NEW YORK
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HEALTH

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Commissioner

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Executive Deputy Commissioner

To: Laboratory Directors and Laboratory Staff

From: Robert Rej, Ph.D.

Date: June 29, 2012

Subject: Results of the June 4, 2012 Hematology Proficiency Test

Enclosed are results from the hematology proficiency testing survey shipped June 4, 2012. Five samples were distributed for each test category:

Routine Blood Counts (B61, B62, B63, B64, B65)

Routine Coagulation (C61, C62, C63, C64, C65 - APTT, PT/INR and Fibrinogen assays)

Cell Identification (361, 362, 363, 364, 365)

**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 $10^9$/L)**

| Specimen: B61 | Specimen: B62 | Specimen: B63 | Specimen: B64 | Specimen: B65 | Number | [Code] Instrument |
|---|---|---|---|---|---|---|
| 3.91 ± 0.15 | 11.94 ± 0.46 | 9.33 ± 0.34 | 16.44 ± 0.70 | 4.16 ± 0.17 | n = 415 | [---] All Methods & Instruments |
| | | | | | | **<Instruments>** |
| 4.08 ± 0.15 | 12.11 ± 0.37 | 9.58 ± 0.32 | 16.77 ± 0.68 | 4.37 ± 0.14 | n = 3 | [ABF] Abbott Cell Dyn 3500 |
| 3.97 ± 0.05 | 12.32 ± 0.15 | 9.39 ± 0.29 | 16.77 ± 0.32 | 4.30 ± 0.18 | n = 3 | [ABG] Abbott Cell Dyn 1700 |
| 4.03 ± 0.09 | 12.27 ± 0.25 | 9.60 ± 0.17 | 16.93 ± 0.92 | 4.28 ± 0.13 | n = 4 | [ABJ] Abbott Cell Dyn 1800 |
| 3.92 ± 0.09 | 11.80 ± 0.31 | 9.34 ± 0.22 | 16.30 ± 0.41 | 4.10 ± 0.12 | n = 7 | [ABK] Abbott Cell Dyn 3200 |
| 3.98 ± 0.15 | 11.98 ± 0.57 | 9.35 ± 0.30 | 16.41 ± 0.46 | 4.23 ± 0.13 | n = 15 | [ABM] Abbott Cell Dyn 3700 |
| 3.96 ± 0.09 | 12.42 ± 0.32 | 9.57 ± 0.24 | 16.83 ± 0.37 | 4.27 ± 0.14 | n = 13 | [ABS] Abbott Cell Dyn Sapphire |
| 3.99 ± 0.11 | 12.07 ± 0.20 | 9.53 ± 0.15 | 16.54 ± 0.29 | 4.19 ± 0.07 | n = 18 | [ABT] Abbott Cell Dyn Ruby |
| 3.95 ± 0.12 | 11.52 ± 0.20 | 9.03 ± 0.16 | 15.91 ± 0.40 | 4.13 ± 0.15 | n = 4 | [ABU] Abbott Cell Dyn Emerald |
| 3.73 ± 0.21 | 11.61 ± 0.51 | 8.89 ± 0.32 | 16.15 ± 0.63 | 4.03 ± 0.17 | n = 20 | [BTD] Siemens (Bayer)Advia 120 |
| 3.65 ± 0.14 | 11.76 ± 0.37 | 8.89 ± 0.36 | 16.06 ± 0.49 | 4.02 ± 0.17 | n = 27 | [BTE] Siemens (Bayer)Advia 2120 |
| 3.96 ± 0.07 | 11.84 ± 0.19 | 9.30 ± 0.21 | 16.42 ± 0.23 | 4.09 ± 0.09 | n = 23 | [CUL] Coulter UniCel DxH 800 |
| 3.77 ± 0.07 | 11.95 ± 0.29 | 9.22 ± 0.13 | 16.59 ± 0.30 | 4.10 ± 0.12 | n = 7 | [CUS] Coulter ACT 5 diff |
| 3.96 ± 0.12 | 12.09 ± 0.31 | 9.43 ± 0.18 | 16.82 ± 0.38 | 4.27 ± 0.12 | n = 23 | [CUT] Coulter ACT series,not ACT5 diff |
| 4.02 ± 0.10 | 12.38 ± 0.40 | 9.43 ± 0.20 | 17.47 ± 0.59 | 4.25 ± 0.11 | n = 10 | [CUW] Coulter HMX |
| 3.90 ± 0.06 | 11.88 ± 0.18 | 9.38 ± 0.15 | 16.29 ± 0.57 | 4.19 ± 0.08 | n = 63 | [CUX] Coulter LH750,755 |
| 3.88 ± 0.09 | 11.75 ± 0.25 | 9.33 ± 0.16 | 16.02 ± 0.58 | 4.18 ± 0.10 | n = 19 | [CUY] Coulter LH 780 |
| 4.06 ± 0.07 | 12.42 ± 0.22 | 9.52 ± 0.18 | 17.41 ± 0.34 | 4.31 ± 0.09 | n = 21 | [CUZ] Coulter LH500 |
| 3.92 ± 0.09 | 12.08 ± 0.15 | 9.47 ± 0.15 | 16.61 ± 0.22 | 4.18 ± 0.09 | n = 7 | [ROB] ABX Pentra series |
| 3.73 ± 0.28 | 11.57 ± 0.08 | 9.01 ± 0.18 | 16.16 ± 0.23 | 4.10 ± 0.00 | n = 5 | [SYB] Sysmex KX-21N |
| 3.85 ± 0.13 | 11.50 ± 0.44 | 9.10 ± 0.38 | 15.87 ± 0.67 | 4.03 ± 0.19 | n = 23 | [SYO] Sysmex XE2100 |
| 3.93 ± 0.05 | 11.82 ± 0.41 | 9.20 ± 0.46 | 15.98 ± 0.78 | 4.10 ± 0.27 | n = 3 | [SYL] Sysmex XE 2100C |
| 3.74 ± 0.13 | 11.38 ± 0.28 | 8.94 ± 0.17 | 15.70 ± 0.55 | 3.94 ± 0.10 | n = 7 | [SYQ] Sysmex XE 2100D(Blood Center Only) |
| 3.90 ± 0.09 | 11.37 ± 0.05 | 9.10 ± 0.09 | 15.64 ± 0.26 | 3.87 ± 0.05 | n = 3 | [SYN] Sysmex XE 2100DC |
| 3.84 ± 0.16 | 11.34 ± 0.44 | 8.98 ± 0.36 | 15.68 ± 0.72 | 3.96 ± 0.17 | n = 27 | [SYA] Sysmex XE 5000 |
| 3.89 ± 0.07 | 12.04 ± 0.32 | 9.39 ± 0.21 | 16.50 ± 0.43 | 4.18 ± 0.16 | n = 23 | [SYI] Sysmex XT-1800i,XT-2000i |
| 3.95 ± 0.17 | 12.19 ± 0.35 | 9.43 ± 0.37 | 16.89 ± 0.68 | 4.22 ± 0.12 | n = 8 | [SYV] Sysmex XT 4000i |
| 4.04 ± 0.10 | 12.65 ± 0.27 | 9.80 ± 0.19 | 17.35 ± 0.36 | 4.35 ± 0.11 | n = 19 | [SYP] Sysmex XS-1000i,XS-1000iAL |
| 3.93 ± 0.05 | 11.97 ± 0.31 | 9.49 ± 0.29 | 16.04 ± 0.71 | 4.17 ± 0.05 | n = 3 | [OOO] Other |

**Summary of Participant Responses**
**Mean ± One Standard Deviation**

**Red Cell Count (x $10^{12}$/L)**

| Specimen: B61 | Specimen: B62 | Specimen: B63 | Specimen: B64 | Specimen: B65 | Number | [Code] Instrument |
|---|---|---|---|---|---|---|
| 3.102 ± 0.088 | 5.295 ± 0.125 | 4.497 ± 0.104 | 5.082 ± 0.112 | 4.906 ± 0.113 | n = 414 | [---] All Methods & Instruments |
| | | | | | | **<Instruments>** |
| 3.173 ± 0.014 | 5.425 ± 0.090 | 4.575 ± 0.054 | 5.168 ± 0.069 | 5.017 ± 0.014 | n = 3 | [ABF] Abbott Cell Dyn 3500 |
| 3.154 ± 0.056 | 5.403 ± 0.032 | 4.579 ± 0.066 | 5.210 ± 0.009 | 5.043 ± 0.031 | n = 3 | [ABG] Abbott Cell Dyn 1700 |
| 3.171 ± 0.069 | 5.350 ± 0.098 | 4.485 ± 0.067 | 5.118 ± 0.101 | 4.903 ± 0.100 | n = 4 | [ABJ] Abbott Cell Dyn 1800 |
| 3.215 ± 0.040 | 5.400 ± 0.089 | 4.554 ± 0.105 | 5.164 ± 0.051 | 4.985 ± 0.081 | n = 7 | [ABK] Abbott Cell Dyn 3200 |
| 3.198 ± 0.078 | 5.431 ± 0.128 | 4.592 ± 0.090 | 5.186 ± 0.086 | 5.045 ± 0.110 | n = 15 | [ABM] Abbott Cell Dyn 3700 |
| 3.177 ± 0.031 | 5.510 ± 0.069 | 4.655 ± 0.063 | 5.310 ± 0.061 | 5.124 ± 0.085 | n = 13 | [ABS] Abbott Cell Dyn Sapphire |
| 3.145 ± 0.062 | 5.484 ± 0.074 | 4.573 ± 0.066 | 5.238 ± 0.068 | 5.059 ± 0.103 | n = 18 | [ABT] Abbott Cell Dyn Ruby |
| 3.081 ± 0.044 | 5.113 ± 0.102 | 4.399 ± 0.095 | 5.038 ± 0.060 | 4.802 ± 0.106 | n = 4 | [ABU] Abbott Cell Dyn Emerald |
| 3.171 ± 0.060 | 5.326 ± 0.073 | 4.561 ± 0.073 | 5.128 ± 0.079 | 4.953 ± 0.084 | n = 20 | [BTD] Siemens (Bayer)Advia 120 |
| 3.169 ± 0.060 | 5.360 ± 0.085 | 4.544 ± 0.066 | 5.142 ± 0.078 | 4.937 ± 0.085 | n = 27 | [BTE] Siemens (Bayer)Advia 2120 |
| 3.027 ± 0.044 | 5.173 ± 0.074 | 4.395 ± 0.070 | 4.961 ± 0.067 | 4.789 ± 0.060 | n = 23 | [CUL] Coulter UniCel DxH 800 |
| 3.082 ± 0.059 | 5.351 ± 0.060 | 4.522 ± 0.055 | 5.108 ± 0.040 | 4.936 ± 0.032 | n = 7 | [CUS] Coulter ACT 5 diff |
| 3.013 ± 0.066 | 5.190 ± 0.117 | 4.381 ± 0.111 | 5.017 ± 0.082 | 4.804 ± 0.098 | n = 22 | [CUT] Coulter ACT series,not ACT5 diff |
| 3.062 ± 0.063 | 5.226 ± 0.041 | 4.397 ± 0.055 | 5.016 ± 0.049 | 4.834 ± 0.038 | n = 10 | [CUW] Coulter HMX |
| 3.013 ± 0.032 | 5.179 ± 0.047 | 4.408 ± 0.034 | 4.974 ± 0.046 | 4.806 ± 0.042 | n = 63 | [CUX] Coulter LH750,755 |
| 3.019 ± 0.034 | 5.184 ± 0.067 | 4.412 ± 0.043 | 4.977 ± 0.055 | 4.801 ± 0.049 | n = 19 | [CUY] Coulter LH 780 |
| 3.098 ± 0.063 | 5.260 ± 0.053 | 4.417 ± 0.050 | 5.037 ± 0.052 | 4.856 ± 0.052 | n = 21 | [CUZ] Coulter LH500 |
| 3.054 ± 0.062 | 5.285 ± 0.105 | 4.486 ± 0.073 | 5.092 ± 0.071 | 4.886 ± 0.059 | n = 7 | [ROB] ABX Pentra series |
| 3.099 ± 0.018 | 5.343 ± 0.009 | 4.495 ± 0.019 | 5.059 ± 0.056 | 4.913 ± 0.037 | n = 5 | [SYB] Sysmex KX-21N |
| 3.175 ± 0.031 | 5.330 ± 0.073 | 4.571 ± 0.032 | 5.101 ± 0.051 | 4.954 ± 0.046 | n = 23 | [SYO] Sysmex XE2100 |
| 3.172 ± 0.024 | 5.326 ± 0.071 | 4.555 ± 0.019 | 5.115 ± 0.027 | 4.932 ± 0.015 | n = 3 | [SYL] Sysmex XE 2100C |
| 3.176 ± 0.028 | 5.310 ± 0.049 | 4.573 ± 0.039 | 5.101 ± 0.063 | 4.948 ± 0.033 | n = 7 | [SYQ] Sysmex XE 2100D(Blood Center Only) |
| 3.185 ± 0.036 | 5.343 ± 0.050 | 4.570 ± 0.018 | 5.137 ± 0.042 | 4.997 ± 0.032 | n = 3 | [SYN] Sysmex XE 2100DC |
| 3.156 ± 0.047 | 5.285 ± 0.059 | 4.559 ± 0.046 | 5.095 ± 0.060 | 4.936 ± 0.049 | n = 27 | [SYA] Sysmex XE 5000 |
| 3.132 ± 0.034 | 5.342 ± 0.048 | 4.537 ± 0.033 | 5.108 ± 0.063 | 4.964 ± 0.041 | n = 23 | [SYI] Sysmex XT-1800i,XT-2000i |
| 3.161 ± 0.023 | 5.375 ± 0.043 | 4.602 ± 0.065 | 5.166 ± 0.055 | 5.010 ± 0.063 | n = 8 | [SYV] Sysmex XT 4000i |
| 3.060 ± 0.023 | 5.386 ± 0.050 | 4.515 ± 0.046 | 5.154 ± 0.046 | 4.977 ± 0.035 | n = 19 | [SYP] Sysmex XS-1000i,XS-1000iAL |
| 3.025 ± 0.019 | 5.300 ± 0.090 | 4.440 ± 0.064 | 5.077 ± 0.068 | 4.896 ± 0.100 | n = 3 | [OOO] Other |

