To: Participating Physicians and Healthcare Providers

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Date: June 2, 2023

RE: Introducing high sensitivity (hs) troponin assay and algorithm

Beginning June 6, 2023, troponin testing will be performed using the high sensitivity assay on the automated Abbott Alinity instrument at the Chemistry Laboratories of both Kent Hospital and Women & Infants Hospital. This assay offers the advantages of a lower limit of detection (<3 ng/L), sex specific reference ranges (<14 ng/L female; <35 ng/L male), and a clinical testing algorithm to allow for rapid rule out of acute coronary syndrome (shown below).

The new troponin assay is ordered as *hs troponin* or as an *ACS PowerPlan* that includes testing at baseline, 2 and 4 hours according to the algorithm developed with laboratory guidelines, published clinical studies, and local cardiology and emergency care physician leaders. The algorithm is available when ordering in the *PowerPlan/Order Set*. Once acute coronary syndrome is ruled out or ruled in, any subsequent unnecessary troponin tests in the series should be canceled by the ordering provider.

Note that the unit of reporting is <u>ng/L</u> for hs troponin, and this differs from the unit previously used for the contemporary troponin assay. The critical values for hs troponin are 64 ng/L, as well as delta values of 10 ng/L (2 hour) and 15 ng/L (4 hour).

Laminated copies of the algorithm will be available to assist you with conversion to this new test. To request a copy or for other questions, please call the Chemistry Lab at Kent Hospital (401-737-7000, x31384) or Women & Infants Hospital (direct: 401-430-1239 or 401-274-1122, x41239).

Use **ACS Power Plan** and place hs Troponin orders Draw 1st hs Troponin AND calculate Heart Baseline (time 0) Discharge Heart YES Initial hs Troponin is < 4 ng/L with more than 3 hours of YES Home Score symptoms 0-3 NO NO Draw 2nd hs Troponin 2 Hours after First Draw "Rule OUT" "Intermediate" "Rule IN" hs Troponin < 14 ng/L hs Troponin 14 -63 ng/L hs Troponin ≥ 64 ng/L **FEMALE**^T **FEMALE**^T "OR" hs Troponin < 35 ng/L hs Troponin 35 -63 ng/L MALE T Change in Values "Delta" **MALE**^T "AND" \triangle hs Troponin ≥ 10 ng/L "OR" Change in Values "Delta" Change in Values "Delta" \triangle hs Troponin \leq 5 ng/L \triangle hs Troponin >5 to <10 ng/L Admit to $^{\scriptscriptstyle \sf T}$ For gender indeterminant, use of Hospital female reference data is Draw <u>3rd</u> hs Troponin recommended. 4 Hours after First Draw "Rule IN" hs Troponin ≥ 64 ng/L "Intermediate" "Rule OUT" Same Criteria as used after 2 nd draw Same criteria as used aftern2 draw "OR" Change in Values "Delta" \triangle hs Troponin \ge 15 ng/L **Clinical Decision needed**

hs-Troponin results should be used with other diagnostic information, patient symptoms and clinical judgement as an aid in the diagnosis of acute coronary syndrome.

Adapted from ESC Guidelines, European Heart Journal, 2020 and Hughes et al., Clinical Biochem. 2023.

A critical value of \geq 64 ng/L or delta \geq 10 ng/L at 2 hours or delta \geq 15 ng/L at 4 hours will be called.

