

This memo is also serving as McLendon Labs Numbered Memo: Core #170

June 21, 2021

TO: UNC Medical Center Epic users

FROM: Patricia Chang, MD (Director of UNC Heart Failure Program)

Steve Cotten, PhD (Director of UNC Automated Chemistry and Critical Care Testing)

RE: Conversion of NTproBNP to BNP lab assay on July 13, 2021, at UNC Medical Center

Because McLendon Labs is standardizing in-house lab testing to the Siemens instrument, the BNP assay will replace the NT-proBNP (“proBNP”) assay as the only in-house natriuretic peptide assay at UNC Medical Center. As a result, NT-proBNP orders will automatically be replaced by BNP when ordered as a single test or as part of any existing orderset. However, NT-proBNP is still available as a send-out test (it will be sent to UNC Rex Hospital laboratory with a 24 hour turnaround time), as needed. If you want to still be able to order NT-proBNP 7/13/21 onward (as a send-out), **add NT-proBNP to your personal preference list prior to 7/13/21**. This document provides a general guide for interpreting BNP values with the following main points:

- As first described in the [original BNP Study in 2002](#), the accepted cutoff for the diagnosis of heart failure in patients presenting for acute care with dyspnea is 100 pg/ml which, unlike NTproBNP, is not age-dependent.
- Correlating BNP and NT-proBNP values is challenging, as there is no simple or reliable conversion ratio of NT-proBNP to BNP. A [recent PARADIGM-HF substudy published in 2020](#) suggests that the ratio of NT-proBNP to BNP may be approximately 6:1, but this ratio varies according to rhythm (atrial fibrillation), age, renal function, and BMI. Figure 1 from this study (copied on the right) demonstrates the 2020 study’s correlation of the two natriuretic peptide results ($r^2 \sim 0.5$). Furthermore, the analytical concordance is very poor on an individual patient level, as noted in this [2018 study](#).
- BNP interpretation should also be taken with caution in patients who are receiving Sacubitril-Valsartan (Entresto) therapy. As summarized in this [2019 discussion](#) about the BNP vs NT-proBNP testing with concomitant sacubitril-valsartan therapy, an increase in BNP level can be expected as a therapeutic effect based on this medication’s pharmacologic mechanism, thus may not accurately reflect the patient’s volume status. In addition, change in BNP level pre and post Sacubitril-Valsartan therapy typically will not accurately reflect therapeutic response to this drug especially over the first few months of therapy.
- Clinicians should continue to use BNP similar to how they use NT-proBNP, as the [2017 AHA/ACC/HFSA Heart Failure Guidelines](#) suggest (Figure 1): for purposes of diagnosis, prognosis, thus management of patient with heart failure (HF) or suspected HF.

