CENTER FOR IMPROVING
VALUE IN HEALTH CARE

Time	Opportunity Number	Project Details
10:30 AM	24.40	University of Colorado School of Medicine *Connecting Upstream Health Care Systems to the Organ Transplant System – An Investigation into Health Disparities and Spending Among Coloradans with Organ Failure.*
11:00 AM	24.29	New York University, Stern School of Business *Efficiency in Healthcare Delivery: Measurement and Policy Design*
11:30 AM	24.106.75	Colorado Behavioral Health Administration *BHA Performance Hub*

10:30 AM – 24.40, UNIVERSITY OF COLORADO SCHOOL OF MEDICINE

Connecting Upstream Health Care Systems to the Organ Transplant System – An Investigation into Health Disparities and Spending Among Coloradans with Organ Failure.

Identifiable Extract

Specific Research Questions:
1. What are the demographic, health insurance, and medical characteristics of Colorado patients who may qualify for an organ transplant (heart, lung, liver, and kidney)?
2. What is the time to waitlist and transplantation (i.e. 1-year, 5-year, never) during the study period (2016-present) for Colorado patients who may qualify for an organ transplant?
3. What are the expected survival rates for Colorado patients who may qualify for an organ transplant compared to those who are waitlisted and receive an organ transplant?
4. What are the overall patient health care costs for Coloradans who may qualify for an organ transplant compared to those who are placed on the organ transplant waitlist? Compared to those who receive an organ transplant?
5. What is the interaction between payer type and patient organ transplant system status (1. qualifies for organ transplant but not waitlisted; 2. waitlisted for an organ transplant; 3. received an organ transplant) on patient health care costs for Coloradans? How does this interaction affect the proportion of Colorado patient health care costs and payer costs?

Methodology:
We will combine patient data from the Colorado APCD with our own UC Health Transplant Center claims data repositories to track changes from the currently unidentified population of Coloradan's who may qualify for an organ transplant to Colorado's organ transplant waitlist and recipient population. The UC Health Transplant Center data repositories are queried and made available to our research team through the Health Data Compass component of the Research Informatics Office within the University of Colorado, Anschutz Medical Campus. The claims data contains medical and demographic information on waitlisted and organ transplant recipients within the UC Health Transplant Center and is linked with CIVHC claims data. This will allow us to link general patient population information in CIVHC to more specific organ transplant system patient information within Health Data Compass. This linkage requires identifiable information, including date of birth, from CIVHC to accurately merge the two data sets using multiple identifier variables.

Following data mergers, we can then employ standard statistical methods used to investigate the hazard risk of being placed on the organ transplant waitlist, receiving an organ transplant, outcomes following organ transplantation, and costs to patients along the health care to organ transplant system spectrum. The more general and wider CIVHC database is vital to identifying the entire population of Coloradans who may qualify for an organ transplant and tracking their transition from organ failure diagnosis into the organ transplant system.

11:00 AM – 24.29, NEW YORK UNIVERSITY, STERN SCHOOL OF BUSINESS

Efficiency in Healthcare Delivery: Measurement and Policy Design

Limited Extract

Specific Research Questions:
1. How do the features of a health insurance plan—including provider network design and patient out-of-pocket costs—affect an enrollee's access to surgical care? Do these factors generate differences in access by demographic group?
2. How do the features of a health insurance plan—including provider network design and patient out-of-pocket costs—affect an enrollees' (a) medical outcomes/recovery time and (b) current and future health spending following surgical care?
3. How do waiting times for surgical care differ across specific surgical procedures and demographic groups? How would alternative regulations of insurance markets affect these wait times, and thereby affect a patient's health outcome and spending level? Would these policies generate differential gains/losses for patients of different demographics, socioeconomic status, or geographic location?
4. How do health insurance market regulations, such as network adequacy rules, affect access to healthcare services? Do these effects differ across demographic groups?

Methodology:
First, we plan to implement a machine learning approach to quantify wait times for surgical care. Based on our past research work using national claims data from employer-sponsored insurance plans, we have developed and tested a procedure that exploits inpatient, outpatient, and pharmaceutical claims to predict the start to a patient's wait time for a set of surgical procedures. We will deploy our machine learning tool in the CO APCD to approximate wait times for various services in Colorado. Descriptively, we can quantify differences in this wait time across geographies, and for patients that differ in their insurance plan design. Second, we propose an empirical strategy that will help us establish a causal link between wait time and patients' health and spending outcomes. Our strategy exploits randomness in the timing of an individual patient's diagnosis; if patients become ill at a time period in which providers in their local market and insurance network are at or near capacity, they will experience longer waits independent of their health status. To implement this strategy, we need information on providers' overall volumes at different points in time, which we plan to measure in the CO APCD. Lastly, we plan to build economic models that feature (a) households' demand for insurance, (b) patients' choices of providers for surgical procedures when needed, and (c) insurers' responses to plan enrollment, provider utilization, and overall medical costs. In our proposed model, insurers can respond to patient usage by changing their plan design, network structure, or premiums to affect both spending and

enrollment. The investigators on this project have experience with machine learning tools and with designing economic models that can allow a researcher to predict the key outcomes—like health spending and plan enrollment—that might result from new regulations enforced on insurance markets.

11:30 AM – 24.106.75, COLORADO BEHAVIORAL HEALTH ADMINISTRATION

BHA Performance Hub

Limited Extract

Specific Research Questions:
1. Percentage of members who received follow-up care within 30 days of a positive depression screen finding (NCQA)
2. Percentage of members who were screened for clinical depression using a standardized instrument (NCQA)
3. Follow-Up After Hospitalization for Mental Illness (FUH)
4. Follow-Up After Emergency Department Visit for Mental Illness
5. Adherence to Antipsychotic Medications for Individuals with Schizophrenia
6. Depression Response at 12 Months-Progress Towards Remission
7. Depression Response at Six Months-Progress Towards Remission

Methodology:

The BHA will be leveraging this data to calculate key metrics listed above and will likely publish these metrics as part of the Performance Hub. This data will be ingested into BHA's data warehouse where analysts will calculate the above key metrics leveraging SQL code. Once developed, analysts will follow an intensive metric testing process which has been defined here. Through this process, the utility of the metric given the available data, will be ascertained.

In public presentation of the data, we intend to aggregate the data by geographical region as specified through the BHA's upcoming BHASO initiative, defined here.

Moreover, we intend to follow the same methodology leverage for national specifications on the calculation of CMS core set metrics in order to ensure integrity of metric calculation based on this data.

We seek demographic data (e.g. race, gender, etc) in order to conduct necessary stratification of the data. These steps are critical to ours and the public's understanding of the behavioral health ecosystem through the lens of health equity. Per our ethos and overall strategy at the BHA, such stratification of the data is essential.