CIVHC
CENTER FOR IMPROVING VALUE IN HEALTH CARE

Data Release Review Committee Agenda
Meeting Date: August 2, 2023

10:30 AM – 23.25 University of Wisconsin, Madison Provider Network Hospital Systems Changes in Physician Practices

Type of Data Requested

Identifiable Extract

Project Purpose

This project will study how provider social networks and social influence shape professional practices and affect the care that patients receive in Colorado. It has the following objectives: (1) Examine how provider characteristics and provider patient-sharing networks are associated with high-risk professional practices; (2) Examine how patient-sharing networks are associated with changes in high-risk practices before and after new policies and regulations are introduced; (3) As an example examine, how provider networks shape the prescribing of buprenorphine's for treating opioid-use disorders (3) Examine how formal forms of organizations – the type of hospital systems and insurance networks – shape provider networks; (4) Examine how providers change their practices in response to new regulations; (5) Examine how adverse events change collaboration patterns between providers; (6) Identify the social network structures and processes that amplify learning at the physician-community-level.

Identifying the network structures, community characteristics, and social influence processes between physicians is expected to produce new insights into the mechanisms underlying the variability in professional practices. It will inform strategies and interventions that help effectively structure provider networks to optimize efficacious practices. The results of this analysis will provide researchers, regulators, and pharmacy benefit managers with improved understanding of the type of social network structures and processes that maximize learning and peer influence in social networks that lead to the adoption of efficacious practices.

Specific Aims

1. How do provider networks shape response to new policies and regulations (such as opioid prescribing guidelines)?
2. How do changes in the institutional and regulatory environment shape provider networks?
3. How do provider networks shape patients' disparities in care, such as the receipt of a buprenorphine prescription for opioid-use disorder?

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Meeting Date: August 2, 2023

11:00 AM – 23.73 Duke University
Effects of Negotiated Price Transparency Regulations Evidence from Hospital Prices

Type of Data Requested
Identifiable Extract

Project Purpose
My project will study the effects of price transparency of hospital prices negotiated between health systems and private insurers by analyzing two policy changes: the state of Colorado's Shop for Care Tool and the Centers for Medicare and Medicaid Services' (CMS) 2021 Hospital Price Transparency Rule. I plan to study these effects with difference-in-differences techniques. First, I will compare changes before versus after prices were posted in the Shop for Care Tool for prices included in the tool versus prices for similar services not included. The first version of the Shop for Care Tool was posted in 2014, so I have requested data dating back to 2012 to have a 2-year pre-period. I will compare changes in prices before versus after 2014 for services with prices posted in the Shop for Care Tool (treatment) versus the same change over time in prices for services not posted in the Shop for Care Tool (control). I will use similar methods to study later versions of the Shop for Care Tool posted in 2019, 2020, and 2022.

Next, I will compare changes in prices before versus after CMS's policy for prices that were included in the Shop for Care Tool to prices for services not included in the tool, with similar difference-in-differences methods. This analysis will evaluate whether the complete transparency of prices due to CMS's policy had different effects than the posting of summary statistics of prices in the Shop for Care Tool. Third, ambulatory surgical centers were not subject to CMS's price transparency rule. This will allow me to compare changes in prices for the same services before vs after CMS's policy in hospitals (subject to the rule) versus the same change over time in ambulatory surgical centers (not subject to the rule) to estimate the effect of the rule. Finally, I plan to use a regression kink design to study whether hospitals that faced different fines for non-compliance as a function of their number of beds complied with the policy at different rates, and how prices changed for those likely induced to post prices by the increased fines.

I plan to study the likely mechanisms of any effect on prices in several ways. First, I will study whether consumers appear to respond to price information by studying consumers' choices of hospitals before versus after price information becomes available. Further, because the Shop for Care Tool included quality ratings, I will study whether consumers appear to respond to this quality information when choosing hospitals. Second, I will study how the relative market structure and market power of hospitals and insurers is associated with changes in the negotiated prices. Third, I will study variation in effects across different prices and different insurance plans to determine what sources of uncertainty price information resolved. Finally, I plan to study whether any price changes resulted in follow-on effects, for example changes in employer health care costs, individual marketplace premiums, or levels of utilization of care.

