



## Department of Health

ANDREW M. CUOMO  
Governor

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

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

### **Clinical Chemistry Proficiency Test Program**

#### **Statistical Summary – February 2015 (Event 15-1)**

This statistical report summarizes participant data for the five Clinical Chemistry proficiency survey specimens shipped 2 February 2015 (originally scheduled 26 January 2015). Test samples (Vials C16, C17, C18, C19, C20) were prepared by the quantitative transfer of constituents to pooled human serum. The material was subsequently sterile filtered, dispensed into aliquots, stored at -80°C, and distributed to participants for analysis.

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

#### Disclaimer:

Note: The use of brand and/or trade names in this report does not constitute an endorsement of the products on the part of the Wadsworth Center or the New York State Department of Health

Should you have any questions regarding this report, please contact the Clinical Chemistry Section at (518) 474-5582.

## Summary of Participant Performance (Mean and Standard Deviation)

## Glucose (mg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 140.8 ± 4.46  | 181.4 ± 4.56  | 52.6 ± 2.63   | 67.6 ± 2.30   | 314.3 ± 8.03  | n = 388 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 139.0 ± 0.90  | 177.7 ± 0.51  | 52.3 ± 1.37   | 64.0 ± 0.90   | 308.0 ± 0.90  | n = 3   | [AXA] Abaxis Piccolo                       |
| 140.4 ± 2.64  | 182.6 ± 2.84  | 51.5 ± 0.96   | 66.9 ± 1.16   | 321.7 ± 5.00  | n = 23  | [ABJ] Abbott Architect c System            |
| 148.0 ± 0.90  | 184.5 ± 2.74  | 55.2 ± 1.54   | 70.3 ± 1.37   | 325.2 ± 4.11  | n = 3   | [AWA] Alfa Wassermann ACE Alera            |
| 139.3 ± 3.91  | 180.0 ± 4.95  | 51.4 ± 1.53   | 66.6 ± 1.89   | 312.4 ± 7.93  | n = 70  | [OLC] Beckman Coulter AU Chemistry System  |
| 137.9 ± 3.98  | 180.4 ± 3.14  | 51.2 ± 2.45   | 66.5 ± 1.67   | 310.2 ± 5.00  | n = 15  | [BCG] Beckman Coulter UniCel DxC 600       |
| 138.1 ± 3.28  | 179.6 ± 2.52  | 51.6 ± 2.04   | 67.0 ± 1.73   | 311.7 ± 4.40  | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 152.0 ± 1.80  | 208.1 ± 2.86  | 67.3 ± 0.51   | 80.2 ± 1.54   | 346.5 ± 1.86  | n = 3   | [HEB] HemoCue B-Glucose                    |
| 173.1 ± 5.22  | 225.6 ± 1.02  | 87.3 ± 0.51   | 93.5 ± 7.22   | 356.8 ± 1.54  | n = 3   | [HEC] HemoCue Glucose 201                  |
| 138.6 ± 1.52  | 184.4 ± 1.42  | 50.9 ± 1.01   | 66.0 ± 1.31   | 313.7 ± 4.02  | n = 8   | [IAA] i-STAT                               |
| 141.0 ± 2.41  | 181.9 ± 3.51  | 51.8 ± 0.47   | 69.7 ± 1.56   | 316.8 ± 5.80  | n = 8   | [JJE] Ortho Vitros 250/350/950             |
| 140.5 ± 3.63  | 181.2 ± 2.36  | 51.0 ± 0.90   | 69.0 ± 0.90   | 317.5 ± 3.63  | n = 3   | [JJH] Ortho Vitros 4600                    |
| 140.3 ± 2.77  | 181.5 ± 2.88  | 52.7 ± 1.58   | 69.0 ± 2.26   | 318.3 ± 4.88  | n = 12  | [JJF] Ortho Vitros 5,1FS                   |
| 139.9 ± 4.34  | 180.7 ± 5.05  | 52.0 ± 1.58   | 68.6 ± 2.12   | 315.2 ± 5.83  | n = 20  | [JJG] Ortho Vitros 5600                    |
| 140.0 ± 0.90  | 180.5 ± 1.86  | 52.3 ± 0.51   | 67.3 ± 0.51   | 316.3 ± 3.16  | n = 3   | [ROK] Roche cobas c111                     |
| 140.1 ± 1.83  | 181.6 ± 2.57  | 51.6 ± 0.55   | 67.8 ± 0.80   | 316.2 ± 4.71  | n = 5   | [ROJ] Roche cobas c311                     |
| 140.7 ± 2.89  | 181.7 ± 3.97  | 51.8 ± 1.16   | 67.6 ± 1.91   | 312.9 ± 5.66  | n = 33  | [ROC] Roche cobas c501                     |
| 139.8 ± 2.09  | 181.9 ± 3.14  | 51.9 ± 0.75   | 67.3 ± 1.05   | 315.7 ± 4.37  | n = 8   | [ROH] Roche cobas c701                     |
| 139.2 ± 2.21  | 181.9 ± 3.43  | 51.8 ± 0.91   | 67.0 ± 1.37   | 317.0 ± 6.11  | n = 6   | [ROS] Roche Cobas INTEGRA 400              |
| 141.3 ± 2.26  | 180.1 ± 1.88  | 50.8 ± 1.46   | 67.0 ± 0.75   | 312.4 ± 6.03  | n = 4   | [ROT] Roche Cobas INTEGRA 800              |
| 138.5 ± 3.26  | 180.1 ± 3.92  | 51.4 ± 1.13   | 66.7 ± 1.48   | 312.7 ± 6.12  | n = 18  | [ROD] Roche MODULAR D/P                    |
| 138.5 ± 2.31  | 178.5 ± 3.96  | 51.7 ± 0.99   | 66.6 ± 1.04   | 308.8 ± 5.76  | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 141.5 ± 1.86  | 182.5 ± 2.74  | 53.0 ± 0.00   | 67.6 ± 1.02   | 317.6 ± 4.72  | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 148.1 ± 3.30  | 186.4 ± 3.70  | 57.8 ± 1.83   | 70.9 ± 2.13   | 320.5 ± 7.41  | n = 25  | [DUE] Siemens Dimension EXL                |
| 148.7 ± 1.68  | 187.7 ± 2.66  | 58.1 ± 1.44   | 71.7 ± 1.36   | 325.7 ± 4.69  | n = 13  | [DUR] Siemens Dimension RxL                |
| 141.5 ± 3.68  | 178.8 ± 4.07  | 55.3 ± 1.26   | 67.6 ± 1.37   | 307.4 ± 6.62  | n = 42  | [DUT] Siemens Dimension Vista              |
| 146.6 ± 1.62  | 185.3 ± 2.01  | 57.5 ± 1.48   | 71.0 ± 2.26   | 318.0 ± 5.49  | n = 13  | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 139.0 ± 0.90  | 177.7 ± 0.51  | 52.3 ± 1.37   | 64.0 ± 0.90   | 308.0 ± 0.90  | n = 3   | [AX1] Abaxis                               |
| 140.3 ± 2.71  | 182.8 ± 2.82  | 51.4 ± 0.94   | 66.9 ± 1.15   | 321.3 ± 5.61  | n = 24  | [AB1] Abbott                               |
| 148.0 ± 0.90  | 184.5 ± 2.74  | 55.2 ± 1.54   | 70.3 ± 1.37   | 325.2 ± 4.11  | n = 3   | [AW1] Alfa Wassermann                      |
| 138.0 ± 3.65  | 179.9 ± 3.04  | 51.3 ± 2.29   | 66.6 ± 1.84   | 310.9 ± 5.09  | n = 28  | [BC1] Beckman Coulter                      |
| 139.3 ± 3.69  | 179.9 ± 4.63  | 51.4 ± 1.46   | 66.5 ± 1.78   | 312.3 ± 7.81  | n = 67  | [OL1] Beckman Coulter AU Series            |
| 162.1 ± 12.23 | 217.1 ± 10.03 | 77.3 ± 11.41  | 85.8 ± 8.58   | 351.7 ± 6.21  | n = 6   | [HE1] HemoCue                              |
| 138.9 ± 1.40  | 184.2 ± 1.51  | 50.9 ± 1.11   | 66.0 ± 1.42   | 314.4 ± 3.43  | n = 7   | [IA1] i-STAT                               |
| 140.4 ± 3.56  | 181.4 ± 3.84  | 52.1 ± 1.48   | 69.0 ± 2.02   | 316.6 ± 5.56  | n = 43  | [JJ1] Ortho Clinical Diagnostics           |
| 140.0 ± 0.90  | 180.5 ± 1.86  | 52.3 ± 0.51   | 67.3 ± 0.51   | 316.3 ± 3.16  | n = 3   | [R08] Roche cobas c111                     |
| 140.6 ± 2.68  | 181.9 ± 3.70  | 51.8 ± 1.06   | 67.6 ± 1.66   | 314.1 ± 5.55  | n = 49  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 138.5 ± 3.26  | 180.1 ± 3.92  | 51.4 ± 1.13   | 66.7 ± 1.48   | 312.7 ± 6.12  | n = 18  | [R02] Roche Hitachi and Modular D/P        |
| 140.0 ± 2.38  | 181.0 ± 2.90  | 51.5 ± 1.24   | 67.0 ± 1.12   | 315.0 ± 6.68  | n = 10  | [R01] Roche Integra and MIRA               |
| 139.0 ± 2.44  | 179.2 ± 3.93  | 51.9 ± 1.02   | 66.8 ± 1.00   | 310.2 ± 6.57  | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 145.2 ± 4.57  | 183.2 ± 5.37  | 56.6 ± 1.98   | 69.6 ± 2.65   | 315.1 ± 10.02 | n = 93  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## Urea Nitrogen (mg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 27.6 ± 1.08   | 14.1 ± 0.71   | 20.2 ± 0.88   | 35.0 ± 1.37   | 27.5 ± 1.16   | n = 370 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 26.7 ± 0.51   | 13.3 ± 0.51   | 19.3 ± 0.51   | 34.0 ± 0.90   | 27.0 ± 0.00   | n = 3   | [AXA] Abaxis Piccolo                       |
| 27.7 ± 0.60   | 14.0 ± 0.00   | 20.0 ± 0.00   | 35.3 ± 0.67   | 27.7 ± 0.67   | n = 22  | [ABJ] Abbott Architect c System            |
| 28.3 ± 0.51   | 14.7 ± 0.51   | 20.3 ± 0.51   | 35.3 ± 0.51   | 28.6 ± 1.02   | n = 3   | [AWA] Alfa Wassermann ACE Alera            |
| 27.8 ± 0.86   | 14.2 ± 0.60   | 20.4 ± 0.79   | 35.3 ± 1.27   | 27.6 ± 0.97   | n = 67  | [OLC] Beckman Coulter AU Chemistry System  |
| 28.2 ± 0.74   | 14.6 ± 0.64   | 20.9 ± 0.47   | 35.2 ± 0.87   | 28.4 ± 0.64   | n = 14  | [BCG] Beckman Coulter UniCel DxC 600       |
| 24.3 ± 2.08   | 12.5 ± 0.65   | 17.3 ± 2.01   | 32.3 ± 1.29   | 24.1 ± 1.93   | n = 11  | [BCH] Beckman Coulter UniCel DxC 800       |
| 32.6 ± 0.56   | 15.0 ± 0.00   | 22.8 ± 0.66   | 40.2 ± 0.66   | 32.8 ± 0.66   | n = 7   | [IAA] i-STAT                               |
| 26.2 ± 0.65   | 13.7 ± 0.51   | 20.0 ± 0.00   | 34.0 ± 0.82   | 26.4 ± 0.70   | n = 9   | [JJE] Ortho Vitros 250/350/950             |
| 25.7 ± 0.51   | 13.0 ± 0.00   | 19.0 ± 0.00   | 33.0 ± 0.00   | 25.7 ± 0.51   | n = 3   | [JJH] Ortho Vitros 4600                    |
| 26.1 ± 0.82   | 13.3 ± 0.51   | 19.3 ± 0.51   | 33.8 ± 0.83   | 26.2 ± 0.73   | n = 12  | [JJF] Ortho Vitros 5,1FS                   |
| 26.1 ± 0.60   | 13.4 ± 0.66   | 19.0 ± 0.00   | 33.3 ± 0.68   | 25.7 ± 0.82   | n = 20  | [JJG] Ortho Vitros 5600                    |
| 28.3 ± 0.51   | 14.3 ± 0.51   | 20.3 ± 0.51   | 35.3 ± 0.51   | 28.3 ± 0.51   | n = 3   | [ROK] Roche cobas c111                     |
| 28.0 ± 0.00   | 14.0 ± 0.00   | 20.0 ± 0.00   | 35.0 ± 0.00   | 28.0 ± 0.00   | n = 5   | [ROJ] Roche cobas c311                     |
| 27.5 ± 0.93   | 14.0 ± 0.00   | 20.1 ± 0.57   | 34.5 ± 0.96   | 27.2 ± 0.81   | n = 32  | [ROC] Roche cobas c501                     |
| 26.5 ± 1.03   | 13.7 ± 0.69   | 19.5 ± 0.90   | 34.0 ± 1.12   | 26.8 ± 1.20   | n = 8   | [ROH] Roche cobas c701                     |
| 27.0 ± 0.93   | 14.3 ± 1.03   | 20.3 ± 0.47   | 34.7 ± 1.47   | 27.8 ± 1.07   | n = 5   | [ROS] Roche Cobas INTEGRA 400              |
| 27.7 ± 0.82   | 13.8 ± 0.41   | 20.0 ± 0.75   | 34.3 ± 0.90   | 27.0 ± 0.75   | n = 4   | [ROT] Roche Cobas INTEGRA 800              |
| 28.1 ± 0.79   | 14.2 ± 0.57   | 20.6 ± 0.68   | 35.9 ± 0.57   | 27.8 ± 0.78   | n = 17  | [ROD] Roche MODULAR D/P                    |
| 28.0 ± 0.50   | 14.7 ± 0.58   | 20.4 ± 0.55   | 36.4 ± 0.62   | 27.8 ± 0.68   | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 28.0 ± 0.00   | 14.7 ± 0.51   | 20.0 ± 0.00   | 36.7 ± 0.51   | 27.7 ± 0.51   | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 28.4 ± 0.69   | 14.2 ± 0.66   | 20.9 ± 0.95   | 35.4 ± 0.86   | 28.4 ± 0.88   | n = 25  | [DUE] Siemens Dimension EXL                |
| 28.4 ± 0.76   | 14.3 ± 0.63   | 20.7 ± 0.96   | 35.7 ± 0.84   | 28.3 ± 0.84   | n = 13  | [DUR] Siemens Dimension RxL                |
| 27.6 ± 0.73   | 14.0 ± 0.40   | 20.1 ± 0.58   | 34.9 ± 0.94   | 27.5 ± 0.85   | n = 42  | [DUT] Siemens Dimension Vista              |
| 28.4 ± 1.11   | 14.3 ± 0.60   | 20.9 ± 0.54   | 35.8 ± 1.26   | 28.3 ± 0.72   | n = 12  | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 26.7 ± 0.51   | 13.3 ± 0.51   | 19.3 ± 0.51   | 34.0 ± 0.90   | 27.0 ± 0.00   | n = 3   | [AX1] Abaxis                               |
| 27.7 ± 0.60   | 14.0 ± 0.00   | 20.0 ± 0.00   | 35.3 ± 0.67   | 27.7 ± 0.67   | n = 23  | [AB1] Abbott                               |
| 28.3 ± 0.51   | 14.7 ± 0.51   | 20.3 ± 0.51   | 35.3 ± 0.51   | 28.6 ± 1.02   | n = 3   | [AW1] Alfa Wassermann                      |
| 27.1 ± 2.28   | 14.0 ± 1.23   | 19.9 ± 2.07   | 34.4 ± 1.97   | 27.2 ± 2.49   | n = 29  | [BC1] Beckman Coulter                      |
| 27.8 ± 0.82   | 14.3 ± 0.61   | 20.4 ± 0.78   | 35.3 ± 1.25   | 27.5 ± 0.98   | n = 63  | [OL1] Beckman Coulter AU Series            |
| 32.5 ± 0.57   | 15.0 ± 0.00   | 22.7 ± 0.51   | 40.2 ± 0.73   | 32.7 ± 0.51   | n = 6   | [IA1] i-STAT                               |
| 26.1 ± 0.69   | 13.4 ± 0.60   | 19.3 ± 0.53   | 33.5 ± 0.85   | 26.0 ± 0.82   | n = 44  | [JJ1] Ortho Clinical Diagnostics           |
| 28.3 ± 0.51   | 14.3 ± 0.51   | 20.3 ± 0.51   | 35.3 ± 0.51   | 28.3 ± 0.51   | n = 3   | [R08] Roche cobas c111                     |
| 27.5 ± 0.99   | 14.0 ± 0.37   | 20.0 ± 0.67   | 34.5 ± 0.98   | 27.3 ± 0.90   | n = 48  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 28.1 ± 0.79   | 14.2 ± 0.57   | 20.6 ± 0.68   | 35.9 ± 0.57   | 27.8 ± 0.78   | n = 17  | [R02] Roche Hitachi and Modular D/P        |
| 27.3 ± 1.00   | 14.0 ± 0.81   | 20.2 ± 0.60   | 34.5 ± 1.17   | 27.4 ± 0.93   | n = 9   | [R01] Roche Integra and MIRA               |
| 28.0 ± 0.00   | 14.7 ± 0.56   | 20.3 ± 0.54   | 36.5 ± 0.61   | 27.8 ± 0.64   | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 28.0 ± 0.88   | 14.1 ± 0.58   | 20.5 ± 0.82   | 35.3 ± 1.03   | 27.9 ± 0.91   | n = 91  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## Creatinine (mg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] | Instrument or Reagent System            |
|---------------|---------------|---------------|---------------|---------------|---------|--------|-----------------------------------------|
| 1.42 ± 0.14   | 1.89 ± 0.12   | 1.02 ± 0.11   | 3.29 ± 0.15   | 1.45 ± 0.16   | n = 380 | [---]  | All Methods & Instruments               |
| 1.40 ± 0.14   | 1.87 ± 0.11   | 1.01 ± 0.11   | 3.27 ± 0.15   | 1.43 ± 0.16   | n = 216 | [---]  | All IDMS Traceable Methods              |
| 1.44 ± 0.13   | 1.91 ± 0.12   | 1.04 ± 0.11   | 3.31 ± 0.14   | 1.48 ± 0.16   | n = 158 | [---]  | All Non-IDMS Traceable Methods          |
| 1.47 ± 0.12   | 1.92 ± 0.11   | 1.05 ± 0.10   | 3.31 ± 0.13   | 1.52 ± 0.13   | n = 124 | [-G-]  | Alkaline picrate/Jaffe                  |
| 1.43 ± 0.14   | 1.86 ± 0.11   | 1.03 ± 0.12   | 3.25 ± 0.13   | 1.48 ± 0.16   | n = 156 | [-H-]  | Alkaline picrate/Jaffe-IDMS calibration |
| 1.33 ± 0.14   | 1.88 ± 0.12   | 0.98 ± 0.11   | 3.33 ± 0.20   | 1.31 ± 0.14   | n = 34  | [-I-]  | Enzymatic                               |
| 1.33 ± 0.11   | 1.87 ± 0.12   | 0.98 ± 0.09   | 3.35 ± 0.18   | 1.33 ± 0.12   | n = 60  | [-J-]  | Enzymatic-IDMS-traceable calibration    |
| 0.93 ± 0.21   | 1.36 ± 0.06   | 0.86 ± 0.08   | 2.91 ± 0.34   | 0.75 ± 0.08   | n = 6   | [---]  | Other                                   |
| 1.24 ± 0.14   | 1.75 ± 0.05   | 0.83 ± 0.14   | 3.22 ± 0.14   | 1.15 ± 0.05   | n = 3   | [AXA]  | Abaxis Piccolo                          |
| 1.60 ± 0.02   | 2.12 ± 0.05   | 1.12 ± 0.04   | 3.47 ± 0.06   | 1.71 ± 0.05   | n = 22  | [ABJ]  | Abbott Architect c System               |
| 1.54 ± 0.12   | 1.91 ± 0.02   | 0.99 ± 0.09   | 3.21 ± 0.03   | 1.55 ± 0.05   | n = 3   | [AWA]  | Alfa Wassermann ACE Alera               |
| 1.40 ± 0.05   | 1.85 ± 0.06   | 1.04 ± 0.05   | 3.22 ± 0.09   | 1.44 ± 0.05   | n = 68  | [OLC]  | Beckman Coulter AU Chemistry System     |
| 1.30 ± 0.05   | 1.81 ± 0.07   | 0.84 ± 0.06   | 3.24 ± 0.12   | 1.32 ± 0.06   | n = 16  | [BCG]  | Beckman Coulter UniCel DxC 600          |
| 1.34 ± 0.05   | 1.89 ± 0.05   | 0.97 ± 0.04   | 3.30 ± 0.04   | 1.39 ± 0.06   | n = 10  | [BCH]  | Beckman Coulter UniCel DxC 800          |
| 0.89 ± 0.13   | 1.36 ± 0.06   | 0.84 ± 0.06   | 2.84 ± 0.34   | 0.75 ± 0.08   | n = 5   | [EPO]  | Epocal epoc                             |
| 1.24 ± 0.06   | 1.97 ± 0.11   | 0.90 ± 0.00   | 3.22 ± 0.05   | 1.20 ± 0.00   | n = 7   | [IAA]  | i-STAT                                  |
| 1.40 ± 0.02   | 1.98 ± 0.06   | 1.07 ± 0.05   | 3.53 ± 0.06   | 1.40 ± 0.00   | n = 9   | [JJE]  | Ortho Vitros 250/350/950                |
| 1.42 ± 0.06   | 1.95 ± 0.05   | 1.03 ± 0.05   | 3.51 ± 0.01   | 1.37 ± 0.05   | n = 3   | [JJH]  | Ortho Vitros 4600                       |
| 1.44 ± 0.06   | 1.95 ± 0.05   | 1.06 ± 0.07   | 3.45 ± 0.07   | 1.44 ± 0.06   | n = 12  | [JJF]  | Ortho Vitros 5,1FS                      |
| 1.40 ± 0.04   | 1.96 ± 0.06   | 1.04 ± 0.05   | 3.52 ± 0.13   | 1.39 ± 0.02   | n = 20  | [JJG]  | Ortho Vitros 5600                       |
| 1.22 ± 0.09   | 1.69 ± 0.04   | 0.90 ± 0.04   | 3.08 ± 0.06   | 1.28 ± 0.09   | n = 3   | [ROK]  | Roche cobas c111                        |
| 1.38 ± 0.11   | 1.86 ± 0.07   | 0.94 ± 0.14   | 3.25 ± 0.08   | 1.41 ± 0.17   | n = 5   | [ROJ]  | Roche cobas c311                        |
| 1.30 ± 0.07   | 1.78 ± 0.08   | 0.88 ± 0.05   | 3.23 ± 0.11   | 1.30 ± 0.08   | n = 34  | [ROC]  | Roche cobas c501                        |
| 1.44 ± 0.14   | 1.86 ± 0.08   | 1.06 ± 0.11   | 3.24 ± 0.12   | 1.46 ± 0.15   | n = 8   | [ROH]  | Roche cobas c701                        |
| 1.40 ± 0.11   | 1.86 ± 0.16   | 1.00 ± 0.00   | 3.25 ± 0.09   | 1.43 ± 0.11   | n = 6   | [ROS]  | Roche Cobas INTEGRA 400                 |
| 1.21 ± 0.07   | 1.72 ± 0.05   | 0.90 ± 0.01   | 3.08 ± 0.08   | 1.21 ± 0.08   | n = 4   | [ROT]  | Roche Cobas INTEGRA 800                 |
| 1.52 ± 0.20   | 1.92 ± 0.11   | 1.12 ± 0.14   | 3.29 ± 0.11   | 1.57 ± 0.19   | n = 17  | [ROD]  | Roche MODULAR D/P                       |
| 1.59 ± 0.15   | 1.88 ± 0.06   | 1.10 ± 0.08   | 3.19 ± 0.10   | 1.67 ± 0.13   | n = 20  | [BYE]  | Siemens ADVIA 1800                      |
| 1.61 ± 0.09   | 1.81 ± 0.06   | 1.06 ± 0.06   | 3.18 ± 0.08   | 1.70 ± 0.10   | n = 3   | [BYB]  | Siemens ADVIA 2400                      |
| 1.48 ± 0.09   | 1.96 ± 0.07   | 1.05 ± 0.09   | 3.38 ± 0.08   | 1.56 ± 0.08   | n = 25  | [DUE]  | Siemens Dimension EXL                   |
| 1.49 ± 0.13   | 1.95 ± 0.15   | 1.06 ± 0.15   | 3.38 ± 0.12   | 1.56 ± 0.13   | n = 13  | [DUR]  | Siemens Dimension RxL                   |
| 1.42 ± 0.13   | 1.88 ± 0.12   | 1.01 ± 0.10   | 3.25 ± 0.11   | 1.48 ± 0.13   | n = 42  | [DUT]  | Siemens Dimension Vista                 |
| 1.48 ± 0.09   | 1.93 ± 0.11   | 1.03 ± 0.10   | 3.32 ± 0.10   | 1.53 ± 0.11   | n = 12  | [DUX]  | Siemens Dimension Xpand                 |
| 1.24 ± 0.14   | 1.75 ± 0.05   | 0.83 ± 0.14   | 3.22 ± 0.14   | 1.15 ± 0.05   | n = 3   | [AX1]  | Abaxis                                  |
| 1.60 ± 0.02   | 2.12 ± 0.06   | 1.11 ± 0.05   | 3.47 ± 0.07   | 1.71 ± 0.05   | n = 23  | [AB1]  | Abbott                                  |
| 1.54 ± 0.12   | 1.91 ± 0.02   | 0.99 ± 0.09   | 3.21 ± 0.03   | 1.55 ± 0.05   | n = 3   | [AW1]  | Alfa Wassermann                         |
| 1.31 ± 0.06   | 1.84 ± 0.07   | 0.89 ± 0.09   | 3.26 ± 0.11   | 1.35 ± 0.07   | n = 29  | [BC1]  | Beckman Coulter                         |
| 1.40 ± 0.05   | 1.85 ± 0.06   | 1.04 ± 0.05   | 3.22 ± 0.08   | 1.44 ± 0.05   | n = 64  | [OL1]  | Beckman Coulter AU Series               |
| 0.89 ± 0.13   | 1.36 ± 0.06   | 0.84 ± 0.06   | 2.84 ± 0.34   | 0.75 ± 0.08   | n = 5   | [EP1]  | Epocal epoc                             |
| 1.25 ± 0.06   | 1.97 ± 0.12   | 0.90 ± 0.00   | 3.23 ± 0.05   | 1.20 ± 0.00   | n = 6   | [IA1]  | i-STAT                                  |
| 1.42 ± 0.05   | 1.96 ± 0.06   | 1.05 ± 0.06   | 3.50 ± 0.09   | 1.41 ± 0.04   | n = 44  | [JJ1]  | Ortho Clinical Diagnostics              |
| 1.22 ± 0.09   | 1.69 ± 0.04   | 0.90 ± 0.04   | 3.08 ± 0.06   | 1.28 ± 0.09   | n = 3   | [R08]  | Roche cobas c111                        |
| 1.34 ± 0.12   | 1.81 ± 0.09   | 0.93 ± 0.13   | 3.24 ± 0.11   | 1.34 ± 0.13   | n = 50  | [R04]  | Roche cobas c311/c501/c502/c701/c702    |
| 1.52 ± 0.20   | 1.92 ± 0.11   | 1.12 ± 0.14   | 3.29 ± 0.11   | 1.57 ± 0.19   | n = 17  | [R02]  | Roche Hitachi and Modular D/P           |
| 1.33 ± 0.14   | 1.79 ± 0.13   | 0.94 ± 0.07   | 3.19 ± 0.12   | 1.34 ± 0.15   | n = 10  | [R01]  | Roche Integra and MIRA                  |
| 1.60 ± 0.14   | 1.87 ± 0.07   | 1.10 ± 0.08   | 3.18 ± 0.10   | 1.68 ± 0.13   | n = 24  | [BY1]  | Siemens ADVIA/ADVIA Centaur             |
| 1.46 ± 0.12   | 1.92 ± 0.11   | 1.03 ± 0.11   | 3.31 ± 0.12   | 1.52 ± 0.12   | n = 92  | [DA5]  | Siemens Dimension                       |

