 | 419.0 ± 17.26 | 155.1 ± 5.17 | n = 22 | [CUZ] Coulter LH500 |
| 149.0 ± 9.20 | 567.4 ± 23.79 | 242.9 ± 7.01 | 469.4 ± 21.92 | 178.4 ± 9.56 | n = 8 | [ROB] ABX Pentra series |
| 146.1 ± 9.19 | 564.5 ± 33.48 | 246.0 ± 12.65 | 488.3 ± 7.67 | 179.7 ± 5.97 | n = 3 | [ROC] ABX Micro |
| 128.5 ± 11.73 | 561.1 ± 16.52 | 224.5 ± 4.61 | 427.3 ± 7.75 | 156.0 ± 5.41 | n = 3 | [SYB] Sysmex KX-21N |
| 117.9 ± 5.66 | 460.4 ± 23.09 | 207.5 ± 10.18 | 391.7 ± 13.83 | 142.3 ± 6.08 | n = 27 | [SYO] Sysmex XE2100 |
| 145.0 ± 3.37 | 575.6 ± 17.10 | 241.4 ± 3.43 | 474.6 ± 10.78 | 175.9 ± 3.86 | n = 7 | [SYQ] Sysmex XE 2100D |
| 117.3 ± 4.68 | 456.2 ± 16.87 | 205.3 ± 7.18 | 382.9 ± 10.35 | 141.5 ± 3.83 | n = 19 | [SYA] Sysmex XE 5000 |
| 136.4 ± 4.09 | 538.9 ± 19.20 | 228.4 ± 5.62 | 441.0 ± 12.37 | 163.8 ± 6.05 | n = 24 | [SYI] Sysmex XT-1800i,XT-2000i |
| 138.7 ± 5.17 | 526.8 ± 13.69 | 226.9 ± 6.69 | 431.2 ± 10.00 | 163.1 ± 4.75 | n = 5 | [SYV] Sysmex XT 4000i |
| 131.1 ± 4.33 | 533.7 ± 10.92 | 227.8 ± 3.65 | 446.1 ± 9.45 | 160.3 ± 4.89 | n = 13 | [SYP] Sysmex XS-1000i,XS-1000iAL |

Summary of Participant Responses

Mean ± One Standard Deviation

Prothrombin Time (seconds)

| Specimen: C46 | Specimen: C47 | Specimen: C48 | Specimen: C49 | Specimen: C50 | Number | [Code] Instrument or Reagent |
|----------------------------|---------------|---------------|---------------|---------------|---------|-----------------------------------|
| 11.90 ± 0.87 | 27.56 ± 4.29 | 27.60 ± 4.35 | 42.33 ± 7.68 | 11.39 ± 0.70 | n = 317 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 11.54 ± 0.65 | 22.36 ± 3.37 | 22.87 ± 2.87 | 33.11 ± 8.49 | 11.32 ± 0.68 | n = 3 | [BBA] BBL Fibrometer |
| 11.17 ± 0.33 | 25.18 ± 1.01 | 25.26 ± 1.08 | 38.05 ± 1.95 | 11.21 ± 0.23 | n = 21 | [BEB] Dade-Behring BCS,BCSXP |
| 13.37 ± 0.14 | 30.49 ± 0.61 | 30.55 ± 0.63 | 47.05 ± 0.91 | 12.73 ± 0.32 | n = 3 | [BXE] Trinity Biotech MDA |
| 13.43 ± 0.41 | 31.28 ± 1.32 | 31.07 ± 1.30 | 47.98 ± 2.61 | 12.91 ± 0.38 | n = 28 | [DGC] Diagnostica Stago STA Compa |
| 13.77 ± 0.56 | 31.64 ± 0.91 | 31.84 ± 0.78 | 48.33 ± 1.74 | 13.31 ± 0.52 | n = 14 | [DGD] Diagnostica Stago STA-R, ST |
| 12.24 ± 0.61 | 21.07 ± 1.04 | 21.44 ± 1.10 | 29.81 ± 1.84 | 11.92 ± 0.42 | n = 15 | [ILA] IL ACL(All models except 81 |
| 12.13 ± 0.44 | 28.77 ± 6.55 | 28.75 ± 6.56 | 44.08 ± 11.84 | 11.29 ± 0.43 | n = 34 | [ILC] IL ACL Futura/Advance |
| 11.73 ± 0.39 | 27.62 ± 3.96 | 28.02 ± 3.94 | 43.11 ± 8.03 | 11.31 ± 0.49 | n = 34 | [ILD] IL ACL(ELITE,ELITE PRO,8/9/ |
| 12.40 ± 0.46 | 31.72 ± 1.45 | 31.89 ± 1.53 | 49.95 ± 2.47 | 11.44 ± 0.45 | n = 45 | [ILE] IL ACL TOP Series (ACLTOP,A |
| 11.19 ± 0.32 | 25.33 ± 1.12 | 25.39 ± 0.89 | 38.85 ± 1.48 | 10.80 ± 0.41 | n = 36 | [SYW] Sysmex CA500,540,560 |
| 11.37 ± 0.16 | 25.51 ± 0.78 | 25.43 ± 0.66 | 38.75 ± 1.33 | 11.13 ± 0.25 | n = 58 | [SYX] Sysmex CA 1500 |
| 11.67 ± 0.12 | 25.54 ± 0.73 | 25.48 ± 0.67 | 38.81 ± 1.27 | 11.37 ± 0.21 | n = 15 | [SYY] Sysmex CA 7000 |
| 14.64 ± 0.26 | 33.67 ± 1.58 | 33.76 ± 1.26 | 51.47 ± 2.03 | 14.60 ± 0.54 | n = 3 | [TRE] Trinity Biotech AMAX Destin |
| <Reagents> | | | | | | |
| 13.55 ± 0.44 | 31.47 ± 1.19 | 31.41 ± 1.29 | 48.38 ± 2.47 | 13.04 ± 0.45 | n = 42 | [TA3] STA Neoplastine CL+ |
| 11.32 ± 0.29 | 25.45 ± 0.94 | 25.44 ± 0.82 | 38.73 ± 1.51 | 11.09 ± 0.33 | n = 130 | [TD2] Dade Innovin |
| 11.92 ± 0.15 | 19.46 ± 0.82 | 19.24 ± 0.90 | 26.22 ± 0.95 | 11.65 ± 0.54 | n = 3 | [TD4] Dade Thromboplastin C+ |
| 12.06 ± 0.47 | 20.91 ± 0.88 | 21.11 ± 0.91 | 29.61 ± 1.55 | 11.65 ± 0.60 | n = 34 | [TJ2] HemosIL PT-Fibrinogen |
| 12.15 ± 0.52 | 31.24 ± 1.99 | 31.37 ± 1.91 | 49.15 ± 3.12 | 11.34 ± 0.42 | n = 91 | [TJ8] HemosIL RecombiPlasTin 2G |
| 14.64 ± 0.26 | 33.67 ± 1.58 | 33.76 ± 1.26 | 51.47 ± 2.03 | 14.60 ± 0.54 | n = 3 | [TK3] Trin Bio TriniCLOT PT Excel |
| 11.46 ± 0.79 | 20.02 ± 0.94 | 20.78 ± 0.94 | 27.95 ± 1.10 | 11.19 ± 0.92 | n = 3 | [TP2] Fisher/PH Thromboplastin D |