**Summary of Participant Responses**
**Mean ± One Standard Deviation**

**Hemoglobin (g/dL)**

| Specimen: B61 | Specimen: B62 | Specimen: B63 | Specimen: B64 | Specimen: B65 | Number | [Code] Instrument |
|---|---|---|---|---|---|---|
| 9.37 ± 0.18 | 15.83 ± 0.30 | 13.68 ± 0.20 | 15.77 ± 0.30 | 15.38 ± 0.22 | n = 425 | [---] All Methods & Instruments |
| | | | | | | **<Instruments>** |
| 10.78 ± 0.15 | 18.94 ± 0.10 | 16.20 ± 0.09 | >19.00 | 18.94 ± 0.10 | n = 3 | [HQB] HemoCue Donor Hb Checker |
| 9.48 ± 0.11 | 15.89 ± 0.32 | 13.70 ± 0.21 | 15.71 ± 0.27 | 15.38 ± 0.18 | n = 6 | [HQC] HemoCue Hb201+/B-Hb |
| 9.43 ± 0.05 | 16.03 ± 0.34 | 13.73 ± 0.14 | 15.97 ± 0.14 | 15.36 ± 0.10 | n = 3 | [ABF] Abbott Cell Dyn 3500 |
| 9.26 ± 0.10 | 15.87 ± 0.23 | 13.68 ± 0.15 | 16.05 ± 0.19 | 15.49 ± 0.20 | n = 3 | [ABG] Abbott Cell Dyn 1700 |
| 9.41 ± 0.11 | 16.03 ± 0.41 | 13.81 ± 0.27 | 16.08 ± 0.37 | 15.50 ± 0.40 | n = 4 | [ABJ] Abbott Cell Dyn 1800 |
| 9.75 ± 0.16 | 16.23 ± 0.29 | 14.15 ± 0.31 | 16.26 ± 0.18 | 15.57 ± 0.16 | n = 7 | [ABK] Abbott Cell Dyn 3200 |
| 9.54 ± 0.20 | 16.05 ± 0.22 | 13.89 ± 0.24 | 16.14 ± 0.21 | 15.54 ± 0.30 | n = 15 | [ABM] Abbott Cell Dyn 3700 |
| 9.68 ± 0.14 | 16.26 ± 0.27 | 14.07 ± 0.20 | 16.11 ± 0.32 | 15.70 ± 0.21 | n = 13 | [ABS] Abbott Cell Dyn Sapphire |
| 9.47 ± 0.15 | 16.04 ± 0.31 | 13.77 ± 0.25 | 16.09 ± 0.33 | 15.41 ± 0.33 | n = 18 | [ABT] Abbott Cell Dyn Ruby |
| 9.18 ± 0.13 | 15.87 ± 0.27 | 13.63 ± 0.25 | 15.91 ± 0.20 | 15.53 ± 0.30 | n = 4 | [ABU] Abbott Cell Dyn Emerald |
| 9.58 ± 0.14 | 15.88 ± 0.23 | 13.81 ± 0.17 | 15.87 ± 0.27 | 15.45 ± 0.18 | n = 19 | [BTD] Siemens (Bayer)Advia 120 |
| 9.60 ± 0.16 | 15.88 ± 0.24 | 13.77 ± 0.28 | 15.85 ± 0.26 | 15.25 ± 0.24 | n = 28 | [BTE] Siemens (Bayer)Advia 2120 |
| 9.35 ± 0.13 | 15.53 ± 0.20 | 13.57 ± 0.22 | 15.41 ± 0.24 | 15.18 ± 0.19 | n = 23 | [CUL] Coulter UniCel DxH 800 |
| 9.36 ± 0.13 | 15.98 ± 0.15 | 13.81 ± 0.10 | 15.98 ± 0.15 | 15.50 ± 0.17 | n = 7 | [CUS] Coulter ACT 5 diff |
| 9.23 ± 0.17 | 15.80 ± 0.24 | 13.57 ± 0.21 | 15.72 ± 0.24 | 15.29 ± 0.26 | n = 22 | [CUT] Coulter ACT series,not ACT5 diff |
| 9.37 ± 0.18 | 15.89 ± 0.23 | 13.72 ± 0.14 | 15.92 ± 0.15 | 15.38 ± 0.14 | n = 10 | [CUW] Coulter HMX |
| 9.28 ± 0.10 | 15.70 ± 0.14 | 13.60 ± 0.11 | 15.62 ± 0.13 | 15.34 ± 0.12 | n = 63 | [CUX] Coulter LH750,755 |
| 9.29 ± 0.09 | 15.68 ± 0.21 | 13.59 ± 0.11 | 15.65 ± 0.21 | 15.36 ± 0.10 | n = 19 | [CUY] Coulter LH 780 |
| 9.52 ± 0.08 | 15.94 ± 0.13 | 13.71 ± 0.17 | 15.99 ± 0.21 | 15.44 ± 0.14 | n = 21 | [CUZ] Coulter LH500 |
| 9.13 ± 0.07 | 15.94 ± 0.13 | 13.63 ± 0.16 | 15.90 ± 0.17 | 15.39 ± 0.16 | n = 7 | [ROB] ABX Pentra series |
| 9.50 ± 0.06 | 16.05 ± 0.08 | 13.80 ± 0.09 | 16.01 ± 0.13 | 15.62 ± 0.08 | n = 5 | [SYB] Sysmex KX-21N |
| 9.32 ± 0.08 | 15.75 ± 0.19 | 13.60 ± 0.13 | 15.64 ± 0.16 | 15.39 ± 0.17 | n = 23 | [SYO] Sysmex XE2100 |
| 9.42 ± 0.04 | 15.77 ± 0.16 | 13.57 ± 0.16 | 15.59 ± 0.23 | 15.31 ± 0.27 | n = 4 | [SYL] Sysmex XE 2100C |
| 9.35 ± 0.10 | 15.63 ± 0.07 | 13.53 ± 0.12 | 15.56 ± 0.08 | 15.34 ± 0.08 | n = 6 | [SYQ] Sysmex XE 2100D(Blood Center Only) |
| 9.27 ± 0.05 | 15.67 ± 0.05 | 13.47 ± 0.14 | 15.53 ± 0.05 | 15.23 ± 0.05 | n = 3 | [SYN] Sysmex XE 2100DC |
| 9.26 ± 0.10 | 15.64 ± 0.17 | 13.55 ± 0.15 | 15.52 ± 0.20 | 15.25 ± 0.18 | n = 27 | [SYA] Sysmex XE 5000 |
| 9.35 ± 0.09 | 15.70 ± 0.22 | 13.70 ± 0.12 | 15.57 ± 0.16 | 15.36 ± 0.17 | n = 23 | [SYI] Sysmex XT-1800i,XT-2000i |
| 9.38 ± 0.12 | 15.76 ± 0.12 | 13.79 ± 0.15 | 15.63 ± 0.09 | 15.41 ± 0.11 | n = 8 | [SYV] Sysmex XT 4000i |
| 9.29 ± 0.10 | 16.08 ± 0.10 | 13.80 ± 0.12 | 16.06 ± 0.09 | 15.68 ± 0.14 | n = 19 | [SYP] Sysmex XS-1000i,XS-1000iAL |
| 9.40 ± 0.09 | 16.04 ± 0.39 | 13.75 ± 0.19 | 16.02 ± 0.41 | 15.48 ± 0.15 | n = 3 | [OOO] Other |

