



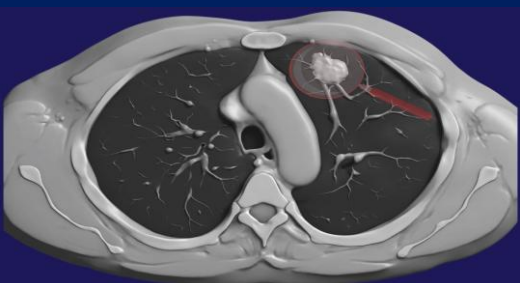
A Multi-level Intervention to Improve Low-dose CT Uptake for Lung Cancer Screening (Empower LCS): A Single Arm Pilot Feasibility Clinical Trial

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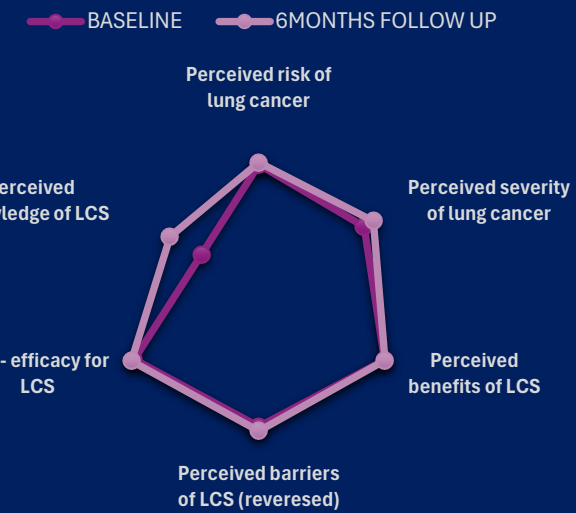
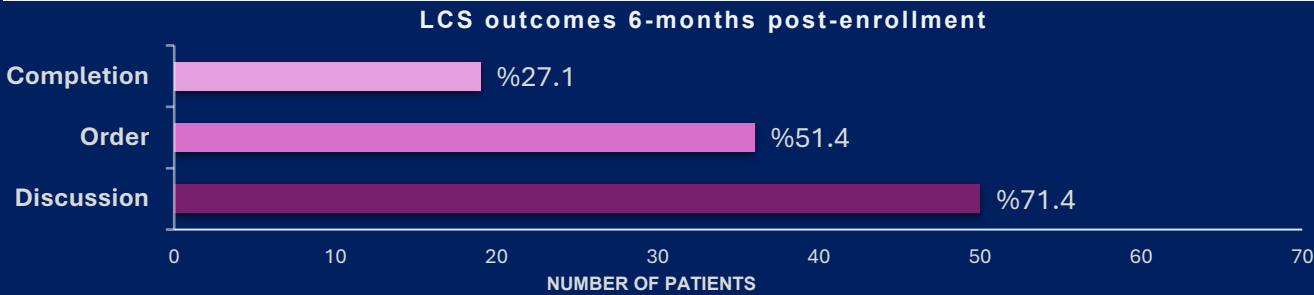
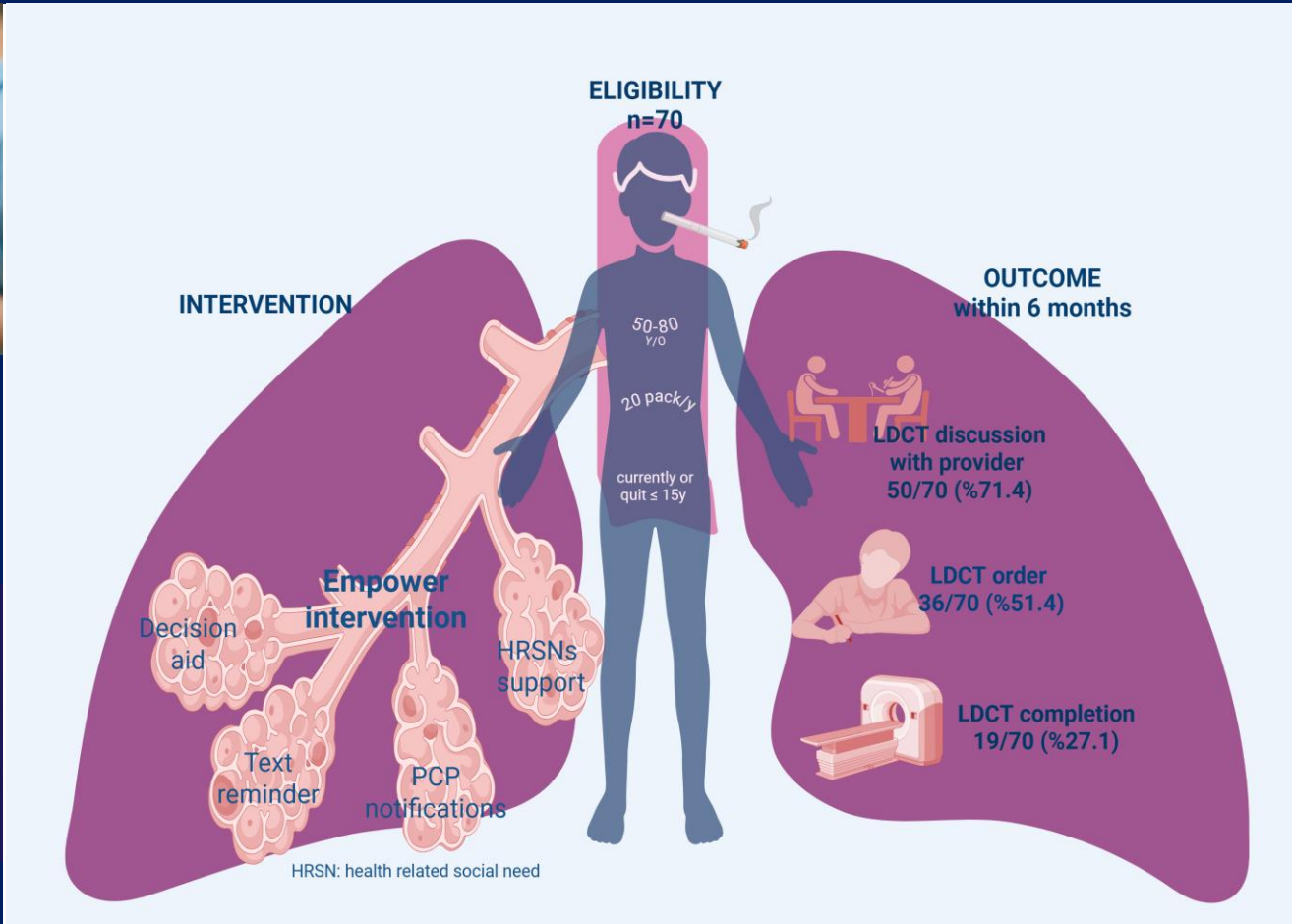
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Purpose: Lung cancer screening (LCS) uptake remains low nationally with only 9.4% of eligible patients discuss it with providers and 16% and 13% undergoing LDCT nationally and in California, respectively, in 2022. We evaluated the feasibility and preliminary efficacy of a multi-level intervention to improve LCS uptake in a pilot trial.