Summary of Participant Responses

Mean ± One Standard Deviation

Prothrombin Time (seconds) - continued

| Specimen: C46 ----- | Specimen: C47 ----- | Specimen: C48 ----- | Specimen: C49 ----- | Specimen: C50 ----- | Number ----- | [Code] Reagent & Instrument ----- |
|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------|---|
| 13.43 ± 0.41 | 31.28 ± 1.32 | 31.07 ± 1.30 | 47.98 ± 2.61 | 12.91 ± 0.38 | n = 28 | [TA3]&[DGC] STA Neoplastin & Diagnostica St |
| 13.82 ± 0.44 | 31.67 ± 0.82 | 31.90 ± 0.73 | 48.51 ± 1.50 | 13.38 ± 0.41 | n = 12 | [TA3]&[DGD] STA Neoplastin & Diagnostica St |
| 11.14 ± 0.28 | 25.20 ± 0.98 | 25.28 ± 1.03 | 38.06 ± 1.91 | 11.20 ± 0.20 | n = 20 | [TD2]&[BEB] Dade Innovin & Dade-Behring B |
| 11.17 ± 0.31 | 25.33 ± 1.11 | 25.39 ± 0.88 | 38.85 ± 1.47 | 10.80 ± 0.41 | n = 35 | [TD2]&[SYW] Dade Innovin & Sysmex CA500,5 |
| 11.37 ± 0.16 | 25.51 ± 0.78 | 25.43 ± 0.66 | 38.75 ± 1.33 | 11.12 ± 0.24 | n = 57 | [TD2]&[SYX] Dade Innovin & Sysmex CA 1500 |
| 11.67 ± 0.12 | 25.54 ± 0.73 | 25.48 ± 0.67 | 38.81 ± 1.27 | 11.37 ± 0.21 | n = 15 | [TD2]&[SYY] Dade Innovin & Sysmex CA 7000 |
| 12.22 ± 0.44 | 21.18 ± 0.93 | 21.56 ± 0.99 | 30.00 ± 1.73 | 11.88 ± 0.33 | n = 13 | [TJ2]&[ILA] HemosIL PT-Fib & IL ACL(All mod |
| 11.85 ± 0.47 | 20.78 ± 0.74 | 20.80 ± 0.76 | 29.67 ± 1.41 | 11.03 ± 0.55 | n = 12 | [TJ2]&[ILC] HemosIL PT-Fib & IL ACL Futura/ |
| 12.04 ± 0.31 | 20.67 ± 0.97 | 21.12 ± 0.60 | 29.05 ± 1.37 | 11.97 ± 0.42 | n = 8 | [TJ2]&[ILD] HemosIL PT-Fib & IL ACL(ELITE,E |
| 12.24 ± 0.36 | 32.66 ± 1.42 | 32.63 ± 1.53 | 50.97 ± 2.51 | 11.40 ± 0.34 | n = 20 | [TJ8]&[ILC] HemosIL Recomb & IL ACL Futura/ |
| 11.65 ± 0.34 | 29.21 ± 1.56 | 29.59 ± 1.34 | 46.19 ± 2.58 | 11.14 ± 0.35 | n = 26 | [TJ8]&[ILD] HemosIL Recomb & IL ACL(ELITE,E |
| 12.39 ± 0.46 | 31.72 ± 1.48 | 31.85 ± 1.54 | 49.93 ± 2.51 | 11.42 ± 0.44 | n = 44 | [TJ8]&[ILE] HemosIL Recomb & IL ACL TOP Ser |
| 14.64 ± 0.26 | 33.67 ± 1.58 | 33.76 ± 1.26 | 51.47 ± 2.03 | 14.60 ± 0.54 | n = 3 | [TK3]&[TRE] Trin Bio Trini & Trinity Biotec |

Summary of Participant Responses

Mean ± One Standard Deviation

Act Partial Thromboplastin Time (seconds)

| Specimen: C46 | Specimen: C47 | Specimen: C48 | Specimen: C49 | Specimen: C50 | Number | [Code] Instrument or Reagent |
|----------------------------|---------------|---------------|----------------|---------------|---------|-----------------------------------|
| 31.47 ± 1.86 | 58.22 ± 6.26 | 58.49 ± 6.45 | 76.08 ± 7.84 | 28.19 ± 1.54 | n = 309 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 29.44 ± 0.61 | 53.08 ± 0.92 | 53.99 ± 2.56 | 68.20 ± 2.76 | 27.06 ± 0.45 | n = 21 | [BEB] Dade-Behring BCS,BCSXP |
| 27.62 ± 1.50 | 53.55 ± 2.88 | 52.77 ± 3.20 | 70.21 ± 4.58 | 25.27 ± 2.11 | n = 3 | [BXE] Trinity Biotech MDA |
| 32.63 ± 1.77 | 53.99 ± 1.79 | 54.61 ± 4.04 | 73.53 ± 4.76 | 29.88 ± 1.41 | n = 3 | [DGB] Diagnostica Stago STA |
| 33.05 ± 0.91 | 55.54 ± 1.94 | 55.49 ± 2.40 | 72.59 ± 1.94 | 30.19 ± 1.02 | n = 26 | [DGC] Diagnostica Stago STA Compa |
| 31.91 ± 1.15 | 53.04 ± 1.30 | 52.92 ± 1.70 | 70.46 ± 1.78 | 29.76 ± 1.05 | n = 13 | [DGD] Diagnostica Stago STA-R, ST |
| 29.88 ± 1.23 | 55.84 ± 7.54 | 56.84 ± 7.30 | 73.24 ± 9.38 | 27.38 ± 1.07 | n = 17 | [ILA] IL ACL(All models except 81 |
| 31.12 ± 1.77 | 66.78 ± 1.81 | 66.60 ± 1.94 | 84.79 ± 7.37 | 27.89 ± 1.50 | n = 34 | [ILC] IL ACL Futura/Advance |
| 30.55 ± 1.14 | 60.36 ± 5.85 | 61.05 ± 5.97 | 77.92 ± 7.88 | 28.40 ± 0.95 | n = 31 | [ILD] IL ACL(ELITE,ELITE PRO,8/90 |
| 33.38 ± 0.90 | 63.93 ± 2.30 | 64.48 ± 2.30 | 83.57 ± 2.84 | 29.07 ± 0.98 | n = 44 | [ILE] IL ACL TOP Series (ACLTOP,A |
| 30.78 ± 1.34 | 55.39 ± 3.61 | 55.64 ± 3.75 | 73.72 ± 4.84 | 26.90 ± 1.33 | n = 34 | [SYW] Sysmex CA500,540,560 |
| 31.65 ± 1.26 | 56.13 ± 2.28 | 56.39 ± 2.32 | 74.27 ± 3.03 | 28.18 ± 0.94 | n = 59 | [SYX] Sysmex CA 1500 |
| 31.33 ± 1.13 | 54.47 ± 1.85 | 53.93 ± 1.83 | 71.70 ± 2.45 | 27.80 ± 0.82 | n = 12 | [SYY] Sysmex CA 7000 |
| 28.84 ± 5.39 | 54.81 ± 10.07 | 57.11 ± 6.78 | 78.90 ± 6.63 | 28.45 ± 3.83 | n = 3 | [TRE] Trinity Biotech AMAX Destin |
| <Reagents> | | | | | | |
| 32.73 ± 1.11 | 54.59 ± 2.27 | 54.53 ± 2.76 | 71.82 ± 2.50 | 30.03 ± 0.97 | n = 40 | [AA2] Diagnostica Stago STA PTT-A |
| 30.04 ± 2.73 | 74.40 ± 7.64 | 74.06 ± 7.62 | 104.70 ± 13.41 | 26.53 ± 1.78 | n = 8 | [AD2] Dade Actin |
| 30.37 ± 1.25 | 93.41 ± 4.28 | 93.55 ± 3.66 | 121.69 ± 3.92 | 27.37 ± 0.56 | n = 8 | [AD3] Dade Actin FS |
| 31.09 ± 1.46 | 55.43 ± 2.85 | 55.66 ± 3.09 | 73.11 ± 4.17 | 27.69 ± 1.10 | n = 113 | [AD4] Dade Actin FSL |
| 29.40 ± 1.36 | 52.41 ± 1.68 | 53.01 ± 2.20 | 68.92 ± 1.54 | 27.22 ± 1.37 | n = 29 | [AJ3] HemosIL Test APTT-SP |
| 27.35 ± 4.42 | 56.11 ± 6.92 | 57.55 ± 4.67 | 79.27 ± 4.68 | 26.12 ± 4.04 | n = 5 | [AK3] Trin Bio TriniCLOT aPTTS (P |
| 26.95 ± 0.27 | 51.30 ± 1.27 | 50.76 ± 0.84 | 68.20 ± 0.91 | 24.67 ± 1.04 | n = 3 | [AK5] Trinity Biotech MDA Plateli |
| 32.20 ± 1.62 | 64.81 ± 2.94 | 65.14 ± 2.81 | 84.25 ± 3.77 | 28.68 ± 1.11 | n = 96 | [AO4] HemosIL SynthASil |