**Summary of Participant Responses**
**Mean ± One Standard Deviation**

**Hematocrit (%)**

| Specimen: B61 | Specimen: B62 | Specimen: B63 | Specimen: B64 | Specimen: B65 | Number | [Code] Instrument |
|---|---|---|---|---|---|---|
| 26.98 ± 1.37 | 44.37 ± 1.95 | 38.70 ± 1.66 | 44.12 ± 1.82 | 43.33 ± 1.84 | n = 419 | [---] All Methods & Instruments |
| | | | | | | **<Instruments>** |
| 24.64 ± 1.09 | 41.95 ± 0.93 | 36.64 ± 1.09 | 41.64 ± 1.09 | 41.30 ± 2.35 | n = 5 | [MHC] Microhematocrit |
| 28.63 ± 0.34 | 47.80 ± 0.55 | 41.13 ± 0.14 | 47.10 ± 0.64 | 46.55 ± 0.19 | n = 3 | [ABF] Abbott Cell Dyn 3500 |
| 27.29 ± 0.37 | 46.25 ± 0.19 | 39.90 ± 0.64 | 46.19 ± 0.29 | 45.35 ± 0.19 | n = 3 | [ABG] Abbott Cell Dyn 1700 |
| 28.23 ± 0.66 | 46.68 ± 1.07 | 39.87 ± 0.77 | 45.80 ± 1.03 | 44.98 ± 1.14 | n = 4 | [ABJ] Abbott Cell Dyn 1800 |
| 24.31 ± 0.60 | 39.66 ± 0.78 | 34.49 ± 0.78 | 39.13 ± 0.51 | 38.06 ± 0.66 | n = 7 | [ABK] Abbott Cell Dyn 3200 |
| 28.91 ± 0.67 | 48.02 ± 1.25 | 41.50 ± 0.89 | 47.34 ± 1.00 | 46.95 ± 1.26 | n = 15 | [ABM] Abbott Cell Dyn 3700 |
| 25.65 ± 0.34 | 42.97 ± 0.56 | 37.34 ± 0.55 | 42.95 ± 0.46 | 42.02 ± 0.68 | n = 13 | [ABS] Abbott Cell Dyn Sapphire |
| 23.82 ± 0.56 | 40.13 ± 0.86 | 34.44 ± 0.72 | 39.63 ± 0.90 | 38.57 ± 1.10 | n = 18 | [ABT] Abbott Cell Dyn Ruby |
| 28.49 ± 0.50 | 45.76 ± 0.98 | 40.32 ± 0.91 | 46.61 ± 0.52 | 45.18 ± 0.89 | n = 4 | [ABU] Abbott Cell Dyn Emerald |
| 24.77 ± 0.44 | 40.74 ± 0.46 | 35.77 ± 0.45 | 40.79 ± 0.47 | 39.86 ± 0.64 | n = 19 | [BTD] Siemens (Bayer)Advia 120 |
| 24.82 ± 0.66 | 41.06 ± 1.02 | 35.84 ± 0.88 | 41.22 ± 0.96 | 39.93 ± 1.15 | n = 28 | [BTE] Siemens (Bayer)Advia 2120 |
| 27.67 ± 0.40 | 45.81 ± 0.67 | 39.80 ± 0.68 | 45.61 ± 0.64 | 44.69 ± 0.66 | n = 23 | [CUL] Coulter UniCel DxH 800 |
| 25.70 ± 0.64 | 43.57 ± 0.74 | 37.61 ± 0.57 | 43.00 ± 0.63 | 42.07 ± 0.54 | n = 7 | [CUS] Coulter ACT 5 diff |
| 26.71 ± 0.56 | 44.70 ± 0.91 | 38.47 ± 1.01 | 44.58 ± 0.74 | 43.37 ± 0.91 | n = 22 | [CUT] Coulter ACT series,not ACT5 diff |
| 27.15 ± 0.54 | 45.13 ± 0.49 | 38.75 ± 0.49 | 44.65 ± 0.61 | 43.77 ± 0.47 | n = 10 | [CUW] Coulter HMX |
| 26.94 ± 0.37 | 45.23 ± 0.53 | 39.24 ± 0.46 | 44.92 ± 0.58 | 44.03 ± 0.50 | n = 63 | [CUX] Coulter LH750,755 |
| 26.95 ± 0.32 | 45.30 ± 0.54 | 39.29 ± 0.48 | 44.91 ± 0.50 | 44.02 ± 0.52 | n = 19 | [CUY] Coulter LH 780 |
| 27.36 ± 0.58 | 45.25 ± 0.79 | 38.89 ± 0.58 | 44.73 ± 0.61 | 43.95 ± 0.44 | n = 21 | [CUZ] Coulter LH500 |
| 25.65 ± 0.66 | 43.17 ± 0.69 | 37.24 ± 0.86 | 42.88 ± 0.74 | 41.57 ± 0.83 | n = 7 | [ROB] ABX Pentra series |
| 26.02 ± 0.11 | 42.44 ± 0.26 | 36.61 ± 0.40 | 41.61 ± 0.24 | 40.96 ± 0.21 | n = 5 | [SYB] Sysmex KX-21N |
| 28.00 ± 0.35 | 44.55 ± 0.60 | 39.36 ± 0.44 | 44.12 ± 0.53 | 43.57 ± 0.52 | n = 23 | [SYO] Sysmex XE2100 |
| 26.99 ± 0.61 | 43.55 ± 1.45 | 37.18 ± 0.78 | 42.43 ± 1.05 | 41.77 ± 1.04 | n = 3 | [SYL] Sysmex XE 2100C |
| 28.17 ± 0.34 | 44.79 ± 0.46 | 39.76 ± 0.47 | 44.50 ± 0.61 | 43.80 ± 0.43 | n = 7 | [SYQ] Sysmex XE 2100D(Blood Center Only) |
| 27.16 ± 0.65 | 43.69 ± 1.08 | 37.50 ± 0.63 | 42.91 ± 0.74 | 42.45 ± 0.82 | n = 3 | [SYN] Sysmex XE 2100DC |
| 27.88 ± 0.40 | 44.35 ± 0.54 | 39.41 ± 0.45 | 44.26 ± 0.48 | 43.58 ± 0.54 | n = 27 | [SYA] Sysmex XE 5000 |
| 28.06 ± 0.41 | 44.14 ± 0.63 | 39.02 ± 0.39 | 43.81 ± 0.64 | 43.40 ± 0.50 | n = 23 | [SYI] Sysmex XT-1800i,XT-2000i |
| 28.29 ± 0.13 | 44.33 ± 0.59 | 39.47 ± 0.39 | 44.13 ± 0.31 | 43.63 ± 0.42 | n = 8 | [SYV] Sysmex XT 4000i |
| 27.38 ± 0.42 | 44.52 ± 0.68 | 38.83 ± 0.56 | 44.22 ± 0.49 | 43.46 ± 0.62 | n = 19 | [SYP] Sysmex XS-1000i,XS-1000iAL |
| 26.73 ± 0.59 | 45.13 ± 1.04 | 38.82 ± 0.50 | 44.78 ± 0.50 | 44.13 ± 0.05 | n = 3 | [OOO] Other |

**Summary of Participant Responses**
**Mean ± One Standard Deviation**

**Platelet Count (x $10^9$/L)**

| Specimen: B61 | Specimen: B62 | Specimen: B63 | Specimen: B64 | Specimen: B65 | Number | [Code] Instrument |
|---|---|---|---|---|---|---|
| 166.2 ± 16.24 | 266.0 ± 26.43 | 235.4 ± 21.86 | 527.6 ± 46.65 | 74.3 ± 9.78 | n = 416 | [---] All Methods & Instruments |
| | | | | | | **<Instruments>** |
| 188.4 ± 12.53 | 291.9 ± 17.02 | 262.6 ± 7.44 | 583.8 ± 14.01 | 95.9 ± 16.86 | n = 3 | [ABF] Abbott Cell Dyn 3500 |
| 167.3 ± 5.91 | 288.5 ± 9.03 | 244.4 ± 14.48 | 572.1 ± 23.55 | 80.2 ± 4.11 | n = 3 | [ABG] Abbott Cell Dyn 1700 |
| 174.0 ± 5.79 | 296.1 ± 16.18 | 254.3 ± 11.85 | 577.1 ± 24.16 | 80.0 ± 3.36 | n = 4 | [ABJ] Abbott Cell Dyn 1800 |
| 190.4 ± 11.95 | 307.0 ± 20.76 | 267.9 ± 23.53 | 583.8 ± 26.43 | 95.5 ± 10.00 | n = 7 | [ABK] Abbott Cell Dyn 3200 |
| 189.0 ± 7.12 | 287.3 ± 20.75 | 253.5 ± 11.65 | 556.2 ± 21.08 | 80.2 ± 4.16 | n = 15 | [ABM] Abbott Cell Dyn 3700 |
| 176.4 ± 6.14 | 285.8 ± 7.12 | 248.1 ± 8.70 | 546.3 ± 14.49 | 86.0 ± 3.65 | n = 13 | [ABS] Abbott Cell Dyn Sapphire |
| 185.1 ± 8.05 | 316.9 ± 19.80 | 271.2 ± 15.91 | 590.7 ± 22.40 | 100.8 ± 7.26 | n = 18 | [ABT] Abbott Cell Dyn Ruby |
| 182.8 ± 12.49 | 287.6 ± 7.14 | 255.6 ± 7.57 | 573.5 ± 14.18 | 82.4 ± 6.38 | n = 4 | [ABU] Abbott Cell Dyn Emerald |
| 189.9 ± 10.97 | 295.5 ± 12.48 | 261.2 ± 12.69 | 594.9 ± 30.09 | 86.2 ± 6.40 | n = 20 | [BTD] Siemens (Bayer)Advia 120 |
| 186.6 ± 11.77 | 295.0 ± 16.75 | 259.7 ± 13.56 | 587.6 ± 34.27 | 85.7 ± 5.28 | n = 27 | [BTE] Siemens (Bayer)Advia 2120 |
| 157.2 ± 3.92 | 248.9 ± 5.96 | 221.4 ± 5.46 | 494.4 ± 11.13 | 68.4 ± 2.33 | n = 23 | [CUL] Coulter UniCel DxH 800 |
| 183.7 ± 2.88 | 280.3 ± 8.83 | 256.2 ± 7.60 | 557.6 ± 14.74 | 74.8 ± 3.38 | n = 7 | [CUS] Coulter ACT 5 diff |
| 158.2 ± 7.36 | 259.5 ± 13.76 | 230.9 ± 12.93 | 516.6 ± 21.23 | 71.5 ± 5.66 | n = 23 | [CUT] Coulter ACT series,not ACT5 diff |
| 159.0 ± 7.58 | 254.9 ± 13.54 | 222.3 ± 7.95 | 502.0 ± 24.28 | 70.8 ± 2.81 | n = 10 | [CUW] Coulter HMX |
| 161.8 ± 5.85 | 261.7 ± 8.58 | 233.0 ± 7.99 | 511.9 ± 16.18 | 74.0 ± 3.19 | n = 63 | [CUX] Coulter LH750,755 |
| 160.9 ± 4.15 | 260.4 ± 7.43 | 231.4 ± 6.46 | 510.9 ± 10.16 | 74.3 ± 2.89 | n = 19 | [CUY] Coulter LH 780 |
| 159.7 ± 6.46 | 255.5 ± 6.59 | 226.0 ± 9.75 | 515.1 ± 18.81 | 71.1 ± 3.57 | n = 21 | [CUZ] Coulter LH500 |
| 181.4 ± 10.26 | 283.9 ± 12.02 | 251.4 ± 12.95 | 562.0 ± 28.03 | 76.8 ± 2.83 | n = 7 | [ROB] ABX Pentra series |
| 184.2 ± 2.36 | 274.3 ± 4.22 | 255.9 ± 4.38 | 553.8 ± 6.79 | 82.5 ± 5.40 | n = 3 | [ROC] ABX Micro |
| 162.1 ± 1.83 | 273.7 ± 12.62 | 237.5 ± 6.71 | 568.6 ± 16.69 | 72.9 ± 3.31 | n = 5 | [SYB] Sysmex KX-21N |
| 145.4 ± 6.04 | 223.5 ± 11.27 | 201.6 ± 7.69 | 452.8 ± 21.87 | 61.4 ± 3.03 | n = 23 | [SYO] Sysmex XE2100 |
| 157.3 ± 6.85 | 242.3 ± 10.61 | 220.9 ± 3.72 | 497.6 ± 25.60 | 62.4 ± 2.56 | n = 3 | [SYL] Sysmex XE 2100C |
| 179.5 ± 5.28 | 273.6 ± 7.55 | 252.8 ± 7.67 | 559.8 ± 18.05 | 73.8 ± 2.24 | n = 7 | [SYQ] Sysmex XE 2100D(Blood Center Only) |
| 155.0 ± 1.80 | 240.3 ± 7.75 | 215.1 ± 3.72 | 488.3 ± 9.49 | 65.7 ± 2.26 | n = 3 | [SYN] Sysmex XE 2100DC |
| 142.6 ± 5.73 | 221.2 ± 10.80 | 199.7 ± 7.19 | 450.9 ± 21.00 | 59.9 ± 3.05 | n = 27 | [SYA] Sysmex XE 5000 |
| 167.9 ± 5.39 | 268.5 ± 9.32 | 235.5 ± 5.69 | 532.9 ± 13.79 | 74.0 ± 2.72 | n = 23 | [SYI] Sysmex XT-1800i,XT-2000i |
| 166.3 ± 6.55 | 267.7 ± 8.81 | 234.9 ± 9.65 | 532.0 ± 5.96 | 73.0 ± 2.55 | n = 8 | [SYV] Sysmex XT 4000i |
| 158.9 ± 5.18 | 253.3 ± 8.49 | 224.9 ± 7.13 | 515.6 ± 14.26 | 66.9 ± 2.14 | n = 19 | [SYP] Sysmex XS-1000i,XS-1000iAL |
| 164.2 ± 6.95 | 264.5 ± 9.09 | 237.6 ± 8.43 | 535.9 ± 22.60 | 70.0 ± 5.41 | n = 3 | [OOO] Other |

