The Laboratory Services Reform Programme
Enhanced Community Care Programme
National Heart Programme

ADVICE NOTE

NT-proBNP Testing Guidance

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Clinical Practice Guidance Document Cover Sheet

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The Laboratory Services Reform Programme offers the following advice:

1.1 Advice for Laboratory Users

1. Measurement of the NT-proBNP level in a blood sample is useful in the evaluation of adult patients **with clinical features** that may be caused by heart disease.

2. The following are the national criteria for direct GP access to testing for NT-proBNP:
   - Suspected new onset heart failure;
   - Existing heart failure with suspected deterioration.
     (It will not always be necessary to check NT-proBNP in every case. Patients with acute decompensated heart failure will require urgent referral to AMU/ED and checking NT-proBNP is not likely to change pre-hospital management. The main indication for NT-proBNP testing in suspected deterioration of HF is where there is a co-morbidity (e.g. COPD) where symptoms of deterioration are similar. A stable NT-proBNP suggests HF is not the cause of the deterioration, whereas a rise of >30% from baseline makes HF the more likely cause.)
   - One NT-proBNP test will be facilitated per GP Structured Chronic Disease Management registration visit for type 2 diabetes, ischemic heart disease or atrial fibrillation to aid in risk stratification.

3. Testing for NT-proBNP may also be requested based on certain other clinical indications which should be specified on the request form.

4. Serial testing of NT-proBNP levels is not useful for most patients with cardiac failure. Of particular note, there is no role for serial NT-proBNP testing in assessing response to treatment.

5. Testing for NT-proBNP is not recommended in the absence of a specific clinical indication.

6. Results of NT-proBNP must be interpreted in the context of the clinical indication for testing.

7. In a symptomatic patient an NT-proBNP result of less than 125ng/L makes a diagnosis of cardiac failure unlikely.

8. In a symptomatic patient an NT-proBNP result of more than 400ng/L makes a diagnosis of cardiac failure more likely and further investigation should be considered.

9. Elevation of the measured NT-proBNP value above the reference range does not establish a diagnosis of heart failure and is not of itself an indication for further investigation. For example in healthy males over 70 years of age levels may exceed 1200ng/L in 2 to 3 % of people.

1.2 Advice for Laboratories

1. Measurement of NT-proBNP levels should be performed when relevant and legible clinical details and requestor identification are provided on the request (electronic or paper) accompanying the sample and the sample received is suitable for analysis.

2. The appropriate unit for reporting of NT-proBNP is ng/L.

3. Laboratories should communicate to laboratory users the specific indications for testing for NT-proBNP accepted by the laboratory taking account of the advice to laboratory users outlined earlier in this document.

4. To the greatest extent practical requests for testing for NT-proBNP that do not conform to the laboratory requirements specified including the provision of relevant legible clinical details should be rejected.

5. There are significant practical challenges in implementing a process to manage requests in the absence of electronic ordering. Providing users with a specific list of terms such as indicated above that must be legible on a request form for acceptance of the sample for testing has been used effectively in some laboratories. Some laboratories may use a specific request form for NT-proBNP that helps to remind the requestor of the requirements.

6. If samples are rejected, a report should issue to the effect that testing for NT-proBNP was not performed because the criteria for testing were not met.

7. In so far as practical with the available laboratory information system laboratories should consider adding a comment to reports on NT-proBNP to guide interpretation taking account of the National Guidelines. (Laboratory Testing for Natriuretic Peptides (NP)-BNP / NT-proBNP) and other available evidence.

2 Background

NT-proBNP is a peptide present in blood. It is a useful biomarker in assessing patients with relevant clinical features of heart failure. Increased blood levels of NT-proBNP are associated with acute and with chronic heart failure.

The National Heart Programme Model of Care in Heart Failure advises the following:

NT-proBNP <400 ng/L – HF unlikely; consider other causes
NT-proBNP >400 ng/L – HF possible; refer for Echocardiography
NT-proBNP >2000 ng/L – Urgent referral for Echocardiography and specialist review

Even in the absence of symptoms or signs of heart failure, an elevated value of NT-proBNP still indicates heightened CV risk and advice is to focus on tight risk factor control, in particular hypertension management.

NT-proBNP levels can be influenced by factors other than heart failure. Levels can be increased related to advanced age, renal disease and a number of other factors. Results should be interpreted in the context of other clinical features. As with many test results minor variation of the measured value from the reference range may not be clinically significant.

Note on Terminology

A reference range is quoted by laboratories on reports of many test results. In the past this was often referred to incorrectly as a “normal range”. In general the reference range is defined in relation to the values observed in a readily accessible group of healthy people who provide samples, or from the

literature. In some cases different reference ranges may be specified for those who have identified as men and women or for paediatric settings. A reference range is a guide to interpretation. A value outside of the reference range is not always “abnormal” for that person and may not be a cause for concern. A value outside of the reference range may be physiological for some people. It may be expected in relation to age, medication or known medical condition. Equally, a value within the reference range may be abnormal for some people. In each case clinical judgement is required in applying the result of a diagnostic test result to the individual’s clinical circumstances.

3 References

1. Laboratory Testing for Natriuretic Peptides (NP)-BNP / NT-proBNP. (www.hse.ie>ncps>pathology>resources)
2. Model of Care for Heart Failure – HSE National Heart Programme, 2021 https://www.hse.ie/eng/about/who/cspd/icp/chronic-disease/moc/national-heart-failure-model-of-care-2021.pdf

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