Summary of Participant Responses

Mean ± One Standard Deviation

Act Partial Thromboplastin Time (seconds) - continued

| Specimen: C46 | Specimen: C47 | Specimen: C48 | Specimen: C49 | Specimen: C50 | Number | [Code] Reagent & Instrument |
|---------------|---------------|---------------|----------------|---------------|--------|---|
| 32.63 ± 1.77 | 53.99 ± 1.79 | 54.61 ± 4.04 | 73.53 ± 4.76 | 29.88 ± 1.41 | n = 3 | [AA2]&[DGB] Diagnostica St & Diagnostica St |
| 33.05 ± 0.91 | 55.54 ± 1.94 | 55.49 ± 2.40 | 72.59 ± 1.94 | 30.19 ± 1.02 | n = 26 | [AA2]&[DGC] Diagnostica St & Diagnostica St |
| 32.03 ± 0.91 | 53.05 ± 1.28 | 52.93 ± 1.69 | 70.47 ± 1.77 | 29.77 ± 0.69 | n = 11 | [AA2]&[DGD] Diagnostica St & Diagnostica St |
| 30.63 ± 1.77 | 74.39 ± 11.21 | 74.37 ± 12.04 | 103.99 ± 18.92 | 26.01 ± 2.08 | n = 3 | [AD2]&[SYW] Dade Actin & Sysmex CA500,5 |
| 30.03 ± 0.71 | 94.21 ± 4.42 | 93.89 ± 4.50 | 119.91 ± 3.27 | 27.30 ± 0.40 | n = 4 | [AD3]&[SYX] Dade Actin FS & Sysmex CA 1500 |
| 29.42 ± 0.59 | 53.07 ± 0.91 | 53.79 ± 2.23 | 68.40 ± 2.19 | 27.02 ± 0.32 | n = 16 | [AD4]&[BEB] Dade Actin FSL & Dade-Behring B |
| 30.75 ± 1.26 | 55.24 ± 3.57 | 55.52 ± 3.76 | 73.54 ± 4.87 | 26.95 ± 1.19 | n = 30 | [AD4]&[SYW] Dade Actin FSL & Sysmex CA500,5 |
| 31.79 ± 1.14 | 56.12 ± 2.27 | 56.38 ± 2.32 | 74.26 ± 3.02 | 28.28 ± 0.90 | n = 53 | [AD4]&[SYX] Dade Actin FSL & Sysmex CA 1500 |
| 31.33 ± 1.13 | 54.47 ± 1.85 | 53.93 ± 1.83 | 71.70 ± 2.45 | 27.80 ± 0.82 | n = 12 | [AD4]&[SYX] Dade Actin FSL & Sysmex CA 7000 |
| 29.46 ± 1.17 | 51.92 ± 0.99 | 53.39 ± 1.24 | 69.07 ± 0.97 | 27.29 ± 0.88 | n = 12 | [AJ3]&[ILA] HemosIL Test A & IL ACL(All mod |
| 28.04 ± 0.70 | 51.16 ± 0.38 | 50.35 ± 1.41 | 67.69 ± 1.41 | 25.01 ± 0.22 | n = 6 | [AJ3]&[ILC] HemosIL Test A & IL ACL Futura/ |
| 30.03 ± 0.82 | 53.56 ± 1.62 | 54.12 ± 1.84 | 69.60 ± 1.57 | 27.80 ± 0.77 | n = 10 | [AJ3]&[ILD] HemosIL Test A & IL ACL(ELITE,E |
| 28.84 ± 5.39 | 54.81 ± 10.07 | 57.11 ± 6.78 | 78.90 ± 6.63 | 28.45 ± 3.83 | n = 3 | [AK3]&[TRE] Trin Bio Trini & Trinity Biotec |
| 30.62 ± 0.69 | 68.10 ± 4.59 | 69.27 ± 5.08 | 90.04 ± 7.15 | 27.47 ± 1.39 | n = 5 | [AO4]&[ILA] HemosIL SynthA & IL ACL(All mod |
| 31.52 ± 1.15 | 66.72 ± 1.81 | 66.60 ± 1.96 | 86.30 ± 3.16 | 28.17 ± 0.92 | n = 26 | [AO4]&[ILC] HemosIL SynthA & IL ACL Futura/ |
| 30.86 ± 1.16 | 63.37 ± 3.43 | 64.09 ± 3.32 | 82.19 ± 4.48 | 28.77 ± 0.72 | n = 21 | [AO4]&[ILD] HemosIL SynthA & IL ACL(ELITE,E |
| 33.37 ± 0.92 | 63.96 ± 2.24 | 64.48 ± 2.29 | 83.58 ± 2.82 | 29.08 ± 0.99 | n = 43 | [AO4]&[ILE] HemosIL SynthA & IL ACL TOP Ser |