**Summary of Participant Responses**
**Mean ± One Standard Deviation**

**Prothrombin Time (seconds)**

| Specimen: C61 | Specimen: C62 | Specimen: C63 | Specimen: C64 | Specimen: C65 | Number | [Code] Instrument or Reagent |
|---|---|---|---|---|---|---|
| 11.11 ± 0.69 | 10.74 ± 0.86 | 29.19 ± 3.51 | 50.48 ± 8.29 | 11.10 ± 0.68 | n = 323 | [---] All Methods & Instruments |
| | | | | | | **<Instruments>** |
| 11.20 ± 1.00 | 10.94 ± 1.38 | 24.74 ± 4.53 | 39.40 ± 10.85 | 11.27 ± 1.05 | n = 3 | [BBA] BBL Fibrometer |
| 10.93 ± 0.23 | 9.96 ± 0.15 | 27.49 ± 0.78 | 45.85 ± 1.85 | 10.92 ± 0.21 | n = 19 | [BEB] Dade-Behring BCS,BCSXP |
| 12.66 ± 0.30 | 12.64 ± 0.30 | 31.27 ± 0.79 | 56.74 ± 2.32 | 12.74 ± 0.37 | n = 28 | [DGC] Diagnostica Stago STA Compact |
| 12.96 ± 0.30 | 12.98 ± 0.32 | 31.94 ± 0.90 | 56.73 ± 2.82 | 13.17 ± 0.53 | n = 14 | [DGD] Diagnostica Stago STA-R, STA-R Ev |
| 11.76 ± 0.34 | 11.08 ± 0.40 | 21.84 ± 0.97 | 33.63 ± 1.98 | 11.66 ± 0.52 | n = 15 | [ILA] IL ACL(All models except 810,ELIT |
| 11.03 ± 0.40 | 11.00 ± 0.43 | 30.58 ± 5.93 | 52.26 ± 12.85 | 11.06 ± 0.38 | n = 30 | [ILC] IL ACL Futura/Advance |
| 10.75 ± 0.51 | 10.54 ± 0.43 | 28.25 ± 3.97 | 49.07 ± 9.21 | 11.00 ± 0.53 | n = 36 | [ILD] IL ACL(ELITE,ELITE PRO,8/9/10000) |
| 11.09 ± 0.44 | 11.00 ± 0.41 | 32.14 ± 2.21 | 57.44 ± 4.52 | 11.00 ± 0.46 | n = 56 | [ILE] IL ACL TOP Series (ACLTOP,ACLTOP |
| 10.65 ± 0.28 | 10.00 ± 0.31 | 27.57 ± 1.25 | 46.47 ± 3.16 | 10.58 ± 0.33 | n = 37 | [SYW] Sysmex CA500,540,560 |
| 10.92 ± 0.20 | 10.35 ± 0.17 | 27.82 ± 0.83 | 47.12 ± 1.79 | 10.95 ± 0.21 | n = 57 | [SYX] Sysmex CA 1500 |
| 11.23 ± 0.10 | 10.65 ± 0.16 | 27.93 ± 0.88 | 46.84 ± 1.96 | 11.21 ± 0.15 | n = 17 | [SYY] Sysmex CA 7000 |
| 14.19 ± 0.52 | 13.75 ± 0.54 | 33.69 ± 2.36 | 59.93 ± 6.79 | 14.37 ± 0.14 | n = 3 | [TRE] Trinity Biotech AMAX Destiny/Dest |
| | | | | | | **<Reagents>** |
| 12.77 ± 0.34 | 12.76 ± 0.35 | 31.60 ± 0.85 | 57.09 ± 2.27 | 12.89 ± 0.45 | n = 42 | [TA3] STA Neoplastine CL+ |
| 10.89 ± 0.31 | 10.23 ± 0.34 | 27.76 ± 1.00 | 46.82 ± 2.38 | 10.88 ± 0.32 | n = 131 | [TD2] Dade Innovin |
| 11.40 ± 0.53 | 10.87 ± 0.47 | 21.73 ± 0.86 | 33.44 ± 1.76 | 11.41 ± 0.64 | n = 35 | [TJ2] HemosIL PT-Fibrinogen |
| 10.95 ± 0.48 | 10.90 ± 0.46 | 31.71 ± 2.40 | 56.17 ± 4.83 | 10.99 ± 0.43 | n = 101 | [TJ8] HemosIL RecombiPlasTin 2G |
| 14.19 ± 0.52 | 13.75 ± 0.54 | 33.69 ± 2.36 | 59.93 ± 6.79 | 14.37 ± 0.14 | n = 3 | [TK3] Trin Bio TriniCLOT PT ExcelS (Sim |
| 12.40 ± 0.45 | 11.91 ± 0.52 | 30.31 ± 2.18 | 53.20 ± 3.78 | 12.17 ± 0.60 | n = 3 | [TK6] Trinity Biotech TriniCLOT PT HTF |

**Summary of Participant Responses**
**Mean ± One Standard Deviation**

**Prothrombin Time (seconds) - continued**

| Specimen: C61 | Specimen: C62 | Specimen: C63 | Specimen: C64 | Specimen: C65 | Number | [Code] Reagent & Instrument |
|---|---|---|---|---|---|---|
| 12.66 ± 0.30 | 12.64 ± 0.30 | 31.27 ± 0.79 | 56.74 ± 2.32 | 12.74 ± 0.37 | n = 28 | [TA3]&[DGC] STA Neoplastin & Diagnostica St |
| 12.96 ± 0.28 | 12.98 ± 0.31 | 32.13 ± 0.59 | 57.39 ± 1.99 | 13.24 ± 0.42 | n = 12 | [TA3]&[DGD] STA Neoplastin & Diagnostica St |
| 10.93 ± 0.23 | 9.96 ± 0.15 | 27.49 ± 0.78 | 45.85 ± 1.85 | 10.92 ± 0.21 | n = 19 | [TD2]&[BEB] Dade Innovin & Dade-Behring B |
| 10.65 ± 0.28 | 10.00 ± 0.31 | 27.57 ± 1.25 | 46.47 ± 3.16 | 10.58 ± 0.33 | n = 37 | [TD2]&[SYW] Dade Innovin & Sysmex CA500,5 |
| 10.92 ± 0.20 | 10.35 ± 0.17 | 27.83 ± 0.84 | 47.13 ± 1.81 | 10.95 ± 0.21 | n = 55 | [TD2]&[SYX] Dade Innovin & Sysmex CA 1500 |
| 11.23 ± 0.10 | 10.65 ± 0.16 | 27.93 ± 0.88 | 46.84 ± 1.96 | 11.21 ± 0.15 | n = 17 | [TD2]&[SYY] Dade Innovin & Sysmex CA 7000 |
| 11.76 ± 0.34 | 11.08 ± 0.40 | 21.84 ± 0.97 | 33.63 ± 1.98 | 11.66 ± 0.52 | n = 15 | [TJ2]&[ILA] HemosIL PT-Fib & IL ACL(All mod |
| 10.86 ± 0.34 | 10.56 ± 0.33 | 21.79 ± 0.60 | 33.87 ± 0.96 | 10.76 ± 0.41 | n = 9 | [TJ2]&[ILC] HemosIL PT-Fib & IL ACL Futura/ |
| 11.30 ± 0.43 | 10.80 ± 0.49 | 21.56 ± 0.98 | 32.78 ± 1.96 | 11.64 ± 0.62 | n = 9 | [TJ2]&[ILD] HemosIL PT-Fib & IL ACL(ELITE,E |
| 11.08 ± 0.38 | 11.14 ± 0.32 | 33.48 ± 1.54 | 58.68 ± 4.06 | 11.15 ± 0.32 | n = 20 | [TJ8]&[ILC] HemosIL Recomb & IL ACL Futura/ |
| 10.59 ± 0.40 | 10.47 ± 0.40 | 29.85 ± 1.85 | 52.73 ± 3.60 | 10.86 ± 0.39 | n = 27 | [TJ8]&[ILD] HemosIL Recomb & IL ACL(ELITE,E |
| 11.07 ± 0.45 | 10.99 ± 0.40 | 32.05 ± 2.24 | 57.20 ± 4.55 | 10.98 ± 0.46 | n = 53 | [TJ8]&[ILE] HemosIL Recomb & IL ACL TOP Ser |
| 14.19 ± 0.52 | 13.75 ± 0.54 | 33.69 ± 2.36 | 59.93 ± 6.79 | 14.37 ± 0.14 | n = 3 | [TK3]&[TRE] Trin Bio Trini & Trinity Biotec |

