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### **Economic evaluation of the effects of routine use of NT-proBNP in general practice in North Denmark Region**

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**Background:** Chronic heart failure (CHF) causes dyspnea, edema and unusual tiredness and may be difficult to diagnose. NT-proBNP is a peptide which can effectively be used to exclude CHF in general practice and may substitute echocardiography as first-line investigation.

**Aim:** The aim of the study was to investigate from a health perspective the costs and consequences associated with routine use of NT-proBNP in general practice prior to echocardiography in secondary healthcare.

**Method:** A cost-effectiveness analysis (CEA) was performed using the software TreeAge Pro Healthcare 2015 estimating the costs and effect as the number of saved echocardiographs in secondary healthcare following the introduction of NT-proBNP in general practice. The CEA was based on a population of 95 patients recruited from 11 general practices in the North Denmark Region of whom 15 % had CHF. Age specific cut-off values for NT-proBNP were used: 50 ng/L for patients < 50 years, 75 ng/L for 50-75 years, and 250 ng/L for patients 75+ years. The study included an estimation of implementing NT-proBNP in all general practices in The North Denmark Region.

**Results:** The analysis showed expected costs of €208 and €271 based on the patient population for NT-proBNP investigation method and current primary healthcare, respectively. With NT-proBNP 65 % of the patients were referred to echocardiographs compared to 100 % of the patients with current practice. The incremental cost-effectiveness ratio (ICER) estimated that The North Denmark Region can save approximately €63 pr. patient with reduction of echocardiographs with 35 %. The ICER indicated that NT-proBNP investigation was preferable in relation to cost-effectiveness. It was estimated that The North Denmark Region totally can save €122.930 including 685 echocardiographs per year if implementing NT-proBNP.

**Conclusion:** The use of NT-proBNP in general practice is a cost-effective tool in order to detect and eliminate CHF in Region Nordjylland.

**Cooperation:** Roche Diagnostics, Nord-KAP, Biochemical department at Aalborg University Hospital, Cardiology department at Aalborg University