## Summary of Participant Performance (Mean and Standard Deviation)

Glomerular filtration rate (mL/min/1.73 m<sup>2</sup>)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System             |
|---------------|---------------|---------------|---------------|---------------|---------|-------------------------------------------------|
| 59.2 ± 7.64   | 44.2 ± 3.71   | 89.8 ± 12.24  | 23.1 ± 1.60   | 57.7 ± 7.90   | n = 316 | [---] All Methods & Instruments                 |
| 58.9 ± 8.27   | 44.5 ± 3.66   | 91.2 ± 13.09  | 23.1 ± 1.63   | 57.6 ± 8.49   | n = 180 | [-A-] IDMS-traceable MDRD Study Equation        |
| 57.4 ± 5.82   | 43.7 ± 3.90   | 86.7 ± 11.90  | 23.4 ± 1.48   | 55.2 ± 6.02   | n = 83  | [-B-] Original MDRD Study Equation (4-variable) |
| 62.8 ± 6.17   | 44.4 ± 2.66   | 91.1 ± 10.37  | 22.7 ± 1.05   | 61.7 ± 5.93   | n = 46  | [-F-] CKD-EPI Equation                          |
| 61.7 ± 10.80  | 45.5 ± 6.64   | 85.2 ± 9.97   | 25.3 ± 5.04   | 59.0 ± 10.48  | n = 5   | [-D-] Cockcroft-Gault                           |

## Target values and allowable ranges for Estimated Glomerular Filtration Rate (eGFR):

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Method                             |
|---------------|---------------|---------------|---------------|---------------|------------------------------------|
| 62 (46-78)    | 44 (33-56)    | 90 (67-113)   | 23 (17-30)    | 61 (45-76)    | IDMS-traceable MDRD Study Equation |
| 64 (47-80)    | 46 (34-58)    | 93 (69-117)   | 24 (18-31)    | 62 (46-78)    | Original MDRD Study Equation       |
| 62 (46-77)    | 43 (32-55)    | 91 (68-115)   | 22 (16-28)    | 60 (45-75)    | CKD-EPI Equation                   |
| 69 (51-86)    | 52 (38-65)    | 95 (71-120)   | 30 (22-37)    | 67 (50-84)    | Cockcroft-Gault Equation           |

Laboratories were asked to report Estimated Glomerular Filtration Rate (eGFR) for samples C16-C20 for a 63-year-old African American male weighing 91 kg.

Target values for eGFR calculated by the MDRD Study Equations were derived from participant mean values for serum creatinine for both conventional and isotope dilution mass spectroscopy (IDMS) calibration methods and application of the appropriate 4-variable MDRD Study equation.

Target values for eGFR calculated by the CKD-EPI equation were derived from participant mean values for IDMS-traceable serum creatinine methods and application of the CKD-EPI equation.

Target values for eGFR calculated by the Cockcroft-Gault equation were derived from all-method mean values for serum creatinine and application of the Cockcroft-Gault formula.

Allowable ranges are ± 25% of the target eGFR for all samples/equations.

Note: the NKDEP recommends reporting estimated GFR values greater than or equal to 60 mL/min/1.73 m<sup>2</sup> as "> 60 mL/min/1.73 m<sup>2</sup>" and not as an exact number. However, ranges exceeding 60 mL/min are provided as a relative indicator of acceptability for laboratories that report numeric results above that threshold. Note that some laboratories reported results as > 60 mL/min/1.73 m<sup>2</sup>. These data were removed from the calculations of mean and standard deviation since their inclusion would have skewed results.

## Summary of Participant Performance (Mean and Standard Deviation)

## Uric Acid (mg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 6.23 ± 0.20   | 11.65 ± 0.45  | 2.65 ± 0.16   | 4.36 ± 0.15   | 6.19 ± 0.19   | n = 329 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 6.35 ± 0.11   | 12.30 ± 0.32  | 2.60 ± 0.04   | 4.37 ± 0.08   | 6.34 ± 0.14   | n = 20  | [ABJ] Abbott Architect c System            |
| 6.27 ± 0.14   | 11.76 ± 0.21  | 2.71 ± 0.07   | 4.49 ± 0.10   | 6.27 ± 0.14   | n = 65  | [OLC] Beckman Coulter AU Chemistry System  |
| 5.68 ± 0.08   | 11.10 ± 0.10  | 2.50 ± 0.00   | 4.18 ± 0.08   | 5.69 ± 0.07   | n = 12  | [BCG] Beckman Coulter UniCel DxC 600       |
| 5.67 ± 0.08   | 11.11 ± 0.08  | 2.50 ± 0.00   | 4.17 ± 0.08   | 5.68 ± 0.09   | n = 9   | [BCH] Beckman Coulter UniCel DxC 800       |
| 5.77 ± 0.05   | 11.20 ± 0.09  | 2.50 ± 0.00   | 4.23 ± 0.05   | 5.77 ± 0.05   | n = 3   | [BCV] Beckman Coulter UniCel DxI 600       |
| 6.18 ± 0.09   | 11.70 ± 0.35  | 2.52 ± 0.07   | 4.43 ± 0.10   | 6.18 ± 0.09   | n = 6   | [JJE] Ortho Vitros 250/350/950             |
| 6.17 ± 0.05   | 11.43 ± 0.05  | 2.50 ± 0.00   | 4.33 ± 0.05   | 6.14 ± 0.10   | n = 3   | [JJH] Ortho Vitros 4600                    |
| 6.25 ± 0.17   | 11.62 ± 0.25  | 2.53 ± 0.06   | 4.40 ± 0.11   | 6.19 ± 0.15   | n = 11  | [JJF] Ortho Vitros 5,1FS                   |
| 6.18 ± 0.13   | 11.61 ± 0.24  | 2.51 ± 0.07   | 4.37 ± 0.09   | 6.16 ± 0.15   | n = 20  | [JJG] Ortho Vitros 5600                    |
| 6.30 ± 0.08   | 12.14 ± 0.19  | 2.62 ± 0.04   | 4.45 ± 0.06   | 6.32 ± 0.04   | n = 4   | [ROJ] Roche cobas c311                     |
| 6.26 ± 0.13   | 11.94 ± 0.22  | 2.58 ± 0.06   | 4.42 ± 0.08   | 6.23 ± 0.15   | n = 31  | [ROC] Roche cobas c501                     |
| 6.23 ± 0.14   | 11.95 ± 0.19  | 2.60 ± 0.00   | 4.33 ± 0.05   | 6.13 ± 0.14   | n = 3   | [ROG] Roche cobas c502                     |
| 6.20 ± 0.06   | 11.78 ± 0.30  | 2.55 ± 0.06   | 4.36 ± 0.10   | 6.17 ± 0.12   | n = 6   | [ROH] Roche cobas c701                     |
| 6.13 ± 0.05   | 11.87 ± 0.05  | 2.53 ± 0.05   | 4.30 ± 0.00   | 6.13 ± 0.05   | n = 3   | [ROT] Roche Cobas INTEGRA 800              |
| 6.17 ± 0.13   | 11.77 ± 0.20  | 2.52 ± 0.06   | 4.30 ± 0.07   | 6.13 ± 0.09   | n = 16  | [ROD] Roche MODULAR D/P                    |
| 6.21 ± 0.10   | 11.86 ± 0.20  | 2.60 ± 0.06   | 4.41 ± 0.05   | 6.23 ± 0.11   | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 6.38 ± 0.24   | 12.21 ± 0.37  | 2.66 ± 0.10   | 4.53 ± 0.14   | 6.34 ± 0.26   | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 6.41 ± 0.14   | 11.65 ± 0.18  | 2.91 ± 0.09   | 4.39 ± 0.10   | 6.29 ± 0.14   | n = 25  | [DUE] Siemens Dimension EXL                |
| 6.37 ± 0.17   | 11.53 ± 0.15  | 2.88 ± 0.13   | 4.32 ± 0.13   | 6.26 ± 0.13   | n = 11  | [DUR] Siemens Dimension RxL                |
| 6.09 ± 0.13   | 10.90 ± 0.17  | 2.82 ± 0.09   | 4.15 ± 0.08   | 6.05 ± 0.11   | n = 41  | [DUT] Siemens Dimension Vista              |
| 6.39 ± 0.10   | 11.59 ± 0.20  | 2.92 ± 0.09   | 4.43 ± 0.07   | 6.26 ± 0.08   | n = 7   | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 6.35 ± 0.11   | 12.30 ± 0.32  | 2.60 ± 0.04   | 4.37 ± 0.08   | 6.34 ± 0.14   | n = 20  | [AB1] Abbott                               |
| 5.69 ± 0.08   | 11.12 ± 0.11  | 2.50 ± 0.00   | 4.19 ± 0.08   | 5.70 ± 0.09   | n = 25  | [BC1] Beckman Coulter                      |
| 6.27 ± 0.14   | 11.77 ± 0.21  | 2.71 ± 0.07   | 4.49 ± 0.10   | 6.28 ± 0.14   | n = 64  | [OL1] Beckman Coulter AU Series            |
| 6.19 ± 0.13   | 11.60 ± 0.25  | 2.51 ± 0.06   | 4.38 ± 0.10   | 6.17 ± 0.14   | n = 40  | [JJ1] Ortho Clinical Diagnostics           |
| 6.25 ± 0.12   | 11.95 ± 0.24  | 2.58 ± 0.06   | 4.40 ± 0.09   | 6.23 ± 0.15   | n = 46  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 6.17 ± 0.13   | 11.77 ± 0.20  | 2.52 ± 0.06   | 4.30 ± 0.07   | 6.13 ± 0.09   | n = 16  | [R02] Roche Hitachi and Modular D/P        |
| 6.20 ± 0.10   | 11.90 ± 0.06  | 2.56 ± 0.06   | 4.30 ± 0.00   | 6.18 ± 0.08   | n = 5   | [R01] Roche Integra and MIRA               |
| 6.22 ± 0.10   | 11.89 ± 0.21  | 2.60 ± 0.06   | 4.41 ± 0.05   | 6.23 ± 0.10   | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 6.25 ± 0.21   | 11.27 ± 0.43  | 2.86 ± 0.10   | 4.26 ± 0.16   | 6.17 ± 0.17   | n = 84  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## Bilirubin (mg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 2.29 ± 0.19   | 1.70 ± 0.13   | 4.88 ± 0.31   | 0.92 ± 0.11   | 2.21 ± 0.18   | n = 356 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 2.15 ± 0.19   | 1.67 ± 0.05   | 4.87 ± 0.14   | 0.87 ± 0.05   | 2.00 ± 0.18   | n = 3   | [AXA] Abaxis Piccolo                       |
| 2.42 ± 0.11   | 1.89 ± 0.10   | 5.18 ± 0.17   | 1.03 ± 0.07   | 2.34 ± 0.13   | n = 22  | [ABJ] Abbott Architect c System            |
| 2.86 ± 0.10   | 2.13 ± 0.05   | 5.83 ± 0.14   | 1.20 ± 0.00   | 2.80 ± 0.09   | n = 3   | [AWA] Alfa Wassermann ACE Alera            |
| 2.20 ± 0.08   | 1.69 ± 0.05   | 4.63 ± 0.12   | 0.99 ± 0.04   | 2.15 ± 0.09   | n = 68  | [OLC] Beckman Coulter AU Chemistry System  |
| 2.42 ± 0.21   | 1.95 ± 0.12   | 4.92 ± 0.16   | 1.09 ± 0.15   | 2.27 ± 0.15   | n = 15  | [BCG] Beckman Coulter UniCel DxC 600       |
| 2.46 ± 0.10   | 1.94 ± 0.10   | 4.89 ± 0.15   | 1.07 ± 0.07   | 2.30 ± 0.10   | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 2.53 ± 0.13   | 1.62 ± 0.11   | 5.22 ± 0.16   | 0.97 ± 0.08   | 2.43 ± 0.13   | n = 9   | [JJE] Ortho Vitros 250/350/950             |
| 2.43 ± 0.05   | 1.53 ± 0.05   | 5.13 ± 0.14   | 0.87 ± 0.05   | 2.33 ± 0.05   | n = 3   | [JJH] Ortho Vitros 4600                    |
| 2.49 ± 0.06   | 1.60 ± 0.00   | 5.24 ± 0.13   | 0.93 ± 0.05   | 2.41 ± 0.06   | n = 12  | [JJF] Ortho Vitros 5,1FS                   |
| 2.49 ± 0.08   | 1.55 ± 0.09   | 5.20 ± 0.13   | 0.92 ± 0.07   | 2.41 ± 0.10   | n = 20  | [JJG] Ortho Vitros 5600                    |
| 2.06 ± 0.14   | 1.56 ± 0.11   | 4.62 ± 0.08   | 0.76 ± 0.06   | 2.01 ± 0.14   | n = 5   | [ROJ] Roche cobas c311                     |
| 2.13 ± 0.09   | 1.63 ± 0.06   | 4.61 ± 0.15   | 0.81 ± 0.06   | 2.07 ± 0.09   | n = 31  | [ROC] Roche cobas c501                     |
| 2.06 ± 0.22   | 1.60 ± 0.00   | 4.61 ± 0.15   | 0.80 ± 0.00   | 1.98 ± 0.19   | n = 6   | [ROH] Roche cobas c701                     |
| 2.10 ± 0.00   | 1.60 ± 0.00   | 4.54 ± 0.05   | 0.80 ± 0.00   | 1.99 ± 0.06   | n = 6   | [ROS] Roche Cobas INTEGRA 400              |
| 1.98 ± 0.15   | 1.55 ± 0.06   | 4.42 ± 0.13   | 0.75 ± 0.06   | 1.90 ± 0.18   | n = 4   | [ROT] Roche Cobas INTEGRA 800              |
| 2.13 ± 0.08   | 1.60 ± 0.00   | 4.82 ± 0.15   | 0.79 ± 0.04   | 2.06 ± 0.13   | n = 16  | [ROD] Roche MODULAR D/P                    |
| 2.42 ± 0.05   | 1.83 ± 0.06   | 5.32 ± 0.12   | 1.00 ± 0.00   | 2.34 ± 0.10   | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 2.42 ± 0.15   | 1.87 ± 0.05   | 5.32 ± 0.24   | 0.97 ± 0.05   | 2.30 ± 0.18   | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 2.29 ± 0.10   | 1.69 ± 0.07   | 4.91 ± 0.12   | 0.87 ± 0.06   | 2.21 ± 0.09   | n = 25  | [DUE] Siemens Dimension EXL                |
| 2.30 ± 0.13   | 1.69 ± 0.07   | 4.96 ± 0.18   | 0.85 ± 0.06   | 2.20 ± 0.00   | n = 13  | [DUR] Siemens Dimension RxL                |
| 2.32 ± 0.07   | 1.72 ± 0.06   | 4.86 ± 0.10   | 0.90 ± 0.00   | 2.25 ± 0.08   | n = 42  | [DUT] Siemens Dimension Vista              |
| 2.30 ± 0.06   | 1.70 ± 0.00   | 4.90 ± 0.11   | 0.90 ± 0.07   | 2.22 ± 0.13   | n = 11  | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 2.15 ± 0.19   | 1.67 ± 0.05   | 4.87 ± 0.14   | 0.87 ± 0.05   | 2.00 ± 0.18   | n = 3   | [AX1] Abaxis                               |
| 2.42 ± 0.11   | 1.89 ± 0.10   | 5.18 ± 0.17   | 1.03 ± 0.07   | 2.34 ± 0.13   | n = 22  | [AB1] Abbott                               |
| 2.86 ± 0.10   | 2.13 ± 0.05   | 5.83 ± 0.14   | 1.20 ± 0.00   | 2.80 ± 0.09   | n = 3   | [AW1] Alfa Wassermann                      |
| 2.41 ± 0.18   | 1.93 ± 0.12   | 4.89 ± 0.16   | 1.07 ± 0.12   | 2.28 ± 0.13   | n = 28  | [BC1] Beckman Coulter                      |
| 2.20 ± 0.09   | 1.69 ± 0.05   | 4.63 ± 0.12   | 0.99 ± 0.04   | 2.14 ± 0.09   | n = 65  | [OL1] Beckman Coulter AU Series            |
| 2.49 ± 0.09   | 1.58 ± 0.08   | 5.21 ± 0.14   | 0.93 ± 0.07   | 2.41 ± 0.10   | n = 44  | [JJ1] Ortho Clinical Diagnostics           |
| 2.11 ± 0.11   | 1.61 ± 0.07   | 4.62 ± 0.13   | 0.80 ± 0.06   | 2.05 ± 0.11   | n = 46  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 2.13 ± 0.08   | 1.60 ± 0.00   | 4.82 ± 0.15   | 0.79 ± 0.04   | 2.06 ± 0.13   | n = 16  | [R02] Roche Hitachi and Modular D/P        |
| 2.10 ± 0.00   | 1.59 ± 0.05   | 4.52 ± 0.06   | 0.77 ± 0.05   | 1.97 ± 0.11   | n = 10  | [R01] Roche Integra and MIRA               |
| 2.43 ± 0.06   | 1.84 ± 0.06   | 5.32 ± 0.16   | 1.00 ± 0.00   | 2.34 ± 0.12   | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 2.31 ± 0.08   | 1.71 ± 0.06   | 4.88 ± 0.11   | 0.89 ± 0.05   | 2.23 ± 0.09   | n = 91  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## Phosphorus (mg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 4.40 ± 0.22   | 3.51 ± 0.16   | 2.60 ± 0.19   | 5.01 ± 0.20   | 4.43 ± 0.23   | n = 330 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 4.38 ± 0.07   | 3.51 ± 0.06   | 2.57 ± 0.07   | 5.02 ± 0.07   | 4.39 ± 0.08   | n = 20  | [ABJ] Abbott Architect c System            |
| 4.27 ± 0.15   | 3.41 ± 0.10   | 2.52 ± 0.11   | 4.87 ± 0.14   | 4.30 ± 0.16   | n = 63  | [OLC] Beckman Coulter AU Chemistry System  |
| 4.46 ± 0.13   | 3.50 ± 0.11   | 2.69 ± 0.10   | 5.01 ± 0.07   | 4.49 ± 0.13   | n = 13  | [BCG] Beckman Coulter UniCel DxC 600       |
| 4.53 ± 0.09   | 3.63 ± 0.11   | 2.72 ± 0.07   | 5.21 ± 0.11   | 4.57 ± 0.12   | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 4.98 ± 0.15   | 4.06 ± 0.11   | 3.10 ± 0.09   | 5.62 ± 0.24   | 5.03 ± 0.18   | n = 8   | [JJE] Ortho Vitros 250/350/950             |
| 4.87 ± 0.05   | 3.97 ± 0.05   | 3.03 ± 0.05   | 5.40 ± 0.09   | 4.94 ± 0.10   | n = 3   | [JJH] Ortho Vitros 4600                    |
| 4.87 ± 0.10   | 3.97 ± 0.08   | 3.04 ± 0.07   | 5.47 ± 0.08   | 4.94 ± 0.09   | n = 11  | [JJF] Ortho Vitros 5,1FS                   |
| 4.87 ± 0.17   | 3.96 ± 0.15   | 3.07 ± 0.14   | 5.40 ± 0.18   | 4.91 ± 0.15   | n = 20  | [JJG] Ortho Vitros 5600                    |
| 4.46 ± 0.10   | 3.56 ± 0.10   | 2.63 ± 0.05   | 5.10 ± 0.09   | 4.50 ± 0.09   | n = 3   | [ROJ] Roche cobas c311                     |
| 4.45 ± 0.13   | 3.56 ± 0.09   | 2.61 ± 0.09   | 5.10 ± 0.12   | 4.49 ± 0.14   | n = 31  | [ROC] Roche cobas c501                     |
| 4.37 ± 0.13   | 3.49 ± 0.10   | 2.62 ± 0.07   | 4.98 ± 0.13   | 4.40 ± 0.00   | n = 7   | [ROH] Roche cobas c701                     |
| 4.40 ± 0.17   | 3.56 ± 0.18   | 2.59 ± 0.11   | 4.97 ± 0.15   | 4.40 ± 0.17   | n = 4   | [ROS] Roche Cobas INTEGRA 400              |
| 4.40 ± 0.00   | 3.50 ± 0.00   | 2.64 ± 0.10   | 4.97 ± 0.05   | 4.47 ± 0.05   | n = 3   | [ROT] Roche Cobas INTEGRA 800              |
| 4.47 ± 0.12   | 3.53 ± 0.09   | 2.61 ± 0.10   | 5.08 ± 0.12   | 4.48 ± 0.17   | n = 16  | [ROD] Roche MODULAR D/P                    |
| 4.40 ± 0.09   | 3.53 ± 0.05   | 2.61 ± 0.10   | 5.03 ± 0.09   | 4.44 ± 0.10   | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 4.40 ± 0.09   | 3.50 ± 0.00   | 2.60 ± 0.09   | 4.97 ± 0.05   | 4.38 ± 0.15   | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 4.34 ± 0.12   | 3.51 ± 0.09   | 2.53 ± 0.09   | 4.99 ± 0.09   | 4.36 ± 0.08   | n = 23  | [DUE] Siemens Dimension EXL                |
| 4.36 ± 0.15   | 3.54 ± 0.12   | 2.55 ± 0.11   | 5.00 ± 0.10   | 4.41 ± 0.10   | n = 13  | [DUR] Siemens Dimension RxL                |
| 4.22 ± 0.16   | 3.37 ± 0.09   | 2.42 ± 0.10   | 4.88 ± 0.14   | 4.22 ± 0.12   | n = 41  | [DUT] Siemens Dimension Vista              |
| 4.39 ± 0.11   | 3.50 ± 0.00   | 2.54 ± 0.06   | 4.99 ± 0.08   | 4.39 ± 0.11   | n = 9   | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 4.38 ± 0.07   | 3.51 ± 0.06   | 2.57 ± 0.07   | 5.02 ± 0.07   | 4.39 ± 0.08   | n = 20  | [AB1] Abbott                               |
| 4.48 ± 0.15   | 3.56 ± 0.13   | 2.70 ± 0.10   | 5.11 ± 0.16   | 4.53 ± 0.15   | n = 26  | [BC1] Beckman Coulter                      |
| 4.28 ± 0.15   | 3.41 ± 0.10   | 2.52 ± 0.11   | 4.88 ± 0.14   | 4.30 ± 0.16   | n = 61  | [OL1] Beckman Coulter AU Series            |
| 4.89 ± 0.14   | 3.98 ± 0.12   | 3.06 ± 0.11   | 5.45 ± 0.17   | 4.94 ± 0.14   | n = 42  | [JJ1] Ortho Clinical Diagnostics           |
| 4.43 ± 0.12   | 3.55 ± 0.09   | 2.60 ± 0.08   | 5.07 ± 0.13   | 4.47 ± 0.12   | n = 44  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 4.47 ± 0.12   | 3.53 ± 0.09   | 2.61 ± 0.10   | 5.08 ± 0.12   | 4.48 ± 0.17   | n = 16  | [R02] Roche Hitachi and Modular D/P        |
| 4.43 ± 0.05   | 3.53 ± 0.13   | 2.61 ± 0.11   | 5.00 ± 0.07   | 4.47 ± 0.05   | n = 7   | [R01] Roche Integra and MIRA               |
| 4.39 ± 0.09   | 3.52 ± 0.05   | 2.60 ± 0.10   | 5.01 ± 0.09   | 4.43 ± 0.11   | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 4.30 ± 0.16   | 3.45 ± 0.12   | 2.48 ± 0.11   | 4.95 ± 0.13   | 4.31 ± 0.15   | n = 86  | [DA5] Siemens Dimension                    |