**Summary of Participant Responses**
**Mean ± One Standard Deviation**

**Activated Partial Thromboplastin Time (seconds)**

| Specimen: C61 | Specimen: C62 | Specimen: C63 | Specimen: C64 | Specimen: C65 | Number | [Code] Instrument or Reagent |
|---|---|---|---|---|---|---|
| 28.06 ± 2.02 | 29.16 ± 1.93 | 55.85 ± 5.72 | 80.98 ± 10.45 | 28.23 ± 1.96 | n = 316 | [---] All Methods & Instruments |
| | | | | | | **<Instruments>** |
| 25.83 ± 1.05 | 25.50 ± 0.90 | 50.44 ± 1.70 | 70.54 ± 2.35 | 25.74 ± 1.09 | n = 20 | [BEB] Dade-Behring BCS,BCSXP |
| 28.73 ± 0.23 | 31.89 ± 0.52 | 55.31 ± 1.93 | 76.71 ± 1.53 | 28.73 ± 1.14 | n = 3 | [DGB] Diagnostica Stago STA |
| 28.96 ± 0.95 | 31.82 ± 1.10 | 54.30 ± 2.48 | 76.66 ± 3.06 | 29.47 ± 1.04 | n = 26 | [DGC] Diagnostica Stago STA Compact |
| 28.56 ± 0.26 | 31.47 ± 0.68 | 52.45 ± 1.54 | 73.70 ± 2.02 | 29.10 ± 0.36 | n = 13 | [DGD] Diagnostica Stago STA-R, STA-R Ev |
| 26.46 ± 0.91 | 27.31 ± 1.12 | 51.92 ± 5.36 | 76.20 ± 9.42 | 26.66 ± 1.15 | n = 16 | [ILA] IL ACL(All models except 810,ELIT |
| 29.39 ± 2.12 | 28.94 ± 1.36 | 63.79 ± 1.76 | 96.17 ± 2.78 | 29.37 ± 2.12 | n = 29 | [ILC] IL ACL Futura/Advance |
| 27.12 ± 1.62 | 27.16 ± 0.97 | 58.77 ± 6.70 | 87.51 ± 11.88 | 28.36 ± 1.57 | n = 34 | [ILD] IL ACL(ELITE,ELITE PRO,8/9/10000) |
| 30.62 ± 0.86 | 29.89 ± 1.11 | 61.47 ± 1.62 | 90.80 ± 2.58 | 30.12 ± 1.02 | n = 54 | [ILE] IL ACL TOP Series (ACLTOP,ACLTOP |
| 26.43 ± 0.77 | 28.69 ± 0.97 | 51.45 ± 2.20 | 74.52 ± 4.04 | 26.48 ± 0.90 | n = 37 | [SYW] Sysmex CA500,540,560 |
| 27.51 ± 0.93 | 29.55 ± 1.05 | 54.32 ± 2.22 | 76.85 ± 4.03 | 27.58 ± 1.03 | n = 57 | [SYX] Sysmex CA 1500 |
| 28.25 ± 0.87 | 30.05 ± 0.98 | 53.77 ± 2.23 | 76.34 ± 4.07 | 28.19 ± 0.96 | n = 15 | [SYY] Sysmex CA 7000 |
| 29.18 ± 0.49 | 30.50 ± 0.81 | 56.52 ± 1.33 | 79.70 ± 5.49 | 29.15 ± 1.54 | n = 3 | [TRE] Trinity Biotech AMAX Destiny/Dest |
| | | | | | | **<Reagents>** |
| 28.78 ± 0.69 | 31.68 ± 0.96 | 53.77 ± 2.41 | 75.73 ± 3.07 | 29.29 ± 0.89 | n = 40 | [AA2] Diagnostica Stago STA PTT-Auto |
| 27.29 ± 1.33 | 29.95 ± 0.93 | 78.38 ± 2.51 | 121.54 ± 5.20 | 27.31 ± 1.09 | n = 6 | [AD2] Dade Actin |
| 27.21 ± 0.44 | 28.57 ± 0.92 | 86.60 ± 17.35 | 116.64 ± 27.31 | 27.08 ± 0.51 | n = 8 | [AD3] Dade Actin FS |
| 27.10 ± 1.32 | 28.98 ± 1.64 | 52.97 ± 2.76 | 75.42 ± 4.63 | 27.13 ± 1.35 | n = 117 | [AD4] Dade Actin FSL |
| 25.71 ± 0.99 | 27.28 ± 1.39 | 50.08 ± 1.19 | 73.13 ± 2.26 | 26.12 ± 1.29 | n = 30 | [AJ3] HemosIL Test APTT-SP |
| 27.93 ± 1.80 | 29.03 ± 2.30 | 55.27 ± 2.35 | 80.37 ± 4.05 | 27.45 ± 3.06 | n = 5 | [AK3] Trin Bio TriniCLOT aPTTS (Plateli |
| 29.91 ± 1.53 | 29.12 ± 1.62 | 62.26 ± 2.01 | 92.80 ± 3.99 | 29.83 ± 1.11 | n = 102 | [AO4] HemosIL SynthASil |

**Summary of Participant Responses**
**Mean ± One Standard Deviation**

**Activated Partial Thromboplastin Time (seconds) - continued**

| Specimen: C61 | Specimen: C62 | Specimen: C63 | Specimen: C64 | Specimen: C65 | Number | [Code] Reagent & Instrument |
|---|---|---|---|---|---|---|
| 28.73 ± 0.23 | 31.89 ± 0.52 | 55.31 ± 1.93 | 76.71 ± 1.53 | 28.73 ± 1.14 | n = 3 | [AA2]&[DGB] Diagnostica St & Diagnostica St |
| 28.96 ± 0.95 | 31.82 ± 1.10 | 54.30 ± 2.48 | 76.66 ± 3.06 | 29.47 ± 1.04 | n = 26 | [AA2]&[DGC] Diagnostica St & Diagnostica St |
| 28.56 ± 0.25 | 31.40 ± 0.69 | 52.45 ± 1.54 | 73.71 ± 2.00 | 29.10 ± 0.36 | n = 11 | [AA2]&[DGD] Diagnostica St & Diagnostica St |
| 27.41 ± 0.22 | 29.05 ± 0.23 | 77.80 ± 22.64 | 104.87 ± 28.25 | 27.32 ± 0.60 | n = 5 | [AD3]&[SYX] Dade Actin FS & Sysmex CA 1500 |
| 25.70 ± 0.95 | 25.34 ± 0.71 | 50.43 ± 1.68 | 70.53 ± 2.34 | 25.58 ± 0.93 | n = 16 | [AD4]&[BEB] Dade Actin FSL & Dade-Behring B |
| 26.40 ± 0.76 | 28.69 ± 0.94 | 51.47 ± 2.23 | 74.63 ± 4.08 | 26.48 ± 0.89 | n = 34 | [AD4]&[SYW] Dade Actin FSL & Sysmex CA500,5 |
| 27.57 ± 1.00 | 29.59 ± 1.13 | 54.42 ± 2.22 | 77.06 ± 4.00 | 27.66 ± 1.08 | n = 50 | [AD4]&[SYX] Dade Actin FSL & Sysmex CA 1500 |
| 28.25 ± 0.87 | 30.05 ± 0.98 | 53.77 ± 2.23 | 76.34 ± 4.07 | 28.19 ± 0.96 | n = 15 | [AD4]&[SYY] Dade Actin FSL & Sysmex CA 7000 |
| 26.13 ± 0.58 | 27.58 ± 1.18 | 50.01 ± 0.60 | 72.63 ± 0.82 | 26.19 ± 0.59 | n = 12 | [AJ3]&[ILA] HemosIL Test A & IL ACL(All mod |
| 24.26 ± 0.99 | 25.95 ± 1.01 | 49.24 ± 0.92 | 72.11 ± 2.38 | 24.14 ± 0.50 | n = 5 | [AJ3]&[ILC] HemosIL Test A & IL ACL Futura/ |
| 25.60 ± 0.98 | 27.34 ± 1.44 | 51.04 ± 2.16 | 73.90 ± 2.78 | 26.66 ± 1.17 | n = 12 | [AJ3]&[ILD] HemosIL Test A & IL ACL(ELITE,E |
| 29.18 ± 0.49 | 30.50 ± 0.81 | 56.52 ± 1.33 | 79.70 ± 5.49 | 29.15 ± 1.54 | n = 3 | [AK3]&[TRE] Trin Bio Trini & Trinity Biotec |
| 27.78 ± 0.60 | 26.70 ± 0.75 | 63.28 ± 1.54 | 96.54 ± 4.18 | 28.50 ± 0.66 | n = 4 | [AO4]&[ILA] HemosIL SynthA & IL ACL(All mod |
| 29.97 ± 1.20 | 29.32 ± 0.90 | 63.91 ± 1.80 | 96.40 ± 2.77 | 29.97 ± 1.18 | n = 22 | [AO4]&[ILC] HemosIL SynthA & IL ACL Futura/ |
| 27.98 ± 0.88 | 27.04 ± 0.64 | 62.46 ± 1.91 | 94.06 ± 3.82 | 29.23 ± 0.67 | n = 22 | [AO4]&[ILD] HemosIL SynthA & IL ACL(ELITE,E |
| 30.63 ± 0.85 | 29.93 ± 1.09 | 61.47 ± 1.62 | 90.81 ± 2.57 | 30.15 ± 0.98 | n = 53 | [AO4]&[ILE] HemosIL SynthA & IL ACL TOP Ser |