My objective is to study the effects of price transparency, so in all analyses, I will control for a variety of other factors to isolate changes in prices that can accurately be attributed to price transparency. Specifically, I will use Colorado Department of Public Health and Environment county-level data to control for the impact of the COVID-19 pandemic. I will also use publicly available data to control for zip-code average income, population, demographics, and distances to hospitals. Finally, I will control for hospital and insurance plan. Since prices are negotiated between a hospital and insurance company, and different prices are negotiated for different insurance plans offered by the same company, to ensure that I am comparing changes over time in the same prices, I need to be able to identify two prices in different years as belonging to the same hospital-insurance plan-service triplet. However, I do not need to know the true identity of the insurer or the true insurance plan information. As such, I have requested diagnosis/procedure/revenue codes, a hospital identifier, and the insurance company alias. If possible, I would also like to request an alias of the insurance plan policy number and group number, again to ensure that I compare prices from the same hospital-insurance plan-service triplet over time. I do need to know the true service information to identify which claims are for services included in the Shop for Care Tool.

Finally, I would like to convey that this project has been approved by my PhD dissertation committee in a formal dissertation proposal defense. My committee members, Professors Manoj Mohanan, Ryan McDevitt, M. Kate Bundorf, and James Roberts are all tenured professors and experts in economics and health policy who have published in leading academic journals including the American Economic Review, the Quarterly Journal of Economics, the Journal of Health Economics, Health Affairs, the Journal of the American Medical Association, and the Lancet.

METHODOLGY

This project will study the effect of price transparency on hospital prices, specifically the effects of Colorado's Shop for Care Tool and the Center for Medicare and Medicaid Services 2021 Hospital Price Transparency Rule. To do so, the project will use several quantitative methods including event studies and difference-in-differences methods. First, the project will conduct event studies, comparing the levels and trends of prices before versus after prices were added to the Shop for Care Tool, and before versus after CMS's policy.

Next, the project will use three difference-in-differences comparisons. These methods will study policies by comparing changes in prices affected by a policy before versus after the policy implementation versus changes in prices unaffected by the policy. By including a comparison to changes in prices unaffected by the policy, this approach attempts to control for common unobserved trends.

For example, prices for 4 medical services were displayed in the Shop for Care Tool starting in 2014. The difference -in-differences approach will compare how prices for these 4 services change from before to after 2014 versus the same difference for other similar services not included in the tool. Let P(tool) represent average prices for the 4 services included in the Shop for Care Tool, and P(Not tool) indicated average prices for similar services not included in the tool. Then the difference-in-differences estimate of the effect of the Shop for Care Tool is:

Effect = [P(tool, post 2014) - P(tool, pre 2014)] - [P(not tool, post 2014) - P(not tool, pre 2014)]

This simplified example is intended to illustrate the fundamental comparisons used in a difference-in-differences approach. In quantitative analyses, this project will control for trends over time, hospital, insurer, service, and geographic characteristics, as well as for additional prices added to the Shop for Care Tool.

The second difference-in-differences analysis will use a similar approach, and compare prices before vs after CMS's rule for services never included in the Shop for Care Tool vs those included in the tool. Finally, ambulatory surgical centers were not subject to CMS's price transparency rule. This will allow the project to compare changes in prices before vs after CMS's policy in hospitals (subject to the rule) versus the same change over time in ambulatory surgical centers (not subject to the rule) to estimate the effect of the rule.

The figure below provides a graphical representation of the difference-in-differences method.

CONTROL GROUP:

There will not be a control group of any population for this project. This project will lend itself to analyzing and comparing healthcare care prices only.

Specific Aims

1. What are the effects of mandated price transparency on hospital prices?
2. What does variation in effects across markets and prices suggest were the mechanisms of the effects of price transparency?
3. Did price transparency lead to follow-on effects such as changes in employer health care costs, individual marketplace premiums, and healthcare use, thereby affecting consumers?

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Data Release Review Committee Agenda
Meeting Date: August 2, 2023

11:30 AM – 23.70 Kaiser Permanente
Health Insurance Instability and Mortality among Patients Receiving Buprenorphine Treatment for Opioid Use Disorder

Type of Data Requested
Limited Extract

Project Purpose
Amidst the current opioid epidemic, the incidence of opioid use disorder (OUD) has increased and medication-based treatments for opioid use disorder (MOUD) remain underutilized.1-4 While long-term MOUD is generally associated with improved health5 and mortality6 outcomes, maintaining continuous health insurance coverage is a significant challenge to sustained treatment access.7,8 Patients with OUD are likely susceptible to experiencing insurance instability due to volatile employment and variable eligibility for public insurance9,10, which results in frequent plan changes and critical coverage gaps.11-14 The economic crisis associated with the current COVID-19 pandemic may result in greater insurance coverage instability and losses, which would leave patients with OUD even more vulnerable. High-risk care transitions and significant disruption of treatment, including discontinuation of OUD treatment, increased risk of relapse, overdose, and mortality.1,2,15,16 Further, heightened vulnerability to insurance instability among racial/ethnic minorities may contribute to observed disparities in addiction treatment access and retention.17-19 Despite the potential for insurance instability to create significant barriers to OUD treatment continuity, current knowledge regarding its health and mortality impacts is limited due to the challenge of capturing and evaluating patient outcomes after disenrollment from health systems.

