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| Instrument Correlation in Hematology  |
| **Purpose** | This procedure provides instructions for INSTRUMENT CORRELATION. This procedure describes the activity used to meet regulatory requirements for reporting results for the same test from different analyzers. This procedure is intended for all Hematology personnel responsible for the correlation of test values reported across multiple analyzers in the same lab, and under the same CLIA license. |
| **Policy Statements** | * This procedure applies to all employees working in the hematology department
* When results are reported from multiple instruments for a given test, the instruments are checked against each other at least twice a year for correlation of results.
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| **Materials** | **Reagents, Supplies, Equipment:**Refer to the specific method procedures for required reagents, equipment and supplies. |
| **Special Safety Precautions** | Refer to the manufacturers and laboratory’s safety policies and procedures for the analyzers being checked. |
| **Procedure** | **Step** | Action | **Related Document** |
|  | 1 | Monthly:MIN/STP: Compare 1 well-mixed EDTA whole blood patient sample perform an auto diff (preferably containing reportable values for NRBC’s) and test for the following; WBC, RBC, HGB, MCV, PLTC, MPVO on the Sysmex XNs. Next using the same sample perform HGB testing on the Hemocue. Make a slide on the same sample and perform a manual differential. Results should agree within the 95% confidence intervals on the Manual Differential Confidence Table. | [Manual Differential Confidence Table](https://starnet.childrenshc.org/References/labsop/heme/res/table-i-manual-differential-confidence-table.pdf) |
|  | 2 | **Monthly:**Acquire a patient sample and perform coagulation testing for PT, PTT, and Fibrinogen at a minimum. If other reagents are available perform other assays that are done on both analyzers such as DDI, Factor Assays, ATIII, HEP, HLMW, FONDA (MIN only). It is required that these assays also be checked twice a year, but do not dilute a kit up to perform correlations unless it is necessary.  |  |
|  | 3 | **Twice per year:**MIN: Draw a coworker and perform TEG testing on all 4 analyzers (8 channels). |  |
|  | 7 | Record results on the Instrument Correlation Monitor Log sheet. |  |
|  | 8 | Determine actual difference and % difference if needed. |  |
|  | 9 | Note whether differences meet defined criteria. |  |
|  | 10 | If acceptable limits are exceeded, identify the problem and correct before repeating analysis. |  |
|  | 11 | Results are reviewed and signed periodically by the Section Supervisor. |  |
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| **Calculations** | To calculate the % difference, divide the difference between the 2 results by the target or deemed value. |
| **Interpretation/ Results/Critical Values** |

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| **Analyte** | **Children’s acceptable difference** |  **CAP Survey Criteria** |
| WBC | ± 0.5 10^3/uL | ± 15% |
| RBC | ± 0.20 10^6/uL | ± 6% |
| HGB | ± 0.3 g/dL | ± 7% |
| MCV | ± 5.0 fL | ± 3 SD |
| PLTC | ± 10% | ± 25% |
| MPVO | ± 20% | ± 3 SD |
| PMN | 95% confidence limits (Rumke chart)  | 3 SD or 1.0 (whichever is greater) |
| LYMP | 95% confidence limits (Rumke chart) | 3 SD or 1.0 (whichever is greater) |
| MONO | 95% confidence limits (Rumke chart) | 3 SD or 1.0 (whichever is greater) |
| EOS | 95% confidence limits (Rumke chart) | 3 SD or 1.0 (whichever is greater) |
| BASO | 95% confidence limits (Rumke chart) | 3 SD or 1.0 (whichever is greater) |
| NRBC | 95% confidence limits (Rumke chart) | 3 SD or 1.0 (whichever is greater) |
| PT | <10% | ± 15% |
| PTT | <10% | ± 15% |
| FIB | <15% | ± 20% |
| TT | <10% | Not evaluated |
| HEPU | 0.1IU/mL | ± 3 SD |
| HLMW | 0.1IU/mL | ± 3 SD |
| ATIII | <10% | ± 3 SD |
| DDI | <10% | ± 3 SD |
| Factor Assays | <20% | 50% when mean is <2020% when mean is >/=20 |
| FONDA | 0.1IU/mL | Not evaluated |
| RCT | CV <10% | Not evaluated |
| KCK | CV <10% | Not evaluated |
| ANGL | CV <10% | Not evaluated |
| 1MA | CV <10% | Not evaluated |
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| **Result Reporting** | Record all results on the appropriate Instrument Correlation Monitor log sheets found in the Correlation Monitor binder. |
| **References** | College of American Pathologists, Commission on Laboratory Accreditation, All Common Checklist, Revised 4/21/14 |

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| **Historical Record** | **Version** | **Written/Revised by:** | **Effective Date:** | **Summary of Revisions** |
|  | Al Quigley | 10/1/19 | Initial Version |
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