

Our research explained

BRCsnapshots

Home-based monitoring after hospitalisation for COPD

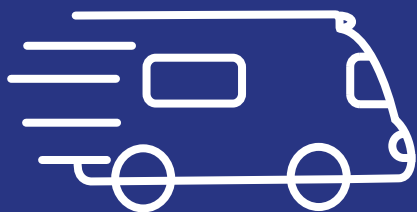


What we know

Chronic Obstructive Pulmonary Disease (COPD) is a progressive lung disease that affects approximately 1.2 million people in the UK. COPD patients suffer with episodes of worsening breathing symptoms, including breathlessness, cough and sputum production, called exacerbations.

Exacerbations of COPD are the second most common cause of emergency hospital attendance, and approximately one quarter of patients are readmitted within 30 days of discharge.

Home-based methods to reduce 30-day hospital readmission, including telemonitoring and advanced methods of monitoring airways resistance, have had limited success.



One in four patients hospitalised with an exacerbation of COPD are readmitted within 30 days



1.2 million people in the UK are diagnosed with COPD



Previous methods of home based monitoring have had limited success in preventing readmissions within 30 days

What we did

We monitored COPD patients admitted to St Thomas' Hospital with an exacerbation during their stay and for 30 days after they had been discharged.

We used questionnaires to assess their symptoms and quality of life. We assessed their lung physiology by measuring oxygen saturation and heart rate (using a finger probe), lung volumes (spirometry) and 'drive to breathe'. Drive to breathe was measured using parasternal electromyography. This involves placing two stickers on the chest and one on the collar bone, which are connected to a computer, and observing breathing over two to five minutes. This allows us to monitor electrical activity of breathing muscles, and indicates how hard someone is working to breathe.

How will this change care

"We gathered detailed information on what happens after a patient is hospitalised with a COPD exacerbation by carrying out 232 home visits to 12 patients. We found that patient-reported outcomes (patients' scores of their symptoms and quality of life) were closely linked to their lung physiology, including driving to breathe."

We also found several signs of recovery within one week of hospital discharge. Finally, we found that it was feasible to perform home-based measurements of drive to breathe. We now plan to carry out more research to determine whether it can be used to support early recognition and treatment of COPD exacerbations in patients' homes, meaning that fewer patients will need to be admitted to hospital."

Dr Rebecca D'Cruz, NIHR Doctoral Research Fellow, Lane Fox Respiratory Unit and King's College London.



About the study

The study was supported by the NIHR Guy's and St Thomas' Biomedical Research Centre.

Further information

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Article details

D'Cruz RF, Suh ES, Kaltsakas G, Dewar A, Shah NM, Priori R, Douiri A, Rose L, Hart N, Murphy PB, Home parasternal electromyography tracks patient-reported and physiological measures of recovery from severe COPD exacerbation, ERJ Open Research 2021; DOI: 10.1183/23120541.00709-2020

<https://openres.ersjournals.com/content/early/2021/01/21/23120541.00709-2020>

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