Summary of Participant Responses

Mean ± One Standard Deviation

Fibrinogen (mg/dL)

| Specimen: C46 | Specimen: C47 | Specimen: C48 | Specimen: C49 | Specimen: C50 | Number | [Code] Instrument or Reagent |
|----------------------------|---------------|---------------|---------------|---------------|---------|-----------------------------------|
| 461.0 ± 58.40 | 277.1 ± 37.56 | 277.1 ± 36.48 | 278.5 ± 41.77 | 281.6 ± 32.39 | n = 213 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 535.6 ± 37.60 | 302.0 ± 27.33 | 302.1 ± 32.35 | 309.3 ± 29.25 | 299.8 ± 31.92 | n = 20 | [BEB] Dade-Behring BCS,BCSXP |
| 497.1 ± 26.37 | 280.8 ± 14.22 | 279.3 ± 16.50 | 276.1 ± 15.29 | 285.5 ± 13.00 | n = 25 | [DGC] Diagnostica Stago STA Compa |
| 498.2 ± 24.60 | 273.1 ± 8.91 | 274.5 ± 6.72 | 271.7 ± 7.20 | 284.9 ± 11.17 | n = 13 | [DGD] Diagnostica Stago STA-R, ST |
| 507.0 ± 26.23 | 399.1 ± 29.31 | 397.4 ± 30.76 | 388.2 ± 29.68 | 342.7 ± 15.13 | n = 4 | [ILA] IL ACL(All models except 81 |
| 412.6 ± 63.89 | 340.8 ± 39.53 | 339.3 ± 41.31 | 374.3 ± 37.88 | 272.5 ± 33.81 | n = 27 | [ILC] IL ACL Futura/Advance |
| 547.6 ± 85.98 | 319.3 ± 50.38 | 322.9 ± 54.68 | 346.4 ± 73.25 | 331.9 ± 3.81 | n = 11 | [ILD] IL ACL(ELITE,ELITE PRO,8/9/ |
| 470.6 ± 22.40 | 283.6 ± 32.74 | 282.9 ± 30.40 | 286.7 ± 26.52 | 307.6 ± 23.45 | n = 40 | [ILE] IL ACL TOP Series (ACLTOP,A |
| 425.8 ± 28.24 | 243.6 ± 13.62 | 246.6 ± 11.28 | 242.1 ± 10.13 | 257.6 ± 14.17 | n = 6 | [SYW] Sysmex CA500,540,560 |
| 419.3 ± 17.17 | 250.4 ± 11.49 | 250.7 ± 12.63 | 250.2 ± 13.53 | 256.2 ± 12.76 | n = 49 | [SYX] Sysmex CA 1500 |
| 419.6 ± 12.37 | 244.8 ± 9.85 | 248.7 ± 10.14 | 243.1 ± 5.82 | 252.6 ± 8.72 | n = 10 | [SYY] Sysmex CA 7000 |
| <Reagents> | | | | | | |
| 478.5 ± 34.88 | 383.1 ± 31.07 | 385.0 ± 28.38 | 395.4 ± 22.52 | 319.5 ± 21.93 | n = 14 | [TJ2] HemosIL PT-Fibrinogen |
| 430.0 ± 59.87 | 323.2 ± 21.84 | 318.8 ± 20.65 | 339.3 ± 45.74 | 294.5 ± 44.10 | n = 35 | [TJ8] HemosIL RecombiPlasTin 2G |
| 498.6 ± 25.89 | 278.3 ± 13.34 | 277.5 ± 13.16 | 275.0 ± 12.74 | 285.8 ± 12.85 | n = 39 | [FA4] Stago STA-Fibrinogen 5 |
| 542.9 ± 29.07 | 306.4 ± 25.69 | 305.1 ± 32.42 | 314.2 ± 26.78 | 303.6 ± 34.04 | n = 17 | [FB2] Behring Multifibren U |
| 421.1 ± 18.90 | 249.3 ± 12.46 | 250.3 ± 12.53 | 248.5 ± 13.15 | 256.5 ± 13.31 | n = 68 | [FD2] Dade Fib (thrombin) |
| 493.2 ± 66.61 | 270.8 ± 19.68 | 271.5 ± 20.71 | 280.1 ± 16.34 | 303.6 ± 22.29 | n = 26 | [FJ2] HemosIL Fibrinogen C,XL |
| 434.6 ± 24.06 | 257.5 ± 10.83 | 251.5 ± 14.60 | 255.7 ± 16.74 | 275.3 ± 14.77 | n = 3 | [FM1] Kamiya K-Assay Fibrinogen |
| 536.4 ± 66.24 | 257.5 ± 14.59 | 256.6 ± 16.65 | 261.5 ± 20.63 | 288.0 ± 23.24 | n = 6 | [FO3] HemosIL QFA(bovine) |

Summary of Participant Responses

Mean ± One Standard Deviation

Fibrinogen (mg/dL) - continued

| Specimen: C46 | Specimen: C47 | Specimen: C48 | Specimen: C49 | Specimen: C50 | Number | [Code] Reagent & Instrument |
|---------------|---------------|---------------|---------------|---------------|--------|---|
| 507.0 ± 26.23 | 399.1 ± 29.31 | 397.4 ± 30.76 | 388.2 ± 29.68 | 342.7 ± 15.13 | n = 4 | [TJ2]&[ILA] HemosIL PT-Fib & IL ACL(All mod |
| 477.3 ± 22.78 | 389.1 ± 14.30 | 391.6 ± 11.80 | 395.5 ± 13.81 | 307.5 ± 5.31 | n = 7 | [TJ2]&[ILC] HemosIL PT-Fib & IL ACL Futura/ |
| 433.8 ± 27.28 | 327.1 ± 30.14 | 342.6 ± 17.17 | 401.5 ± 26.16 | 336.2 ± 41.08 | n = 3 | [TJ2]&[ILD] HemosIL PT-Fib & IL ACL(ELITE,E |
| 370.3 ± 15.90 | 335.6 ± 14.43 | 332.1 ± 14.92 | 373.5 ± 20.68 | 248.8 ± 11.06 | n = 15 | [TJ8]&[ILC] HemosIL Recomb & IL ACL Futura/ |
| 466.9 ± 16.99 | 311.6 ± 16.57 | 306.9 ± 11.66 | 307.9 ± 17.34 | 323.5 ± 12.50 | n = 18 | [TJ8]&[ILE] HemosIL Recomb & IL ACL TOP Ser |
| 497.1 ± 26.37 | 280.8 ± 14.22 | 279.3 ± 16.50 | 276.1 ± 15.29 | 285.5 ± 13.00 | n = 25 | [FA4]&[DGC] Stago STA-Fibr & Diagnostica St |
| 498.2 ± 24.60 | 273.1 ± 8.91 | 274.5 ± 6.72 | 271.7 ± 7.20 | 284.9 ± 11.17 | n = 13 | [FA4]&[DGD] Stago STA-Fibr & Diagnostica St |
| 542.9 ± 29.07 | 306.4 ± 25.69 | 305.1 ± 32.42 | 314.2 ± 26.78 | 303.6 ± 34.04 | n = 17 | [FB2]&[BEB] Behring Multif & Dade-Behring B |
| 486.9 ± 29.99 | 278.6 ± 21.38 | 287.3 ± 27.34 | 282.0 ± 25.16 | 285.2 ± 11.38 | n = 3 | [FD2]&[BEB] Dade Fib (thro & Dade-Behring B |
| 425.8 ± 28.24 | 243.6 ± 13.62 | 246.6 ± 11.28 | 242.1 ± 10.13 | 257.6 ± 14.17 | n = 6 | [FD2]&[SYW] Dade Fib (thro & Sysmex CA500,5 |
| 419.3 ± 17.17 | 250.4 ± 11.49 | 250.7 ± 12.63 | 250.2 ± 13.53 | 256.2 ± 12.76 | n = 49 | [FD2]&[SYX] Dade Fib (thro & Sysmex CA 1500 |
| 419.6 ± 12.37 | 244.8 ± 9.85 | 248.7 ± 10.14 | 243.1 ± 5.82 | 252.6 ± 8.72 | n = 10 | [FD2]&[SYY] Dade Fib (thro & Sysmex CA 7000 |
| 503.6 ± 49.36 | 277.7 ± 12.29 | 278.8 ± 20.35 | 284.3 ± 18.52 | 312.1 ± 22.56 | n = 3 | [FJ2]&[ILC] HemosIL Fibrin & IL ACL Futura/ |
| 609.3 ± 32.06 | 292.9 ± 14.95 | 293.9 ± 13.57 | 292.1 ± 6.97 | 332.6 ± 3.49 | n = 6 | [FJ2]&[ILD] HemosIL Fibrin & IL ACL(ELITE,E |
| 469.0 ± 27.33 | 262.5 ± 15.24 | 263.1 ± 15.27 | 274.1 ± 15.44 | 294.1 ± 15.96 | n = 17 | [FJ2]&[ILE] HemosIL Fibrin & IL ACL TOP Ser |
| 552.6 ± 61.87 | 255.2 ± 16.26 | 247.5 ± 3.45 | 255.4 ± 17.33 | 283.5 ± 23.41 | n = 5 | [FO3]&[ILE] HemosIL QFA(bo & IL ACL TOP Ser |

