



# Data to Drive Decisions Webinar Series: Using Data to Understand Physician Practices and Optimize Patient Outcomes

June 23, 2022



CENTER FOR IMPROVING  
**VALUE** IN HEALTH CARE

# Agenda

- AHRQ's initiative to address gaps in current physician and physician practice data through the development of a research database.
- Investigate the complexities of health care and the opportunity to implement value stream mapping in order to improve patients outcomes and experiences.
- Questions/Feedback from Participants
- **Housekeeping:** Session is being recorded, questions via the chat box



# Presenters



Herbert S. Wong, Ph.D.  
Agency for Healthcare Research and  
Quality (AHRQ)  
Director of Statistical Research  
and Methods



Jennifer Smith, Ph.D.  
NORC at the University of Chicago  
Principal Data Scientist



Duncan Sibson, MBA  
Icon Health  
CO-Founder and COO



# Our Mission

We strive to empower individuals, communities, and organizations through collaborative support services and health care information to advance the Triple Aim: **Better Health**, **Better Care**, **Lower Cost**

We are:

- Non-profit
- Independent
- Objective



# Who We Serve

## Change Agents

Individuals, communities, or organizations working to lower costs, improve care, and make Colorado healthier.



Clinicians



Hospitals



Government



Consumers



Employers



Researchers



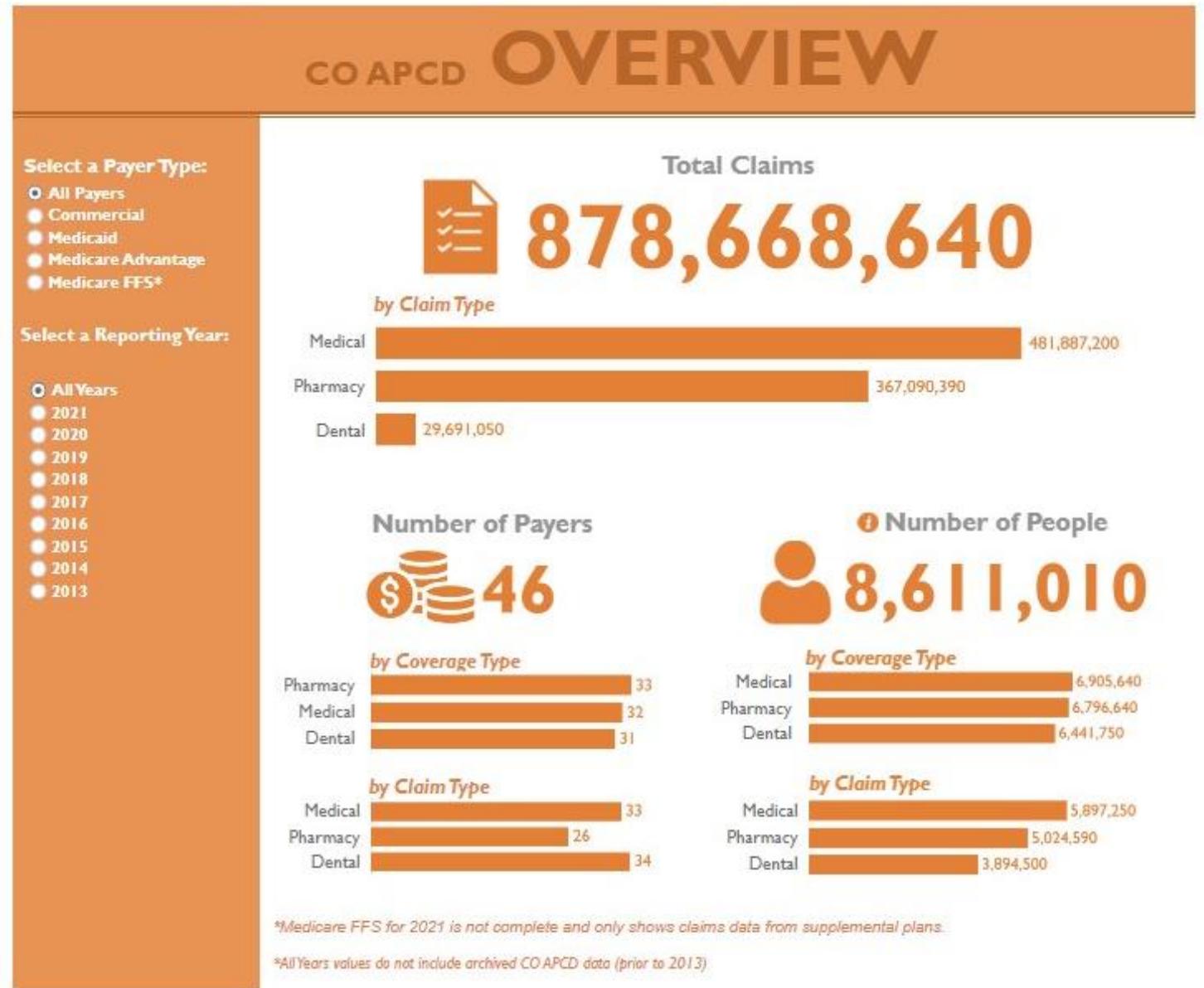
Health Plans



Non-Profits

# What's in the CO APCD?

- <https://www.civhc.org/get-data/whats-in-the-co-apcd/>

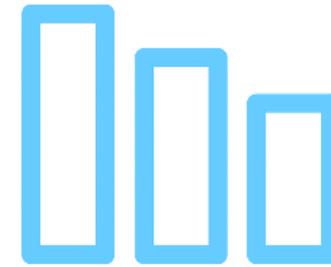


