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# IS THERE A ROLE FOR TELEMEDICINE IN CYSTIC FIBROSIS? A SYSTEMATIC REVIEW

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## **Background**

As a result of new medical advances people with CF are now able to live longer but still require frequent specialist care input and support. To cope with an ever increasing complex condition and demand for care, CF centres are having to rethink the way they work. Telemedicine is an evolving field which has the advantage of remote monitoring and real time review and may provide a solution.

## **Objectives**

To determine whether telemedicine has a role in the management of CF in terms of:

- 1) Feasibility and acceptability,
- 2) Early pulmonary exacerbation detection, and
- 3) Self-management and improving adherence to prescribed therapies.

## **Methods**

A systematic search was undertaken to identify relevant studies. This involved seven electronic databases, the top four peer reviewed journals reporting on CF and telemedicine, and the three major conference proceedings in CF and telemedicine. Clinical trial registers were searched to find ongoing studies as supplementary evidence. A mixed methods synthesis was performed to combine results from quantitative and qualitative studies.

## **Results**

34 studies in total were included in the results synthesis. These consisted of mainly small pilot and feasibility studies. There were 7 RCTs largely reporting interim results rather than efficacy data. Rates of adherence to telemedicine varied between 10.16 to 59% but were generally poor with barriers including frequent measures being a burden, forgetting, and denial of results. There was a general consensus that pulmonary exacerbations can be detected early but no statistical tests of significance performed. There were also only 2 studies predominantly reporting qualitative evidence. After corroborating the results using thematic synthesis this led to 3 main themes (expectations, technical aspects, and impacts of telemedicine) linked to these were barriers and facilitators.

## **Conclusion**

The findings indicate that telemedicine in CF is feasible but the uptake amongst people with CF may be challenging. This is probably not surprising since adherence to treatment is often poor. Nevertheless telemedicine has the potential to play an important role in the early detection of pulmonary exacerbations and further studies are required.