Summary of Participant Responses

Mean ± One Standard Deviation

INR (International Normalized Ratio)

| Specimen: C46 ----- | Specimen: C47 ----- | Specimen: C48 ----- | Specimen: C49 ----- | Specimen: C50 ----- | Number ----- | [Code] Instrument or Reagent ----- |
|----------------------------|------------------------|------------------------|------------------------|------------------------|-----------------|---------------------------------------|
| 1.070 ± 0.052 | 2.637 ± 0.248 | 2.648 ± 0.253 | 4.193 ± 0.596 | 1.025 ± 0.056 | n = 317 | [---] All Methods & Instruments |
| <Instruments> | | | | | | |
| 1.003 ± 0.005 | 2.470 ± 0.244 | 2.642 ± 0.284 | 4.280 ± 0.649 | 1.000 ± 0.000 | n = 3 | [BBA] BBL Fibrometer |
| 1.065 ± 0.048 | 2.653 ± 0.154 | 2.640 ± 0.152 | 4.010 ± 0.239 | 1.061 ± 0.050 | n = 21 | [BEB] Dade-Behring BCS,BCSXP |
| 1.059 ± 0.029 | 2.806 ± 0.047 | 2.796 ± 0.074 | 4.682 ± 0.077 | 0.995 ± 0.054 | n = 3 | [BXE] Trinity Biotech MDA |
| 1.039 ± 0.047 | 3.094 ± 0.155 | 3.078 ± 0.173 | 5.401 ± 0.351 | 0.993 ± 0.026 | n = 28 | [DGC] Diagnostica Stago STA Compa |
| 1.065 ± 0.063 | 3.061 ± 0.216 | 3.101 ± 0.220 | 5.279 ± 0.468 | 1.042 ± 0.060 | n = 14 | [DGD] Diagnostica Stago STA-R, ST |
| 1.056 ± 0.063 | 2.779 ± 0.149 | 2.856 ± 0.115 | 5.094 ± 0.339 | 0.994 ± 0.058 | n = 16 | [ILA] IL ACL(All models except 81 |
| 1.078 ± 0.054 | 2.725 ± 0.167 | 2.746 ± 0.154 | 4.377 ± 0.393 | 0.992 ± 0.069 | n = 34 | [ILC] IL ACL Futura/Advance |
| 1.048 ± 0.074 | 2.648 ± 0.214 | 2.682 ± 0.184 | 4.328 ± 0.329 | 1.010 ± 0.068 | n = 33 | [ILD] IL ACL(ELITE,ELITE PRO,8/9/ |
| 1.087 ± 0.050 | 2.684 ± 0.130 | 2.690 ± 0.130 | 4.137 ± 0.200 | 1.007 ± 0.034 | n = 44 | [ILE] IL ACL TOP Series (ACLTOP,A |
| 1.085 ± 0.045 | 2.498 ± 0.121 | 2.497 ± 0.107 | 3.856 ± 0.188 | 1.052 ± 0.051 | n = 37 | [SYW] Sysmex CA500,540,560 |
| 1.079 ± 0.029 | 2.452 ± 0.094 | 2.457 ± 0.102 | 3.764 ± 0.167 | 1.051 ± 0.043 | n = 59 | [SYX] Sysmex CA 1500 |
| 1.097 ± 0.011 | 2.439 ± 0.106 | 2.411 ± 0.101 | 3.718 ± 0.164 | 1.069 ± 0.045 | n = 14 | [SYZ] Sysmex CA 7000 |
| 1.021 ± 0.029 | 2.547 ± 0.186 | 2.528 ± 0.212 | 4.074 ± 0.283 | 1.014 ± 0.010 | n = 3 | [TRE] Trinity Biotech AMAX Destin |
| <Reagents> | | | | | | |
| 1.045 ± 0.051 | 3.096 ± 0.152 | 3.099 ± 0.172 | 5.403 ± 0.343 | 0.999 ± 0.039 | n = 42 | [TA3] STA Neoplastine CL+ |
| 1.081 ± 0.037 | 2.483 ± 0.126 | 2.482 ± 0.124 | 3.808 ± 0.196 | 1.056 ± 0.047 | n = 129 | [TD2] Dade Innovin |
| 1.045 ± 0.059 | 2.653 ± 0.259 | 2.611 ± 0.305 | 4.451 ± 0.487 | 1.017 ± 0.086 | n = 5 | [TD4] Dade Thromboplastin C+ |
| 1.035 ± 0.080 | 2.701 ± 0.209 | 2.759 ± 0.195 | 4.903 ± 0.460 | 0.978 ± 0.068 | n = 34 | [TJ2] HemosIL PT-Fibrinogen |
| 1.082 ± 0.054 | 2.706 ± 0.149 | 2.716 ± 0.143 | 4.203 ± 0.239 | 1.013 ± 0.048 | n = 90 | [TJ8] HemosIL RecombiPlasTin 2G |
| 1.021 ± 0.029 | 2.547 ± 0.186 | 2.528 ± 0.212 | 4.074 ± 0.283 | 1.014 ± 0.010 | n = 3 | [TK3] Trin Bio TriniCLOT PT Excel |
| 1.052 ± 0.024 | 2.751 ± 0.052 | 2.737 ± 0.034 | 4.550 ± 0.164 | 0.985 ± 0.036 | n = 3 | [TK6] Trinity Biotech TriniCLOT P |
| 0.947 ± 0.105 | 2.476 ± 0.237 | 2.674 ± 0.226 | 4.489 ± 0.364 | 0.916 ± 0.154 | n = 3 | [TP2] Fisher/PH Thromboplastin D |