Methods: Eligible patients were 50–80, and met 2021 USPSTF LCS criteria. The Empower LCS intervention included: (1) a decision aid; (2) text reminder to encourage LCS discussion with primary care providers (PCPs); (3) PCP notifications on eligibility and barriers, and (4) financial hardship and health-related social needs support. Screening outcomes (LCS discussions, orders, and completion) at 6 months were assessed using medical records and surveys. Changes in LCS knowledge and health beliefs were assessed with surveys.



Results: 70 patients enrolled (mean age: 62.5±6.3; 70% male; 1.4% Black, 18.6% Asian, 44.3% White, 35.7% Other). 45.7% were Hispanic, and 41% current smokers. Common LCS barriers included cost concerns (40%, 28/70) and fear of finding something wrong (34.3%, 24/70). 72.9% of patient reported financial hardship or HRSNs and received support. At 6 months, 71.4% (50/70) discussed LCS with their PCP, 51.4% (36/70) received LDCT orders, and 27.1% (19/70) completed screening (52.8% of those with order). Completion exceeded the national average of 16% (P=0.01). Knowledge and perceived severity changed significantly (knowledge: 1.91 to 2.67, p=0.01; severity: 16.3 to 18.1, p=0.0003). No significant changes were observed in perceived barriers or self-efficacy.

Conclusion: The Empower LCS intervention, using decision aid, reminders, and provider alerts improved lung cancer screening (LCS) uptake compared to national averages. However, only half of those with LCS order, completed the exam, suggesting the need for stronger patient navigation and follow-up systems.

Citations:

1. US Preventive Services Task Force. Available at: <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/lung-cancer-screening>
2. Carpenter CJ. A meta-analysis of the effectiveness of health belief model variables in predicting behavior. Health Commun. Dec 2010;25(8):661-9. doi:10.1080/10410236.2010.521906
3. <https://app.biorender.com/illustrations>