# How We Inform



## Public CO APCD Data

Identify opportunities for improvement and to advance health care through public reports and publications



## Non-Public CO APCD Data

Datasets and reports to address specific project needs aimed at better health, better care and lower costs





AGENCY FOR HEALTHCARE RESEARCH AND QUALITY



# Physician and Physician Practice Research Database (3P-RD)

Herbert S. Wong, Ph.D.

*Agency for Healthcare Research and Quality*

Jennifer Smith, Ph.D.

*NORC at the University of Chicago*

CIVHC Webinar ♦ June 23, 2022

# AHRQ Mission

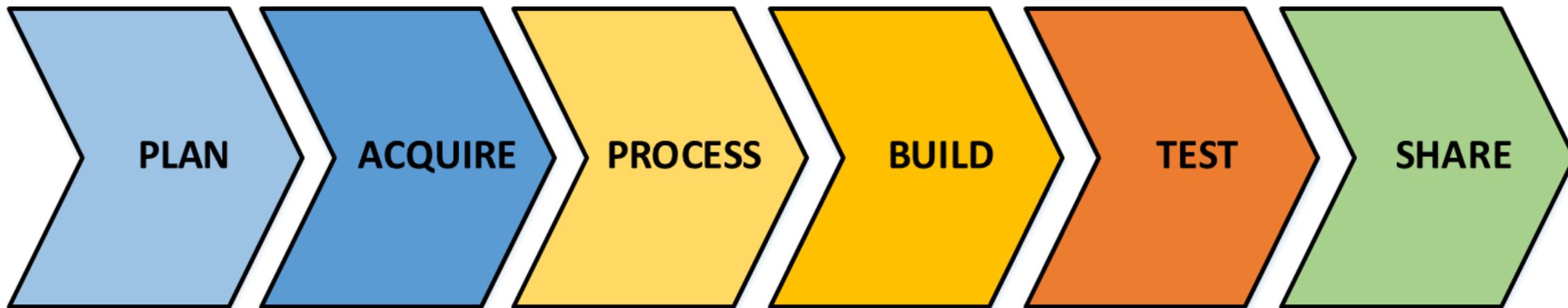


- “... to produce evidence to make healthcare safer, higher quality, more accessible, equitable, and affordable, and to work within the U.S. Department of Health and Human Services and with other partners to make sure that the evidence is understood and used...”
- Fund and conduct healthcare research
- Database Development and Dissemination
  - ▶ Long history
  - ▶ Medical Expenditure Panel Survey (MEPS), Healthcare Cost and Utilization Project (HCUP)

# Motivation

- March 2020: COVID-19 National Emergency
- The Coronavirus Aid, Relief, and Economic Security Act (CARES Act) signed into law on March 27, 2020.
  - ▶ Federal response to economic consequences of COVID-19
  - ▶ Growing recognition of health care disparities issue
- How best to implement components of the CARES Act?
  - ▶ Lack of data on medical professionals and organizations to make informed decisions.
- AHRQ Response -- Physician and Physician Practice Database (3P-RD)