Summary of Participant Responses

Mean ± One Standard Deviation

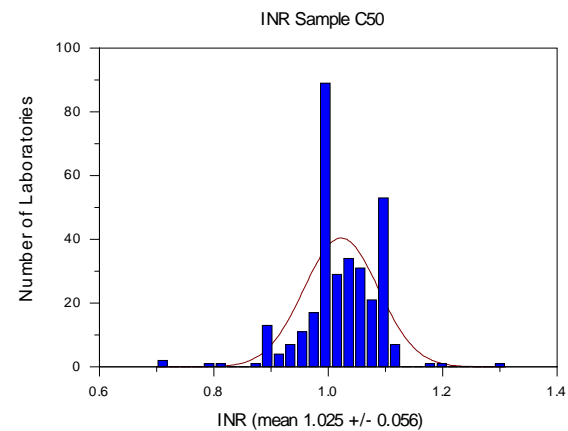
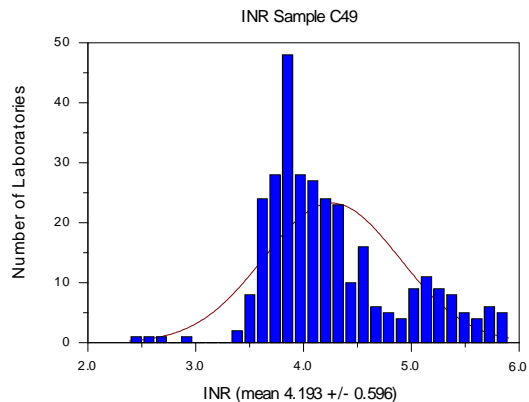
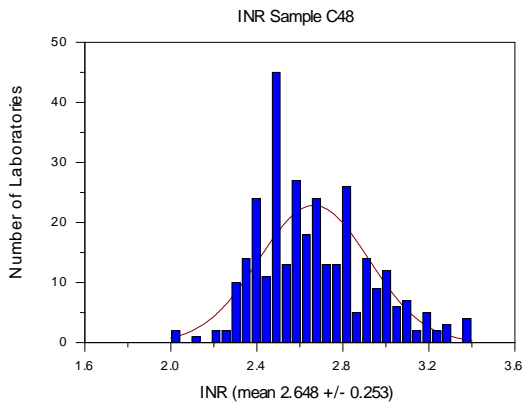
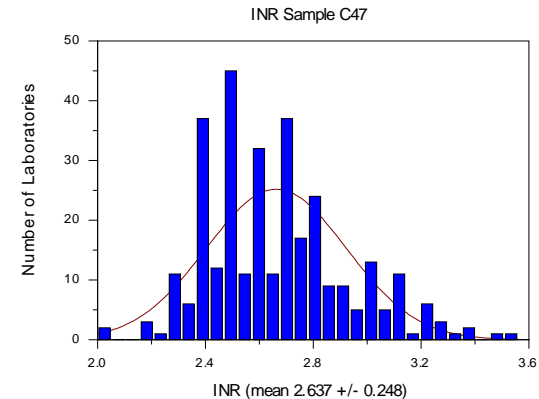
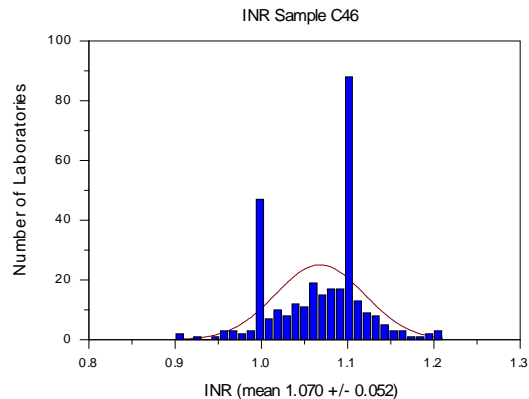
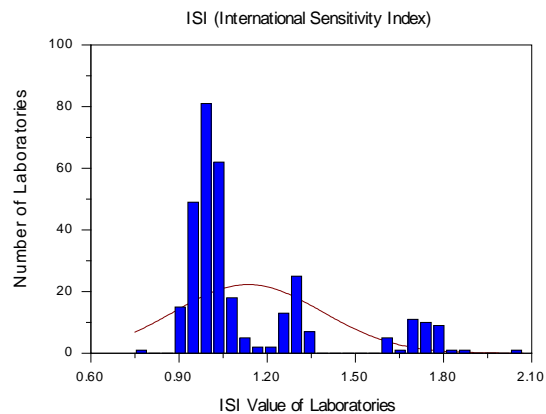
INR (International Normalized Ratio) - continued

| Specimen: C46 | Specimen: C47 | Specimen: C48 | Specimen: C49 | Specimen: C50 | Number | [Code] Reagent & Instrument |
|---------------|---------------|---------------|---------------|---------------|--------|---|
| ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 1.039 ± 0.047 | 3.094 ± 0.155 | 3.078 ± 0.173 | 5.401 ± 0.351 | 0.993 ± 0.026 | n = 28 | [TA3]&[DGC] STA Neoplastin & Diagnostica St |
| 1.065 ± 0.061 | 3.100 ± 0.165 | 3.144 ± 0.168 | 5.341 ± 0.314 | 1.039 ± 0.058 | n = 12 | [TA3]&[DGD] STA Neoplastin & Diagnostica St |
| 1.063 ± 0.051 | 2.636 ± 0.138 | 2.623 ± 0.132 | 3.992 ± 0.230 | 1.059 ± 0.051 | n = 19 | [TD2]&[BEB] Dade Innovin & Dade-Behring B |
| 1.087 ± 0.043 | 2.496 ± 0.125 | 2.499 ± 0.112 | 3.848 ± 0.182 | 1.054 ± 0.050 | n = 35 | [TD2]&[SYW] Dade Innovin & Sysmex CA500,5 |
| 1.080 ± 0.028 | 2.449 ± 0.092 | 2.454 ± 0.099 | 3.758 ± 0.162 | 1.053 ± 0.042 | n = 58 | [TD2]&[SYX] Dade Innovin & Sysmex CA 1500 |
| 1.097 ± 0.011 | 2.439 ± 0.106 | 2.411 ± 0.101 | 3.718 ± 0.164 | 1.069 ± 0.045 | n = 14 | [TD2]&[SYY] Dade Innovin & Sysmex CA 7000 |
| 1.058 ± 0.061 | 2.800 ± 0.126 | 2.868 ± 0.107 | 5.156 ± 0.257 | 0.998 ± 0.058 | n = 14 | [TJ2]&[ILA] HemosIL PT-Fib & IL ACL(All mod |
| 1.040 ± 0.094 | 2.650 ± 0.218 | 2.674 ± 0.236 | 4.797 ± 0.454 | 0.938 ± 0.081 | n = 12 | [TJ2]&[ILC] HemosIL PT-Fib & IL ACL Futura/ |
| 0.970 ± 0.068 | 2.483 ± 0.250 | 2.596 ± 0.126 | 4.460 ± 0.518 | 0.975 ± 0.070 | n = 7 | [TJ2]&[ILD] HemosIL PT-Fib & IL ACL(ELITE,E |
| 1.101 ± 0.018 | 2.773 ± 0.115 | 2.786 ± 0.108 | 4.239 ± 0.237 | 1.023 ± 0.048 | n = 20 | [TJ8]&[ILC] HemosIL Recomb & IL ACL Futura/ |
| 1.066 ± 0.065 | 2.683 ± 0.195 | 2.710 ± 0.183 | 4.302 ± 0.261 | 1.019 ± 0.065 | n = 26 | [TJ8]&[ILD] HemosIL Recomb & IL ACL(ELITE,E |
| 1.086 ± 0.051 | 2.683 ± 0.132 | 2.685 ± 0.129 | 4.129 ± 0.198 | 1.006 ± 0.035 | n = 43 | [TJ8]&[ILE] HemosIL Recomb & IL ACL TOP Ser |
| 1.021 ± 0.029 | 2.547 ± 0.186 | 2.528 ± 0.212 | 4.074 ± 0.283 | 1.014 ± 0.010 | n = 3 | [TK3]&[TRE] Trin Bio Trini & Trinity Biotec |