## Summary of Participant Performance (Mean and Standard Deviation)

## Calcium (mg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 9.79 ± 0.22   | 8.90 ± 0.29   | 7.23 ± 0.18   | 11.51 ± 0.28  | 9.77 ± 0.22   | n = 364 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 9.64 ± 0.26   | 8.53 ± 0.05   | 7.10 ± 0.09   | 11.17 ± 0.32  | 9.70 ± 0.00   | n = 3   | [AXA] Abaxis Piccolo                       |
| 9.86 ± 0.12   | 9.07 ± 0.16   | 7.29 ± 0.12   | 11.68 ± 0.11  | 9.86 ± 0.12   | n = 22  | [ABJ] Abbott Architect c System            |
| 9.87 ± 0.05   | 8.99 ± 0.29   | 7.37 ± 0.23   | 11.57 ± 0.05  | 9.95 ± 0.19   | n = 3   | [AWA] Alfa Wassermann ACE Alera            |
| 9.83 ± 0.15   | 9.12 ± 0.14   | 7.32 ± 0.14   | 11.52 ± 0.17  | 9.80 ± 0.13   | n = 68  | [OLC] Beckman Coulter AU Chemistry System  |
| 9.60 ± 0.17   | 8.82 ± 0.13   | 7.12 ± 0.09   | 11.28 ± 0.16  | 9.59 ± 0.15   | n = 15  | [BCG] Beckman Coulter UniCel DxC 600       |
| 9.69 ± 0.14   | 8.92 ± 0.10   | 7.19 ± 0.13   | 11.45 ± 0.19  | 9.74 ± 0.11   | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 9.60 ± 0.09   | 8.93 ± 0.14   | 7.17 ± 0.14   | 11.26 ± 0.10  | 9.63 ± 0.05   | n = 3   | [BCV] Beckman Coulter UniCel DxI 600       |
| 10.05 ± 0.19  | 9.16 ± 0.18   | 7.18 ± 0.14   | 12.09 ± 0.34  | 10.18 ± 0.28  | n = 8   | [JJE] Ortho Vitros 250/350/950             |
| 9.78 ± 0.24   | 8.88 ± 0.24   | 7.00 ± 0.18   | 11.45 ± 0.27  | 9.75 ± 0.27   | n = 3   | [JJH] Ortho Vitros 4600                    |
| 10.03 ± 0.22  | 9.16 ± 0.20   | 7.15 ± 0.17   | 11.80 ± 0.24  | 10.05 ± 0.23  | n = 12  | [JJF] Ortho Vitros 5,1FS                   |
| 9.89 ± 0.23   | 9.02 ± 0.20   | 7.06 ± 0.19   | 11.63 ± 0.23  | 9.86 ± 0.21   | n = 20  | [JJG] Ortho Vitros 5600                    |
| 9.70 ± 0.09   | 8.77 ± 0.05   | 7.07 ± 0.05   | 11.60 ± 0.09  | 9.70 ± 0.09   | n = 3   | [ROK] Roche cobas c111                     |
| 9.93 ± 0.11   | 9.00 ± 0.06   | 7.28 ± 0.08   | 11.69 ± 0.17  | 9.90 ± 0.09   | n = 5   | [ROJ] Roche cobas c311                     |
| 9.85 ± 0.20   | 8.93 ± 0.13   | 7.24 ± 0.14   | 11.67 ± 0.24  | 9.83 ± 0.19   | n = 33  | [ROC] Roche cobas c501                     |
| 9.71 ± 0.14   | 8.80 ± 0.18   | 7.07 ± 0.20   | 11.51 ± 0.22  | 9.69 ± 0.22   | n = 7   | [ROH] Roche cobas c701                     |
| 9.82 ± 0.12   | 8.90 ± 0.00   | 7.21 ± 0.11   | 11.64 ± 0.06  | 9.80 ± 0.06   | n = 6   | [ROS] Roche Cobas INTEGRA 400              |
| 9.73 ± 0.09   | 8.82 ± 0.04   | 7.02 ± 0.04   | 11.45 ± 0.12  | 9.60 ± 0.00   | n = 4   | [ROT] Roche Cobas INTEGRA 800              |
| 9.88 ± 0.33   | 9.03 ± 0.11   | 7.30 ± 0.20   | 11.62 ± 0.37  | 9.92 ± 0.31   | n = 16  | [ROD] Roche MODULAR D/P                    |
| 9.79 ± 0.20   | 8.96 ± 0.19   | 7.23 ± 0.12   | 11.45 ± 0.21  | 9.76 ± 0.15   | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 9.75 ± 0.19   | 8.95 ± 0.19   | 7.25 ± 0.19   | 11.45 ± 0.19  | 9.73 ± 0.31   | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 9.77 ± 0.23   | 8.63 ± 0.22   | 7.33 ± 0.21   | 11.34 ± 0.24  | 9.66 ± 0.22   | n = 25  | [DUE] Siemens Dimension EXL                |
| 9.77 ± 0.16   | 8.56 ± 0.12   | 7.25 ± 0.16   | 11.43 ± 0.29  | 9.71 ± 0.22   | n = 13  | [DUR] Siemens Dimension RxL                |
| 9.59 ± 0.27   | 8.45 ± 0.24   | 7.17 ± 0.25   | 11.18 ± 0.30  | 9.57 ± 0.27   | n = 42  | [DUT] Siemens Dimension Vista              |
| 9.67 ± 0.06   | 8.52 ± 0.10   | 7.26 ± 0.12   | 11.42 ± 0.12  | 9.66 ± 0.12   | n = 12  | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 9.64 ± 0.26   | 8.53 ± 0.05   | 7.10 ± 0.09   | 11.17 ± 0.32  | 9.70 ± 0.00   | n = 3   | [AX1] Abaxis                               |
| 9.86 ± 0.12   | 9.07 ± 0.16   | 7.29 ± 0.12   | 11.68 ± 0.11  | 9.86 ± 0.12   | n = 22  | [AB1] Abbott                               |
| 9.87 ± 0.05   | 8.99 ± 0.29   | 7.37 ± 0.23   | 11.57 ± 0.05  | 9.95 ± 0.19   | n = 3   | [AW1] Alfa Wassermann                      |
| 9.64 ± 0.16   | 8.87 ± 0.15   | 7.15 ± 0.12   | 11.34 ± 0.19  | 9.66 ± 0.15   | n = 29  | [BC1] Beckman Coulter                      |
| 9.82 ± 0.15   | 9.12 ± 0.14   | 7.32 ± 0.15   | 11.52 ± 0.16  | 9.80 ± 0.13   | n = 65  | [OL1] Beckman Coulter AU Series            |
| 9.96 ± 0.23   | 9.08 ± 0.22   | 7.11 ± 0.18   | 11.74 ± 0.32  | 9.96 ± 0.26   | n = 43  | [JJ1] Ortho Clinical Diagnostics           |
| 9.70 ± 0.09   | 8.77 ± 0.05   | 7.07 ± 0.05   | 11.60 ± 0.09  | 9.70 ± 0.09   | n = 3   | [R08] Roche cobas c111                     |
| 9.83 ± 0.19   | 8.92 ± 0.15   | 7.22 ± 0.15   | 11.65 ± 0.23  | 9.82 ± 0.18   | n = 47  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 9.92 ± 0.29   | 9.03 ± 0.11   | 7.33 ± 0.17   | 11.74 ± 0.14  | 10.06 ± 0.08  | n = 15  | [R02] Roche Hitachi and Modular D/P        |
| 9.78 ± 0.12   | 8.88 ± 0.07   | 7.13 ± 0.13   | 11.57 ± 0.13  | 9.71 ± 0.12   | n = 10  | [R01] Roche Integra and MIRA               |
| 9.60 ± 0.27   | 8.60 ± 0.27   | 7.15 ± 0.19   | 11.02 ± 0.32  | 9.65 ± 0.19   | n = 3   | [GZ1] Sekisui Diagnostics (Genzyme)        |
| 9.78 ± 0.20   | 8.96 ± 0.18   | 7.23 ± 0.13   | 11.46 ± 0.21  | 9.77 ± 0.16   | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 9.68 ± 0.24   | 8.53 ± 0.22   | 7.23 ± 0.22   | 11.29 ± 0.29  | 9.63 ± 0.24   | n = 92  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## Magnesium (mg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 3.23 ± 0.11   | 2.55 ± 0.10   | 4.58 ± 0.19   | 1.73 ± 0.09   | 3.22 ± 0.13   | n = 336 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 3.04 ± 0.07   | 2.57 ± 0.10   | 4.32 ± 0.11   | 1.68 ± 0.09   | 3.03 ± 0.09   | n = 21  | [ABJ] Abbott Architect c System            |
| 3.21 ± 0.09   | 2.55 ± 0.08   | 4.55 ± 0.14   | 1.74 ± 0.06   | 3.21 ± 0.10   | n = 64  | [OLC] Beckman Coulter AU Chemistry System  |
| 3.17 ± 0.07   | 2.51 ± 0.08   | 4.41 ± 0.11   | 1.73 ± 0.06   | 3.16 ± 0.09   | n = 15  | [BCG] Beckman Coulter UniCel DxC 600       |
| 3.17 ± 0.09   | 2.53 ± 0.06   | 4.41 ± 0.12   | 1.76 ± 0.05   | 3.11 ± 0.10   | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 3.28 ± 0.10   | 2.58 ± 0.07   | 4.76 ± 0.08   | 1.72 ± 0.07   | 3.26 ± 0.08   | n = 6   | [JJE] Ortho Vitros 250/350/950             |
| 3.20 ± 0.00   | 2.50 ± 0.00   | 4.60 ± 0.00   | 1.63 ± 0.05   | 3.17 ± 0.05   | n = 3   | [JJH] Ortho Vitros 4600                    |
| 3.18 ± 0.10   | 2.54 ± 0.07   | 4.65 ± 0.11   | 1.70 ± 0.00   | 3.16 ± 0.08   | n = 12  | [JJF] Ortho Vitros 5,1FS                   |
| 3.17 ± 0.09   | 2.49 ± 0.07   | 4.60 ± 0.11   | 1.65 ± 0.08   | 3.14 ± 0.09   | n = 19  | [JJG] Ortho Vitros 5600                    |
| 3.25 ± 0.07   | 2.56 ± 0.06   | 4.55 ± 0.11   | 1.77 ± 0.07   | 3.26 ± 0.07   | n = 30  | [ROC] Roche cobas c501                     |
| 3.23 ± 0.05   | 2.57 ± 0.05   | 4.50 ± 0.18   | 1.77 ± 0.05   | 3.20 ± 0.09   | n = 3   | [ROG] Roche cobas c502                     |
| 3.10 ± 0.06   | 2.44 ± 0.06   | 4.15 ± 0.08   | 1.75 ± 0.08   | 3.10 ± 0.06   | n = 5   | [ROH] Roche cobas c701                     |
| 3.23 ± 0.05   | 2.57 ± 0.05   | 4.47 ± 0.05   | 1.77 ± 0.05   | 3.20 ± 0.09   | n = 3   | [ROS] Roche Cobas INTEGRA 400              |
| 3.20 ± 0.09   | 2.57 ± 0.14   | 4.50 ± 0.09   | 1.77 ± 0.05   | 3.20 ± 0.09   | n = 3   | [ROT] Roche Cobas INTEGRA 800              |
| 3.22 ± 0.08   | 2.57 ± 0.05   | 4.50 ± 0.08   | 1.78 ± 0.04   | 3.22 ± 0.08   | n = 16  | [ROD] Roche MODULAR D/P                    |
| 3.37 ± 0.07   | 2.68 ± 0.07   | 4.68 ± 0.10   | 1.90 ± 0.00   | 3.37 ± 0.06   | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 3.37 ± 0.14   | 2.65 ± 0.19   | 4.72 ± 0.32   | 1.90 ± 0.00   | 3.32 ± 0.15   | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 3.30 ± 0.07   | 2.58 ± 0.06   | 4.73 ± 0.09   | 1.71 ± 0.06   | 3.28 ± 0.08   | n = 23  | [DUE] Siemens Dimension EXL                |
| 3.31 ± 0.09   | 2.61 ± 0.07   | 4.82 ± 0.07   | 1.73 ± 0.05   | 3.34 ± 0.06   | n = 13  | [DUR] Siemens Dimension RxL                |
| 3.25 ± 0.11   | 2.45 ± 0.11   | 4.69 ± 0.13   | 1.64 ± 0.10   | 3.25 ± 0.12   | n = 42  | [DUT] Siemens Dimension Vista              |
| 3.28 ± 0.08   | 2.58 ± 0.07   | 4.77 ± 0.09   | 1.68 ± 0.04   | 3.32 ± 0.13   | n = 11  | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 3.04 ± 0.07   | 2.57 ± 0.10   | 4.32 ± 0.11   | 1.68 ± 0.09   | 3.03 ± 0.09   | n = 21  | [AB1] Abbott                               |
| 3.17 ± 0.08   | 2.52 ± 0.07   | 4.43 ± 0.12   | 1.75 ± 0.07   | 3.15 ± 0.10   | n = 28  | [BC1] Beckman Coulter                      |
| 3.21 ± 0.09   | 2.54 ± 0.08   | 4.55 ± 0.15   | 1.74 ± 0.06   | 3.21 ± 0.10   | n = 61  | [OL1] Beckman Coulter AU Series            |
| 3.19 ± 0.09   | 2.52 ± 0.07   | 4.64 ± 0.12   | 1.67 ± 0.07   | 3.17 ± 0.09   | n = 40  | [JJ1] Ortho Clinical Diagnostics           |
| 3.24 ± 0.08   | 2.55 ± 0.07   | 4.49 ± 0.19   | 1.77 ± 0.06   | 3.24 ± 0.09   | n = 42  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 3.22 ± 0.08   | 2.57 ± 0.05   | 4.50 ± 0.08   | 1.78 ± 0.04   | 3.22 ± 0.08   | n = 16  | [R02] Roche Hitachi and Modular D/P        |
| 3.22 ± 0.07   | 2.57 ± 0.10   | 4.48 ± 0.07   | 1.77 ± 0.05   | 3.20 ± 0.09   | n = 6   | [R01] Roche Integra and MIRA               |
| 3.38 ± 0.09   | 2.69 ± 0.09   | 4.70 ± 0.13   | 1.90 ± 0.00   | 3.37 ± 0.07   | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 3.28 ± 0.10   | 2.53 ± 0.11   | 4.73 ± 0.12   | 1.68 ± 0.08   | 3.28 ± 0.10   | n = 89  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## Iron (µg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| -----         | -----         | -----         | -----         | -----         | -----   | -----                                      |
| 115.2 ± 7.72  | 99.7 ± 5.77   | 94.8 ± 5.92   | 114.4 ± 5.51  | 114.9 ± 8.07  | n = 264 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 110.8 ± 2.89  | 102.2 ± 2.96  | 91.6 ± 2.93   | 118.7 ± 3.01  | 110.2 ± 3.25  | n = 14  | [ABJ] Abbott Architect c System            |
| 118.6 ± 3.54  | 101.7 ± 3.36  | 97.6 ± 3.02   | 116.0 ± 3.38  | 118.8 ± 3.11  | n = 59  | [OLC] Beckman Coulter AU Chemistry System  |
| 108.1 ± 2.57  | 92.3 ± 2.98   | 92.8 ± 2.48   | 111.0 ± 3.16  | 108.5 ± 2.16  | n = 8   | [BCG] Beckman Coulter UniCel DxC 600       |
| 109.5 ± 2.47  | 95.6 ± 2.51   | 95.2 ± 1.89   | 113.1 ± 3.49  | 110.3 ± 2.82  | n = 9   | [BCH] Beckman Coulter UniCel DxC 800       |
| 128.8 ± 3.23  | 119.7 ± 2.26  | 100.6 ± 4.72  | 126.3 ± 3.37  | 127.5 ± 2.74  | n = 3   | [JJH] Ortho Vitros 4600                    |
| 134.7 ± 5.10  | 122.3 ± 4.29  | 107.6 ± 4.77  | 130.8 ± 6.51  | 132.9 ± 4.51  | n = 10  | [JJF] Ortho Vitros 5,1FS                   |
| 128.7 ± 5.97  | 119.6 ± 7.68  | 102.6 ± 7.46  | 128.5 ± 6.10  | 129.8 ± 6.31  | n = 20  | [JJG] Ortho Vitros 5600                    |
| 119.4 ± 2.37  | 102.8 ± 2.12  | 98.9 ± 1.85   | 116.2 ± 2.56  | 119.4 ± 1.88  | n = 21  | [ROC] Roche cobas c501                     |
| 120.7 ± 0.51  | 103.1 ± 2.05  | 98.6 ± 1.02   | 117.2 ± 1.54  | 119.4 ± 1.02  | n = 3   | [ROG] Roche cobas c502                     |
| 117.1 ± 1.87  | 99.4 ± 1.33   | 96.0 ± 1.54   | 113.0 ± 1.00  | 116.4 ± 1.09  | n = 5   | [ROH] Roche cobas c701                     |
| 117.1 ± 1.28  | 101.1 ± 1.54  | 96.2 ± 1.68   | 113.3 ± 1.70  | 116.5 ± 2.50  | n = 15  | [ROD] Roche MODULAR D/P                    |
| 104.2 ± 2.85  | 99.1 ± 1.69   | 86.0 ± 2.40   | 112.6 ± 1.89  | 103.8 ± 3.03  | n = 19  | [BYE] Siemens ADVIA 1800                   |
| 112.2 ± 3.23  | 102.7 ± 2.26  | 92.6 ± 2.56   | 116.9 ± 3.72  | 111.6 ± 2.56  | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 108.3 ± 1.97  | 93.3 ± 1.68   | 88.7 ± 1.97   | 107.9 ± 1.85  | 108.1 ± 1.52  | n = 12  | [DUE] Siemens Dimension EXL                |
| 110.7 ± 1.92  | 93.9 ± 2.65   | 90.2 ± 1.14   | 109.1 ± 3.03  | 109.9 ± 2.01  | n = 8   | [DUR] Siemens Dimension RxL                |
| 110.9 ± 2.29  | 95.5 ± 1.85   | 90.5 ± 1.85   | 110.2 ± 1.93  | 110.1 ± 2.00  | n = 38  | [DUT] Siemens Dimension Vista              |
| <Reagents>    |               |               |               |               |         |                                            |
| 110.2 ± 2.69  | 101.5 ± 2.52  | 90.9 ± 2.61   | 118.2 ± 3.06  | 109.6 ± 3.15  | n = 12  | [AB3] Abbott-Iron/6K95                     |
| 109.1 ± 2.75  | 94.3 ± 3.45   | 94.5 ± 2.47   | 112.4 ± 3.43  | 109.6 ± 2.83  | n = 19  | [BC1] Beckman Coulter                      |
| 119.3 ± 3.31  | 102.4 ± 2.90  | 98.0 ± 2.99   | 116.8 ± 2.94  | 119.3 ± 2.90  | n = 49  | [OL1] Beckman Coulter AU Series            |
| 130.5 ± 6.20  | 120.6 ± 5.86  | 104.2 ± 6.85  | 129.0 ± 6.04  | 130.7 ± 5.85  | n = 34  | [JJ1] Ortho Clinical Diagnostics           |
| 118.9 ± 2.34  | 102.1 ± 2.32  | 98.2 ± 2.08   | 115.5 ± 2.47  | 118.7 ± 2.05  | n = 33  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 117.1 ± 1.28  | 101.1 ± 1.54  | 96.2 ± 1.68   | 113.3 ± 1.70  | 116.5 ± 2.50  | n = 15  | [R02] Roche Hitachi and Modular D/P        |
| 120.3 ± 2.65  | 105.7 ± 1.58  | 98.0 ± 1.76   | 117.2 ± 2.11  | 118.1 ± 2.72  | n = 4   | [R01] Roche Integra and MIRA               |
| 115.2 ± 3.45  | 97.5 ± 1.53   | 95.5 ± 2.50   | 111.9 ± 1.73  | 116.7 ± 3.34  | n = 9   | [GZ1] Sekisui Diagnostics                  |
| 104.8 ± 3.50  | 99.3 ± 1.87   | 86.8 ± 3.01   | 112.7 ± 2.11  | 104.6 ± 3.75  | n = 22  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 110.3 ± 2.43  | 94.8 ± 2.09   | 90.1 ± 1.88   | 109.6 ± 2.23  | 109.6 ± 2.04  | n = 60  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## Sodium (mmol/L)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System               |
|---------------|---------------|---------------|---------------|---------------|---------|---------------------------------------------------|
| 149.9 ± 2.42  | 138.5 ± 2.37  | 127.8 ± 1.66  | 161.2 ± 2.81  | 149.4 ± 2.31  | n = 373 | [---] All Methods & Instruments                   |
| <Instruments> |               |               |               |               |         |                                                   |
| 147.0 ± 0.90  | 135.3 ± 0.51  | 125.7 ± 0.51  | 159.5 ± 2.74  | 146.7 ± 0.51  | n = 3   | [AXA] Abaxis Piccolo                              |
| 150.8 ± 1.68  | 138.5 ± 1.04  | 127.4 ± 1.04  | 162.5 ± 2.03  | 150.1 ± 1.55  | n = 22  | [ABJ] Abbott Architect c System                   |
| 153.4 ± 1.02  | 141.7 ± 0.51  | 126.7 ± 0.51  | 163.3 ± 0.51  | 152.7 ± 0.51  | n = 3   | [AWA] Alfa Wassermann ACE Alera                   |
| 148.2 ± 1.61  | 137.1 ± 1.07  | 126.9 ± 1.11  | 159.5 ± 1.68  | 147.8 ± 1.44  | n = 68  | [OLC] Beckman Coulter AU Chemistry System         |
| 148.2 ± 1.42  | 137.5 ± 1.52  | 126.8 ± 1.46  | 159.5 ± 2.05  | 148.8 ± 1.83  | n = 16  | [BCG] Beckman Coulter UniCel DxC 600              |
| 149.0 ± 1.91  | 138.0 ± 1.47  | 127.8 ± 1.91  | 160.3 ± 1.62  | 149.6 ± 1.98  | n = 10  | [BCH] Beckman Coulter UniCel DxC 800              |
| 148.3 ± 0.87  | 138.3 ± 0.54  | 125.0 ± 0.00  | 159.5 ± 0.57  | 148.1 ± 0.60  | n = 8   | [IAA] i-STAT                                      |
| 154.4 ± 3.32  | 144.8 ± 3.23  | 128.3 ± 3.30  | 168.0 ± 2.64  | 155.1 ± 3.72  | n = 8   | [JJE] Ortho Vitros 250/350/950                    |
| 154.8 ± 1.55  | 144.6 ± 1.06  | 128.3 ± 1.89  | 167.2 ± 2.83  | 154.9 ± 2.39  | n = 13  | [JJF] Ortho Vitros 5,1FS                          |
| 153.8 ± 2.06  | 143.8 ± 1.84  | 127.7 ± 1.48  | 165.7 ± 1.21  | 153.3 ± 1.38  | n = 20  | [JJG] Ortho Vitros 5600                           |
| 147.6 ± 1.02  | 136.7 ± 0.51  | 127.3 ± 0.51  | 160.5 ± 1.86  | 148.3 ± 1.37  | n = 3   | [ROK] Roche cobas c111                            |
| 152.0 ± 0.00  | 140.0 ± 0.00  | 129.4 ± 0.55  | 163.8 ± 0.41  | 151.0 ± 0.00  | n = 5   | [ROJ] Roche cobas c311                            |
| 149.8 ± 1.45  | 138.5 ± 1.77  | 127.5 ± 1.43  | 162.2 ± 1.98  | 149.9 ± 1.48  | n = 32  | [ROC] Roche cobas c501                            |
| 151.2 ± 1.86  | 140.1 ± 1.11  | 128.4 ± 1.45  | 162.7 ± 1.88  | 149.8 ± 1.73  | n = 7   | [ROH] Roche cobas c701                            |
| 148.6 ± 1.51  | 136.7 ± 0.91  | 126.2 ± 1.53  | 161.0 ± 2.39  | 148.4 ± 2.96  | n = 5   | [ROS] Roche Cobas INTEGRA 400                     |
| 149.1 ± 1.13  | 137.5 ± 1.22  | 125.8 ± 1.27  | 160.5 ± 1.22  | 148.3 ± 1.58  | n = 4   | [ROT] Roche Cobas INTEGRA 800                     |
| 151.4 ± 1.80  | 139.8 ± 1.69  | 128.7 ± 1.75  | 163.1 ± 1.94  | 150.2 ± 1.97  | n = 16  | [ROD] Roche MODULAR D/P                           |
| 151.7 ± 1.08  | 140.3 ± 1.00  | 129.8 ± 0.91  | 162.7 ± 1.27  | 150.9 ± 0.83  | n = 20  | [BYE] Siemens ADVIA 1800                          |
| 151.3 ± 1.37  | 140.0 ± 1.80  | 129.5 ± 1.86  | 162.3 ± 1.37  | 150.7 ± 1.37  | n = 3   | [BYB] Siemens ADVIA 2400                          |
| 150.1 ± 1.25  | 139.2 ± 1.20  | 128.4 ± 1.22  | 161.3 ± 1.62  | 149.5 ± 1.48  | n = 25  | [DUE] Siemens Dimension EXL                       |
| 148.0 ± 1.65  | 137.4 ± 2.05  | 127.7 ± 1.23  | 159.4 ± 1.76  | 148.1 ± 2.02  | n = 13  | [DUR] Siemens Dimension RxL                       |
| 148.6 ± 1.30  | 136.6 ± 1.13  | 128.3 ± 1.19  | 159.1 ± 1.32  | 148.1 ± 1.10  | n = 42  | [DUT] Siemens Dimension Vista                     |
| 151.0 ± 0.85  | 140.0 ± 0.75  | 129.5 ± 0.66  | 162.2 ± 0.98  | 150.1 ± 0.82  | n = 12  | [DUX] Siemens Dimension Xpand                     |
| <Reagents>    |               |               |               |               |         |                                                   |
| 147.0 ± 0.90  | 135.3 ± 0.51  | 125.7 ± 0.51  | 159.5 ± 2.74  | 146.7 ± 0.51  | n = 3   | [AX1] Abaxis                                      |
| 150.7 ± 1.77  | 138.5 ± 1.02  | 127.3 ± 1.12  | 162.3 ± 2.09  | 150.0 ± 1.61  | n = 23  | [AB1] Abbott                                      |
| 153.4 ± 1.02  | 141.7 ± 0.51  | 126.7 ± 0.51  | 163.3 ± 0.51  | 152.7 ± 0.51  | n = 3   | [AW1] Alfa Wassermann                             |
| 148.5 ± 1.67  | 137.8 ± 1.51  | 127.2 ± 1.63  | 159.8 ± 1.97  | 149.0 ± 2.01  | n = 30  | [BC1] Beckman Coulter                             |
| 148.2 ± 1.51  | 137.1 ± 1.05  | 126.9 ± 1.12  | 159.4 ± 1.68  | 147.8 ± 1.39  | n = 65  | [OL1] Beckman Coulter AU Series                   |
| 148.7 ± 1.24  | 138.2 ± 0.48  | 125.0 ± 0.00  | 159.4 ± 0.57  | 148.2 ± 0.68  | n = 8   | [IA1] i-STAT                                      |
| 154.3 ± 2.32  | 144.1 ± 2.09  | 128.0 ± 1.90  | 166.6 ± 2.44  | 154.0 ± 2.30  | n = 43  | [JJ1] Ortho Clinical Diagnostics                  |
| 147.6 ± 1.02  | 136.7 ± 0.51  | 127.3 ± 0.51  | 160.5 ± 1.86  | 148.3 ± 1.37  | n = 3   | [R08] Roche cobas c111                            |
| 150.6 ± 1.38  | 139.4 ± 1.55  | 128.2 ± 1.41  | 163.0 ± 1.73  | 150.3 ± 1.27  | n = 38  | [R04] Roche c311/501/502/701/702 w/o compensation |
| 148.7 ± 2.32  | 137.7 ± 1.44  | 126.8 ± 0.84  | 161.1 ± 1.81  | 149.0 ± 2.01  | n = 9   | [RP4] Roche c311/501/502/701/702 w/ compensation  |
| 151.5 ± 2.05  | 139.9 ± 1.93  | 128.9 ± 1.88  | 163.5 ± 2.03  | 150.3 ± 2.16  | n = 13  | [R02] Roche Modular D/P w/o compensation          |
| 151.2 ± 0.36  | 139.5 ± 0.45  | 128.1 ± 1.09  | 161.9 ± 0.77  | 149.7 ± 1.23  | n = 3   | [RP2] Roche Modular D/P w/ compensation           |
| 148.9 ± 1.37  | 137.1 ± 1.13  | 126.1 ± 1.46  | 160.5 ± 1.46  | 148.2 ± 2.22  | n = 9   | [R01] Roche Integra and MIRA                      |
| 151.6 ± 1.24  | 140.2 ± 1.23  | 129.7 ± 1.15  | 162.6 ± 1.27  | 150.8 ± 0.98  | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur                 |
| 149.3 ± 1.67  | 137.8 ± 1.99  | 128.4 ± 1.24  | 160.1 ± 1.97  | 148.8 ± 1.56  | n = 92  | [DA5] Siemens Dimension                           |