# Project Overview



- ENVIRONMENTAL SCAN
- DATABASE DESIGN & DATA DEVELOPMENT PLANS
- PROJECT ADVISOR DISCUSSIONS
- DATA VENDOR OUTREACH

- DATA REQUEST APPLICATIONS
- DATA USE AGREEMENTS/MEMORANDUM OF UNDERSTANDINGS
- DATA PURCHASING COSTS
- DATA IMPORTS & STORAGE

- DATA CLEANING & VALIDATION
- DATA HARMONIZATION

- CONSTRUCTS & MEASURES DEFINING
- MATCHING/ RECORD LINKAGE
- DATA AGGREGATIONS

- DATA QUALITY CHECKS & BENCHMARKING
- ANALYSIS OF OUTLIERS
- CONFIDENTIALITY ASSESSMENT

- RESTRICTED & PUBLIC USE FILES
- DOCUMENTATION
- FEASIBILITY REPORT

# Planning Stage: Evaluate Data

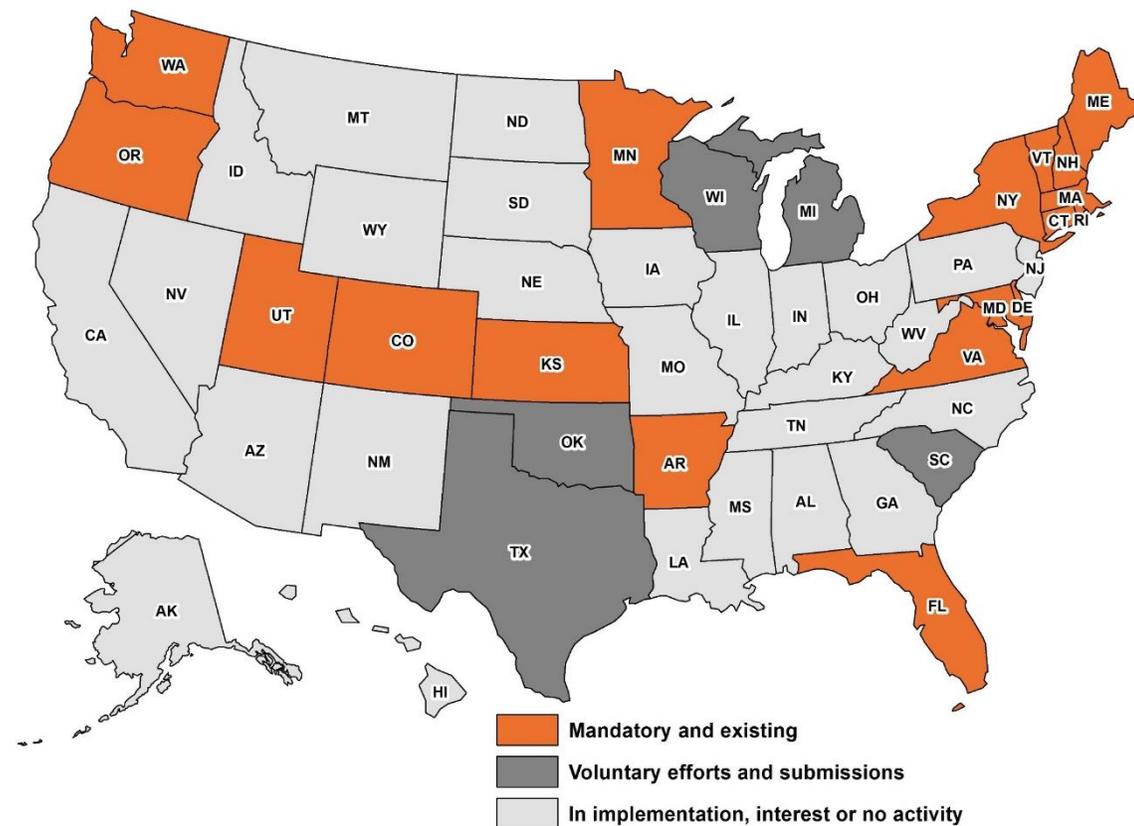


- Data Sources Common to States
  - ▶ Three (3) physician datasets (NPPES, FSMB, AMA Masterfile)
  - ▶ Four (4) physician practice datasets (MD-PPAS, PECOS, HCRIS, IQVIA OneKey)
- Data Sources Unique to States
  - ▶ Claims Databases (APCD and other claims sources)
  - ▶ State Medical Boards (SMB)
- Nine (9) other data sources considered
  - ▶ Association of American Medical Colleges
  - ▶ AHRQ's Compendium of U.S. Health Systems