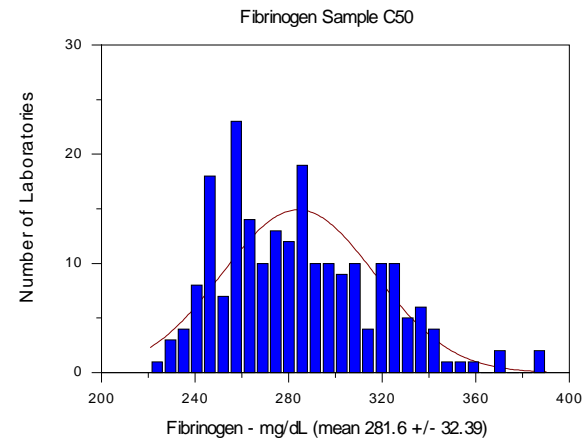
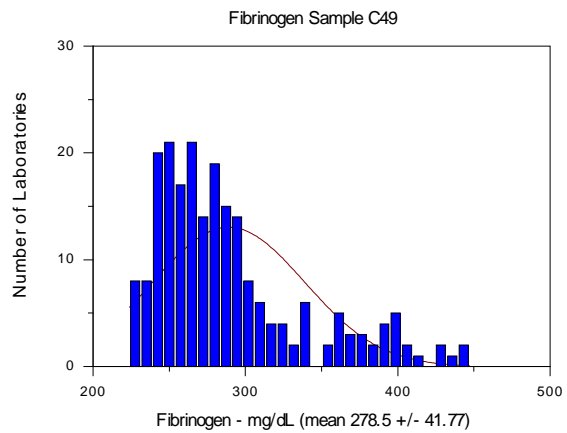
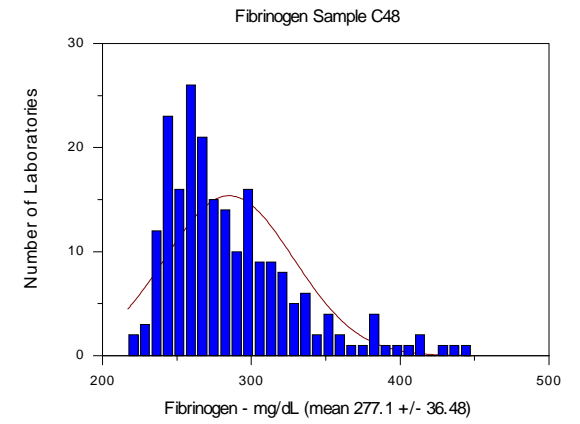
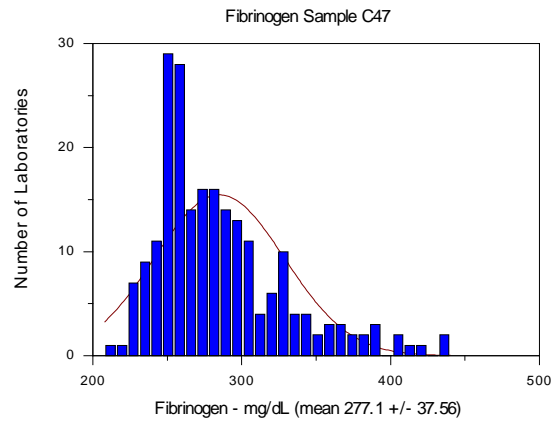
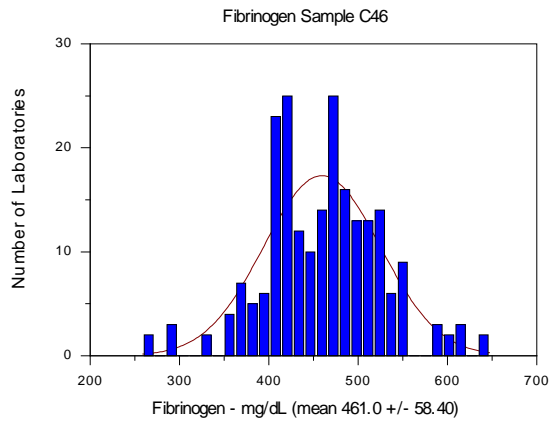
Hematology Proficiency Test Event

June 6, 2011

International Sensitivity Index (ISI) and International Normalized Ratio (INR)



Hematology Proficiency Test Event June 6, 2011 Fibrinogen Data

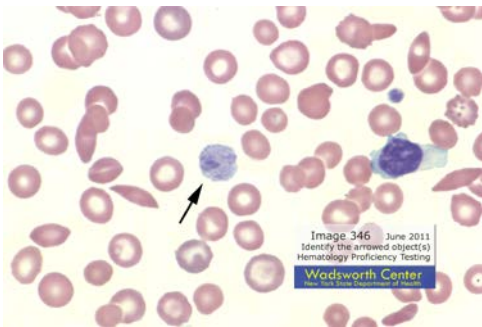


NEW YORK STATE HEMATOLOGY PROFICIENCY TESTING PROGRAM

June 6, 2011

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 346

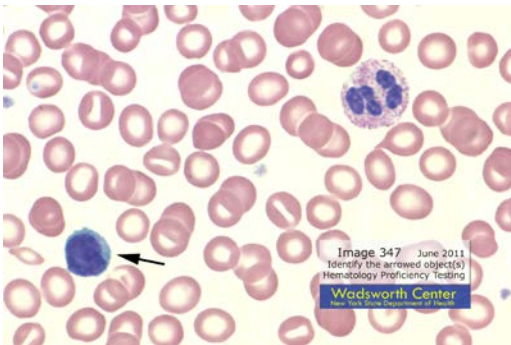


The arrowed object in Image 346 is light blue in color, contains granules, is non-nucleated, and is larger in size than the adjacent red blood cells. The object is a giant platelet as correctly identified by all participants.

