Improving the diagnostic process for breathlessness in primary care Protocol for global implementation of "Breathlessness diagnostics in a Box" (BiaB)





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1. Introduction to BiaB

Breathlessness is a common reason for consulting a general practitioner (GP). It is a symptom of various conditions, making it difficult to determine its cause. This hampers optimal treatment. There is a lack of quick and easy tests in primary care to diagnose the cause of breathlessness.

Looking for general practices to collaborate on this study!

Vision cardiopulmonary pathway optimisation

Undiagnosed Diagnostic phase

Diagnosed (but uncontrolled)

Management phase



"Breathlessness diagnostics in a Box" (BiaB) is an easy and reliable tool to support healthcare professionals (HCPs) with fast diagnostic procedures for breathlessness. BiaB fits within a bigger picture to optimise the cardiopulmonary pathway (Figure 1).

In 2023, a pilot study was conducted with 122 patients from 5 Dutch GP practices to design and test BiaB. Based on the pilot study, updates were implemented to the box.

2. Objectives of the study

- To evaluate whether the implementation of BiaB shortens time to diagnosis of breathlessness
- To evaluate whether the implementation of BiaB increases the number of new diagnoses of COPD and heart disease

Figure 1: BiaB within the vision for cardiopulmonary pathway optimisation

3. Study design

To investigate implementation of BiaB, a stepped-wedge design will be conducted in 3 countries (The United Kingdom, The Netherlands, and Spain), with 15 GP practices and 300 patients per country. A phased timing of BiaB implementation per practice will be used (Figure 2). The design includes a baseline period, a transition period, and an implementation period. Each practice will actively participate in the study for 40 weeks.

• To demonstrate usability and efficiency of BiaB



4. The BiaB box

During the implementation period HCPs will use BiaB during patient consultations/diagnostic workup. The BiaB box contains questionnaires, point of care tests (NTproBNP, D-dimer, pulse oximeter), an oscillometer +



spirometer, and an ECG device (Figure 3).

The BiaB algorithm, developed by the GPRI team in collaboration with the international scientific advisory board, uses input from these tests to support the HCP with the interpretation of test results and generates the BiaB report.

The population will consist of patients with undiagnosed dyspnea, or patients with existing conditions that could cause breathlessness but who have residual or increasing breathlessness potentially caused by other undetected diseases.

5. Key takeaway

 BiaB is an easy and quick tool to support HCPs with fast execution of diagnostic procedures required to diagnose the cause(s) of breathlessness.

The clinical value of BiaB use in shortening time to diagnosis is currently being investigated in a multinational study with a stepped-wedge design that is now starting up.

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BiaB, or want to

know more?

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code!