## Summary of Participant Performance (Mean and Standard Deviation)

## Potassium (mmol/L)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System               |
|---------------|---------------|---------------|---------------|---------------|---------|---------------------------------------------------|
| 4.71 ± 0.12   | 3.36 ± 0.10   | 2.90 ± 0.09   | 5.29 ± 0.12   | 4.69 ± 0.11   | n = 374 | [---] All Methods & Instruments                   |
| <Instruments> |               |               |               |               |         |                                                   |
| 4.83 ± 0.14   | 3.37 ± 0.14   | 2.77 ± 0.14   | 5.47 ± 0.05   | 4.75 ± 0.19   | n = 3   | [AXA] Abaxis Piccolo                              |
| 4.73 ± 0.06   | 3.39 ± 0.05   | 2.90 ± 0.00   | 5.29 ± 0.07   | 4.70 ± 0.00   | n = 22  | [ABJ] Abbott Architect c System                   |
| 4.97 ± 0.05   | 3.53 ± 0.05   | 2.97 ± 0.05   | 5.47 ± 0.05   | 4.90 ± 0.00   | n = 3   | [AWA] Alfa Wassermann ACE Alera                   |
| 4.66 ± 0.07   | 3.35 ± 0.06   | 2.90 ± 0.00   | 5.24 ± 0.07   | 4.65 ± 0.06   | n = 68  | [OLC] Beckman Coulter AU Chemistry System         |
| 4.64 ± 0.07   | 3.28 ± 0.06   | 2.81 ± 0.06   | 5.25 ± 0.07   | 4.65 ± 0.08   | n = 16  | [BCG] Beckman Coulter UniCel DxC 600              |
| 4.69 ± 0.05   | 3.29 ± 0.05   | 2.84 ± 0.06   | 5.30 ± 0.00   | 4.71 ± 0.07   | n = 10  | [BCH] Beckman Coulter UniCel DxC 800              |
| 4.60 ± 0.00   | 3.30 ± 0.00   | 2.80 ± 0.00   | 5.13 ± 0.05   | 4.60 ± 0.00   | n = 8   | [IAA] i-STAT                                      |
| 4.89 ± 0.08   | 3.55 ± 0.09   | 2.99 ± 0.06   | 5.50 ± 0.09   | 4.89 ± 0.08   | n = 8   | [JJE] Ortho Vitros 250/350/950                    |
| 4.93 ± 0.05   | 3.57 ± 0.05   | 3.03 ± 0.05   | 5.53 ± 0.05   | 4.93 ± 0.05   | n = 3   | [JJH] Ortho Vitros 4600                           |
| 4.88 ± 0.07   | 3.53 ± 0.06   | 3.00 ± 0.00   | 5.42 ± 0.06   | 4.86 ± 0.08   | n = 12  | [JJF] Ortho Vitros 5,1FS                          |
| 4.88 ± 0.09   | 3.51 ± 0.04   | 3.00 ± 0.00   | 5.40 ± 0.00   | 4.86 ± 0.08   | n = 20  | [JJG] Ortho Vitros 5600                           |
| 4.67 ± 0.05   | 3.30 ± 0.00   | 2.90 ± 0.00   | 5.30 ± 0.00   | 4.70 ± 0.00   | n = 3   | [ROK] Roche cobas c111                            |
| 4.80 ± 0.00   | 3.50 ± 0.00   | 3.00 ± 0.00   | 5.40 ± 0.00   | 4.80 ± 0.00   | n = 5   | [ROJ] Roche cobas c311                            |
| 4.74 ± 0.12   | 3.35 ± 0.13   | 2.90 ± 0.13   | 5.32 ± 0.14   | 4.71 ± 0.12   | n = 32  | [ROC] Roche cobas c501                            |
| 4.80 ± 0.00   | 3.42 ± 0.11   | 2.97 ± 0.13   | 5.40 ± 0.11   | 4.74 ± 0.08   | n = 7   | [ROH] Roche cobas c701                            |
| 4.72 ± 0.08   | 3.35 ± 0.11   | 2.90 ± 0.00   | 5.30 ± 0.06   | 4.68 ± 0.08   | n = 5   | [ROS] Roche Cobas INTEGRA 400                     |
| 4.72 ± 0.04   | 3.35 ± 0.06   | 2.90 ± 0.00   | 5.32 ± 0.04   | 4.75 ± 0.06   | n = 4   | [ROT] Roche Cobas INTEGRA 800                     |
| 4.80 ± 0.10   | 3.43 ± 0.10   | 2.99 ± 0.08   | 5.36 ± 0.12   | 4.76 ± 0.10   | n = 16  | [ROD] Roche MODULAR D/P                           |
| 4.78 ± 0.05   | 3.42 ± 0.05   | 3.00 ± 0.00   | 5.37 ± 0.06   | 4.76 ± 0.06   | n = 20  | [BYE] Siemens ADVIA 1800                          |
| 4.80 ± 0.09   | 3.43 ± 0.05   | 3.00 ± 0.00   | 5.33 ± 0.05   | 4.73 ± 0.05   | n = 3   | [BYB] Siemens ADVIA 2400                          |
| 4.67 ± 0.06   | 3.30 ± 0.00   | 2.80 ± 0.00   | 5.28 ± 0.06   | 4.65 ± 0.06   | n = 25  | [DUE] Siemens Dimension EXL                       |
| 4.62 ± 0.05   | 3.30 ± 0.09   | 2.83 ± 0.05   | 5.23 ± 0.06   | 4.60 ± 0.00   | n = 13  | [DUR] Siemens Dimension RxL                       |
| 4.60 ± 0.04   | 3.30 ± 0.00   | 2.88 ± 0.04   | 5.16 ± 0.06   | 4.60 ± 0.00   | n = 42  | [DUT] Siemens Dimension Vista                     |
| 4.70 ± 0.00   | 3.30 ± 0.00   | 2.82 ± 0.04   | 5.30 ± 0.00   | 4.70 ± 0.00   | n = 12  | [DUX] Siemens Dimension Xpand                     |
| <Reagents>    |               |               |               |               |         |                                                   |
| 4.83 ± 0.14   | 3.37 ± 0.14   | 2.77 ± 0.14   | 5.47 ± 0.05   | 4.75 ± 0.19   | n = 3   | [AX1] Abaxis                                      |
| 4.72 ± 0.07   | 3.39 ± 0.05   | 2.91 ± 0.04   | 5.29 ± 0.08   | 4.70 ± 0.04   | n = 23  | [AB1] Abbott                                      |
| 4.97 ± 0.05   | 3.53 ± 0.05   | 2.97 ± 0.05   | 5.47 ± 0.05   | 4.90 ± 0.00   | n = 3   | [AW1] Alfa Wassermann                             |
| 4.67 ± 0.06   | 3.29 ± 0.06   | 2.83 ± 0.06   | 5.27 ± 0.06   | 4.67 ± 0.08   | n = 30  | [BC1] Beckman Coulter                             |
| 4.66 ± 0.06   | 3.35 ± 0.06   | 2.90 ± 0.00   | 5.23 ± 0.07   | 4.65 ± 0.06   | n = 65  | [OL1] Beckman Coulter AU Series                   |
| 4.60 ± 0.05   | 3.30 ± 0.00   | 2.80 ± 0.00   | 5.14 ± 0.06   | 4.60 ± 0.05   | n = 7   | [IA1] i-STAT                                      |
| 4.64 ± 0.10   | 3.27 ± 0.05   | 2.77 ± 0.05   | 5.20 ± 0.09   | 4.60 ± 0.09   | n = 3   | [IL1] Instrumentation Lab                         |
| 4.89 ± 0.08   | 3.53 ± 0.06   | 3.00 ± 0.00   | 5.44 ± 0.10   | 4.87 ± 0.08   | n = 43  | [JJ1] Ortho Clinical Diagnostics                  |
| 4.67 ± 0.05   | 3.30 ± 0.00   | 2.90 ± 0.00   | 5.30 ± 0.00   | 4.70 ± 0.00   | n = 3   | [R08] Roche cobas c111                            |
| 4.79 ± 0.08   | 3.41 ± 0.09   | 2.96 ± 0.08   | 5.38 ± 0.09   | 4.76 ± 0.08   | n = 37  | [R04] Roche c311/501/502/701/702 w/o compensation |
| 4.63 ± 0.12   | 3.26 ± 0.16   | 2.82 ± 0.15   | 5.20 ± 0.16   | 4.61 ± 0.11   | n = 8   | [RP4] Roche c311/501/502/701/702 w/ compensation  |
| 4.81 ± 0.10   | 3.43 ± 0.10   | 3.00 ± 0.08   | 5.37 ± 0.12   | 4.77 ± 0.09   | n = 13  | [R02] Roche Modular D/P w/o compensation          |
| 4.70 ± 0.17   | 3.39 ± 0.13   | 2.92 ± 0.14   | 5.29 ± 0.13   | 4.69 ± 0.13   | n = 5   | [RP2] Roche Modular D/P w/ compensation           |
| 4.72 ± 0.07   | 3.34 ± 0.06   | 2.90 ± 0.00   | 5.31 ± 0.05   | 4.71 ± 0.08   | n = 9   | [R01] Roche Integra and MIRA                      |
| 4.78 ± 0.06   | 3.42 ± 0.05   | 3.00 ± 0.00   | 5.37 ± 0.06   | 4.76 ± 0.06   | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur                 |
| 4.64 ± 0.07   | 3.30 ± 0.00   | 2.85 ± 0.06   | 5.22 ± 0.08   | 4.62 ± 0.06   | n = 91  | [DA5] Siemens Dimension                           |

## Summary of Participant Performance (Mean and Standard Deviation)

## Chloride (mmol/L)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System               |
|---------------|---------------|---------------|---------------|---------------|---------|---------------------------------------------------|
| 109.6 ± 2.23  | 95.3 ± 2.52   | 86.3 ± 2.18   | 116.4 ± 2.34  | 109.2 ± 2.24  | n = 368 | [---] All Methods & Instruments                   |
| <Instruments> |               |               |               |               |         |                                                   |
| 109.3 ± 0.51  | 97.3 ± 0.51   | 86.7 ± 0.51   | 115.7 ± 1.37  | 110.0 ± 0.90  | n = 3   | [AXA] Abaxis Piccolo                              |
| 109.8 ± 1.21  | 95.9 ± 1.00   | 86.5 ± 0.72   | 116.7 ± 1.30  | 109.4 ± 1.02  | n = 21  | [ABJ] Abbott Architect c System                   |
| 114.0 ± 0.00  | 100.0 ± 0.00  | 89.0 ± 0.00   | 120.0 ± 0.90  | 113.7 ± 0.51  | n = 3   | [AWA] Alfa Wassermann ACE Alera                   |
| 108.2 ± 1.11  | 94.1 ± 0.84   | 85.4 ± 0.98   | 114.6 ± 1.17  | 107.8 ± 1.14  | n = 67  | [OLC] Beckman Coulter AU Chemistry System         |
| 109.0 ± 1.35  | 95.6 ± 1.23   | 86.0 ± 1.31   | 116.2 ± 1.20  | 109.3 ± 1.21  | n = 16  | [BCG] Beckman Coulter UniCel DxC 600              |
| 109.6 ± 1.81  | 96.1 ± 1.33   | 86.7 ± 1.63   | 117.0 ± 1.73  | 110.0 ± 2.25  | n = 10  | [BCH] Beckman Coulter UniCel DxC 800              |
| 113.5 ± 0.74  | 100.2 ± 0.86  | 88.1 ± 1.01   | 120.0 ± 0.47  | 113.0 ± 0.70  | n = 7   | [IAA] i-STAT                                      |
| 109.8 ± 1.00  | 95.2 ± 1.02   | 85.9 ± 1.30   | 117.4 ± 1.35  | 110.5 ± 1.25  | n = 8   | [JJE] Ortho Vitros 250/350/950                    |
| 111.7 ± 0.51  | 96.0 ± 0.00   | 87.6 ± 1.02   | 118.0 ± 0.90  | 111.3 ± 0.51  | n = 3   | [JJH] Ortho Vitros 4600                           |
| 110.7 ± 1.68  | 96.1 ± 1.58   | 86.5 ± 1.64   | 116.9 ± 0.95  | 110.6 ± 1.79  | n = 12  | [JJF] Ortho Vitros 5,1FS                          |
| 109.8 ± 1.82  | 95.1 ± 1.46   | 86.1 ± 1.43   | 116.4 ± 1.99  | 109.7 ± 1.95  | n = 20  | [JJG] Ortho Vitros 5600                           |
| 111.0 ± 0.90  | 96.5 ± 1.86   | 88.3 ± 1.37   | 118.7 ± 0.51  | 110.7 ± 0.51  | n = 3   | [ROK] Roche cobas c111                            |
| 107.2 ± 0.80  | 91.0 ± 0.93   | 83.0 ± 0.93   | 113.8 ± 0.80  | 106.4 ± 1.09  | n = 5   | [ROJ] Roche cobas c311                            |
| 106.2 ± 1.10  | 90.7 ± 1.21   | 82.3 ± 0.83   | 113.8 ± 1.09  | 106.1 ± 1.17  | n = 32  | [ROC] Roche cobas c501                            |
| 107.4 ± 0.94  | 92.0 ± 0.82   | 82.8 ± 0.47   | 114.4 ± 0.94  | 106.2 ± 0.47  | n = 7   | [ROH] Roche cobas c701                            |
| 109.7 ± 1.61  | 96.0 ± 1.15   | 86.0 ± 1.00   | 116.5 ± 1.80  | 109.2 ± 1.55  | n = 5   | [ROS] Roche Cobas INTEGRA 400                     |
| 109.3 ± 0.82  | 96.5 ± 1.22   | 86.0 ± 0.75   | 116.7 ± 0.90  | 109.0 ± 0.75  | n = 4   | [ROT] Roche Cobas INTEGRA 800                     |
| 108.1 ± 0.88  | 92.7 ± 0.85   | 83.6 ± 1.05   | 114.2 ± 1.16  | 107.0 ± 1.07  | n = 16  | [ROD] Roche MODULAR D/P                           |
| 110.7 ± 0.65  | 95.6 ± 0.95   | 86.5 ± 0.68   | 116.5 ± 1.07  | 109.3 ± 1.07  | n = 20  | [BYE] Siemens ADVIA 1800                          |
| 109.7 ± 0.51  | 95.0 ± 0.90   | 86.0 ± 0.00   | 115.7 ± 1.37  | 108.4 ± 1.02  | n = 3   | [BYB] Siemens ADVIA 2400                          |
| 110.3 ± 0.90  | 96.5 ± 0.71   | 88.3 ± 0.81   | 117.9 ± 1.04  | 109.8 ± 0.79  | n = 25  | [DUE] Siemens Dimension EXL                       |
| 110.6 ± 0.97  | 96.0 ± 1.38   | 87.5 ± 1.18   | 118.2 ± 1.25  | 110.3 ± 1.28  | n = 13  | [DUR] Siemens Dimension RxL                       |
| 112.4 ± 1.14  | 98.1 ± 0.81   | 88.2 ± 0.82   | 118.9 ± 1.03  | 111.6 ± 1.09  | n = 42  | [DUT] Siemens Dimension Vista                     |
| 110.3 ± 0.57  | 96.7 ± 0.57   | 88.5 ± 0.57   | 118.0 ± 0.00  | 109.9 ± 0.66  | n = 12  | [DUX] Siemens Dimension Xpand                     |
| <Reagents>    |               |               |               |               |         |                                                   |
| 109.3 ± 0.51  | 97.3 ± 0.51   | 86.7 ± 0.51   | 115.7 ± 1.37  | 110.0 ± 0.90  | n = 3   | [AX1] Abaxis                                      |
| 109.9 ± 1.25  | 95.9 ± 0.97   | 86.5 ± 0.74   | 116.8 ± 1.41  | 109.5 ± 0.99  | n = 23  | [AB1] Abbott                                      |
| 114.0 ± 0.00  | 100.0 ± 0.00  | 89.0 ± 0.00   | 120.0 ± 0.90  | 113.7 ± 0.51  | n = 3   | [AW1] Alfa Wassermann                             |
| 109.2 ± 1.46  | 95.8 ± 1.22   | 86.3 ± 1.33   | 116.4 ± 1.48  | 109.4 ± 1.62  | n = 30  | [BC1] Beckman Coulter                             |
| 108.2 ± 1.09  | 94.0 ± 0.84   | 85.5 ± 0.96   | 114.6 ± 1.15  | 107.9 ± 1.13  | n = 64  | [OL1] Beckman Coulter AU Series                   |
| 113.3 ± 0.51  | 100.0 ± 0.55  | 87.8 ± 0.73   | 120.0 ± 0.00  | 113.0 ± 0.55  | n = 6   | [IA1] i-STAT                                      |
| 110.2 ± 1.70  | 95.4 ± 1.41   | 86.3 ± 1.50   | 116.9 ± 1.64  | 110.3 ± 1.83  | n = 42  | [JJ1] Ortho Clinical Diagnostics                  |
| 111.0 ± 0.90  | 96.5 ± 1.86   | 88.3 ± 1.37   | 118.7 ± 0.51  | 110.7 ± 0.51  | n = 3   | [R08] Roche cobas c111                            |
| 106.7 ± 1.06  | 90.9 ± 1.01   | 82.5 ± 0.89   | 113.8 ± 0.90  | 106.3 ± 0.98  | n = 35  | [R04] Roche c311/501/502/701/702 w/o compensation |
| 105.7 ± 2.46  | 90.9 ± 1.67   | 82.6 ± 0.53   | 114.3 ± 1.68  | 106.0 ± 1.44  | n = 9   | [RP4] Roche c311/501/502/701/702 w/ compensation  |
| 108.0 ± 0.91  | 92.6 ± 0.94   | 83.7 ± 1.12   | 114.2 ± 1.16  | 107.1 ± 1.12  | n = 14  | [R02] Roche Modular D/P w/o compensation          |
| 107.9 ± 1.13  | 92.0 ± 1.65   | 83.2 ± 1.27   | 113.7 ± 0.90  | 106.5 ± 1.22  | n = 4   | [RP2] Roche Modular D/P w/ compensation           |
| 109.5 ± 1.31  | 96.2 ± 1.21   | 86.0 ± 0.90   | 116.6 ± 1.44  | 109.0 ± 1.13  | n = 9   | [R01] Roche Integra and MIRA                      |
| 110.6 ± 0.76  | 95.6 ± 0.95   | 86.3 ± 0.59   | 116.5 ± 1.31  | 109.3 ± 1.15  | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur                 |
| 111.2 ± 1.51  | 97.2 ± 1.24   | 88.2 ± 0.86   | 118.4 ± 1.16  | 110.6 ± 1.33  | n = 93  | [DA5] Siemens Dimension                           |