Platelets are the cytoplasmic fragments of megakaryocytes responsible for hemostasis. Normal platelet size averages 1 - 4 μm in diameter. The size of a giant platelet is usually 10 - 20 μm . Image 346 was taken from the case of sickle cell anemia, Case 076, used in the November 2009 Cytohematology Glass Slide Proficiency Test (<http://www.wadsworth.org/chemheme/heme/glass/0911.htm>). Fifty-one percent of participants, in Case 076, reported the presence of giant platelets.

| Number of Responses | Percent of Laboratories | Cell type or finding |
|---------------------|-------------------------|----------------------|
| 367 | 100% | Giant platelet |

Image 347



The arrowed cell in Image 347 has a small amount of cytoplasm and a coarse compact nucleus lacking nucleoli. It was correctly identified as a normal lymphocyte by 97.3% of participants.

Eight participants reported this cell as a reactive/atypical lymphocyte. The distinguishing characteristic of the arrowed cell in Image 347 that makes identification of a normal lymphocyte the best choice is the small amount of cytoplasm. Typically, reactive/atypical lymphocytes contain moderate to abundant cytoplasm.

| Number of Responses | Percent of Laboratories | Cell type or finding |
|---------------------|-------------------------|------------------------------|
| 357 | 97.3% | Normal lymphocyte |
| 8 | 2.2% | Reactive/Atypical lymphocyte |
| 1 | 0.3% | Lymphoblast |
| 1 | 0.3% | Monocyte |

Image 348

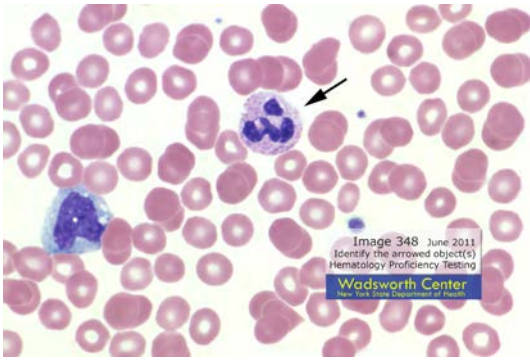
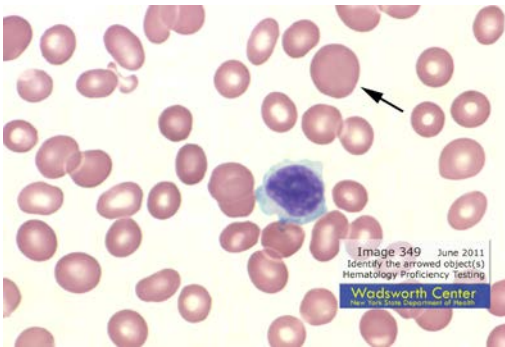


Image 348 was obtained from an asymptomatic 44 year-old female. The cytoplasm of the arrowed white blood cell in Image 348 is pale pink and contains specific granules. The nucleus has three distinct lobes separated by thin filaments. Participant consensus was obtained for Image 348; 88.3% (324) of participants identified the cell as a segmented neutrophil.

Approximately ten percent of participants identified the arrowed cell in Image 348 as a segmented/band neutrophil with toxic granulation. A neutrophil with toxic granules is a neutrophil that has been prematurely released from the marrow in response to, most often, a bacterial infection. The granules in such a case are abundant, coarse purple (azurophilic) primary granules. In less stressed conditions normal maturation of the neutrophil occurs and the primary granules are replaced with the smaller, secondary (specific) granules. The granules present in the arrowed cell of Image 348 are not coarse primary granules they are smaller secondary granules consistent with those of a segmented neutrophil and as reported by 324 participants.

| Number of Responses | Percent of Laboratories | Cell type or finding |
|---------------------|-------------------------|--|
| 324 | 88.3% | Segmented neutrophil |
| 40 | 10.9% | Segmented/band neutrophil with toxic granulation |
| 3 | 0.8% | Hypersegmentation |

Image 349



The arrowed red blood cell in Image 349 is larger than a normal red blood cell and was correctly identified by 91.3% of participants as an erythrocyte-macrocytic.

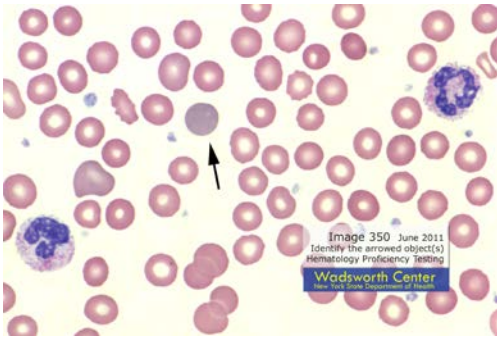
Image 349 was taken from the case of aplastic anemia used in the November 2010 Cytohematology Glass Slide Proficiency Test, Case 084 (<http://www.wadsworth.org/chemheme/heme/glass/1011.htm>). Aplastic anemia is a normocytic-normochromic anemia, sometimes macrocytic. Thirty-three percent of participants, in Case 084, reported slight to moderate macrocytosis.

Macrocytes can be round, as in this case, or oval in shape. "Oval macrocytes are more clinically worrisome. They are most commonly associated with B₁₂ or folic acid deficiency. Dietary deficiency, increased physiologic demand, or increased loss by malabsorption are the usual causes of deficits. Lack of either factor affects DNA synthesis in rapidly dividing cells with effects present in epithelia throughout the body as well as in blood cells. Megaloblastic anemia due to vitamin B₁₂ lack or malabsorption may be more difficult to diagnose. When gastrointestinal abnormalities are present, the disease is called pernicious anemia". Glassy, E.F. *Color Atlas of Hematology*, CAP Northfield, 1998, p.86.

Thirty-one participants identified the arrowed image as a spherocyte. A diagnostic feature of a spherocyte is size, it is smaller than that of a normal red blood cell. The cell in Image 349 has no central pallor, characteristic of a spherocyte, however, it is too large to be identified as such. The best choice is erythrocyte-macrocytic as reported by 91.3% of participants.

| Number of Responses | Percent of Laboratories | Cell type or finding |
|---------------------|-------------------------|--------------------------|
| 335 | 91.3% | Erythrocyte - macrocytic |
| 31 | 8.4% | Spherocyte |
| 1 | 0.3% | Erythrocyte - normal |

Image 350



The arrowed red blood cell in Image 350 has a blue-gray hue and was correctly identified by 366 participants as an erythrocyte-polychromatophilic. Polychromatophilic red blood cells contain small amounts of ribonucleic acid (RNA) and, because they have not reached full maturation, are usually larger in size than normal red blood cells. In this case, the arrowed cell appears only slightly larger than adjacent red cells indicating it is likely near full maturation. Many polychromatophilic red blood cells prove to be reticulocytes when stained with supravital dyes and appear under conditions of accelerated red cell production.

| Number of Responses | Percent of Laboratories | Cell type or finding |
|---------------------|-------------------------|--------------------------------|
| 366 | 99.7% | Erythrocyte-polychromatophilic |
| 1 | 0.3% | Spherocyte |