



**MEMORANDUM #134**

TO: UNCHCS Attending Physicians, Housestaff, Department Heads and Supervisors

FROM: *NKS* Nichole Korpi-Steiner, PhD  
Interim Director, Core Laboratory

*CK* Christian Cristobal, MT(ASCP)  
Assistant Administrative Director, Core Laboratory

*SA* Sascha A. Tuchman, MD, MHS  
Director, Multiple Myeloma and Amyloidosis Program

*HC* Herbert C. Whinna, MD, PhD  
Medical Director, McLendon Clinical Laboratories

**SUBJECT: Changes to Serum Free Light Chain and Beta-2-Microglobulin Testing**

DATE: February 24, 2017

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Effective March 6<sup>th</sup> 2017, serum free light chain (free kappa, free lambda) and beta-2-microglobulin testing will be performed using a new analyzer platform and the current analyzer will subsequently be retired. The decision to change analyzer platforms is due to the availability of enhanced quality assurance features (e.g. minimizing carryover interferences) on the new analyzer for patient safety.

Impact on patient free Kappa, free Lambda and beta-2-microglobulin testing:

- Reference ranges will not change for free Kappa, free Lambda and beta-2-microglobulin.

Analyte	Reference Range
Free Kappa Light Chains	0.33 - 1.94 mg/dL
Free Lambda Light Chains	0.57 - 2.63 mg/dL
Kappa/Lambda Ratio	0.26 - 1.65
Beta2-Microglobulin	0.87 - 2.34 mg/L

- Patient beta-2-microglobulin values will be minimally affected.
- Patients with free Kappa and/or free Lambda values >10 mg/dL and corresponding calculated K/L ratio will have lower values due to analytical bias. **Re-baseline testing will be performed for patients with measured free Kappa and/or free Lambda**

**values >10 mg/dL.** New analyzer results will be reported in EPIC under Results Review with current analyzer results reported as comments. Re-baseline testing will be performed for 2 months (ending April 30, 2017).

Analytical changes in measured values using the new analyzer compared with current analyzer are described below:

- A negative proportional bias in measured free Kappa and free Lambda values. There are minimal differences in measured free Kappa and free Lambda values  $\leq 10$  mg/dL. The negative bias is more evident at higher free Kappa and free Lambda ( $> 10$  mg/dL) concentrations which subsequently change the calculated free Kappa/free Lambda (K/L) ratio. Linear regression analyses demonstrate:  
[New analyzer free Kappa] = 0.7598[Current analyzer free Kappa] + 0.7546;  $R^2 = 0.9998$   
[New analyzer free Lambda] = 0.8318[Current analyzer free Lambda] + 0.3388;  $R^2 = 0.9989$   
[New calculated K/L ratio] = 0.7281[Current calculated K/L ratio] + 0.5;  $R^2 = 0.9596$
- Minimal differences in measured beta-2-microglobulin values across the clinical reportable range (0.87 – 19.8 mg/L). Linear regression analysis demonstrates:  
[New analyzer B2M] = 1.0009[Current analyzer B2M] + 0.466;  $R^2 = 0.9924$

If you have any questions related to these changes, please contact the Core/Special Chemistry Laboratory at 984-974-1415 or Dr. Korpi-Steiner at 984-974-1498.