## Summary of Participant Performance (Mean and Standard Deviation)

## Albumin (g/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 4.53 ± 0.17   | 5.94 ± 0.35   | 3.81 ± 0.16   | 4.84 ± 0.18   | 4.52 ± 0.17   | n = 362 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 4.87 ± 0.14   | 5.73 ± 0.14   | 4.17 ± 0.14   | 4.80 ± 0.09   | 4.87 ± 0.14   | n = 3   | [AXA] Abaxis Piccolo                       |
| 4.42 ± 0.17   | 5.75 ± 0.11   | 3.71 ± 0.18   | 4.70 ± 0.11   | 4.39 ± 0.16   | n = 22  | [ABJ] Abbott Architect c System            |
| 4.47 ± 0.05   | 5.74 ± 0.10   | 3.77 ± 0.05   | 4.77 ± 0.05   | 4.53 ± 0.05   | n = 3   | [AWA] Alfa Wassermann ACE Alera            |
| 4.54 ± 0.10   | 5.88 ± 0.13   | 3.82 ± 0.09   | 4.81 ± 0.11   | 4.50 ± 0.11   | n = 70  | [OLC] Beckman Coulter AU Chemistry System  |
| 4.29 ± 0.11   | 6.01 ± 0.15   | 3.59 ± 0.05   | 4.75 ± 0.09   | 4.28 ± 0.07   | n = 15  | [BCG] Beckman Coulter UniCel DxC 600       |
| 4.39 ± 0.09   | 6.11 ± 0.13   | 3.69 ± 0.09   | 4.83 ± 0.11   | 4.35 ± 0.08   | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 4.38 ± 0.16   | 5.42 ± 0.10   | 3.69 ± 0.10   | 4.68 ± 0.16   | 4.45 ± 0.16   | n = 8   | [JJE] Ortho Vitros 250/350/950             |
| 4.26 ± 0.10   | 5.27 ± 0.05   | 3.57 ± 0.05   | 4.43 ± 0.05   | 4.24 ± 0.10   | n = 3   | [JJH] Ortho Vitros 4600                    |
| 4.40 ± 0.10   | 5.41 ± 0.10   | 3.71 ± 0.09   | 4.57 ± 0.06   | 4.38 ± 0.05   | n = 12  | [JJF] Ortho Vitros 5,1FS                   |
| 4.35 ± 0.14   | 5.29 ± 0.20   | 3.65 ± 0.15   | 4.52 ± 0.16   | 4.32 ± 0.18   | n = 20  | [JJG] Ortho Vitros 5600                    |
| 4.72 ± 0.08   | 6.00 ± 0.00   | 4.00 ± 0.06   | 4.95 ± 0.08   | 4.70 ± 0.06   | n = 5   | [ROJ] Roche cobas c311                     |
| 4.77 ± 0.11   | 5.97 ± 0.30   | 4.03 ± 0.12   | 4.98 ± 0.11   | 4.75 ± 0.12   | n = 31  | [ROC] Roche cobas c501                     |
| 4.73 ± 0.09   | 5.82 ± 0.07   | 3.99 ± 0.10   | 4.96 ± 0.15   | 4.70 ± 0.15   | n = 8   | [ROH] Roche cobas c701                     |
| 4.70 ± 0.09   | 5.92 ± 0.13   | 4.03 ± 0.14   | 4.97 ± 0.20   | 4.72 ± 0.21   | n = 5   | [ROS] Roche Cobas INTEGRA 400              |
| 4.58 ± 0.15   | 5.83 ± 0.16   | 3.95 ± 0.06   | 4.87 ± 0.08   | 4.57 ± 0.08   | n = 4   | [ROT] Roche Cobas INTEGRA 800              |
| 4.73 ± 0.10   | 5.92 ± 0.11   | 4.05 ± 0.10   | 4.94 ± 0.11   | 4.70 ± 0.11   | n = 17  | [ROD] Roche MODULAR D/P                    |
| 4.55 ± 0.10   | 5.66 ± 0.14   | 3.85 ± 0.09   | 4.77 ± 0.10   | 4.54 ± 0.12   | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 4.47 ± 0.05   | 5.77 ± 0.31   | 3.77 ± 0.05   | 4.87 ± 0.05   | 4.47 ± 0.05   | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 4.56 ± 0.10   | 6.33 ± 0.10   | 3.79 ± 0.08   | 4.99 ± 0.09   | 4.53 ± 0.07   | n = 25  | [DUE] Siemens Dimension EXL                |
| 4.54 ± 0.08   | 6.32 ± 0.14   | 3.78 ± 0.09   | 4.98 ± 0.09   | 4.54 ± 0.09   | n = 13  | [DUR] Siemens Dimension RxL                |
| 4.52 ± 0.12   | 6.29 ± 0.15   | 3.79 ± 0.10   | 4.93 ± 0.13   | 4.53 ± 0.12   | n = 42  | [DUT] Siemens Dimension Vista              |
| 4.56 ± 0.12   | 6.36 ± 0.12   | 3.79 ± 0.07   | 4.99 ± 0.12   | 4.52 ± 0.08   | n = 12  | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 4.87 ± 0.14   | 5.73 ± 0.14   | 4.17 ± 0.14   | 4.80 ± 0.09   | 4.87 ± 0.14   | n = 3   | [AX1] Abaxis                               |
| 4.42 ± 0.17   | 5.75 ± 0.11   | 3.71 ± 0.18   | 4.70 ± 0.11   | 4.39 ± 0.16   | n = 22  | [AB1] Abbott                               |
| 4.47 ± 0.05   | 5.74 ± 0.10   | 3.77 ± 0.05   | 4.77 ± 0.05   | 4.53 ± 0.05   | n = 3   | [AW1] Alfa Wassermann                      |
| 4.33 ± 0.11   | 6.04 ± 0.15   | 3.63 ± 0.09   | 4.78 ± 0.11   | 4.32 ± 0.09   | n = 27  | [BC1] Beckman Coulter                      |
| 4.53 ± 0.10   | 5.88 ± 0.12   | 3.83 ± 0.09   | 4.81 ± 0.11   | 4.50 ± 0.11   | n = 66  | [OL1] Beckman Coulter AU Series            |
| 4.36 ± 0.14   | 5.36 ± 0.15   | 3.67 ± 0.13   | 4.56 ± 0.15   | 4.36 ± 0.15   | n = 43  | [JJ1] Ortho Clinical Diagnostics           |
| 4.75 ± 0.11   | 5.94 ± 0.24   | 4.02 ± 0.11   | 4.97 ± 0.12   | 4.73 ± 0.13   | n = 47  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 4.73 ± 0.10   | 5.92 ± 0.11   | 4.05 ± 0.10   | 4.94 ± 0.11   | 4.70 ± 0.11   | n = 17  | [R02] Roche Hitachi and Modular D/P        |
| 4.65 ± 0.13   | 5.88 ± 0.15   | 3.99 ± 0.11   | 4.90 ± 0.15   | 4.62 ± 0.15   | n = 9   | [R01] Roche Integra and MIRA               |
| 4.54 ± 0.10   | 5.66 ± 0.14   | 3.84 ± 0.09   | 4.78 ± 0.10   | 4.54 ± 0.12   | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 4.53 ± 0.11   | 6.32 ± 0.14   | 3.79 ± 0.09   | 4.96 ± 0.12   | 4.53 ± 0.10   | n = 91  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## Total Protein (g/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 7.61 ± 0.20   | 8.19 ± 0.24   | 6.38 ± 0.16   | 7.40 ± 0.19   | 7.59 ± 0.21   | n = 357 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 7.70 ± 0.00   | 8.00 ± 0.00   | 6.30 ± 0.09   | 7.36 ± 0.10   | 7.73 ± 0.14   | n = 3   | [AXA] Abaxis Piccolo                       |
| 7.68 ± 0.07   | 8.15 ± 0.11   | 6.38 ± 0.06   | 7.37 ± 0.06   | 7.64 ± 0.09   | n = 23  | [ABJ] Abbott Architect c System            |
| 7.50 ± 0.18   | 8.00 ± 0.18   | 6.37 ± 0.14   | 7.27 ± 0.14   | 7.60 ± 0.09   | n = 3   | [AWA] Alfa Wassermann ACE Alera            |
| 7.47 ± 0.16   | 8.00 ± 0.17   | 6.25 ± 0.14   | 7.26 ± 0.17   | 7.46 ± 0.15   | n = 68  | [OLC] Beckman Coulter AU Chemistry System  |
| 7.58 ± 0.14   | 8.20 ± 0.09   | 6.38 ± 0.10   | 7.41 ± 0.12   | 7.58 ± 0.16   | n = 15  | [BCG] Beckman Coulter UniCel DxC 600       |
| 7.32 ± 0.11   | 8.06 ± 0.11   | 6.22 ± 0.07   | 7.20 ± 0.00   | 7.39 ± 0.14   | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 7.62 ± 0.13   | 8.51 ± 0.14   | 6.46 ± 0.14   | 7.55 ± 0.17   | 7.62 ± 0.14   | n = 8   | [JJE] Ortho Vitros 250/350/950             |
| 7.43 ± 0.05   | 8.43 ± 0.14   | 6.33 ± 0.05   | 7.30 ± 0.18   | 7.36 ± 0.10   | n = 3   | [JJH] Ortho Vitros 4600                    |
| 7.58 ± 0.13   | 8.38 ± 0.17   | 6.41 ± 0.16   | 7.43 ± 0.16   | 7.49 ± 0.13   | n = 12  | [JJF] Ortho Vitros 5,1FS                   |
| 7.61 ± 0.17   | 8.46 ± 0.18   | 6.42 ± 0.12   | 7.45 ± 0.15   | 7.50 ± 0.17   | n = 20  | [JJG] Ortho Vitros 5600                    |
| 7.55 ± 0.08   | 8.10 ± 0.00   | 6.36 ± 0.06   | 7.40 ± 0.06   | 7.55 ± 0.08   | n = 5   | [ROJ] Roche cobas c311                     |
| 7.56 ± 0.16   | 8.05 ± 0.17   | 6.33 ± 0.11   | 7.33 ± 0.14   | 7.54 ± 0.16   | n = 31  | [ROC] Roche cobas c501                     |
| 7.47 ± 0.05   | 7.98 ± 0.08   | 6.27 ± 0.05   | 7.30 ± 0.15   | 7.47 ± 0.12   | n = 7   | [ROH] Roche cobas c701                     |
| 7.42 ± 0.08   | 7.89 ± 0.19   | 6.26 ± 0.20   | 7.21 ± 0.21   | 7.33 ± 0.09   | n = 5   | [ROS] Roche Cobas INTEGRA 400              |
| 7.39 ± 0.11   | 7.90 ± 0.00   | 6.18 ± 0.04   | 7.17 ± 0.08   | 7.32 ± 0.04   | n = 4   | [ROT] Roche Cobas INTEGRA 800              |
| 7.53 ± 0.16   | 8.03 ± 0.16   | 6.31 ± 0.13   | 7.34 ± 0.13   | 7.53 ± 0.14   | n = 16  | [ROD] Roche MODULAR D/P                    |
| 7.62 ± 0.14   | 8.20 ± 0.10   | 6.47 ± 0.08   | 7.40 ± 0.09   | 7.62 ± 0.10   | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 7.67 ± 0.23   | 8.20 ± 0.18   | 6.39 ± 0.29   | 7.29 ± 0.20   | 7.65 ± 0.19   | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 7.85 ± 0.14   | 8.42 ± 0.13   | 6.55 ± 0.11   | 7.62 ± 0.11   | 7.85 ± 0.11   | n = 25  | [DUE] Siemens Dimension EXL                |
| 7.91 ± 0.13   | 8.48 ± 0.18   | 6.60 ± 0.13   | 7.68 ± 0.11   | 7.89 ± 0.07   | n = 13  | [DUR] Siemens Dimension RxL                |
| 7.72 ± 0.13   | 8.30 ± 0.14   | 6.47 ± 0.11   | 7.51 ± 0.10   | 7.72 ± 0.11   | n = 42  | [DUT] Siemens Dimension Vista              |
| 7.82 ± 0.16   | 8.38 ± 0.19   | 6.53 ± 0.11   | 7.61 ± 0.15   | 7.82 ± 0.17   | n = 12  | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 7.70 ± 0.00   | 8.00 ± 0.00   | 6.30 ± 0.09   | 7.36 ± 0.10   | 7.73 ± 0.14   | n = 3   | [AX1] Abaxis                               |
| 7.68 ± 0.07   | 8.15 ± 0.11   | 6.38 ± 0.06   | 7.37 ± 0.06   | 7.64 ± 0.09   | n = 23  | [AB1] Abbott                               |
| 7.50 ± 0.18   | 8.00 ± 0.18   | 6.37 ± 0.14   | 7.27 ± 0.14   | 7.60 ± 0.09   | n = 3   | [AW1] Alfa Wassermann                      |
| 7.47 ± 0.19   | 8.15 ± 0.12   | 6.33 ± 0.15   | 7.32 ± 0.15   | 7.51 ± 0.18   | n = 28  | [BC1] Beckman Coulter                      |
| 7.48 ± 0.15   | 8.01 ± 0.16   | 6.25 ± 0.13   | 7.26 ± 0.17   | 7.47 ± 0.14   | n = 65  | [OL1] Beckman Coulter AU Series            |
| 7.59 ± 0.16   | 8.45 ± 0.17   | 6.41 ± 0.14   | 7.45 ± 0.17   | 7.51 ± 0.16   | n = 43  | [JJ1] Ortho Clinical Diagnostics           |
| 7.54 ± 0.16   | 8.04 ± 0.16   | 6.32 ± 0.11   | 7.33 ± 0.14   | 7.53 ± 0.16   | n = 45  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 7.53 ± 0.16   | 8.03 ± 0.16   | 6.31 ± 0.13   | 7.34 ± 0.13   | 7.53 ± 0.14   | n = 16  | [R02] Roche Hitachi and Modular D/P        |
| 7.41 ± 0.09   | 7.90 ± 0.00   | 6.22 ± 0.14   | 7.17 ± 0.08   | 7.33 ± 0.07   | n = 9   | [R01] Roche Integra and MIRA               |
| 7.63 ± 0.15   | 8.21 ± 0.11   | 6.48 ± 0.09   | 7.40 ± 0.09   | 7.63 ± 0.12   | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 7.79 ± 0.15   | 8.36 ± 0.16   | 6.51 ± 0.12   | 7.58 ± 0.13   | 7.79 ± 0.15   | n = 91  | [DA5] Siemens Dimension                    |



## Summary of Participant Performance (Mean and Standard Deviation)

## Cholesterol (mg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 215.1 ± 8.63  | 133.7 ± 7.60  | 179.9 ± 8.03  | 191.8 ± 6.23  | 212.5 ± 8.72  | n = 318 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 223.3 ± 1.99  | 139.3 ± 1.10  | 183.3 ± 1.76  | 199.8 ± 2.06  | 220.7 ± 2.23  | n = 17  | [ABJ] Abbott Architect c System            |
| 211.2 ± 4.86  | 131.8 ± 3.08  | 174.4 ± 3.82  | 189.2 ± 3.82  | 207.8 ± 4.91  | n = 72  | [OLC] Beckman Coulter AU Chemistry System  |
| 211.7 ± 5.74  | 133.6 ± 2.01  | 179.1 ± 4.94  | 190.9 ± 5.21  | 210.7 ± 5.33  | n = 11  | [BCG] Beckman Coulter UniCel DxC 600       |
| 213.4 ± 2.45  | 134.2 ± 1.42  | 181.5 ± 4.09  | 190.9 ± 2.95  | 209.9 ± 3.44  | n = 9   | [BCH] Beckman Coulter UniCel DxC 800       |
| 228.5 ± 5.43  | 146.5 ± 1.86  | 196.2 ± 5.90  | 194.3 ± 5.09  | 227.9 ± 3.72  | n = 3   | [JJE] Ortho Vitros 250/350/950             |
| 227.7 ± 6.35  | 143.3 ± 5.27  | 190.5 ± 3.98  | 195.1 ± 4.65  | 224.8 ± 6.65  | n = 10  | [JJF] Ortho Vitros 5,1FS                   |
| 231.3 ± 5.29  | 146.6 ± 4.34  | 193.2 ± 4.31  | 195.8 ± 6.03  | 226.1 ± 6.63  | n = 20  | [JJG] Ortho Vitros 5600                    |
| 223.4 ± 4.77  | 140.2 ± 4.21  | 186.6 ± 5.04  | 199.0 ± 5.02  | 221.2 ± 6.14  | n = 28  | [ROC] Roche cobas c501                     |
| 220.5 ± 4.05  | 137.3 ± 3.56  | 184.6 ± 3.45  | 197.1 ± 3.31  | 218.3 ± 4.98  | n = 7   | [ROH] Roche cobas c701                     |
| 215.9 ± 3.93  | 133.9 ± 2.71  | 180.8 ± 4.98  | 191.9 ± 1.88  | 213.6 ± 3.54  | n = 5   | [ROS] Roche Cobas INTEGRA 400              |
| 217.5 ± 2.74  | 135.5 ± 1.86  | 182.7 ± 1.37  | 194.7 ± 3.37  | 214.2 ± 4.10  | n = 3   | [ROT] Roche Cobas INTEGRA 800              |
| 216.0 ± 4.54  | 134.8 ± 3.59  | 181.0 ± 3.21  | 193.2 ± 3.16  | 215.0 ± 4.04  | n = 18  | [ROD] Roche MODULAR D/P                    |
| 214.3 ± 2.20  | 135.4 ± 1.79  | 184.6 ± 2.74  | 189.5 ± 2.25  | 211.5 ± 2.95  | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 219.2 ± 11.32 | 138.5 ± 5.40  | 188.4 ± 8.81  | 193.8 ± 9.60  | 216.0 ± 10.10 | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 210.6 ± 4.82  | 122.1 ± 3.61  | 174.1 ± 3.86  | 188.4 ± 4.71  | 208.2 ± 5.35  | n = 22  | [DUE] Siemens Dimension EXL                |
| 211.7 ± 7.45  | 125.2 ± 6.04  | 175.5 ± 7.00  | 189.4 ± 8.40  | 211.1 ± 9.15  | n = 9   | [DUR] Siemens Dimension RxL                |
| 206.7 ± 5.24  | 126.3 ± 3.70  | 172.5 ± 5.24  | 187.1 ± 5.99  | 205.1 ± 6.57  | n = 37  | [DUT] Siemens Dimension Vista              |
| 210.0 ± 4.06  | 122.4 ± 5.28  | 174.4 ± 5.18  | 190.0 ± 5.74  | 207.6 ± 4.50  | n = 8   | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 223.3 ± 1.99  | 139.3 ± 1.10  | 183.3 ± 1.76  | 199.8 ± 2.06  | 220.7 ± 2.23  | n = 17  | [AB1] Abbott                               |
| 212.5 ± 4.35  | 133.7 ± 2.08  | 179.8 ± 4.84  | 190.6 ± 4.41  | 209.8 ± 4.30  | n = 23  | [BC1] Beckman Coulter                      |
| 211.3 ± 4.57  | 131.8 ± 2.97  | 174.3 ± 3.49  | 189.3 ± 3.45  | 207.7 ± 4.62  | n = 67  | [OL1] Beckman Coulter AU Series            |
| 230.2 ± 5.78  | 145.9 ± 4.58  | 192.5 ± 4.52  | 195.3 ± 5.35  | 225.9 ± 6.28  | n = 34  | [JJ1] Ortho Clinical Diagnostics           |
| 222.5 ± 4.50  | 139.6 ± 3.88  | 185.9 ± 4.50  | 198.4 ± 4.48  | 220.4 ± 5.69  | n = 39  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 216.0 ± 4.54  | 135.2 ± 4.07  | 181.6 ± 3.36  | 193.0 ± 3.53  | 215.0 ± 4.04  | n = 18  | [R02] Roche Hitachi and Modular D/P        |
| 216.5 ± 3.58  | 134.8 ± 2.39  | 181.6 ± 3.90  | 192.8 ± 3.10  | 213.8 ± 3.75  | n = 8   | [R01] Roche Integra and MIRA               |
| 214.3 ± 2.35  | 135.4 ± 1.67  | 184.6 ± 2.75  | 189.5 ± 2.25  | 211.5 ± 2.84  | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 208.7 ± 5.84  | 124.6 ± 4.71  | 173.5 ± 5.19  | 188.0 ± 5.95  | 206.9 ± 6.63  | n = 76  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## HDL-Cholesterol (mg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 53.3 ± 5.50   | 28.0 ± 4.87   | 65.2 ± 7.11   | 40.3 ± 5.29   | 53.5 ± 5.79   | n = 304 | [---] All Methods & Instruments            |
| 58.0 ± 5.79   | 27.7 ± 3.97   | 71.3 ± 9.42   | 40.6 ± 3.84   | 58.5 ± 6.36   | n = 20  | [---] All Precipitation Methods            |
| 53.0 ± 5.27   | 28.1 ± 4.92   | 64.9 ± 6.67   | 40.2 ± 5.34   | 53.2 ± 5.56   | n = 284 | [---] All Homogeneous (Direct) Methods     |
| 52.6 ± 1.71   | 34.1 ± 1.74   | 63.6 ± 2.13   | 46.1 ± 1.93   | 52.7 ± 1.93   | n = 15  | [AB1] Abbott                               |
| 44.5 ± 1.71   | 15.5 ± 0.57   | 55.5 ± 2.85   | 25.0 ± 1.14   | 44.5 ± 1.71   | n = 2   | [AX1] Abaxis                               |
| 63.1 ± 1.50   | 33.3 ± 0.87   | 73.9 ± 1.74   | 48.0 ± 1.24   | 62.6 ± 1.44   | n = 19  | [BC1] Beckman Coulter                      |
| 51.9 ± 2.57   | 33.4 ± 1.74   | 62.2 ± 2.89   | 45.5 ± 2.13   | 51.5 ± 2.66   | n = 50  | [OL1] Beckman Coulter AU Series            |
| 61.8 ± 3.14   | 29.7 ± 1.58   | 77.8 ± 4.38   | 41.7 ± 2.28   | 62.3 ± 3.44   | n = 27  | [JJ1] Ortho Clinical Diagnostics           |
| 51.0 ± 1.56   | 22.9 ± 0.92   | 63.3 ± 1.94   | 34.8 ± 1.09   | 51.5 ± 1.61   | n = 36  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 51.7 ± 1.95   | 23.3 ± 0.86   | 64.3 ± 2.71   | 35.5 ± 1.48   | 52.2 ± 2.19   | n = 16  | [R02] Roche Hitachi and Modular D/P        |
| 53.1 ± 1.93   | 23.9 ± 0.87   | 66.4 ± 1.66   | 36.5 ± 1.22   | 53.6 ± 2.38   | n = 8   | [R01] Roche Integra and MIRA               |
| 53.3 ± 2.08   | 34.8 ± 1.47   | 64.0 ± 0.23   | 47.4 ± 1.71   | 52.8 ± 1.98   | n = 4   | [GZ1] Sekisui Diagnostics                  |
| 40.3 ± 1.76   | 23.9 ± 0.94   | 48.1 ± 1.72   | 35.9 ± 1.20   | 39.8 ± 1.64   | n = 25  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 53.7 ± 2.48   | 27.5 ± 1.82   | 66.3 ± 3.14   | 39.1 ± 2.06   | 54.5 ± 2.69   | n = 65  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## LDL-Cholesterol (mg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System                                   |
|---------------|---------------|---------------|---------------|---------------|---------|-----------------------------------------------------------------------|
| 135.1 ± 14.02 | 86.8 ± 12.41  | 93.7 ± 11.11  | 124.4 ± 15.62 | 132.7 ± 13.91 | n = 293 | [---] All Methods & Instruments                                       |
| 139.3 ± 9.86  | 92.1 ± 9.29   | 94.1 ± 9.07   | 132.5 ± 8.48  | 137.0 ± 10.22 | n = 145 | [-A-] Calculated Results<br>Friedewald formula [LDL=TC-HDL-(Trigs÷5)] |
| 130.0 ± 16.07 | 80.5 ± 12.02  | 93.6 ± 13.54  | 114.1 ± 15.44 | 127.6 ± 15.48 | n = 146 | [---] All Homogeneous (Direct)Methods                                 |
| 129.5 ± 8.26  | 80.5 ± 5.40   | 92.7 ± 5.91   | 112.0 ± 7.24  | 126.5 ± 8.26  | n = 3   | [AB1] Abbott                                                          |
| 119.5 ± 3.67  | 74.1 ± 1.99   | 86.1 ± 2.80   | 103.8 ± 3.60  | 119.2 ± 4.53  | n = 11  | [BC1] Beckman Coulter                                                 |
| 113.9 ± 5.73  | 70.1 ± 4.66   | 81.2 ± 4.90   | 99.0 ± 6.38   | 112.8 ± 6.63  | n = 28  | [OL1] Beckman Coulter AU Series                                       |
| 129.9 ± 4.48  | 72.5 ± 3.67   | 94.1 ± 4.35   | 106.6 ± 6.56  | 126.5 ± 5.85  | n = 15  | [JJ1] Ortho Clinical Diagnostics                                      |
| 158.5 ± 2.66  | 101.6 ± 1.66  | 120.8 ± 1.72  | 138.2 ± 2.13  | 156.1 ± 2.33  | n = 16  | [R04] Roche cobas c311/c501/c502/c701/c702                            |
| 157.0 ± 2.82  | 100.5 ± 2.22  | 119.8 ± 1.58  | 136.8 ± 1.90  | 154.7 ± 3.00  | n = 11  | [R02] Roche Hitachi and Modular D/P                                   |
| 140.3 ± 4.90  | 81.3 ± 7.21   | 103.4 ± 5.46  | 124.1 ± 6.69  | 137.9 ± 9.54  | n = 4   | [R01] Roche Integra and MIRA                                          |
| 114.0 ± 2.92  | 71.1 ± 3.31   | 82.2 ± 2.64   | 100.6 ± 3.18  | 112.8 ± 3.75  | n = 9   | [GZ1] Sekisui Diagnostics                                             |
| 133.2 ± 4.24  | 79.5 ± 2.90   | 94.9 ± 3.58   | 114.6 ± 4.51  | 130.5 ± 4.31  | n = 13  | [BY1] Siemens ADVIA/ADVIA Centaur                                     |
| 130.6 ± 4.75  | 84.8 ± 3.60   | 94.1 ± 3.68   | 119.0 ± 4.89  | 128.7 ± 5.39  | n = 32  | [DA5] Siemens Dimension                                               |

