



Healthcare
Improvement
Scotland

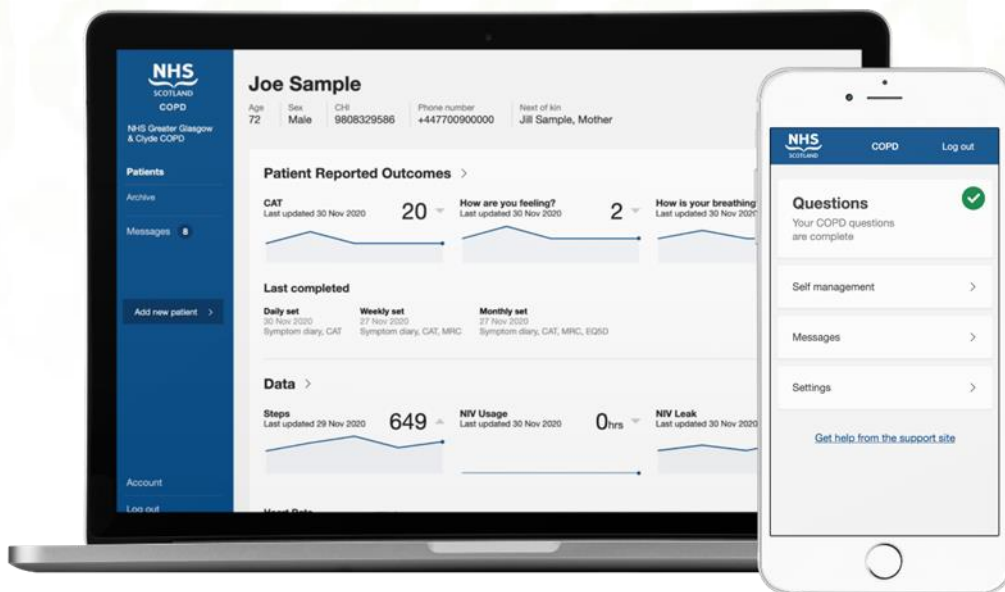
SHTG
Advice on health
technologies

Innovative Medical Technology Overview: Plain Language Summary

IMTO 02-21

February 2021

NHSScotland COPD Support Service: remote and self-management of high-risk patients with COPD using a web app and machine learning predictive modelling.



What is COPD?

Chronic obstructive pulmonary disease (COPD) is a collection of long-term lung diseases that restricts the flow of air from the lungs. Symptoms include breathlessness, cough, mucus production and wheezing.

What is the NHSScotland COPD Support Service?

The NHSScotland COPD Support Service is delivered through a web app (accessed using a smart device) and is used to help people with COPD self-manage their condition. People with COPD complete short questionnaires on the web app and can track any changes in their condition. They can communicate with their clinician via a chat function and can act on any changes as they happen.

What is innovative?

The team running the service is also developing a way to predict which patients are likely to have a flare up of their COPD, be admitted to hospital and their risk of dying within a year. This is called 'machine learning predictive modelling', and it is not yet ready for the clinicians to use.

What we did

We evaluated the available evidence about the performance of the web app. This was limited to the results from the first trial of the web app which was stopped early to enable use of the web app by the whole of NHS Greater Glasgow and Clyde during the COVID-19 pandemic.

What we found

We found that people who were in the trial used the web app regularly and completed the questionnaires several times a week. We also found that using the web app appeared to reduce the likelihood of admission to hospital, number of days spent in hospital and the need to be seen by a clinician at home, compared with patients from previous years who did not use the web app. These results were however from a small group of people with COPD (83) and from a testing period of 10 months.

What did we consider when developing this IMTO?

We considered the potential impact that the NHSScotland COPD Support Service could have on NHSScotland. This included the potential benefits for people with COPD, costs or savings for NHSScotland associated with the NHSScotland COPD Support Service, and how easy it would be to implement the NHSScotland COPD Support Service across the whole of NHSScotland.

What are our conclusions?

Use of the web app seemed to have a positive benefit for some people with COPD, who are high risk, compared with not using it, but these results were from a small group. Continued assessment of the NHSScotland COPD Support Service as it is being used in the whole of NHS Greater Glasgow and Clyde is necessary to confirm if the positive effects happen in everyone who uses the web app.

A full assessment of the costs and savings associated with using the web app needs to be carried out.

The machine learning predictive modelling needs further development and testing before it can be used by clinicians.

Future work

Future work should include:

- testing of the machine learning predictive modelling to make sure that it works safely in the real world.
- continued assessment of the web app as it is used in the whole of NHS Greater Glasgow and Clyde to find out if positive effects are seen in everybody who uses it.
- a full evaluation of the costs and savings that the web app may create once it has been implemented across NHS Greater Glasgow and Clyde.
- a full evaluation of the experience of people who use the web app.

This plain language summary is based on IMTO 02-21, February 2021