The objectives of our study are to 1) establish fact and cause of death; 2) examine insurance instability and associated patients, health plan, and treatment characteristics; 3) assess the risk of death associated with insurance instability; 4) explore exposures and outcomes after disenrollment from health plans.

This research study will examine the association of health insurance instability and mortality risk among patients receiving buprenorphine or naltrexone treatment in a multi-site cohort study, leveraging data across four diverse health systems participating in the National Institute on Drug Abuse (NIDA) Clinical Trials Network (CTN) Health Systems Node: Kaiser Permanente (KP) Colorado (KPCO), KP Northern California (KPNC), KP Southern California (KPSC), and Henry Ford Health System (HFHS). We will conduct a retrospective longitudinal cohort study of patients receiving buprenorphine or naltrexone treatment from January 1, 2012 through December 31, 2022. We expect that a certain proportion of patients will lose employment and subsequently transition to Medicaid coverage, lose insurance, or obtain other types of coverage. For patients with Medicaid, we may not have access to all pharmacy, emergency department, and hospitalization utilization because claims for these patients are processed by Medicaid rather than KPCO.

The purpose of this request is to obtain complete exposure and outcome data from the Colorado All Payers Claims Database (APCD) on KPCO patients who lose their KPCO insurance and KPCO

patients with Medicaid. In this study, we will link APCD and KPCO data to allow us to follow patients treated at KPCO over time, including after disenrollment from our health system.

Specific Aims

We seek to determine external healthcare utilization, including medication use, during enrollment and after disenrollment from KPCO.

For patients with Medicaid, we seek to determine healthcare utilization outside the health system covered by a carve-out.

We seek to distinguish insurance loss from a change in insurance coverage after disenrollment from our health system.

We seek to identify overdoses from inpatient or emergency department settings, including after disenrollment, not identified in our data at KPCO.

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12:00 PM – 24.93 HSRI
BEHAVIORAL HEALTH GAP ANALYSIS

Type of Data Requested
Limited Extract

Project Purpose
HSRI will be conducting a behavioral health network gap analysis of the Regional Accountable Entities (RAEs) and Managed Care Organizations (MCOs) for the Colorado Department of Health Care Policy & Financing (HCPF). HCPF seeks to:

- Expand current Network Adequacy measurements to identify Behavioral Health Network gaps.
- Establish a Network Penetration Rate Report to evaluate licensed providers to contracted providers.
- Develop alternative Network Adequacy measurement standards based on enrolled population clinical needs.

For this project, we propose to use the CO APCD as the primary data source for this work, as it is the state's most comprehensive source of health care insurance claims information representing the majority of covered lives in the state. HSRI will utilize medical and pharmacy claims (including substance use disorder claims), enrollment data, and provider data from the CO APCD for pediatric and adult members for the time period of SFYs 2021 – 2022 (July 1, 2020 through June 30, 2022). The CO APCD person and provider addresses that are mapped to geographic coordinates (latitude and longitude) will be utilized as well, as well as the RAE crosswalk (includes RAE, county, zip code).

Evaluating Time and Distance Standards

The person and provider geocoded locations from the CO APCD extract will be inputted into ArcGIS to calculate the most efficient travel route between member locations and the nearest relevant provider; that route will be evaluated against the current Colorado Medicaid behavioral health time and distance standards. We plan to use the "Origin-Destination Cost Matrix" function in ArcGIS, which calculates drive distance and drive time between origins (member addresses) and destinations (provider addresses). Using this method, we can calculate the average driving time to providers, the percentage of members' driving times that are within the guidelines, and the average drive distance to providers.

For each member's location, we will create a flag identifying the member's county designation (urban, rural, frontier). Using the driving distance and drive time between member location and provider location from the ArcGIS Origin-Destination Cost Matrix output, we will create a flag for each member-provider pair that identifies whether or not the member is within Colorado's time and distance standards for the provider type, based on a categorization of behavioral health providers into provider types (e.g., acute care hospital, prescribers serving adults, etc.). This flag will also incorporate the members' county designation. The flag will be set to 1 if the member is within the time and distance standards for the provider type/county combination and the flag will be set to 0 if

the member is outside of the time and distance standards. For example, if an adult member is located in Pueblo County, Colorado, they would be assigned the "Urban" county designation. According to the Colorado Behavioral Health Network time and distance standards, a person must be within 30 minutes of a mental health provider serving adults. If this member is within 30 minutes of a mental health provider serving adults, their "mental health provider serving adults" flag would be set to 1 and if they are within 45 minutes of a mental health provider serving adults, their flag would be set to 0. The member would have a flag for each behavioral health provider type. Using these flags, we will then calculate a percentage of members with any practitioner, by behavioral health provider type, within the time and distance standards.