## Summary of Participant Performance (Mean and Standard Deviation)

## Triglycerides (mg/dL)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 115.0 ± 6.82  | 64.6 ± 4.29   | 98.9 ± 5.96   | 95.2 ± 5.14   | 113.8 ± 6.72  | n = 311 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 112.3 ± 2.08  | 66.3 ± 1.74   | 102.0 ± 2.96  | 92.6 ± 1.77   | 110.9 ± 2.13  | n = 17  | [ABJ] Abbott Architect c System            |
| 112.8 ± 3.76  | 63.1 ± 1.75   | 94.8 ± 3.65   | 93.5 ± 2.71   | 111.2 ± 4.53  | n = 68  | [OLC] Beckman Coulter AU Chemistry System  |
| 125.6 ± 3.23  | 65.3 ± 1.82   | 104.6 ± 3.66  | 99.8 ± 2.77   | 124.4 ± 3.68  | n = 11  | [BCG] Beckman Coulter UniCel DxC 600       |
| 123.9 ± 4.32  | 65.0 ± 2.99   | 104.3 ± 3.51  | 99.2 ± 3.25   | 121.3 ± 2.74  | n = 9   | [BCH] Beckman Coulter UniCel DxC 800       |
| 129.5 ± 2.74  | 73.5 ± 2.74   | 108.5 ± 1.86  | 107.0 ± 5.48  | 132.6 ± 8.23  | n = 3   | [JJE] Ortho Vitros 250/350/950             |
| 121.7 ± 2.15  | 68.3 ± 1.12   | 100.9 ± 3.03  | 98.7 ± 2.53   | 119.3 ± 2.95  | n = 10  | [JJF] Ortho Vitros 5,1FS                   |
| 121.0 ± 3.72  | 68.4 ± 2.13   | 99.2 ± 3.26   | 98.8 ± 2.73   | 118.7 ± 3.84  | n = 20  | [JJG] Ortho Vitros 5600                    |
| 115.5 ± 4.31  | 65.1 ± 2.26   | 99.7 ± 3.82   | 96.4 ± 2.94   | 114.0 ± 4.25  | n = 27  | [ROC] Roche cobas c501                     |
| 112.2 ± 2.79  | 62.9 ± 1.40   | 96.8 ± 1.08   | 93.7 ± 1.77   | 111.3 ± 2.09  | n = 7   | [ROH] Roche cobas c701                     |
| 109.3 ± 5.80  | 60.7 ± 5.54   | 92.9 ± 6.29   | 93.0 ± 7.44   | 108.1 ± 7.65  | n = 5   | [ROS] Roche Cobas INTEGRA 400              |
| 110.9 ± 2.86  | 60.6 ± 1.02   | 94.0 ± 1.80   | 93.0 ± 0.00   | 111.0 ± 1.80  | n = 3   | [ROT] Roche Cobas INTEGRA 800              |
| 111.6 ± 4.68  | 62.7 ± 2.20   | 98.2 ± 5.00   | 93.2 ± 2.77   | 109.2 ± 5.96  | n = 18  | [ROD] Roche MODULAR D/P                    |
| 113.0 ± 2.98  | 65.5 ± 1.86   | 100.5 ± 3.40  | 94.2 ± 2.60   | 111.7 ± 2.87  | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 118.0 ± 5.48  | 69.3 ± 3.16   | 104.0 ± 4.60  | 98.8 ± 4.10   | 117.5 ± 5.43  | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 107.3 ± 2.66  | 57.8 ± 1.76   | 93.0 ± 2.67   | 87.2 ± 2.91   | 105.9 ± 1.13  | n = 22  | [DUE] Siemens Dimension EXL                |
| 106.8 ± 6.07  | 57.6 ± 3.98   | 93.7 ± 6.10   | 84.7 ± 9.78   | 105.1 ± 10.03 | n = 9   | [DUR] Siemens Dimension RxL                |
| 120.7 ± 3.18  | 69.0 ± 1.71   | 105.4 ± 2.79  | 99.4 ± 2.12   | 119.2 ± 3.20  | n = 39  | [DUT] Siemens Dimension Vista              |
| 107.0 ± 1.76  | 56.9 ± 2.69   | 94.3 ± 1.38   | 87.9 ± 2.16   | 108.2 ± 2.10  | n = 5   | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 112.3 ± 2.08  | 66.3 ± 1.74   | 102.0 ± 2.96  | 92.6 ± 1.77   | 110.9 ± 2.13  | n = 17  | [AB1] Abbott                               |
| 124.9 ± 3.92  | 65.0 ± 2.29   | 104.1 ± 3.89  | 99.4 ± 3.15   | 122.8 ± 3.55  | n = 22  | [BC1] Beckman Coulter                      |
| 112.9 ± 3.39  | 63.2 ± 1.66   | 95.1 ± 3.25   | 93.5 ± 2.76   | 111.3 ± 4.08  | n = 63  | [OL1] Beckman Coulter AU Series            |
| 122.0 ± 4.04  | 68.7 ± 2.21   | 100.4 ± 4.00  | 99.1 ± 2.96   | 119.4 ± 4.07  | n = 34  | [JJ1] Ortho Clinical Diagnostics           |
| 114.6 ± 4.03  | 64.6 ± 2.29   | 99.0 ± 3.46   | 95.8 ± 2.93   | 113.2 ± 3.61  | n = 39  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 111.6 ± 4.68  | 62.7 ± 2.20   | 98.2 ± 5.00   | 93.2 ± 2.77   | 109.2 ± 5.96  | n = 18  | [R02] Roche Hitachi and Modular D/P        |
| 110.2 ± 4.61  | 60.0 ± 2.57   | 93.6 ± 4.72   | 92.9 ± 5.52   | 109.5 ± 5.93  | n = 8   | [R01] Roche Integra and MIRA               |
| 113.3 ± 3.16  | 65.8 ± 2.07   | 100.8 ± 3.51  | 94.5 ± 2.98   | 112.1 ± 3.44  | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 114.5 ± 8.45  | 63.7 ± 6.92   | 100.0 ± 7.55  | 94.2 ± 8.32   | 114.1 ± 7.76  | n = 75  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## Homocysteine (μmol/L)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| -----         | -----         | -----         | -----         | -----         | -----   | -----                                      |
| 19.97 ± 1.64  | 14.86 ± 1.25  | 30.02 ± 2.17  | 12.37 ± 1.28  | 19.95 ± 1.41  | n = 116 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 18.90 ± 0.64  | 13.94 ± 0.48  | 29.84 ± 0.63  | 11.04 ± 0.43  | 19.11 ± 0.73  | n = 13  | [ABH] Abbott Architect i System            |
| 20.84 ± 0.82  | 15.57 ± 1.07  | 30.30 ± 1.38  | 12.63 ± 1.01  | 20.58 ± 0.78  | n = 23  | [OLC] Beckman Coulter AU Chemistry System  |
| 22.13 ± 0.20  | 15.78 ± 0.37  | 32.21 ± 0.35  | 13.17 ± 0.25  | 21.88 ± 0.43  | n = 4   | [JJG] Ortho Vitros 5600                    |
| 19.69 ± 0.37  | 14.56 ± 0.75  | 28.14 ± 1.40  | 12.23 ± 0.48  | 19.39 ± 0.81  | n = 5   | [ROC] Roche cobas c501                     |
| 19.78 ± 1.22  | 14.51 ± 0.86  | 28.91 ± 1.28  | 12.38 ± 0.67  | 19.46 ± 1.05  | n = 4   | [ROG] Roche cobas c502                     |
| 19.92 ± 1.50  | 16.24 ± 1.00  | 28.69 ± 1.81  | 12.67 ± 0.69  | 19.58 ± 1.12  | n = 3   | [ROT] Roche Cobas INTEGRA 800              |
| 20.09 ± 1.11  | 15.17 ± 1.04  | 30.38 ± 1.72  | 13.31 ± 0.96  | 20.23 ± 0.93  | n = 25  | [COB] Siemens ADVIA Centaur                |
| 18.08 ± 1.07  | 13.28 ± 0.63  | 28.77 ± 2.01  | 11.02 ± 0.79  | 18.22 ± 1.23  | n = 8   | [DUT] Siemens Dimension Vista              |
| 20.30 ± 1.03  | 14.68 ± 0.68  | 30.20 ± 2.53  | 11.97 ± 0.77  | 19.99 ± 1.27  | n = 14  | [DPD] Siemens Immulite 2000                |
| <Reagents>    |               |               |               |               |         |                                            |
| 18.90 ± 0.64  | 13.94 ± 0.48  | 29.84 ± 0.63  | 11.04 ± 0.43  | 19.11 ± 0.73  | n = 13  | [AB1] Abbott                               |
| 22.07 ± 1.68  | 16.72 ± 1.95  | 32.32 ± 1.13  | 13.51 ± 1.57  | 21.33 ± 1.23  | n = 3   | [AS1] Axis-Shield                          |
| 20.60 ± 4.44  | 15.28 ± 3.62  | 29.33 ± 5.30  | 12.04 ± 3.50  | 20.17 ± 4.44  | n = 4   | [CR1] Carolina                             |
| 20.53 ± 1.33  | 15.65 ± 1.21  | 29.88 ± 1.82  | 12.73 ± 0.96  | 20.33 ± 1.20  | n = 26  | [DZ1] Diazyme                              |
| 22.00 ± 0.42  | 15.64 ± 0.43  | 32.15 ± 0.32  | 13.01 ± 0.44  | 21.70 ± 0.54  | n = 5   | [JJ1] Ortho Clinical Diagnostics           |
| 19.88 ± 0.85  | 14.54 ± 0.67  | 28.16 ± 1.53  | 12.30 ± 0.61  | 19.38 ± 0.89  | n = 6   | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 21.77 ± 1.59  | 16.74 ± 2.43  | 32.95 ± 1.80  | 13.67 ± 1.85  | 21.50 ± 2.07  | n = 3   | [GZ1] Sekisui Diagnostics                  |
| 20.09 ± 1.11  | 15.17 ± 1.04  | 30.38 ± 1.72  | 13.31 ± 0.96  | 20.23 ± 0.93  | n = 25  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 18.27 ± 1.00  | 13.37 ± 0.82  | 28.39 ± 2.01  | 11.10 ± 0.65  | 17.93 ± 1.16  | n = 5   | [DA5] Siemens Dimension                    |
| 17.81 ± 1.07  | 13.09 ± 0.29  | 29.41 ± 1.99  | 10.93 ± 0.95  | 18.76 ± 1.18  | n = 3   | [DA6] Siemens Dimension LOCI               |
| 20.08 ± 1.27  | 14.65 ± 0.66  | 30.22 ± 2.40  | 12.03 ± 0.76  | 19.96 ± 1.22  | n = 15  | [DP5] Siemens Immulite                     |

## Summary of Participant Performance (Mean and Standard Deviation)

## Troponin I (µg/L)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19  | Specimen: C20 | Number  | [Code] Instrument or Reagent System     |
|---------------|---------------|---------------|----------------|---------------|---------|-----------------------------------------|
| 0.122 ± 0.066 | 1.105 ± 0.686 | 0.014 ± 0.011 | 4.597 ± 3.626  | 0.114 ± 0.062 | n = 223 | [---] All Methods & Instruments         |
| <Instruments> |               |               |                |               |         |                                         |
| 0.430 ± 0.056 | 4.698 ± 0.305 | 0.009 ± 0.005 | 22.822 ± 1.153 | 0.397 ± 0.042 | n = 23  | [ABH] Abbott Architect i System         |
| 0.052 ± 0.011 | 0.629 ± 0.040 | 0.011 ± 0.009 | 2.254 ± 0.122  | 0.052 ± 0.007 | n = 22  | [SAA] Beckman Coulter ACCESS            |
| 0.050 ± 0.000 | 0.514 ± 0.062 | 0.008 ± 0.015 | 1.838 ± 0.123  | 0.047 ± 0.005 | n = 3   | [BCV] Beckman Coulter UniCel DxI 600    |
| 0.048 ± 0.008 | 0.461 ± 0.025 | 0.012 ± 0.013 | 1.717 ± 0.094  | 0.047 ± 0.007 | n = 11  | [BCU] Beckman Coulter UniCel DxI 800    |
| 0.180 ± 0.042 | 1.235 ± 0.207 | 0.017 ± 0.021 | 5.908 ± 0.388  | 0.167 ± 0.029 | n = 8   | [IAA] i-STAT                            |
| 0.192 ± 0.020 | 1.546 ± 0.109 | 0.010 ± 0.000 | 8.653 ± 0.384  | 0.183 ± 0.015 | n = 18  | [JJG] Ortho Vitros 5600                 |
| 0.195 ± 0.016 | 1.615 ± 0.029 | 0.010 ± 0.000 | 8.456 ± 0.610  | 0.182 ± 0.011 | n = 5   | [JJC] Ortho Vitros Eci/ECiQ             |
| 0.300 ± 0.000 | 0.386 ± 0.026 | 0.300 ± 0.000 | 1.524 ± 0.062  | <0.300        | n = 3   | [ROA] Roche cobas e601                  |
| 0.100 ± 0.017 | 2.024 ± 0.126 | 0.010 ± 0.007 | 8.443 ± 0.548  | 0.092 ± 0.013 | n = 44  | [COB] Siemens ADVIA Centaur             |
| 0.146 ± 0.015 | 0.811 ± 0.056 | 0.056 ± 0.040 | 2.473 ± 0.112  | 0.138 ± 0.015 | n = 19  | [DUE] Siemens Dimension EXL             |
| 0.070 ± 0.024 | 0.646 ± 0.060 | 0.035 ± 0.013 | 2.405 ± 0.201  | 0.053 ± 0.012 | n = 8   | [DUR] Siemens Dimension RxL             |
| 0.143 ± 0.013 | 0.807 ± 0.038 | 0.017 ± 0.005 | 2.493 ± 0.108  | 0.136 ± 0.010 | n = 41  | [DUT] Siemens Dimension Vista           |
| 0.071 ± 0.016 | 0.674 ± 0.030 | 0.040 ± 0.000 | 2.402 ± 0.038  | 0.060 ± 0.009 | n = 5   | [DUX] Siemens Dimension Xpand           |
| 0.303 ± 0.032 | 2.208 ± 0.152 | < 0.060       | 12.678 ± 0.856 | 0.283 ± 0.020 | n = 4   | [TOM] Tosoh Bioscience                  |
| <Reagents>    |               |               |                |               |         |                                         |
| 0.418 ± 0.080 | 4.698 ± 0.305 | 0.009 ± 0.006 | 22.825 ± 1.156 | 0.395 ± 0.047 | n = 27  | [AB1] Abbott                            |
| 0.051 ± 0.010 | 0.571 ± 0.094 | 0.011 ± 0.011 | 2.072 ± 0.298  | 0.050 ± 0.007 | n = 36  | [BC1] Beckman Coulter                   |
| 0.182 ± 0.032 | 1.148 ± 0.156 | 0.022 ± 0.021 | 5.684 ± 0.400  | 0.168 ± 0.026 | n = 4   | [IA1] i-STAT                            |
| 0.193 ± 0.019 | 1.555 ± 0.112 | 0.010 ± 0.000 | 8.639 ± 0.377  | 0.183 ± 0.014 | n = 23  | [JJ1] Ortho Clinical Diagnostics        |
| 0.300 ± 0.000 | 0.399 ± 0.034 | 0.300 ± 0.000 | 1.557 ± 0.078  | < 0.300       | n = 4   | [R03] Roche Elecsys/Modular E/e601/e411 |
| 0.100 ± 0.017 | 2.019 ± 0.129 | 0.010 ± 0.007 | 8.425 ± 0.574  | 0.092 ± 0.012 | n = 45  | [BY1] Siemens ADVIA/ADVIA Centaur       |
| 0.071 ± 0.022 | 0.663 ± 0.060 | 0.033 ± 0.016 | 2.400 ± 0.188  | 0.056 ± 0.012 | n = 14  | [DA5] Siemens Dimension                 |
| 0.144 ± 0.013 | 0.807 ± 0.043 | 0.017 ± 0.006 | 2.484 ± 0.109  | 0.136 ± 0.012 | n = 59  | [DA6] Siemens Dimension LOCI            |
| 0.310 ± 0.036 | 2.197 ± 0.186 | < 0.060       | 12.817 ± 0.986 | 0.289 ± 0.020 | n = 3   | [T02] Tosoh ST AIA                      |

## Summary of Participant Performance (Mean and Standard Deviation)

## Troponin T (µg/L)

| Specimen: C16<br>----- | Specimen: C17<br>----- | Specimen: C18<br>----- | Specimen: C19<br>----- | Specimen: C20<br>----- | Number<br>----- | [Code] Instrument or Reagent System<br>----- |
|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------|----------------------------------------------|
| 0.013 ± 0.006          | 0.111 ± 0.012          | 0.010 ± 0.000          | 0.340 ± 0.031          | 0.012 ± 0.004          | n = 43          | [---] All Methods & Instruments              |
| <Instruments>          |                        |                        |                        |                        |                 |                                              |
| 0.019 ± 0.006          | 0.120 ± 0.011          | 0.010 ± 0.000          | 0.364 ± 0.025          | 0.018 ± 0.009          | n = 6           | [R0F] Roche cobas e411                       |
| 0.010 ± 0.000          | 0.105 ± 0.010          | 0.010 ± 0.000          | 0.325 ± 0.026          | 0.010 ± 0.000          | n = 21          | [R0A] Roche cobas e601                       |
| 0.020 ± 0.009          | 0.120 ± 0.014          | 0.010 ± 0.000          | 0.363 ± 0.037          | 0.018 ± 0.007          | n = 6           | [BME] Roche Elecsys                          |
| 0.010 ± 0.000          | 0.115 ± 0.007          | 0.010 ± 0.000          | 0.349 ± 0.023          | 0.010 ± 0.000          | n = 7           | [R0E] Roche MODULAR E                        |
| <Reagents>             |                        |                        |                        |                        |                 |                                              |
| 0.013 ± 0.006          | 0.110 ± 0.011          | 0.010 ± 0.000          | 0.339 ± 0.030          | 0.010 ± 0.000          | n = 41          | [R03] Roche Elecsys/Modular E/e601/e411      |

## Summary of Participant Performance (Mean and Standard Deviation)

## Alanine Aminotransferase (U/L 37°C)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 231.5 ± 17.00 | 113.2 ± 8.26  | 36.4 ± 2.38   | 131.1 ± 10.19 | 229.2 ± 17.46 | n = 359 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 201.6 ± 4.72  | 101.8 ± 1.54  | 37.2 ± 1.54   | 117.3 ± 4.22  | 196.3 ± 4.96  | n = 3   | [AXA] Abaxis Piccolo                       |
| 237.0 ± 5.92  | 116.2 ± 2.64  | 37.5 ± 1.70   | 133.0 ± 3.94  | 234.2 ± 6.49  | n = 22  | [ABJ] Abbott Architect c System            |
| 201.0 ± 4.60  | 94.3 ± 1.37   | 25.3 ± 1.37   | 108.6 ± 1.02  | 198.0 ± 0.90  | n = 3   | [AWA] Alfa Wassermann ACE Alera            |
| 207.2 ± 5.31  | 101.1 ± 2.77  | 34.3 ± 1.17   | 115.8 ± 3.03  | 204.7 ± 5.17  | n = 69  | [OLC] Beckman Coulter AU Chemistry System  |
| 226.2 ± 6.55  | 113.1 ± 1.35  | 38.3 ± 1.57   | 130.6 ± 3.41  | 223.8 ± 5.73  | n = 15  | [BCG] Beckman Coulter UniCel DxC 600       |
| 228.4 ± 3.11  | 113.1 ± 2.06  | 39.4 ± 1.35   | 132.3 ± 2.14  | 226.0 ± 3.74  | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 259.9 ± 3.72  | 123.2 ± 1.51  | 52.6 ± 4.14   | 146.2 ± 3.49  | 260.3 ± 4.92  | n = 8   | [JJE] Ortho Vitros 250/350/950             |
| 254.9 ± 8.31  | 120.4 ± 3.87  | 52.7 ± 3.37   | 139.5 ± 3.63  | 252.3 ± 7.58  | n = 3   | [JJH] Ortho Vitros 4600                    |
| 259.0 ± 6.77  | 123.0 ± 4.15  | 53.6 ± 3.82   | 143.2 ± 4.76  | 255.6 ± 6.87  | n = 12  | [JJF] Ortho Vitros 5,1FS                   |
| 259.0 ± 6.77  | 123.6 ± 4.57  | 53.4 ± 4.35   | 143.5 ± 3.26  | 256.7 ± 5.30  | n = 20  | [JJG] Ortho Vitros 5600                    |
| 226.0 ± 4.71  | 109.6 ± 1.37  | 35.0 ± 1.00   | 126.8 ± 1.55  | 222.2 ± 2.85  | n = 5   | [ROJ] Roche cobas c311                     |
| 229.4 ± 5.82  | 110.8 ± 2.47  | 36.2 ± 0.81   | 128.4 ± 2.98  | 227.3 ± 5.86  | n = 31  | [ROC] Roche cobas c501                     |
| 225.2 ± 5.53  | 109.7 ± 3.01  | 34.9 ± 1.82   | 126.7 ± 3.87  | 225.0 ± 3.19  | n = 8   | [ROH] Roche cobas c701                     |
| 229.1 ± 8.89  | 113.0 ± 7.53  | 35.4 ± 1.63   | 130.1 ± 5.87  | 231.0 ± 13.36 | n = 6   | [ROS] Roche Cobas INTEGRA 400              |
| 219.5 ± 3.90  | 106.1 ± 2.33  | 34.0 ± 1.14   | 123.0 ± 2.25  | 215.8 ± 4.91  | n = 4   | [ROT] Roche Cobas INTEGRA 800              |
| 226.1 ± 4.02  | 110.5 ± 2.48  | 35.9 ± 1.32   | 126.6 ± 2.69  | 223.7 ± 4.05  | n = 17  | [ROD] Roche MODULAR D/P                    |
| 242.9 ± 5.93  | 119.3 ± 2.74  | 38.9 ± 1.72   | 137.7 ± 3.07  | 240.4 ± 4.78  | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 242.6 ± 5.58  | 120.1 ± 5.72  | 40.2 ± 4.89   | 136.5 ± 2.74  | 239.2 ± 4.89  | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 240.9 ± 4.15  | 117.8 ± 2.06  | 37.4 ± 1.94   | 137.0 ± 2.93  | 239.0 ± 3.79  | n = 25  | [DUE] Siemens Dimension EXL                |
| 241.6 ± 4.30  | 123.2 ± 5.07  | 43.1 ± 5.96   | 142.0 ± 4.62  | 240.1 ± 4.13  | n = 13  | [DUR] Siemens Dimension RxL                |
| 235.2 ± 4.72  | 115.2 ± 2.09  | 36.6 ± 1.54   | 134.1 ± 2.45  | 233.1 ± 4.21  | n = 42  | [DUT] Siemens Dimension Vista              |
| 240.3 ± 3.67  | 120.6 ± 4.54  | 40.3 ± 4.89   | 139.5 ± 4.00  | 239.2 ± 3.28  | n = 12  | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 201.6 ± 4.72  | 101.8 ± 1.54  | 37.2 ± 1.54   | 117.3 ± 4.22  | 196.3 ± 4.96  | n = 3   | [AX1] Abaxis                               |
| 237.0 ± 5.92  | 116.2 ± 2.64  | 37.5 ± 1.70   | 133.0 ± 3.94  | 234.2 ± 6.49  | n = 22  | [AB1] Abbott                               |
| 201.0 ± 4.60  | 94.3 ± 1.37   | 25.3 ± 1.37   | 108.6 ± 1.02  | 198.0 ± 0.90  | n = 3   | [AW1] Alfa Wassermann                      |
| 227.3 ± 5.17  | 113.0 ± 1.79  | 38.6 ± 1.76   | 131.4 ± 2.90  | 224.9 ± 5.00  | n = 29  | [BC1] Beckman Coulter                      |
| 207.1 ± 5.25  | 101.1 ± 2.73  | 34.4 ± 1.18   | 115.7 ± 2.93  | 204.5 ± 5.11  | n = 65  | [OL1] Beckman Coulter AU Series            |
| 259.1 ± 6.28  | 123.0 ± 4.11  | 53.2 ± 4.09   | 143.7 ± 4.25  | 256.9 ± 6.07  | n = 43  | [JJ1] Ortho Clinical Diagnostics           |
| 228.0 ± 5.85  | 110.4 ± 2.53  | 35.9 ± 1.20   | 127.7 ± 3.09  | 225.8 ± 5.43  | n = 47  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 226.1 ± 4.02  | 110.5 ± 2.48  | 35.9 ± 1.32   | 126.6 ± 2.69  | 223.7 ± 4.05  | n = 17  | [R02] Roche Hitachi and Modular D/P        |
| 224.3 ± 8.24  | 108.8 ± 5.25  | 34.8 ± 1.60   | 126.7 ± 5.89  | 223.8 ± 12.89 | n = 10  | [R01] Roche Integra and MIRA               |
| 242.4 ± 6.41  | 119.0 ± 3.13  | 38.8 ± 1.71   | 137.3 ± 3.23  | 239.9 ± 5.19  | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 238.5 ± 5.28  | 117.1 ± 3.70  | 37.0 ± 1.82   | 136.2 ± 4.02  | 236.6 ± 5.16  | n = 91  | [DA5] Siemens Dimension                    |



