Children's Hospital of Philadelphia PolicyLab

Cluster Randomized Pragmatic Clinical Trial Testing Behavioral Economic Implementation Strategies to Improve Tobacco Treatment for Cancer Patients Who Smoke

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Few cancer centers systematically engage patients with evidence-based tobacco treatment despite its positive effect on quality of life and survival. Implementation strategies directed at patients, clinicians, or both may increase tobacco use treatment (TUT) within oncology. We conducted a four-arm cluster-randomized pragmatic trial across 11 clinical sites comparing the effect of strategies informed by behavioral economics on TUT engagement during oncology encounters with cancer patients. We delivered electronic health record (EHR)-based nudges promoting TUT across four nudge conditions: patient only, clinician only, patient and clinician, or usual care. Nudges were designed to counteract cognitive biases that reduce TUT engagement. The primary outcome was TUT penetration, defined as the proportion of patients with documented TUT referral or a medication prescription in the EHR. Generalized estimating equations were used to estimate the parameters of a linear model. From June 2021 to July 2022, we randomly assigned 246 clinicians in 95 clusters, and collected TUT penetration data from their encounters with 2,146 eligible patients who smoke receiving oncologic care. Intent-to-treat (ITT) analysis showed that the clinician nudge led to a significant increase in TUT penetration versus usual care (35.6% *v* 13.5%; OR = 3.64; 95% CI, 2.52 to 5.24; *P* < .0001). Completer-only analysis (N = 1,795) showed similar impact (37.7% clinician nudge *v* 13.5% usual care; OR = 3.77; 95% CI, 2.73 to 5.19; *P* < .0001). Clinician type affected TUT penetration, with physicians less likely to provide TUT than advanced practice providers (ITT OR = 0.67; 95% CI, 0.51 to 0.88; *P* = .004). EHR nudges, informed by behavioral economics and aimed at oncology clinicians, appear to substantially increase TUT penetration. Adding patient nudges to the implementation strategy did not affect TUT penetration rates.

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