Controlling for Beneficiary Selection Uncovers Adverse Trends in Estimated ACO Savings

Mariétou Ouayogodé, PhD., The Dartmouth Institute for Health Policy & Clinical Practice
Ellen Meara, Ph.D., The Dartmouth Institute for Health Policy & Clinical Practice
Kate Ho, Ph.D., Princeton University
Christopher M. Snyder, Ph.D., Dartmouth College
Carrie Colla, Ph.D., The Dartmouth Institute for Health Policy & Clinical Practice

ABSTRACT

Background
Accountable care organizations (ACOs)—designed to improve quality and lower spending under Medicare—were associated with growing savings over time in previous studies. The question remained whether the association was biased by selected switching of beneficiaries between providers. To answer this question, we introduced a series of statistical methods into the estimation of ACO savings that control for beneficiary selection.

Methods
Using Medicare claims over 2009-2014, we compared changes in annual spending before and after providers became ACOs to changes over the same period for comparable, large non-ACOs. We controlled for beneficiary selection by estimating within-beneficiary spending changes, using instrumental variables to predict ACO attribution based on the beneficiary's organization prior to ACO rollout, and interpolating zero spending for living beneficiaries without qualifying healthcare expenses who would otherwise drop from the sample.

Results
Unadjusted results show savings growing over time as found in previous studies. Controlling for beneficiary selection reverses this finding; savings diminish over time within ACO cohort and diminish across ACO cohorts, with non-statistically-significant savings for the 2014 ACO cohort.

Conclusions
Savings estimates can be misleading if beneficiary selection is not properly addressed. High-cost beneficiaries may be selected out of ACOs through changing care patterns during periods of sickness, inflating naïve savings estimates. After controlling for beneficiary selection, our results suggest that the initial savings may be difficult for ACOs to maintain and may not generalize to subsequent providers entering the Medicare ACO program.

Keywords: Accountable Care Organization, Medicare, Selection, Shared Savings Program

Corresponding author: Mariétou Ouayogodé, The Dartmouth Institute for Health Policy & Clinical Practice, Geisel School of Medicine at Dartmouth, Level 5 WTRB, 1 Medical Center Drive, Lebanon, NH 03756. Email: Marietou.H.L.Ouayogode@dartmouth.edu.