Public Abstract
First Name:Jesse
Middle Name:Brandon
Last Name:Schmidt
Adviser's First Name:Cerry
Adviser's Last Name:Klein
Co-Adviser's First Name:
Co-Adviser's Last Name:
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The United States has a health care spending problem. Accounting for over 17% of our Gross Domestic Product, almost 50% more than the next high-income country, America is spending much more than what is needed. Most of this money is spent on patients with chronic conditions (84%). Furthermore, a very disproportionate 20% of spending is used for the 5% of patients with five or more chronic conditions. These complex patients have become a target for cost-savings opportunities.

Care management programs are a promising option in health care as a way to control spending for complex patients by delivering more appropriate care and reducing costly admissions and emergency department visits. While research programs have been promising, real-world programs have had a difficult time realizing cost savings. Contrasting successful and unsuccessful programs has led to the belief that programs need to be very deliberate in providing the right patients the right level of care management in order to reduce costs.

This research formulates a mixed-integer programming model to allocate a care management team's resources in order to reduce overall spending for the population. The model assesses the problem from an Accountable Care Organization lens, using a care management team to match cohorts of patients within a set population to deliver the best intervention protocol from an array of options. The model is then refined to specifically match the LIGHT2 program at the University of Missouri Health Care. The data preparation needs are then addressed, specifically in relation to the LIGHT2 program.