Telepulmonology in the Netherlands: Effect on Quality and Efficiency of Care

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Abstract and Objective

In telepulmonology a general practitioner (GP) digitally consults a pulmonologist. This study assessed the effect of telepulmonology on quality and efficiency of care. Efficiency of care was measured as the percentage of prevented physical referrals. Quality of care was measured using 5 indicators. Thirty-one percent of the TelePulmonology Consultations (TPCs) were sent to prevent a physical referral, the other TPCs were sent to ask for advice of the pulmonologist. Sixty-eight percent of the TPCs sent to prevent a physical referral indeed prevented a physical referral. Eighteen percent of the TPCs sent for advice resulted in a physical referral on advice of the pulmonologist. These patients would not have been referred without telepulmonology.

Keywords:
Telemedicine, Pulmonary medicine

Introduction

Chronic Obstructive Pulmonary Disease (COPD) is a chronic lung disorder that constitutes the fourth leading cause of death worldwide [1]. Interpreting spirometry results has proven challenging in primary care practice, potentially leading to under- and misdiagnosis of COPD. Telepulmonology (TP) is an implementation of telemedicine that could support general practitioners in interpreting spirometry results. In telepulmonology a GP digitally consults a pulmonologist to gain support in diagnosing patients or to gain treatment advice. This study assessed the effect of telepulmonology on quality and efficiency of care.

Methods

GPs accessed a secured web-based TeleConsultation System (KSYOS TeleMedical Centre, Amstelveen, The Netherlands) where they filled in the patient data, added up to four PDF’s of the spirometry results and optionally added additional relevant clinical information. This information was sent to the local pulmonologist who had to answer within two working days. Efficiency of care was defined as the percentage of prevented unnecessary physical referrals, measured by answers on questions provided to the GPs:

Before TPC (Q1): “Without telepulmonology, would you have physically referred this patient?”

After TPC (Q2): “Do you refer this patient physically?”

Quality of care was measured by 5 indicators (1) the percentage of TelePulmonology Consultations (TPCs) sent for advice, (2) the percentage of TPCs sent for advice resulting in a physical referral, (3) the educational effect of TP experienced by GPs, (4) the percentage of TPCs that actually aided the GP or patient and (5) the mean response time by the pulmonologist.

Results

Between April 2009 and November 2012 1,958 TPCs were sent by 158 GPs. Thirty-one percent of the TPCs were intended to prevent a physical referral, 68% of these indeed prevented a physical referral. Sixty-nine percent of the TPCs were sent for advice, based on the advice of the pulmonologist 18% of these TPCs led to a physical referral of patients who would not have been referred without telepulmonology. GPs indicated they learned from the pulmonologist’s response in 92% of the TPCs. The GPs indicated they or their patients felt aided by the answer in 96% of the cases. Mean response time of the pulmonologists was 18.2 working hours.

Conclusion

The results show that telepulmonology, by improving the collaboration between GP and pulmonologist, prevents unnecessary physical referrals. Additionally, telepulmonology ensures the right patients are physically referred. Telepulmonology also provides a way to support the GPs in interpreting spirometry results. GPs using telepulmonology experience an educational effect and feel aided by the answer of the pulmonologist. Thus, telepulmonology can contribute to more efficiency and a higher quality of care for COPD patients.

References


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