

# Remote patient monitoring for COPD: systematic review and meta-analysis

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## Abstract

The use of Remote Patient Monitoring (RPM) in Chronic Obstructive Pulmonary Disease (COPD) community care has been growing steadily with increased focus on digital health to enhance patient care.

**Aim:** Our main aim was to identify if RPM in COPD community care is effective at reducing hospital admissions and exacerbations, alongside understanding the psychosocial benefits of RPM in order to understand its role in the future of patient care.

**Methods and Analysis:** A Systematic Literature Review was conducted on papers accessed through PubMed, EMBASE, and Medline. RPM modalities were separated into subgroups and evaluated through quantitative data related to frequency of exacerbations and number of hospitalizations, alongside qualitative data on psychosocial aspects. The quality of evidence extracted from the papers was assessed using GRADE. Eight RCTs were then selected for our meta-analysis on the basis that they addressed either/both of our primary outcomes: change in the number of exacerbations or change in the number of hospitalizations. Two meta-analyses were conducted, looking at both hospitalizations and exacerbations across RPM subgroups.

**Conclusion:** It is clear RPM has shown little promise in reducing hospitalizations and exacerbations for COPD patients. When compared to usual care, RPM does not perform significantly better than usual care in reducing hospitalization and exacerbations; however, it can be said to be found to work just as effectively in the vast majority of studies. Despite RPM not producing significantly superior results to usual care in achieving our primary aim, its capacity to improve patients' quality of life was encouraging.

## Biography

Liam Oktay is in the penultimate year of study at Imperial College Medical School. He graduated from Imperial College Business School in 2020, where he headed a team of researchers in evaluating the efficacy of remote patient monitoring in the management of COPD. He has worked with Imperial College London based research teams in both primary clinical and secondary data-driven research projects. At present he is working with neurosurgeons in Imperial College Healthcare Trust to audit referrals of cauda equina syndrome and investigate the relationship between the timing of decompression surgery and surgical outcomes.

