**To:** Dartmouth Health Providers Utilizing Thyroglobulin Testing

**From:** K. Aaron Geno, PhD, DABCC, Assistant Director for Clinical Chemistry

**Date:** December 20, 2024

**Re:** Delayed Thyroglobulin Testing by LCMS at ARUP Laboratories

**Situation**

Serum/plasma thyroglobulin testing by liquid chromatography with mass spectrometry (LCMS) at ARUP Laboratories (“ARUP”) is on delay through December 31 and may be delayed further.

**Background**

The orderable thyroglobulin test (LAB533) is sent to ARUP. Samples are tested for thyroglobulin antibodies (TgAb) and reflex to the appropriate thyroglobulin measurement depending upon antibody concentration. Samples with TgAb values below the reference limit reflex to immunoassay, while those with TgAb values above the reference limit reflex to LCMS, which is resistant to antibody interference. LCMS thyroglobulin testing has been delayed since October 25, 2024. ARUP’s initial estimated return to testing, November 30, was extended to December 16. It has now been extended to December 31. Due to the prolonged delay, we want to present providers who monitor thyroglobulin with alternatives.

**Assessment**

Mayo Clinic Labs perform the same immunoassays as ARUP, making these results comparable. However, we do not have experience with the Mayo LCMS assay, and there may be differences in the numbers generated by the laboratories’ respective LCMS measurements. Owing to this unknown, we will not be able to assist in interpreting potential differences in numeric concentrations between ARUP and Mayo reported values for thyroglobulin measured by LCMS.

**Recommendations**

1. **Patients without history of thyroglobulin antibodies**

Patients may be tested by either laboratory at provider discretion. The orderable test will permit easier trending of values in eDH, but if the patient has become TgAb-positive since their last testing, testing will reflex to the LCMS testing on delay.

1. **Patients with history of undetectable measurements by LCMS**

It may be reasonable to send to Mayo for measurement. If the result remains undetectable, interpretation is straightforward. If a measurable result returns, follow-up testing at a shorter interval with Mayo is suggested for trending until the ARUP method returns to service.

1. **Patients with history of detectable but stable measurements by LCMS**

This is the most likely population to see differences in results. If testing is needed prior to ARUP resumption, monitor at shorter intervals with the Mayo assay until assured that values have remained stable until the ARUP method returns to service.

To order testing at Mayo, please place a miscellaneous order (LAB3715). Suggested wording: “Thyroglobulin at Mayo, do not re-order for ARUP.” If patients will be collected at DHMC or in the CGPs, you can alert the Chemistry Director on call at pager 8139 or contact the Mailouts section at 5-8093 if desired. Providers at other sites should contact their laboratories to establish a workflow.

**For questions or additional information, please contact:**

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