



## **Educational Discussion: Testosterone and FSH**

### **2018-B Accuracy-Based Testosterone and Estradiol (ABS)**

The challenges in this Survey spanned a broad physiological concentration range for testosterone and FSH. Samples were derived from pooled serum of two patients:

- |        |  |
|--------|--|
| ABS-04 | Two men in their 70's                      |
| ABS-05 | Two men aged in their mid-50's to mid-70's |
| ABS-06 | Two women in their 30's                    |

Testosterone results remain poorly standardized, despite the efforts of the CDC. ABS-06 had a reference value of 26.0 ng/dL, as might be seen in pre- or post-menopausal adult women. While most peer group means and medians were fairly close to the assigned concentration, the Beckman UniCel DxI results exceeded the reference method by more than two-fold. Yet, at the much higher testosterone concentrations seen in ABS-04 and ABS-05, the Beckman method yielded some of the lowest results. In contrast, Abbott Architect results exceeded the ABS-04 and ABS-05 reference measurements by 15 to 30%. The results for ABS-05 were surprisingly high (reference value of 1518 ng/dL, given the ages of the donors. This concentration substantially exceeds the upper limit of normal for many published reference intervals. Also striking was the spread of Abbott Architect results at the higher challenges.

FSH results ranged from near the limit of detection to high concentrations typically seen in post-menopausal women, with all method means ranging from 0.28 to 22.25 IU/L. What is most remarkable is the relative harmonization across so many methods and laboratories, with all method coefficients of variation <10% for the two higher challenges.

Darryl Palmer-Toy, MD, PhD, FCAP  
Accuracy Based Testing Committee