**Summary of Participant Responses**
**Mean ± One Standard Deviation**

**Fibrinogen (mg/dL)**

| Specimen: C61 | Specimen: C62 | Specimen: C63 | Specimen: C64 | Specimen: C65 | Number | [Code] Instrument or Reagent |
|---|---|---|---|---|---|---|
| 310.2 ± 33.72 | 564.4 ± 88.62 | 275.8 ± 28.92 | 286.8 ± 42.78 | 311.0 ± 33.23 | n = 213 | [---] All Methods & Instruments |
| | | | | | | **<Instruments>** |
| 351.9 ± 21.20 | 679.4 ± 53.84 | 295.3 ± 17.38 | 331.6 ± 27.32 | 346.3 ± 26.84 | n = 19 | [BEB] Dade-Behring BCS,BCSXP |
| 317.2 ± 14.94 | 599.5 ± 26.24 | 281.3 ± 15.81 | 282.8 ± 15.34 | 321.1 ± 18.89 | n = 24 | [DGC] Diagnostica Stago STA Compact |
| 310.4 ± 16.38 | 602.2 ± 24.58 | 277.3 ± 12.54 | 279.0 ± 10.23 | 315.0 ± 11.67 | n = 13 | [DGD] Diagnostica Stago STA-R, STA-R Ev |
| 349.1 ± 2.72 | 617.6 ± 16.40 | 362.8 ± 6.12 | 350.0 ± 33.44 | 345.7 ± 16.24 | n = 4 | [ILA] IL ACL(All models except 810,ELIT |
| 287.5 ± 41.42 | 496.2 ± 73.27 | 320.7 ± 34.74 | 376.4 ± 44.71 | 286.3 ± 37.30 | n = 25 | [ILC] IL ACL Futura/Advance |
| 344.0 ± 9.64 | 707.6 ± 92.08 | 286.4 ± 9.04 | 333.6 ± 58.89 | 352.8 ± 13.33 | n = 10 | [ILD] IL ACL(ELITE,ELITE PRO,8/9/10000) |
| 319.7 ± 39.21 | 598.9 ± 77.73 | 274.2 ± 25.77 | 286.8 ± 31.92 | 320.5 ± 33.86 | n = 48 | [ILE] IL ACL TOP Series (ACLTOP,ACLTOP |
| 299.5 ± 9.11 | 482.6 ± 41.15 | 259.8 ± 9.94 | 253.5 ± 15.03 | 295.1 ± 17.55 | n = 6 | [SYW] Sysmex CA500,540,560 |
| 291.6 ± 13.26 | 502.9 ± 39.06 | 252.7 ± 10.20 | 257.4 ± 10.41 | 287.8 ± 11.43 | n = 43 | [SYX] Sysmex CA 1500 |
| 287.2 ± 17.36 | 498.0 ± 44.94 | 257.3 ± 16.88 | 256.7 ± 16.04 | 295.2 ± 15.85 | n = 14 | [SYY] Sysmex CA 7000 |
| | | | | | | **<Reagents>** |
| 346.8 ± 18.91 | 613.4 ± 40.84 | 353.8 ± 30.68 | 375.9 ± 33.94 | 349.1 ± 24.26 | n = 13 | [TJ2] HemosIL PT-Fibrinogen |
| 315.3 ± 57.95 | 533.3 ± 89.77 | 307.9 ± 25.73 | 345.8 ± 50.46 | 313.8 ± 55.47 | n = 35 | [TJ8] HemosIL RecombiPlasTin 2G |
| 315.0 ± 15.77 | 601.0 ± 24.97 | 279.7 ± 14.25 | 281.4 ± 13.32 | 318.5 ± 15.92 | n = 38 | [FA4] Stago STA-Fibrinogen 5 |
| 353.5 ± 22.13 | 686.6 ± 40.33 | 296.4 ± 20.06 | 337.1 ± 23.17 | 349.9 ± 25.26 | n = 17 | [FB2] Behring Multifibren U |
| 292.0 ± 15.08 | 499.5 ± 41.40 | 255.1 ± 13.34 | 257.6 ± 13.72 | 290.5 ± 14.29 | n = 65 | [FD2] Dade Fib (thrombin) |
| 316.2 ± 25.24 | 604.8 ±112.05 | 273.1 ± 16.60 | 279.6 ± 21.44 | 315.5 ± 23.53 | n = 24 | [FJ2] HemosIL Fibrinogen C,XL |
| 310.1 ± 5.72 | 531.8 ± 29.96 | 281.8 ± 5.90 | 264.2 ± 7.68 | 302.4 ± 7.34 | n = 3 | [FM1] Kamiya K-Assay Fibrinogen |
| 298.4 ± 17.56 | 648.7 ± 79.00 | 261.2 ± 13.77 | 270.0 ± 15.11 | 305.5 ± 20.91 | n = 14 | [FO3] HemosIL QFA(bovine) |

**Summary of Participant Responses**
**Mean ± One Standard Deviation**

**Fibrinogen (mg/dL) - continued**

| Specimen: C61 | Specimen: C62 | Specimen: C63 | Specimen: C64 | Specimen: C65 | Number | [Code] Reagent & Instrument |
|---|---|---|---|---|---|---|
| 349.1 ± 2.72 | 617.6 ± 16.40 | 362.8 ± 6.12 | 350.0 ± 33.44 | 345.7 ± 16.24 | n = 4 | [TJ2]&[ILA] HemosIL PT-Fib & IL ACL(All mod |
| 346.7 ± 29.81 | 607.3 ± 58.14 | 363.5 ± 31.78 | 386.4 ± 37.66 | 339.6 ± 29.47 | n = 6 | [TJ2]&[ILC] HemosIL PT-Fib & IL ACL Futura/ |
| 343.2 ± 10.49 | 551.8 ±109.65 | 312.5 ± 27.95 | 385.7 ± 10.44 | 365.1 ± 12.03 | n = 3 | [TJ2]&[ILD] HemosIL PT-Fib & IL ACL(ELITE,E |
| 265.6 ± 17.69 | 462.5 ± 34.88 | 319.7 ± 20.29 | 386.9 ± 26.93 | 266.9 ± 17.08 | n = 14 | [TJ8]&[ILC] HemosIL Recomb & IL ACL Futura/ |
| 354.7 ± 35.47 | 587.3 ± 58.50 | 297.5 ± 26.34 | 317.1 ± 24.56 | 350.8 ± 34.68 | n = 20 | [TJ8]&[ILE] HemosIL Recomb & IL ACL TOP Ser |
| 317.2 ± 14.94 | 599.5 ± 26.24 | 281.3 ± 15.81 | 282.8 ± 15.34 | 321.1 ± 18.89 | n = 24 | [FA4]&[DGC] Stago STA-Fibr & Diagnostica St |
| 310.4 ± 16.38 | 602.2 ± 24.58 | 277.3 ± 12.54 | 279.0 ± 10.23 | 315.0 ± 11.67 | n = 13 | [FA4]&[DGD] Stago STA-Fibr & Diagnostica St |
| 355.4 ± 19.38 | 689.4 ± 35.03 | 298.2 ± 18.43 | 338.5 ± 20.18 | 352.3 ± 22.41 | n = 16 | [FB2]&[BEB] Behring Multif & Dade-Behring B |
| 327.8 ± 24.09 | 522.8 ± 48.48 | 284.5 ± 5.43 | 286.0 ± 12.85 | 308.5 ± 19.10 | n = 3 | [FD2]&[BEB] Dade Fib (thro & Dade-Behring B |
| 299.5 ± 9.11 | 482.6 ± 41.15 | 259.8 ± 9.94 | 253.5 ± 15.03 | 295.1 ± 17.55 | n = 6 | [FD2]&[SYW] Dade Fib (thro & Sysmex CA500,5 |
| 291.5 ± 13.56 | 501.5 ± 38.09 | 252.4 ± 10.13 | 257.2 ± 10.57 | 287.6 ± 11.53 | n = 42 | [FD2]&[SYX] Dade Fib (thro & Sysmex CA 1500 |
| 287.2 ± 17.36 | 498.0 ± 44.94 | 257.3 ± 16.88 | 256.7 ± 16.04 | 295.2 ± 15.85 | n = 14 | [FD2]&[SYY] Dade Fib (thro & Sysmex CA 7000 |
| 313.2 ± 17.95 | 513.4 ± 60.41 | 279.4 ± 23.69 | 280.7 ± 26.81 | 309.7 ± 18.52 | n = 3 | [FJ2]&[ILC] HemosIL Fibrin & IL ACL Futura/ |
| 343.7 ± 1.99 | 757.3 ± 44.78 | 285.6 ± 6.77 | 298.3 ± 9.06 | 346.8 ± 12.27 | n = 6 | [FJ2]&[ILD] HemosIL Fibrin & IL ACL(ELITE,E |
| 306.2 ± 22.82 | 571.8 ± 78.02 | 266.2 ± 13.45 | 271.4 ± 18.16 | 307.0 ± 16.23 | n = 15 | [FJ2]&[ILE] HemosIL Fibrin & IL ACL TOP Ser |
| 297.2 ± 18.28 | 657.5 ± 73.78 | 260.2 ± 14.49 | 269.9 ± 15.81 | 306.2 ± 21.88 | n = 13 | [FO3]&[ILE] HemosIL QFA(bo & IL ACL TOP Ser |

**Summary of Participant Responses**
**Mean ± One Standard Deviation**

## INR (International Normalized Ratio)

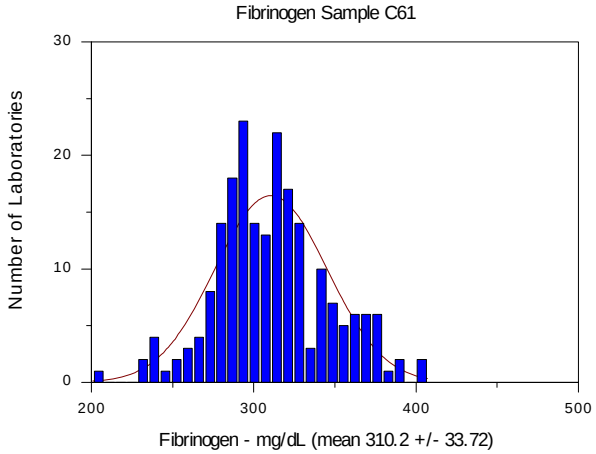
| Specimen: C61 | Specimen: C62 | Specimen: C63 | Specimen: C64 | Specimen: C65 | Number | [Code] Instrument or Reagent |
|---|---|---|---|---|---|---|
| 1.003 ± 0.053 | 0.972 ± 0.051 | 2.828 ± 0.233 | 5.109 ± 0.816 | 1.005 ± 0.051 | n = 325 | [---] All Methods & Instruments |
| | | | | | | **<Instruments>** |
| 0.992 ± 0.015 | 0.989 ± 0.020 | 2.828 ± 0.197 | 5.530 ± 0.904 | 0.997 ± 0.005 | n = 3 | [BBA] BBL Fibrometer |
| 1.019 ± 0.049 | 0.909 ± 0.043 | 2.814 ± 0.119 | 4.688 ± 0.213 | 1.017 ± 0.059 | n = 19 | [BEB] Dade-Behring BCS,BCSXP |
| 0.959 ± 0.049 | 0.972 ± 0.043 | 3.124 ± 0.179 | 6.756 ± 0.386 | 0.981 ± 0.037 | n = 28 | [DGC] Diagnostica Stago STA Compact |
| 0.990 ± 0.050 | 0.984 ± 0.041 | 3.139 ± 0.222 | 6.567 ± 0.791 | 1.000 ± 0.013 | n = 14 | [DGD] Diagnostica Stago STA-R, STA-R Ev |
| 0.984 ± 0.084 | 0.889 ± 0.093 | 2.939 ± 0.306 | 6.264 ± 0.714 | 0.973 ± 0.115 | n = 16 | [ILA] IL ACL(All models except 810,ELIT |
| 0.981 ± 0.060 | 0.985 ± 0.052 | 3.035 ± 0.176 | 5.525 ± 0.697 | 0.988 ± 0.051 | n = 30 | [ILC] IL ACL Futura/Advance |
| 0.971 ± 0.060 | 0.938 ± 0.077 | 2.846 ± 0.189 | 5.246 ± 0.518 | 0.989 ± 0.062 | n = 35 | [ILD] IL ACL(ELITE,ELITE PRO,8/9/10000) |
| 1.000 ± 0.045 | 0.996 ± 0.040 | 2.861 ± 0.155 | 5.070 ± 0.291 | 0.991 ± 0.054 | n = 55 | [ILE] IL ACL TOP Series (ACLTOP,ACLTOP |
| 1.029 ± 0.038 | 0.963 ± 0.040 | 2.703 ± 0.098 | 4.580 ± 0.266 | 1.020 ± 0.034 | n = 40 | [SYW] Sysmex CA500,540,560 |
| 1.023 ± 0.040 | 0.976 ± 0.037 | 2.668 ± 0.123 | 4.570 ± 0.254 | 1.024 ± 0.039 | n = 57 | [SYX] Sysmex CA 1500 |
| 1.024 ± 0.038 | 1.000 ± 0.000 | 2.639 ± 0.086 | 4.535 ± 0.174 | 1.030 ± 0.043 | n = 17 | [SYY] Sysmex CA 7000 |
| 0.983 ± 0.059 | 0.942 ± 0.069 | 2.758 ± 0.284 | 5.454 ± 0.881 | 0.985 ± 0.054 | n = 3 | [TRE] Trinity Biotech AMAX Destiny/Dest |
| | | | | | | **<Reagents>** |
| 0.970 ± 0.048 | 0.979 ± 0.040 | 3.141 ± 0.176 | 6.744 ± 0.436 | 0.988 ± 0.032 | n = 42 | [TA3] STA Neoplastine CL+ |
| 1.026 ± 0.041 | 0.969 ± 0.044 | 2.697 ± 0.125 | 4.593 ± 0.253 | 1.024 ± 0.041 | n = 133 | [TD2] Dade Innovin |
| 0.967 ± 0.079 | 0.892 ± 0.083 | 2.968 ± 0.278 | 6.200 ± 0.730 | 0.968 ± 0.097 | n = 35 | [TJ2] HemosIL PT-Fibrinogen |
| 0.992 ± 0.050 | 0.991 ± 0.047 | 2.883 ± 0.177 | 5.117 ± 0.342 | 0.993 ± 0.049 | n = 100 | [TJ8] HemosIL RecombiPlasTin 2G |
| 0.983 ± 0.059 | 0.942 ± 0.069 | 2.758 ± 0.284 | 5.454 ± 0.881 | 0.985 ± 0.054 | n = 3 | [TK3] Trin Bio TriniCLOT PT ExcelS (Sim |
| 0.990 ± 0.018 | 0.940 ± 0.018 | 2.928 ± 0.205 | 5.789 ± 0.553 | 0.968 ± 0.015 | n = 3 | [TK6] Trinity Biotech TriniCLOT PT HTF |