## Summary of Participant Performance (Mean and Standard Deviation)

## Aspartate Aminotransferase (U/L 37°C)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 266.3 ± 19.34 | 194.3 ± 14.27 | 80.1 ± 5.55   | 143.3 ± 10.82 | 265.4 ± 19.86 | n = 358 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 259.0 ± 4.60  | 190.0 ± 3.58  | 80.7 ± 1.37   | 144.0 ± 3.61  | 257.9 ± 2.86  | n = 3   | [AXA] Abaxis Piccolo                       |
| 269.5 ± 6.21  | 196.8 ± 5.33  | 80.6 ± 2.01   | 143.3 ± 3.95  | 268.4 ± 7.09  | n = 22  | [ABJ] Abbott Architect c System            |
| 253.3 ± 3.16  | 185.3 ± 0.51  | 74.3 ± 2.26   | 134.5 ± 5.40  | 253.0 ± 1.80  | n = 3   | [AWA] Alfa Wassermann ACE Alera            |
| 238.2 ± 8.50  | 173.6 ± 6.24  | 72.4 ± 2.67   | 129.0 ± 5.11  | 236.3 ± 8.35  | n = 68  | [OLC] Beckman Coulter AU Chemistry System  |
| 261.8 ± 7.02  | 194.5 ± 5.29  | 80.8 ± 2.31   | 146.9 ± 4.34  | 260.5 ± 8.37  | n = 15  | [BCG] Beckman Coulter UniCel DxC 600       |
| 262.0 ± 6.06  | 193.0 ± 5.41  | 81.0 ± 1.34   | 145.0 ± 3.20  | 261.3 ± 6.84  | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 306.7 ± 11.00 | 221.4 ± 8.47  | 90.6 ± 3.61   | 170.2 ± 9.43  | 314.4 ± 13.22 | n = 8   | [JJE] Ortho Vitros 250/350/950             |
| 309.1 ± 9.28  | 222.5 ± 5.43  | 92.1 ± 2.05   | 168.6 ± 4.72  | 308.8 ± 9.49  | n = 3   | [JJH] Ortho Vitros 4600                    |
| 302.5 ± 7.04  | 218.1 ± 6.14  | 89.5 ± 2.55   | 164.9 ± 4.77  | 300.7 ± 7.32  | n = 12  | [JJF] Ortho Vitros 5,1FS                   |
| 306.3 ± 11.16 | 220.2 ± 6.95  | 89.7 ± 2.92   | 166.2 ± 5.98  | 304.0 ± 9.93  | n = 20  | [JJG] Ortho Vitros 5600                    |
| 274.2 ± 4.48  | 201.9 ± 2.60  | 81.6 ± 1.09   | 147.8 ± 2.27  | 273.0 ± 3.91  | n = 5   | [ROJ] Roche cobas c311                     |
| 272.7 ± 7.74  | 200.3 ± 5.69  | 81.4 ± 2.18   | 146.5 ± 4.80  | 271.1 ± 8.31  | n = 31  | [ROC] Roche cobas c501                     |
| 270.8 ± 3.46  | 198.2 ± 5.71  | 81.3 ± 1.89   | 146.0 ± 3.21  | 270.0 ± 4.76  | n = 7   | [ROH] Roche cobas c701                     |
| 267.8 ± 6.87  | 195.3 ± 3.68  | 80.1 ± 2.88   | 143.3 ± 2.41  | 266.1 ± 6.44  | n = 6   | [ROS] Roche Cobas INTEGRA 400              |
| 266.2 ± 3.07  | 193.8 ± 3.21  | 79.5 ± 1.22   | 142.9 ± 2.35  | 264.3 ± 4.02  | n = 4   | [ROT] Roche Cobas INTEGRA 800              |
| 263.9 ± 7.74  | 191.8 ± 4.95  | 79.8 ± 1.82   | 141.4 ± 3.40  | 262.4 ± 6.64  | n = 17  | [ROD] Roche MODULAR D/P                    |
| 284.5 ± 5.31  | 209.5 ± 4.07  | 86.5 ± 1.77   | 154.9 ± 2.42  | 283.4 ± 4.69  | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 286.0 ± 8.11  | 210.0 ± 7.27  | 87.2 ± 3.23   | 154.4 ± 3.87  | 284.0 ± 6.37  | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 262.7 ± 4.35  | 190.2 ± 3.16  | 79.0 ± 2.13   | 140.3 ± 2.97  | 263.2 ± 4.43  | n = 25  | [DUE] Siemens Dimension EXL                |
| 267.8 ± 8.62  | 192.6 ± 5.37  | 79.4 ± 2.97   | 141.3 ± 3.70  | 267.6 ± 9.20  | n = 13  | [DUR] Siemens Dimension RxL                |
| 267.3 ± 6.23  | 193.4 ± 4.74  | 78.5 ± 2.47   | 141.6 ± 3.39  | 266.2 ± 5.65  | n = 42  | [DUT] Siemens Dimension Vista              |
| 265.8 ± 4.72  | 192.6 ± 3.27  | 79.9 ± 1.89   | 141.6 ± 2.61  | 267.1 ± 6.62  | n = 12  | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 259.0 ± 4.60  | 190.0 ± 3.58  | 80.7 ± 1.37   | 144.0 ± 3.61  | 257.9 ± 2.86  | n = 3   | [AX1] Abaxis                               |
| 269.5 ± 6.21  | 196.8 ± 5.33  | 80.6 ± 2.01   | 143.3 ± 3.95  | 268.4 ± 7.09  | n = 22  | [AB1] Abbott                               |
| 253.3 ± 3.16  | 185.3 ± 0.51  | 74.3 ± 2.26   | 134.5 ± 5.40  | 253.0 ± 1.80  | n = 3   | [AW1] Alfa Wassermann                      |
| 261.9 ± 6.84  | 193.9 ± 5.58  | 80.7 ± 2.06   | 146.1 ± 3.90  | 260.9 ± 8.05  | n = 29  | [BC1] Beckman Coulter                      |
| 237.9 ± 8.14  | 173.4 ± 5.95  | 72.2 ± 2.55   | 128.8 ± 4.91  | 236.1 ± 7.98  | n = 64  | [OL1] Beckman Coulter AU Series            |
| 305.4 ± 10.06 | 219.9 ± 7.10  | 89.9 ± 2.97   | 166.4 ± 6.34  | 304.7 ± 10.50 | n = 43  | [JJ1] Ortho Clinical Diagnostics           |
| 272.9 ± 6.68  | 200.3 ± 5.27  | 81.4 ± 1.93   | 146.8 ± 4.20  | 271.4 ± 7.17  | n = 47  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 263.9 ± 7.74  | 191.8 ± 4.95  | 79.8 ± 1.82   | 141.4 ± 3.40  | 262.4 ± 6.64  | n = 17  | [R02] Roche Hitachi and Modular D/P        |
| 267.1 ± 5.37  | 194.6 ± 3.56  | 79.7 ± 2.15   | 143.1 ± 2.41  | 265.2 ± 5.36  | n = 10  | [R01] Roche Integra and MIRA               |
| 284.3 ± 6.22  | 209.2 ± 4.90  | 86.4 ± 2.19   | 154.7 ± 2.81  | 283.4 ± 5.24  | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 265.8 ± 6.36  | 192.2 ± 4.48  | 79.0 ± 2.45   | 141.2 ± 3.26  | 265.6 ± 6.29  | n = 92  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

 $\alpha$ -Amylase (U/L 37°C)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 62.9 ± 8.60   | 513.5 ± 96.17 | 46.4 ± 7.29   | 187.0 ± 28.71 | 63.0 ± 8.97   | n = 311 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 63.7 ± 2.10   | 572.0 ± 13.98 | 57.1 ± 4.33   | 204.5 ± 4.19  | 63.4 ± 1.42   | n = 20  | [ABJ] Abbott Architect c System            |
| 48.2 ± 2.76   | 440.5 ± 23.24 | 36.0 ± 2.43   | 156.4 ± 8.86  | 47.9 ± 2.78   | n = 55  | [OLC] Beckman Coulter AU Chemistry System  |
| 70.6 ± 1.48   | 542.5 ± 4.84  | 52.2 ± 0.79   | 200.2 ± 1.38  | 70.1 ± 1.77   | n = 12  | [BCG] Beckman Coulter UniCel DxC 600       |
| 70.7 ± 1.32   | 545.6 ± 10.85 | 52.3 ± 1.36   | 200.4 ± 2.70  | 70.9 ± 1.19   | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 69.4 ± 3.68   | 303.1 ± 4.37  | 51.7 ± 3.19   | 136.4 ± 5.75  | 70.5 ± 1.07   | n = 6   | [JJE] Ortho Vitros 250/350/950             |
| 71.7 ± 3.37   | 310.9 ± 8.08  | 52.0 ± 4.60   | 136.7 ± 7.67  | 71.4 ± 2.56   | n = 3   | [JJH] Ortho Vitros 4600                    |
| 71.3 ± 5.01   | 312.8 ± 8.92  | 53.2 ± 3.47   | 137.4 ± 5.88  | 74.1 ± 3.72   | n = 10  | [JJF] Ortho Vitros 5,1FS                   |
| 72.4 ± 4.53   | 311.5 ± 10.02 | 53.3 ± 4.67   | 138.5 ± 7.52  | 72.2 ± 5.41   | n = 20  | [JJG] Ortho Vitros 5600                    |
| 68.0 ± 0.75   | 502.5 ± 9.50  | 50.2 ± 0.41   | 188.5 ± 1.23  | 68.5 ± 0.57   | n = 4   | [ROJ] Roche cobas c311                     |
| 67.9 ± 0.89   | 500.4 ± 6.64  | 49.7 ± 0.93   | 186.8 ± 3.02  | 67.8 ± 0.91   | n = 27  | [ROC] Roche cobas c501                     |
| 67.0 ± 0.90   | 498.4 ± 5.58  | 48.7 ± 0.51   | 184.3 ± 1.37  | 66.3 ± 0.51   | n = 3   | [ROG] Roche cobas c502                     |
| 67.3 ± 0.51   | 499.2 ± 8.71  | 49.4 ± 1.02   | 186.3 ± 3.07  | 67.7 ± 0.51   | n = 3   | [ROH] Roche cobas c701                     |
| 68.7 ± 0.82   | 504.7 ± 6.16  | 50.7 ± 0.45   | 188.9 ± 2.70  | 68.6 ± 0.82   | n = 4   | [ROS] Roche Cobas INTEGRA 400              |
| 67.7 ± 0.90   | 494.9 ± 4.76  | 49.0 ± 1.14   | 183.8 ± 1.96  | 67.5 ± 0.57   | n = 4   | [ROT] Roche Cobas INTEGRA 800              |
| 67.4 ± 1.15   | 494.7 ± 5.93  | 49.4 ± 1.29   | 184.8 ± 2.12  | 67.6 ± 1.40   | n = 16  | [ROD] Roche MODULAR D/P                    |
| 69.1 ± 1.28   | 523.4 ± 13.07 | 50.5 ± 1.02   | 195.6 ± 3.88  | 69.3 ± 1.17   | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 69.3 ± 1.37   | 529.6 ± 10.79 | 51.0 ± 0.90   | 197.3 ± 4.96  | 69.6 ± 1.02   | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 60.6 ± 1.16   | 624.2 ± 9.84  | 43.3 ± 1.34   | 217.8 ± 3.61  | 60.3 ± 0.95   | n = 22  | [DUE] Siemens Dimension EXL                |
| 60.1 ± 1.58   | 624.8 ± 11.77 | 42.6 ± 1.30   | 218.5 ± 4.25  | 60.2 ± 1.45   | n = 11  | [DUR] Siemens Dimension RxL                |
| 57.2 ± 1.28   | 600.1 ± 8.52  | 40.6 ± 0.79   | 209.3 ± 3.85  | 57.3 ± 1.06   | n = 42  | [DUT] Siemens Dimension Vista              |
| 60.6 ± 1.30   | 631.7 ± 3.12  | 43.0 ± 0.82   | 219.7 ± 1.15  | 61.2 ± 0.66   | n = 7   | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 63.7 ± 2.10   | 572.0 ± 13.98 | 57.1 ± 4.33   | 204.5 ± 4.19  | 63.4 ± 1.42   | n = 20  | [AB1] Abbott                               |
| 70.6 ± 1.16   | 545.9 ± 7.98  | 51.9 ± 1.18   | 200.7 ± 2.45  | 71.1 ± 1.77   | n = 11  | [BC1] Beckman Coulter                      |
| 48.1 ± 2.64   | 439.3 ± 22.26 | 36.1 ± 2.40   | 156.0 ± 8.46  | 47.8 ± 2.72   | n = 52  | [OL1] Beckman Coulter AU Series            |
| 70.5 ± 1.63   | 540.6 ± 5.18  | 52.5 ± 0.92   | 200.2 ± 2.02  | 70.4 ± 0.83   | n = 13  | [BC2] Beckman Coulter IFCC Standardized    |
| 71.4 ± 4.77   | 310.2 ± 9.56  | 52.7 ± 4.31   | 137.4 ± 7.11  | 72.4 ± 4.80   | n = 40  | [JJ1] Ortho Clinical Diagnostics           |
| 67.8 ± 0.86   | 500.2 ± 6.62  | 49.7 ± 0.91   | 186.9 ± 2.85  | 67.8 ± 0.93   | n = 39  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 67.5 ± 1.21   | 495.3 ± 6.22  | 49.5 ± 1.32   | 185.0 ± 2.10  | 67.8 ± 1.52   | n = 17  | [R02] Roche Hitachi and Modular D/P        |
| 68.2 ± 1.04   | 499.2 ± 7.60  | 49.9 ± 1.15   | 186.2 ± 3.57  | 68.0 ± 0.91   | n = 8   | [R01] Roche Integra and MIRA               |
| 69.1 ± 1.34   | 523.1 ± 14.28 | 50.5 ± 1.12   | 195.5 ± 4.51  | 69.3 ± 1.21   | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 58.8 ± 2.20   | 612.5 ± 16.98 | 41.8 ± 1.68   | 213.9 ± 6.14  | 58.8 ± 2.07   | n = 82  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## Alkaline Phosphatase (U/L 37°C)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 122.4 ± 13.69 | 519.8 ± 55.44 | 40.5 ± 6.16   | 239.6 ± 24.87 | 122.5 ± 13.98 | n = 357 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 104.3 ± 2.26  | 431.0 ± 0.90  | 37.7 ± 4.96   | 202.5 ± 2.74  | 101.4 ± 1.02  | n = 3   | [AXA] Abaxis Piccolo                       |
| 121.7 ± 4.91  | 530.1 ± 21.12 | 40.7 ± 1.77   | 245.1 ± 8.47  | 122.0 ± 4.22  | n = 22  | [ABJ] Abbott Architect c System            |
| 116.6 ± 2.56  | 525.8 ± 9.43  | 39.4 ± 1.02   | 264.0 ± 42.00 | 116.4 ± 1.02  | n = 3   | [AWA] Alfa Wassermann ACE Alera            |
| 106.8 ± 6.08  | 471.2 ± 25.38 | 35.0 ± 2.28   | 217.2 ± 12.48 | 106.8 ± 6.50  | n = 68  | [OLC] Beckman Coulter AU Chemistry System  |
| 104.8 ± 4.51  | 463.3 ± 19.67 | 34.2 ± 1.51   | 212.7 ± 8.31  | 104.7 ± 4.09  | n = 15  | [BCG] Beckman Coulter UniCel DxC 600       |
| 109.2 ± 2.24  | 486.2 ± 10.65 | 36.0 ± 0.00   | 220.4 ± 4.37  | 110.1 ± 2.44  | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 143.4 ± 8.10  | 492.4 ± 19.09 | 56.4 ± 4.55   | 235.0 ± 17.47 | 145.3 ± 10.56 | n = 8   | [JJE] Ortho Vitros 250/350/950             |
| 137.5 ± 5.40  | 473.5 ± 19.87 | 55.9 ± 2.05   | 219.5 ± 4.61  | 138.1 ± 4.38  | n = 3   | [JJH] Ortho Vitros 4600                    |
| 136.8 ± 5.04  | 480.3 ± 21.21 | 54.5 ± 2.43   | 221.2 ± 7.53  | 139.6 ± 4.57  | n = 12  | [JJF] Ortho Vitros 5,1FS                   |
| 138.7 ± 5.52  | 481.6 ± 20.29 | 54.8 ± 3.40   | 222.8 ± 12.04 | 139.0 ± 6.05  | n = 20  | [JJG] Ortho Vitros 5600                    |
| 118.2 ± 1.55  | 513.4 ± 6.67  | 39.6 ± 0.55   | 237.6 ± 2.07  | 118.7 ± 1.61  | n = 5   | [ROJ] Roche cobas c311                     |
| 119.1 ± 2.84  | 511.5 ± 15.99 | 39.7 ± 1.58   | 238.2 ± 7.32  | 118.7 ± 3.48  | n = 31  | [ROC] Roche cobas c501                     |
| 115.5 ± 3.48  | 495.8 ± 5.24  | 37.6 ± 1.13   | 231.6 ± 4.46  | 116.9 ± 3.67  | n = 8   | [ROH] Roche cobas c701                     |
| 118.3 ± 1.99  | 524.0 ± 12.27 | 38.1 ± 0.98   | 242.8 ± 9.03  | 118.9 ± 1.13  | n = 5   | [ROS] Roche Cobas INTEGRA 400              |
| 119.7 ± 2.65  | 532.5 ± 14.93 | 38.3 ± 1.58   | 243.8 ± 6.05  | 118.6 ± 3.54  | n = 4   | [ROT] Roche Cobas INTEGRA 800              |
| 117.1 ± 2.72  | 498.6 ± 9.28  | 38.8 ± 1.51   | 233.9 ± 4.79  | 117.0 ± 2.95  | n = 16  | [ROD] Roche MODULAR D/P                    |
| 131.1 ± 3.66  | 584.0 ± 14.75 | 42.8 ± 1.86   | 266.2 ± 6.58  | 131.4 ± 3.69  | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 131.7 ± 4.22  | 577.5 ± 14.51 | 43.9 ± 2.86   | 263.5 ± 3.63  | 129.8 ± 1.54  | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 129.0 ± 3.96  | 572.8 ± 14.15 | 42.2 ± 2.55   | 261.9 ± 5.31  | 129.0 ± 2.78  | n = 25  | [DUE] Siemens Dimension EXL                |
| 139.9 ± 10.65 | 581.3 ± 18.66 | 53.5 ± 9.36   | 273.0 ± 15.18 | 140.0 ± 9.44  | n = 13  | [DUR] Siemens Dimension RxL                |
| 133.8 ± 4.84  | 592.6 ± 19.83 | 42.7 ± 2.00   | 270.0 ± 10.44 | 133.3 ± 4.98  | n = 42  | [DUT] Siemens Dimension Vista              |
| 130.5 ± 6.93  | 571.4 ± 17.40 | 44.4 ± 6.10   | 262.5 ± 10.45 | 130.3 ± 7.20  | n = 12  | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 104.3 ± 2.26  | 431.0 ± 0.90  | 37.7 ± 4.96   | 202.5 ± 2.74  | 101.4 ± 1.02  | n = 3   | [AX1] Abaxis                               |
| 121.7 ± 4.91  | 530.1 ± 21.12 | 40.7 ± 1.77   | 245.1 ± 8.47  | 122.0 ± 4.22  | n = 22  | [AB1] Abbott                               |
| 116.6 ± 2.56  | 525.8 ± 9.43  | 39.4 ± 1.02   | 264.0 ± 42.00 | 116.4 ± 1.02  | n = 3   | [AW1] Alfa Wassermann                      |
| 106.8 ± 4.30  | 472.1 ± 20.45 | 35.0 ± 1.71   | 215.8 ± 8.43  | 107.1 ± 4.64  | n = 29  | [BC1] Beckman Coulter                      |
| 106.7 ± 6.00  | 471.0 ± 25.24 | 35.0 ± 2.28   | 217.2 ± 12.40 | 106.7 ± 6.44  | n = 64  | [OL1] Beckman Coulter AU Series            |
| 138.7 ± 6.12  | 482.6 ± 21.04 | 55.0 ± 3.34   | 223.0 ± 11.09 | 139.5 ± 6.07  | n = 43  | [JJ1] Ortho Clinical Diagnostics           |
| 118.5 ± 3.03  | 510.1 ± 15.49 | 39.4 ± 1.57   | 237.3 ± 7.00  | 118.4 ± 3.41  | n = 47  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 117.1 ± 2.72  | 498.6 ± 9.28  | 38.8 ± 1.51   | 233.9 ± 4.79  | 117.0 ± 2.95  | n = 16  | [R02] Roche Hitachi and Modular D/P        |
| 119.1 ± 2.34  | 528.9 ± 13.37 | 38.3 ± 1.26   | 243.5 ± 7.25  | 119.2 ± 1.93  | n = 10  | [R01] Roche Integra and MIRA               |
| 130.8 ± 4.17  | 581.5 ± 17.13 | 42.8 ± 2.12   | 265.2 ± 7.15  | 130.9 ± 3.82  | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 132.5 ± 6.48  | 582.7 ± 20.77 | 42.7 ± 2.42   | 266.9 ± 10.94 | 132.3 ± 6.22  | n = 92  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

