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Cystic Fibrosis Research News

Title:
Health Care Costs Related to Home Spirometry in the eICE Randomized Trial

Lay Title:
Does Using Home Spirometry Lower Healthcare Costs of Care for people with cystic fibrosis?

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What was your research question?
Does performing lung function tests at home, specifically home spirometry, reduce overall costs through reduced hospitalizations and reduced use of expensive intravenous antibiotics.

Why is this important?
People with cystic fibrosis (CF) have high health care costs. Hospitalizations and medication treatments for pulmonary exacerbations (in which people with CF experience acute decreases in lung function, decreased quality of life, and sometimes permanent lung function reduction) are costly. A randomized study found those who used home spirometry had similar lung function after a year to those who didn't perform home spirometry, but their healthcare utilization patterns were different—more outpatient visits, but fewer hospitalizations. It's important to understand if there is an economic advantage to using home spirometry. This is especially useful information as more individuals are using home spirometry during the COVID-19 pandemic.

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What did you do?

In this randomised clinical trial testing home spirometry titled *Early Intervention in Cystic Fibrosis Exacerbation* we wanted to compare the health care costs for people with CF who used home spirometry to those who did not use home spirometry. We reviewed use of health care services, including outpatient visits, outpatient antibiotics, and hospitalizations of all participants. We found average prices for each outpatient visit, antibiotic medications, and hospitalization from the IBM/Watson MarketScan® Commercial Claims and Encounters Databases. We compared costs for participants who were randomly assigned to home spirometry with those who were not.

What did you find?

We found no significant differences in total health care costs between the two study arms, nor did we find significant differences in costs from outpatient antibiotics or hospitalizations. We found that outpatient visit costs were 13% higher in the home spirometry arm ($3,345 over the course of one year, compared to $2,966), which reached statistical significance.

What does this mean and reasons for caution?

Our study did not demonstrate an advantage to home spirometry in terms of health care costs. It is possible that the sample size was too small to detect differences between the two groups. Likewise, these results should temper enthusiasm for adopting home spirometry for economic advantages, as evidence does not support the value of this intervention.

What's next?

These cost patterns may affect health care systems that include all costs for individuals, including all inpatient care where heavy use of IV antibiotics would cost the health care system. This analysis could lead to targeting high value care and de-emphasizing lower value care for the CF community of patients, families, and clinicians.

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