Using Rapid Cycle Randomized Controlled Trials to Study Clinical Decision Support for Tobacco Cessation

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**BACKGROUND**
Screening and providing interventions for smokers can help improve tobacco cessation rates and is an important CMS Quality Payment Program measure. Previous implementation of a tobacco cessation alert had high override rates and limited acceptance of the recommended counseling and treatment options.

The institution wanted to rapidly improve patient care and compliance with the CMS Quality Payment Program measure, but there were limited recommendations in the literature to guide alert optimization.

The purpose of this project was to leverage rapid randomized controlled trial methodology to test multiple alert enhancements to understand motivating factors for provider acceptance rates and quickly identify and iterate upon the most successful approach to improve the alert’s effectiveness.

**DESIGN**
User feedback sessions with providers to refine the language and layout of the alerts

3 versions of the alert: financial incentive, evidence-based recommendation to conduct brief counseling, and institutional priority

Follow-up actions identical across the 3 BPAs: to provide and document counseling, prescribe pharmacotherapy, and refer patient to a quitline

Practice-level cluster randomization to compare the 3 alerts (average number of practices in each arm = 95)

**CONCLUSIONS/NEXT STEPS**
Rapid randomized controlled trials within the EHR are powerful and generalizable methods to enhance clinical decision support. In a one month cycle, we demonstrated statistically significant improvement in acceptance rates by one version of the alert.

In both rounds, the financial message was superior than the other two messages in alert acceptance rates and across other different variables. We estimate that the financial message would result in 1,543 more tobacco cessation medication prescriptions in a 12-month period compared with either of the other two.

In our next round, we will test 3 versions of the financial message to optimize its acceptance rates and further impact patient outcomes.