Phantom Provider Network Assessment

A phantom provider is a contracted provider who has not provided at least one service encounter within the time period of interest. We will obtain a list of all contracted Medicaid behavioral health providers from HCPF to merge with the CO APCD extract. Among the total number of contract Medicaid behavioral health practitioners, we will calculate the percentage who had at least one claim for a service delivered to an enrolled Medicaid member during the time period of interest, by each relevant provider type. We will obtain the provider business location street addresses of contract Medicaid behavioral health practitioners who we determined did not provide services to Medicaid members from the National Plan and Provider Enumeration System (NPPES). To evaluate the impact of these phantom providers, we will examine how network adequacy rates would be improved if these providers had been among those rendering services. For example, among the members identified in the evaluation of time and distance standards analysis whose location is not within Colorado's network adequacy standards, we will calculate time and distance to the location of the phantom provider, reporting the number and percentage of members who would be within the standards if these providers had rendered services. Using RAE assignments for each Medicaid members, constructed using a member zip code to RAE crosswalk, we will be able to stratify results by RAE, as well as by county.

Telehealth Utilization Assessment

This assessment will provide a detailed comparison of the volume of telehealth and non-telehealth claims (per 1,000 members) for behavioral health services across two groups: 1) members with a provider/practitioner located within Colorado's time and distance standards, and 2) members without a provider/practitioner located within the time and distance standards. For each of those member groupings, we plan to calculate the number of unique members, the number of telehealth behavioral health claims, the number of non-telehealth behavioral health claims, the number of telehealth behavioral health claims per 1,000 members, and the number of non-telehealth behavioral health claims per 1,000 members. We will also calculate these data points for each provider type/county type combination and we will stratify the results by member demographic characteristics (such as gender, race, and ethnicity), RAEs, MCOs, and county.

Behavioral Health Network Gap Analysis

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The CO APCD eligibility records will be used for analyses of Health First Colorado membership, overall and by year and demographic characteristics, including by age group, race, ethnicity and gender. By linking to data supplied by HCPF, we can also report disability status and language of members. We will report on behavioral health diagnoses among members, and we will create person-year-level assignments of physical health comorbidities through the use of the Center for Medicare & Medicaid Services (CMS) Chronic Conditions methodology in conjunction with the claims data to look at co-occurring physical health diagnoses.

We will analyze behavioral health service utilization by service type, and plan to work with HCPF to come up with a categorization of service types based on CPT codes. Categories might include, but are not limited to:

- Diagnostic testing/mental health assessment
- Alcohol and/or drug use screening/assessment
- Psychotherapy (individual, group, family)
- Routine office visit with BH provider
- Pharmacological management
- Emergency services/crisis care
- Medication-assisted treatment
- Psychiatric inpatient
- Detox services
- School-based mental health services

We will examine these utilization patterns by member demographic characteristics, RAE regions, county, and provider type. We will use this output to identify gaps in services and in networks.

Specific Aims

1. What is the percentage of Health First Colorado (Medicaid) members with any behavioral health practitioner located within Colorado Department of Health Care Policy & Financing (HCPF) time and distance standards?
2. What is the percentage of all Medicaid members with any behavioral health practitioner located within HCPF's time and distance standards that delivered services to any members?
3. What is the percentage of contract Medicaid behavioral health practitioners that have delivered services to enrolled Medicaid members? Among practitioners who haven't delivered services, have they delivered services to non-Medicaid members?
4. What is the impact on time and distance results from behavioral health practitioners who are not delivering services (aka Phantom Providers) to Medicaid members?
5. What is the volume of telehealth claims and non-telehealth claims per 1,000 members for those members with and without behavioral health practitioners located within HCPF's time and distance standards?
6. What are the demographic characteristics of enrolled Medicaid members? Characteristics of interest by HCPF include disability status, age, gender, race, ethnicity, and language.
7. What are the behavioral health diagnoses categories among enrolled Medicaid members, overall and by demographic characteristics?

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8. What are the physical health diagnoses coexisting with behavioral health diagnoses among enrolled Medicaid members?
9. What is the volume of enrolled Medicaid members who utilized behavioral health services compared to all enrolled Medicaid members?
10. What behavioral health services are Medicaid members receiving?