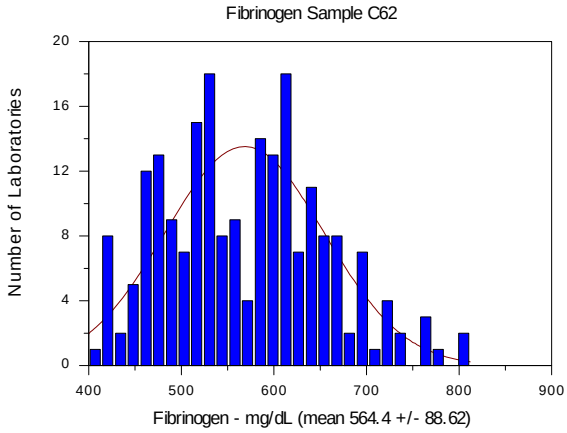
**Summary of Participant Responses**
**Mean ± One Standard Deviation**

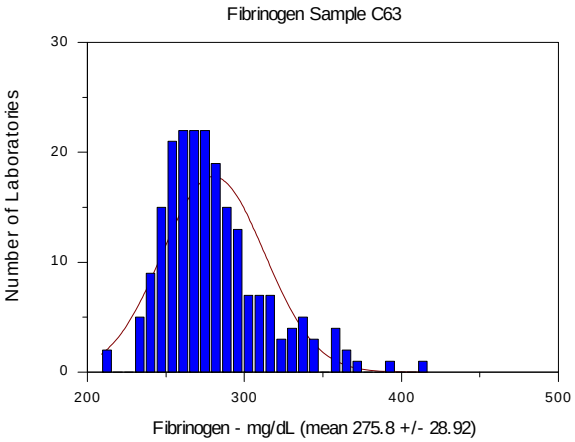
## INR (International Normalized Ratio) - continued

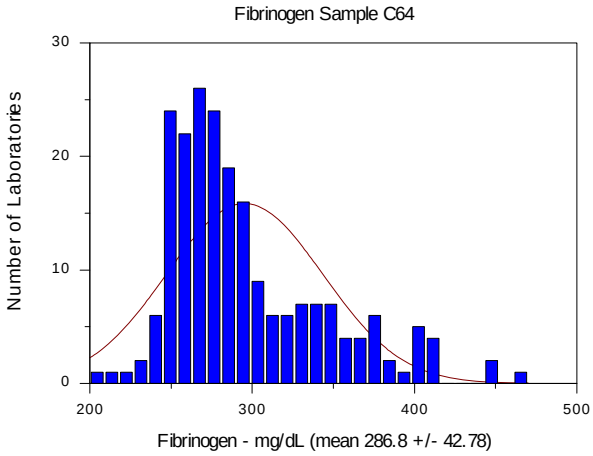
| Specimen: C61 | Specimen: C62 | Specimen: C63 | Specimen: C64 | Specimen: C65 | Number | [Code] Reagent & Instrument |
|---|---|---|---|---|---|---|
| 0.959 ± 0.049 | 0.972 ± 0.043 | 3.124 ± 0.179 | 6.756 ± 0.386 | 0.981 ± 0.037 | n = 28 | [TA3]&[DGC] STA Neoplastin & Diagnostica St |
| 0.991 ± 0.039 | 0.995 ± 0.029 | 3.189 ± 0.174 | 6.723 ± 0.545 | 0.999 ± 0.013 | n = 12 | [TA3]&[DGD] STA Neoplastin & Diagnostica St |
| 1.019 ± 0.049 | 0.909 ± 0.043 | 2.814 ± 0.119 | 4.688 ± 0.213 | 1.017 ± 0.059 | n = 19 | [TD2]&[BEB] Dade Innovin & Dade-Behring B |
| 1.030 ± 0.038 | 0.964 ± 0.040 | 2.706 ± 0.097 | 4.583 ± 0.271 | 1.021 ± 0.035 | n = 39 | [TD2]&[SYW] Dade Innovin & Sysmex CA500,5 |
| 1.024 ± 0.040 | 0.976 ± 0.035 | 2.672 ± 0.122 | 4.572 ± 0.253 | 1.026 ± 0.039 | n = 55 | [TD2]&[SYX] Dade Innovin & Sysmex CA 1500 |
| 1.024 ± 0.038 | 1.000 ± 0.000 | 2.639 ± 0.086 | 4.535 ± 0.174 | 1.030 ± 0.043 | n = 17 | [TD2]&[SYY] Dade Innovin & Sysmex CA 7000 |
| 0.984 ± 0.084 | 0.889 ± 0.093 | 2.939 ± 0.306 | 6.264 ± 0.714 | 0.973 ± 0.115 | n = 16 | [TJ2]&[ILA] HemosIL PT-Fib & IL ACL(All mod |
| 0.949 ± 0.071 | 0.910 ± 0.064 | 3.100 ± 0.322 | 6.524 ± 0.798 | 0.933 ± 0.076 | n = 9 | [TJ2]&[ILC] HemosIL PT-Fib & IL ACL Futura/ |
| 0.939 ± 0.078 | 0.855 ± 0.061 | 2.913 ± 0.185 | 6.074 ± 0.523 | 0.983 ± 0.083 | n = 8 | [TJ2]&[ILD] HemosIL PT-Fib & IL ACL(ELITE,E |
| 0.989 ± 0.050 | 1.002 ± 0.031 | 3.025 ± 0.100 | 5.312 ± 0.362 | 0.996 ± 0.028 | n = 20 | [TJ8]&[ILC] HemosIL Recomb & IL ACL Futura/ |
| 0.979 ± 0.054 | 0.963 ± 0.062 | 2.827 ± 0.182 | 5.084 ± 0.333 | 0.990 ± 0.054 | n = 27 | [TJ8]&[ILD] HemosIL Recomb & IL ACL(ELITE,E |
| 1.001 ± 0.046 | 0.997 ± 0.040 | 2.860 ± 0.154 | 5.065 ± 0.297 | 0.991 ± 0.054 | n = 52 | [TJ8]&[ILE] HemosIL Recomb & IL ACL TOP Ser |
| 0.983 ± 0.059 | 0.942 ± 0.069 | 2.758 ± 0.284 | 5.454 ± 0.881 | 0.985 ± 0.054 | n = 3 | [TK3]&[TRE] Trin Bio Trini & Trinity Biotec |

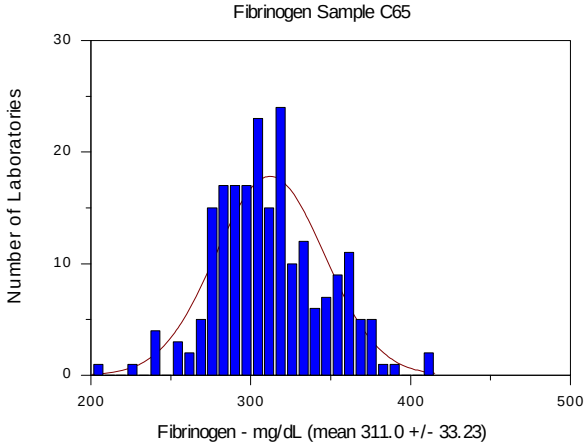
# Hematology Proficiency Test Event
# June 4, 2012
# Fibrinogen Data



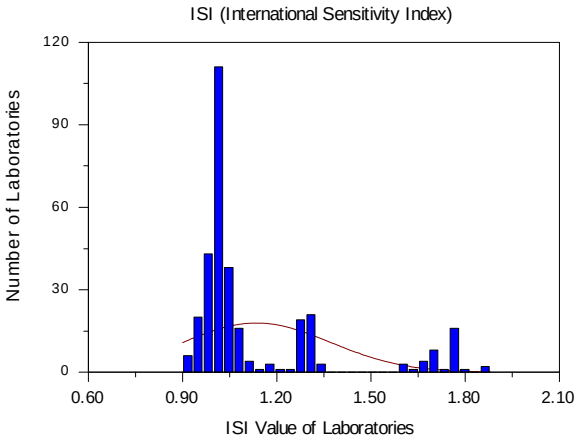



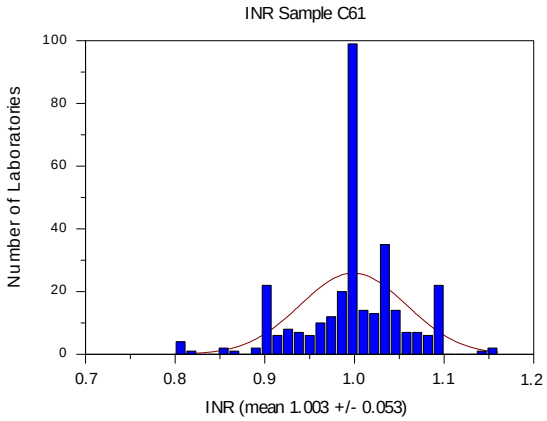



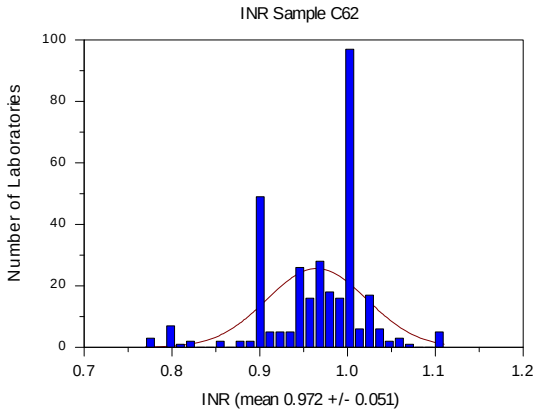



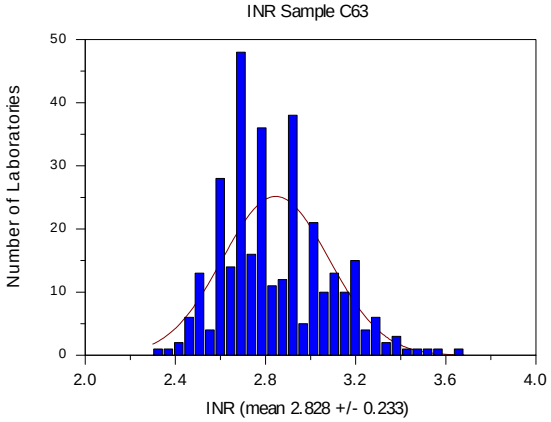



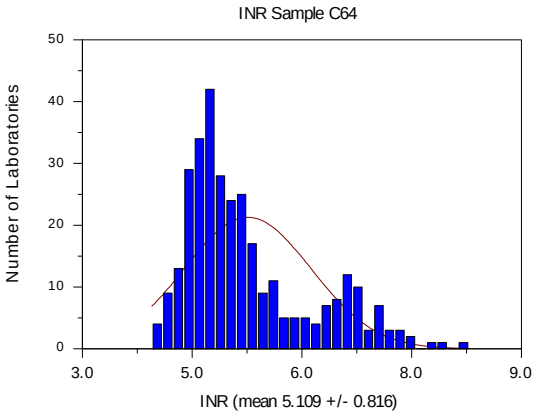
# Hematology Proficiency Test Event
# June 4, 2012
# International Sensitivity Index (ISI) and International Normalized Ratio (INR)