 $\gamma$ -Glutamyltransferase (U/L 37°C)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 209.6 ± 47.49 | 131.4 ± 30.44 | 24.0 ± 5.25   | 134.6 ± 31.62 | 208.8 ± 48.40 | n = 289 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 217.4 ± 12.46 | 135.2 ± 6.73  | 24.4 ± 1.32   | 139.3 ± 8.05  | 217.1 ± 11.85 | n = 14  | [ABJ] Abbott Architect c System            |
| 163.6 ± 8.01  | 101.8 ± 5.34  | 20.2 ± 1.19   | 104.5 ± 5.39  | 162.7 ± 7.64  | n = 60  | [OLC] Beckman Coulter AU Chemistry System  |
| 211.9 ± 6.82  | 131.8 ± 4.01  | 19.7 ± 0.59   | 134.0 ± 3.36  | 210.6 ± 5.92  | n = 13  | [BCG] Beckman Coulter UniCel DxC 600       |
| 213.6 ± 5.41  | 134.0 ± 2.54  | 19.8 ± 0.65   | 136.9 ± 2.34  | 213.9 ± 4.80  | n = 9   | [BCH] Beckman Coulter UniCel DxC 800       |
| 347.1 ± 5.35  | 221.3 ± 10.69 | 30.3 ± 2.77   | 233.7 ± 13.19 | 358.1 ± 20.12 | n = 5   | [JJE] Ortho Vitros 250/350/950             |
| 336.0 ± 5.48  | 209.7 ± 2.26  | 28.7 ± 1.37   | 218.0 ± 3.58  | 334.6 ± 5.58  | n = 3   | [JJH] Ortho Vitros 4600                    |
| 330.7 ± 14.25 | 205.4 ± 10.52 | 29.5 ± 1.65   | 215.4 ± 8.75  | 328.5 ± 15.56 | n = 10  | [JJF] Ortho Vitros 5,1FS                   |
| 328.6 ± 11.35 | 204.3 ± 6.37  | 28.5 ± 1.23   | 215.2 ± 7.69  | 327.4 ± 10.48 | n = 20  | [JJG] Ortho Vitros 5600                    |
| 184.0 ± 4.60  | 114.6 ± 3.12  | 20.8 ± 0.86   | 117.7 ± 3.00  | 183.1 ± 5.25  | n = 25  | [ROC] Roche cobas c501                     |
| 185.7 ± 3.62  | 116.7 ± 1.58  | 21.2 ± 0.41   | 117.1 ± 2.04  | 185.0 ± 4.18  | n = 4   | [ROG] Roche cobas c502                     |
| 179.3 ± 2.69  | 112.2 ± 0.41  | 20.0 ± 1.76   | 115.7 ± 0.90  | 179.5 ± 2.30  | n = 4   | [ROH] Roche cobas c701                     |
| 184.4 ± 1.02  | 115.0 ± 0.90  | 20.3 ± 0.51   | 118.6 ± 1.02  | 184.8 ± 2.36  | n = 3   | [ROS] Roche Cobas INTEGRA 400              |
| 182.9 ± 2.86  | 114.0 ± 1.80  | 19.0 ± 0.90   | 117.0 ± 0.90  | 182.4 ± 1.02  | n = 3   | [ROT] Roche Cobas INTEGRA 800              |
| 187.6 ± 3.67  | 116.3 ± 2.25  | 20.0 ± 1.22   | 119.0 ± 2.05  | 186.7 ± 2.69  | n = 15  | [ROD] Roche MODULAR D/P                    |
| 202.2 ± 5.25  | 125.3 ± 4.19  | 23.3 ± 1.79   | 128.9 ± 3.94  | 201.3 ± 5.92  | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 208.8 ± 2.36  | 131.0 ± 0.90  | 25.6 ± 1.02   | 133.6 ± 1.02  | 208.5 ± 1.86  | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 241.0 ± 3.72  | 153.8 ± 3.54  | 34.2 ± 1.81   | 156.9 ± 2.90  | 241.5 ± 3.35  | n = 18  | [DUE] Siemens Dimension EXL                |
| 241.7 ± 4.43  | 154.4 ± 2.68  | 34.1 ± 1.56   | 157.3 ± 2.57  | 241.6 ± 4.91  | n = 8   | [DUR] Siemens Dimension RxL                |
| 243.7 ± 4.30  | 152.5 ± 2.74  | 28.4 ± 2.32   | 156.3 ± 3.30  | 243.2 ± 4.55  | n = 39  | [DUT] Siemens Dimension Vista              |
| 240.3 ± 0.90  | 151.6 ± 1.64  | 34.3 ± 0.82   | 156.5 ± 2.17  | 237.9 ± 2.33  | n = 4   | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 216.1 ± 12.16 | 134.5 ± 6.67  | 24.3 ± 1.12   | 138.5 ± 8.01  | 216.0 ± 11.84 | n = 13  | [AB1] Abbott                               |
| 212.9 ± 6.24  | 133.0 ± 3.57  | 19.8 ± 0.66   | 135.5 ± 3.32  | 212.4 ± 5.83  | n = 24  | [BC1] Beckman Coulter                      |
| 163.5 ± 8.03  | 101.7 ± 5.32  | 20.2 ± 1.23   | 104.4 ± 5.40  | 162.6 ± 7.69  | n = 58  | [OL1] Beckman Coulter AU Series            |
| 332.3 ± 13.30 | 206.5 ± 9.08  | 28.9 ± 1.61   | 216.9 ± 8.79  | 330.5 ± 13.75 | n = 38  | [JJ1] Ortho Clinical Diagnostics           |
| 183.3 ± 4.45  | 114.4 ± 2.88  | 20.8 ± 0.88   | 117.2 ± 2.69  | 182.6 ± 4.80  | n = 37  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 187.6 ± 3.67  | 116.3 ± 2.25  | 20.0 ± 1.22   | 119.0 ± 2.05  | 186.7 ± 2.69  | n = 15  | [R02] Roche Hitachi and Modular D/P        |
| 184.5 ± 0.84  | 114.6 ± 1.44  | 19.7 ± 0.97   | 117.8 ± 1.22  | 183.2 ± 1.77  | n = 6   | [R01] Roche Integra and MIRA               |
| 202.9 ± 5.76  | 126.0 ± 4.49  | 23.7 ± 2.07   | 129.6 ± 3.97  | 202.1 ± 6.46  | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 242.5 ± 4.32  | 153.0 ± 2.97  | 31.0 ± 3.79   | 156.6 ± 3.08  | 242.2 ± 4.41  | n = 69  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## Creatine Kinase (U/L 37°C)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|---------------|---------------|---------|--------------------------------------------|
| 235.5 ± 19.22 | 329.5 ± 23.65 | 91.1 ± 8.69   | 325.7 ± 23.27 | 229.0 ± 19.18 | n = 325 | [---] All Methods & Instruments            |
| <Instruments> |               |               |               |               |         |                                            |
| 248.4 ± 8.51  | 344.2 ± 10.78 | 96.1 ± 2.65   | 345.2 ± 10.55 | 241.8 ± 9.51  | n = 21  | [ABJ] Abbott Architect c System            |
| 205.0 ± 13.27 | 295.1 ± 15.57 | 75.6 ± 4.53   | 296.5 ± 16.95 | 200.1 ± 13.28 | n = 62  | [OLC] Beckman Coulter AU Chemistry System  |
| 257.2 ± 9.14  | 347.0 ± 8.91  | 99.3 ± 2.57   | 323.4 ± 7.31  | 250.5 ± 7.68  | n = 13  | [BCG] Beckman Coulter UniCel DxC 600       |
| 251.9 ± 7.91  | 342.6 ± 8.35  | 99.8 ± 2.02   | 320.3 ± 9.37  | 247.8 ± 6.31  | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 218.2 ± 20.04 | 318.3 ± 28.14 | 86.1 ± 6.66   | 291.5 ± 39.61 | 206.3 ± 25.30 | n = 5   | [JJE] Ortho Vitros 250/350/950             |
| 240.5 ± 8.26  | 354.0 ± 9.95  | 96.7 ± 2.26   | 323.8 ± 8.59  | 232.4 ± 3.87  | n = 3   | [JJH] Ortho Vitros 4600                    |
| 233.4 ± 12.40 | 345.0 ± 13.42 | 92.0 ± 5.68   | 313.1 ± 12.36 | 224.1 ± 10.33 | n = 11  | [JJF] Ortho Vitros 5,1FS                   |
| 230.3 ± 12.79 | 337.7 ± 16.58 | 92.2 ± 3.60   | 314.3 ± 16.36 | 222.7 ± 11.69 | n = 20  | [JJG] Ortho Vitros 5600                    |
| 248.3 ± 17.15 | 359.7 ± 18.48 | 92.3 ± 0.90   | 359.4 ± 20.12 | 238.9 ± 15.24 | n = 4   | [ROJ] Roche cobas c311                     |
| 252.2 ± 8.38  | 360.8 ± 10.65 | 91.2 ± 2.27   | 363.1 ± 9.86  | 243.8 ± 10.04 | n = 31  | [ROC] Roche cobas c501                     |
| 250.1 ± 10.21 | 358.5 ± 6.96  | 91.7 ± 2.65   | 355.0 ± 10.02 | 241.8 ± 9.42  | n = 4   | [ROG] Roche cobas c502                     |
| 245.2 ± 2.11  | 328.2 ± 2.69  | 96.6 ± 1.09   | 332.0 ± 1.76  | 239.6 ± 1.91  | n = 5   | [ROH] Roche cobas c701                     |
| 259.2 ± 4.11  | 360.5 ± 4.53  | 98.5 ± 1.86   | 365.0 ± 9.95  | 251.9 ± 7.44  | n = 3   | [ROS] Roche Cobas INTEGRA 400              |
| 245.7 ± 13.31 | 350.2 ± 14.01 | 87.3 ± 4.22   | 346.2 ± 14.88 | 228.5 ± 11.83 | n = 3   | [ROT] Roche Cobas INTEGRA 800              |
| 242.1 ± 8.62  | 330.0 ± 6.84  | 96.0 ± 3.21   | 331.1 ± 10.03 | 236.5 ± 9.94  | n = 16  | [ROD] Roche MODULAR D/P                    |
| 228.5 ± 6.72  | 334.7 ± 5.99  | 81.1 ± 1.99   | 336.3 ± 10.15 | 222.6 ± 7.15  | n = 20  | [BYE] Siemens ADVIA 1800                   |
| 222.1 ± 13.31 | 328.3 ± 14.17 | 82.5 ± 3.63   | 331.3 ± 14.91 | 247.8 ± 71.54 | n = 3   | [BYB] Siemens ADVIA 2400                   |
| 240.6 ± 9.71  | 325.9 ± 5.54  | 94.8 ± 2.86   | 330.9 ± 8.62  | 235.3 ± 10.03 | n = 22  | [DUE] Siemens Dimension EXL                |
| 240.6 ± 7.15  | 326.1 ± 8.38  | 95.1 ± 2.78   | 330.6 ± 10.68 | 234.7 ± 8.32  | n = 13  | [DUR] Siemens Dimension RxL                |
| 239.0 ± 6.30  | 321.1 ± 8.14  | 94.7 ± 2.02   | 325.7 ± 7.73  | 233.9 ± 6.89  | n = 41  | [DUT] Siemens Dimension Vista              |
| 239.9 ± 5.50  | 321.7 ± 10.66 | 94.3 ± 3.02   | 330.0 ± 6.22  | 230.9 ± 10.86 | n = 7   | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |               |               |         |                                            |
| 248.4 ± 8.51  | 344.2 ± 10.78 | 96.1 ± 2.65   | 345.2 ± 10.55 | 241.8 ± 9.51  | n = 21  | [AB1] Abbott                               |
| 253.0 ± 11.68 | 343.6 ± 10.42 | 99.5 ± 2.40   | 319.7 ± 12.58 | 249.0 ± 8.71  | n = 28  | [BC1] Beckman Coulter                      |
| 204.5 ± 13.41 | 294.9 ± 16.14 | 75.5 ± 4.54   | 296.3 ± 17.57 | 199.7 ± 13.41 | n = 58  | [OL1] Beckman Coulter AU Series            |
| 231.1 ± 14.31 | 339.9 ± 18.59 | 92.1 ± 4.82   | 314.3 ± 16.01 | 223.4 ± 11.95 | n = 39  | [JJ1] Ortho Clinical Diagnostics           |
| 249.8 ± 10.75 | 355.2 ± 18.02 | 92.1 ± 2.95   | 355.9 ± 18.89 | 241.9 ± 10.50 | n = 46  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 242.1 ± 8.62  | 330.0 ± 6.84  | 96.0 ± 3.21   | 331.1 ± 10.03 | 236.5 ± 9.94  | n = 16  | [R02] Roche Hitachi and Modular D/P        |
| 256.3 ± 4.59  | 356.6 ± 11.47 | 93.3 ± 6.71   | 356.8 ± 15.86 | 241.1 ± 15.52 | n = 6   | [R01] Roche Integra and MIRA               |
| 227.3 ± 8.18  | 333.4 ± 8.70  | 81.0 ± 2.29   | 334.8 ± 11.65 | 221.0 ± 9.09  | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 239.8 ± 7.73  | 323.4 ± 8.67  | 94.8 ± 2.44   | 328.2 ± 8.94  | 234.3 ± 8.55  | n = 79  | [DA5] Siemens Dimension                    |
| 236.9 ± 3.00  | 320.9 ± 3.52  | 92.8 ± 1.27   | 325.5 ± 4.60  | 230.7 ± 6.47  | n = 4   | [DA6] Siemens Dimension LOCI               |

## Summary of Participant Performance (Mean and Standard Deviation)

## Creatine Kinase-MB (ng/mL, U/L 37°C, %)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19 | Specimen: C20 | Number  | [Code] Instrument or Reagent System           |
|---------------|---------------|---------------|---------------|---------------|---------|-----------------------------------------------|
| 17.92 ± 2.55  | 28.20 ± 4.18  | 0.68 ± 0.30   | 25.11 ± 3.68  | 17.72 ± 2.53  | n = 187 | [-A-] All Methods – Results reported as ng/mL |
| 17.13 ± 1.16  | 25.61 ± 1.77  | 1.05 ± 1.27   | 22.95 ± 0.95  | 17.06 ± 0.89  | n = 21  | [AB1] Abbott                                  |
| 20.20 ± 1.04  | 33.38 ± 2.01  | 0.76 ± 0.05   | 28.81 ± 1.23  | 19.75 ± 0.99  | n = 14  | [SAA] Beckman Coulter ACCESS                  |
| 20.50 ± 0.97  | 33.72 ± 1.40  | 0.78 ± 0.06   | 29.58 ± 1.44  | 20.31 ± 1.14  | n = 14  | [BC1] Beckman Coulter UniCel                  |
| 13.92 ± 0.68  | 21.87 ± 1.19  | 0.45 ± 0.08   | 19.01 ± 0.97  | 13.59 ± 0.74  | n = 22  | [JJ1] Ortho Clinical Diagnostics              |
| 20.09 ± 0.96  | 29.69 ± 1.32  | 0.96 ± 0.07   | 27.76 ± 1.04  | 19.96 ± 0.85  | n = 29  | [R03] Roche Elecsys/Modular E/e601/e411       |
| 19.25 ± 1.16  | 30.32 ± 1.62  | 0.32 ± 0.27   | 26.56 ± 1.16  | 18.91 ± 1.01  | n = 30  | [BY1] Siemens ADVIA/ADVIA Centaur             |
| 16.37 ± 1.03  | 27.98 ± 2.43  | 0.59 ± 0.30   | 23.99 ± 1.77  | 15.97 ± 0.90  | n = 26  | [DA5] Siemens Dimension                       |
| 16.49 ± 0.84  | 25.01 ± 1.12  | 0.83 ± 0.22   | 22.69 ± 0.81  | 16.29 ± 0.88  | n = 24  | [DA6] Siemens Dimension LOCI                  |
| 20.90 ± 0.23  | 35.15 ± 0.29  | 0.95 ± 0.17   | 29.50 ± 1.14  | 21.25 ± 0.40  | n = 2   | [TOM] Tosoh                                   |
| 18.01 ± 1.39  | 27.80 ± 3.15  | 1.64 ± 1.27   | 27.25 ± 5.17  | 17.65 ± 3.09  | n = 8   | [-B-] All Methods – Results reported as U/L   |
| 6.04 ± 3.80   | 8.36 ± 1.67   | 0.00 ± 0.00   | 7.41 ± 1.78   | 6.94 ± 3.04   | n = 5   | [-P-] All Methods – Results reported as %     |
| 4.24 ± 4.10   | 8.00 ± 1.80   | 0.00 ± 0.00   | 6.53 ± 1.86   | 5.52 ± 3.63   | n = 3   | [HL1] Helena Laboratories                     |

## Summary of Participant Performance (Mean and Standard Deviation)

## Lactate Dehydrogenase (U/L 37°C)

| Specimen: C16 | Specimen: C17 | Specimen: C18 | Specimen: C19  | Specimen: C20 | Number  | [Code] Instrument or Reagent System        |
|---------------|---------------|---------------|----------------|---------------|---------|--------------------------------------------|
| 197.0 ± 18.34 | 240.5 ± 24.62 | 75.3 ± 7.83   | 543.7 ± 54.59  | 195.5 ± 18.73 | n = 264 | [-A-] All Methods - Lactate to Pyruvate    |
| 507.0 ± 18.87 | 599.7 ± 22.23 | 202.2 ± 20.17 | 1398.7 ± 44.76 | 511.8 ± 24.58 | n = 38  | [-B-] All Methods Pyruvate to Lactate      |
| <Instruments> |               |               |                |               |         |                                            |
| 207.6 ± 7.12  | 248.2 ± 8.62  | 79.9 ± 4.81   | 568.7 ± 13.20  | 203.6 ± 7.80  | n = 20  | [ABJ] Abbott Architect c System            |
| 174.8 ± 9.63  | 210.7 ± 10.77 | 66.4 ± 4.16   | 485.6 ± 27.06  | 172.6 ± 9.48  | n = 60  | [OLC] Beckman Coulter AU Chemistry System  |
| 168.5 ± 3.81  | 202.4 ± 5.40  | 64.2 ± 2.66   | 451.0 ± 14.42  | 168.2 ± 4.06  | n = 14  | [BCG] Beckman Coulter UniCel DxC 600       |
| 169.1 ± 6.16  | 203.8 ± 5.88  | 64.2 ± 3.65   | 451.7 ± 14.51  | 168.6 ± 6.59  | n = 10  | [BCH] Beckman Coulter UniCel DxC 800       |
| 516.1 ± 14.49 | 599.4 ± 6.75  | 203.2 ± 6.72  | 1425.5 ± 39.15 | 516.3 ± 6.62  | n = 6   | [JJE] Ortho Vitros 250/350/950             |
| 503.1 ± 11.54 | 608.5 ± 31.91 | 226.0 ± 20.73 | 1393.5 ± 25.48 | 504.8 ± 23.11 | n = 3   | [JJH] Ortho Vitros 4600                    |
| 504.0 ± 23.96 | 591.1 ± 9.35  | 201.7 ± 15.25 | 1382.5 ± 49.42 | 504.4 ± 17.58 | n = 10  | [JJF] Ortho Vitros 5,1FS                   |
| 507.7 ± 20.06 | 599.3 ± 23.28 | 199.4 ± 21.71 | 1392.9 ± 39.06 | 511.9 ± 26.29 | n = 20  | [JJG] Ortho Vitros 5600                    |
| 204.5 ± 2.83  | 256.2 ± 3.07  | 79.8 ± 0.41   | 571.0 ± 6.72   | 205.8 ± 2.11  | n = 4   | [ROJ] Roche cobas c311                     |
| 204.7 ± 5.86  | 254.5 ± 7.17  | 78.3 ± 2.28   | 569.1 ± 18.06  | 203.3 ± 6.00  | n = 26  | [ROC] Roche cobas c501                     |
| 201.8 ± 1.96  | 249.9 ± 4.10  | 77.3 ± 2.02   | 557.5 ± 5.42   | 200.3 ± 2.47  | n = 4   | [ROG] Roche cobas c502                     |
| 199.8 ± 1.46  | 247.7 ± 2.02  | 77.6 ± 1.90   | 559.4 ± 7.05   | 197.9 ± 6.15  | n = 4   | [ROH] Roche cobas c701                     |
| 206.5 ± 4.53  | 250.1 ± 7.95  | 80.2 ± 4.11   | 567.0 ± 9.06   | 204.4 ± 4.72  | n = 3   | [ROT] Roche Cobas INTEGRA 800              |
| 203.6 ± 3.47  | 251.2 ± 4.42  | 78.4 ± 1.89   | 570.0 ± 8.84   | 203.7 ± 4.59  | n = 17  | [ROD] Roche MODULAR D/P                    |
| 204.3 ± 4.51  | 248.7 ± 5.88  | 79.5 ± 2.28   | 549.0 ± 12.66  | 204.3 ± 5.01  | n = 21  | [BYE] Siemens ADVIA 1800                   |
| 206.9 ± 8.71  | 257.2 ± 8.66  | 77.6 ± 4.46   | 589.0 ± 14.44  | 206.7 ± 8.79  | n = 18  | [DUE] Siemens Dimension EXL                |
| 211.4 ± 8.78  | 259.8 ± 8.80  | 79.0 ± 5.04   | 599.0 ± 19.41  | 212.6 ± 8.53  | n = 7   | [DUR] Siemens Dimension RxL                |
| 210.0 ± 5.96  | 256.7 ± 6.96  | 81.1 ± 3.76   | 581.4 ± 16.34  | 208.2 ± 4.56  | n = 42  | [DUT] Siemens Dimension Vista              |
| 208.5 ± 1.23  | 255.3 ± 4.37  | 76.8 ± 1.89   | 577.9 ± 10.59  | 206.6 ± 6.10  | n = 5   | [DUX] Siemens Dimension Xpand              |
| <Reagents>    |               |               |                |               |         |                                            |
| 207.6 ± 7.12  | 248.2 ± 8.62  | 79.9 ± 4.81   | 568.7 ± 13.20  | 203.6 ± 7.80  | n = 20  | [AB1] Abbott                               |
| 168.6 ± 4.47  | 203.0 ± 5.41  | 64.2 ± 3.05   | 452.3 ± 14.23  | 168.6 ± 4.88  | n = 27  | [BC1] Beckman Coulter                      |
| 174.9 ± 9.33  | 210.8 ± 10.49 | 66.3 ± 4.11   | 485.8 ± 26.58  | 172.6 ± 9.34  | n = 57  | [OL1] Beckman Coulter AU Series            |
| 507.6 ± 20.16 | 598.2 ± 20.99 | 202.5 ± 18.57 | 1396.2 ± 43.05 | 510.6 ± 23.02 | n = 39  | [JJ1] Ortho Clinical Diagnostics           |
| 204.2 ± 5.46  | 253.9 ± 6.96  | 78.5 ± 2.28   | 566.8 ± 15.31  | 203.2 ± 5.90  | n = 40  | [R04] Roche cobas c311/c501/c502/c701/c702 |
| 203.6 ± 3.47  | 251.2 ± 4.42  | 78.4 ± 1.89   | 570.0 ± 8.84   | 203.7 ± 4.59  | n = 17  | [R02] Roche Hitachi and Modular D/P        |
| 208.1 ± 3.66  | 253.6 ± 7.25  | 81.1 ± 2.80   | 567.7 ± 6.93   | 207.2 ± 3.78  | n = 5   | [R01] Roche Integra and MIRA               |
| 204.2 ± 5.07  | 248.7 ± 6.10  | 79.3 ± 2.38   | 548.1 ± 13.05  | 203.8 ± 5.25  | n = 24  | [BY1] Siemens ADVIA/ADVIA Centaur          |
| 209.4 ± 6.98  | 257.1 ± 7.50  | 79.9 ± 4.39   | 584.9 ± 16.57  | 208.2 ± 6.29  | n = 70  | [DA5] Siemens Dimension                    |

## Summary of Participant Performance (Mean and Standard Deviation)

## LDH Isoenzyme 1 (%)

| Specimen: C16<br>----- | Specimen: C17<br>----- | Specimen: C18<br>----- | Specimen: C19<br>----- | Specimen: C20<br>----- | Number<br>----- | [Code] Instrument or Reagent System<br>----- |
|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------|----------------------------------------------|
| 35.0 ± 3.77            | 64.0 ± 1.57            | 38.5 ± 5.24            | 32.7 ± 1.24            | 34.8 ± 2.55            | n = 8           | [-P-] All Methods – Results reported as %    |
| 38.0 ± 2.88            | 63.3 ± 0.90            | 42.6 ± 2.64            | 33.2 ± 0.41            | 36.7 ± 1.58            | n = 4           | <Instruments>                                |
| 32.4 ± 1.91            | 65.2 ± 1.88            | 34.8 ± 3.48            | 31.7 ± 1.53            | 32.9 ± 1.54            | n = 4           | [HLS] Helena SPIFE                           |
|                        |                        |                        |                        |                        |                 | [SEE] Sebia Electrophoresis                  |
| 38.0 ± 2.88            | 63.3 ± 0.90            | 42.6 ± 2.64            | 33.2 ± 0.41            | 36.7 ± 1.58            | n = 4           | <Reagents>                                   |
| 32.4 ± 1.91            | 65.2 ± 1.88            | 34.8 ± 3.48            | 31.7 ± 1.53            | 32.9 ± 1.54            | n = 4           | [HL1] Helena Laboratories                    |
|                        |                        |                        |                        |                        |                 | [SE1] Sebia                                  |