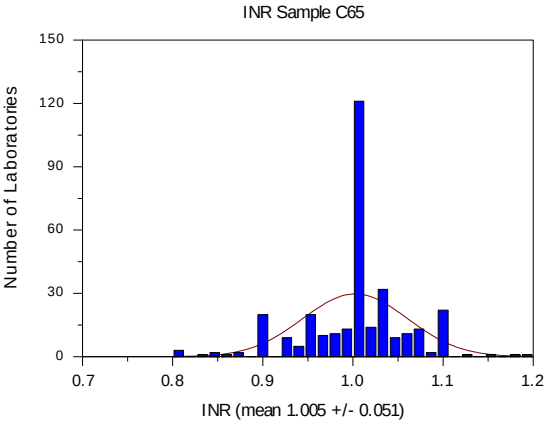


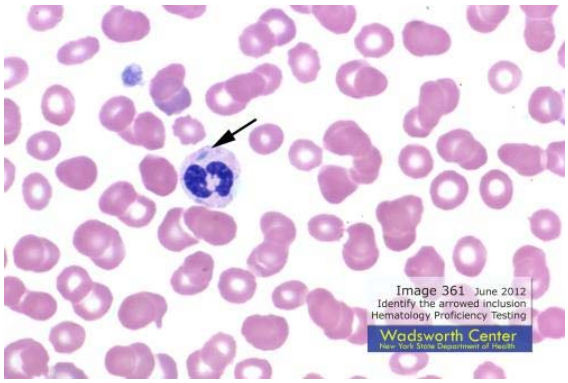



# NEW YORK STATE HEMATOLOGY PROFICIENCY TESTING PROGRAM

*June 4, 2012*

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 361




The inclusion in the cytoplasm of the segmented neutrophil in Image 361 is an irregular shape and blue-gray in color. The inclusion was correctly identified by 361 participants as a Döhle body. Döhle bodies are remnants of rough endoplasmic reticulum and are associated with certain conditions such as infection, burns, trauma and May-Hegglin anomaly.

Image 361 was taken from an individual who presented with thrombocytopenia (platelet count of 20.0 x$10^9$/L) and was later diagnosed with May-Hegglin anomaly. May-Hegglin anomaly is an autosomal dominant disorder characterized by thrombocytopenia and giant platelets. It is one of the macrothrombocytopenias associated with mutations in the *MYH9* gene present at the 22q12-13 chromosomal region.

Few participants identified the inclusion as an Auer rod. Auer rods are elongated, bluish-red rods composed of fused lysosomal granules, seen in the cytoplasm of myeloblasts, promyelocytes and monoblasts.

| Number of Responses | Percent of Laboratories | Cell type or finding |
|---|---|---|
| **361** | **98.6%** | **Döhle body** |
| 5 | 1.4% | Auer rod |

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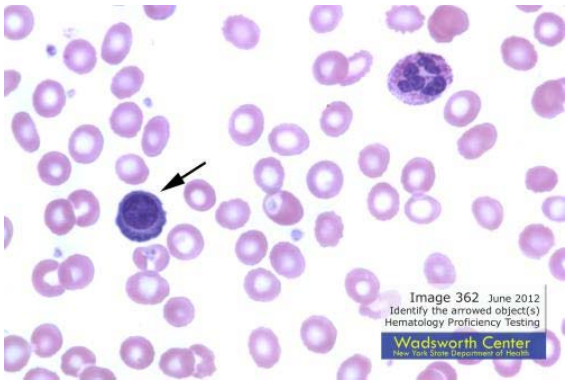
## Image 362



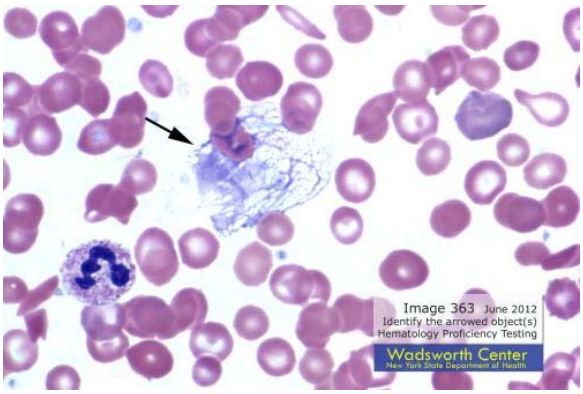

The nucleus of the arrowed cell in Image 362 is round and eccentric. The chromatin is condensed and a perinuclear zone is visible in the deeply basophilic cytoplasm. The cell was correctly identified as a plasma cell by 255 participants.

Image 362 was taken from a 70 year-old male who presented with anemia, fatigue and hypercalcemia and was diagnosed with plasma cell leukemia. “Plasma cells are the most mature form of B-lymphocytes. Three recognizable stages of maturation have been described. The most immature form is the immunoblast or plasmablast. While some investigators feel that plasmablasts are derived from immunoblasts and they are two different stages of maturation, others feel that since these cells are difficult if not impossible to distinguish morphologically, they should be considered the same cell. The next recognizable stage is the proplasmacyte that then develops into a mature plasma cell”. Glassy, E.F. Color Atlas of Hematology, CAP Northfield, 1998, p. 240.

Due to lack of 80% participant consensus, pass credit was issued.

| Number of Responses | Percent of Laboratories | Cell type or finding |
|---|---|---|
| 255 | 69.7% | Plasma cell |
| 74 | 20.2% | Nucleated red cell |
| 23 | 6.3% | Reactive/Atypical lymphocyte |
| 14 | 3.8% | Normal lymphocyte |

## Image 363




The arrowed object in Image 363 consists of coarse chromatin strands; remnants of the nucleus. The image was correctly identified by 319 participants as a smudge cell/basket cell. Smudge cell and basket cell are synonymous and are formed in certain conditions associated with fragile lymphocytes such as chronic lymphocytic leukemia and infectious mononucleosis. In this case, the cell is best classified as a basket cell since the display of the chromatin strands give rise to the basket-like appearance.

| Number of Responses | Percent of Laboratories | Cell type or finding |
|---|---|---|
| **319** | **87.2%** | **Smudge cell / Basket cell** |
| 47 | 12.8% | Stain precipitate |

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## Image 364

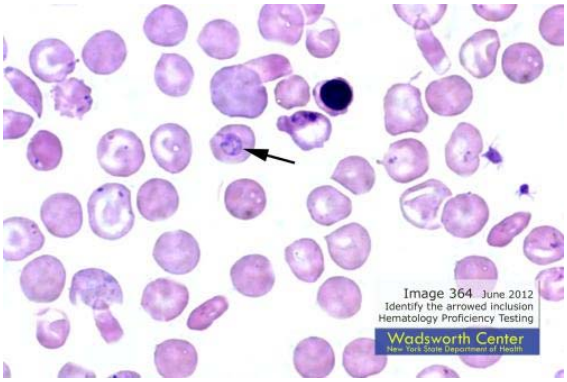


Image 364 is from a case of sickle cell anemia. Several of the expected findings of such a case are present and include target cells, sickle cells, polychromatophilic red blood cells and nucleated red blood cells. Among the reported laboratory findings in this case were Cabot rings, a finding consistent with anemia. Cabot rings are red-purple filaments in the shape of a ring and are thought to be remnants of the mitotic spindle.

It can be difficult at times to distinguish a Cabot ring from the ring forms of Plasmodium. Ring forms of the parasite often include the distinct chromatin mass as observed in Image 325 from the October 2009 proficiency test challenge. http://www.wadsworth.org/chemheme/heme/cytoheme/ans325.htm

This case (Image 364) was not malaria and certain findings favor the identification of the inclusion as a Cabot ring. Namely, the presence of target cells, sickle cells, polychromatophilic red cells, nucleated red cells, the lack of the diagnostic chromatin mass of a malarial parasite and the knowledge that most individuals with malaria inclusions are normochromic/ normocytic.

Due to lack of 80% participant consensus, pass credit was issued.

| Number of Responses | Percent of Laboratories | Cell type or finding |
|---|---|---|
| 279 | 76.2% | Parasite |
| 54 | 14.8% | Cabot ring |
| 14 | 3.8% | Platelet |
| 8 | 2.2% | Nucleated red cell |
| 5 | 1.4% | Pappenheimer body |
| 3 | 0.8% | Stain precipitate |
| 2 | 0.5% | Giant platelet |
| 1 | 0.3% | Erythrocyte - polychromatophilic |

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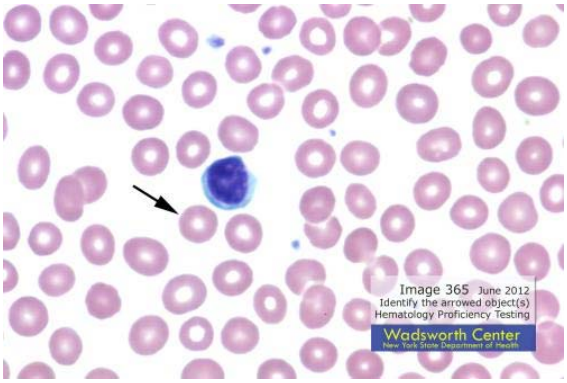
## Image 365




The arrowed cell in Image 365 is a normocytic, normochromic erythrocyte as 346 participants concurred. The image was obtained from an asymptomatic 44 year-old female. Nineteen participants reported the arrowed erythrocyte as hypochromic. Most references agree that an erythrocyte is classified as hypochromic when the central pallor area of the cell is greater than one third of the diameter of the cell.

| Number of Responses | Percent of Laboratories | Cell type or finding |
|---|---|---|
| **346** | **94.5%** | **Erythrocyte - normal** |
| 19 | 5.2% | Erythrocyte – hypochromic |
| 1 | 0.3% | Plasma cell |