# Data Acquisition Stage

- Obtained SMB data for 21 states
- Conducted outreach to 7 states for APCD data
- Obtained APCD data from four (4) states
  - ▶ NPPES, PECOS, Compendium

States with APCDs Considered for the 3P-RD

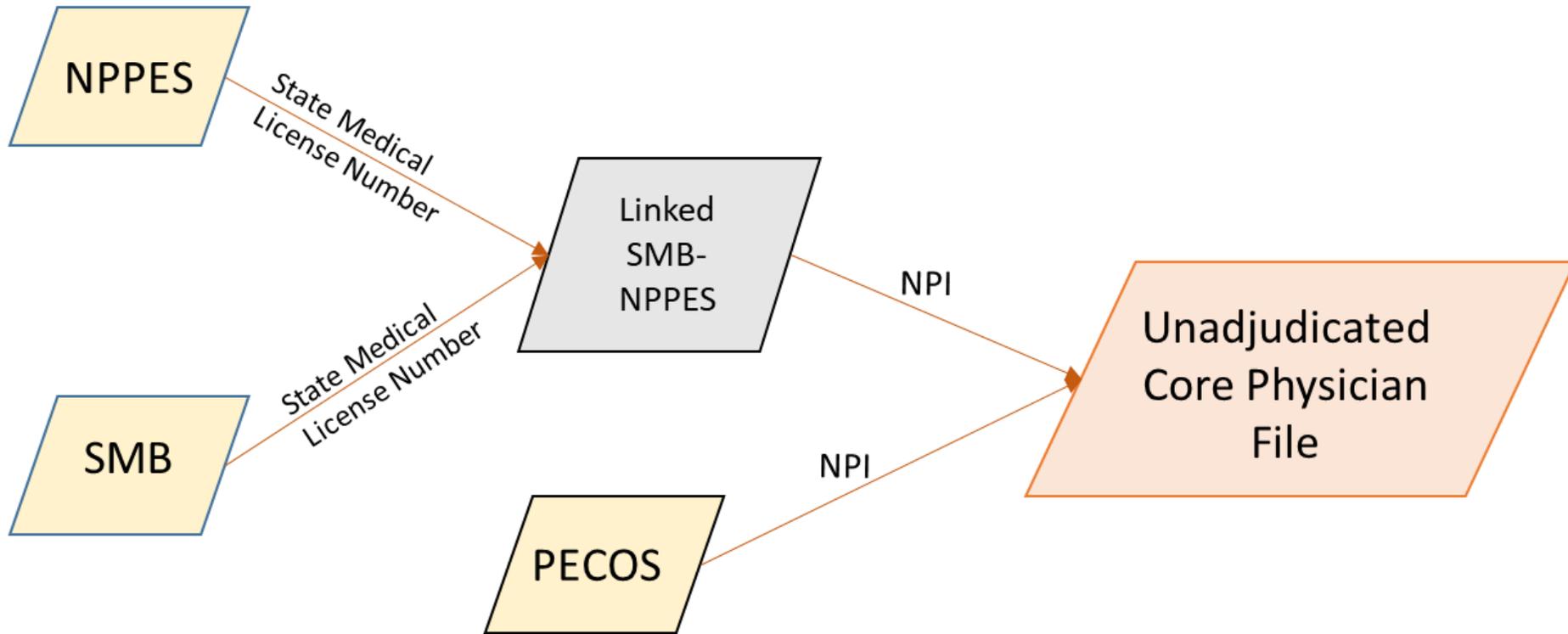


# Process Stage

- Data Cleaning and Validation
  - ▶ Name, date, and full address clean-up
- Data Assessment and Harmonization
  - ▶ Specialty harmonization
  - ▶ Provider Adjudication
- Linking files to create the Core Physician File
  - ▶ Three linking variants created to link SMB and NPPES
  - ▶ Match status evaluated on first and last name using Jaro-Winkler

# Process Stage

## Core Physician File



# Process Stage

- Physician characteristics in the Core Physician file are dependent on the SMB data
  - ▶ Global 3P-RD Provider ID
  - ▶ License status: AR and MN only contain information for physicians with active licenses
  - ▶ License dates
  - ▶ Physician name and sex
  - ▶ Military affiliation: CA, FL, TX, WA
  - ▶ Board certifications: MA, MD, MN, MT
  - ▶ Medical school location: AZ, CA, FL, MA, MN, NY, TX
  - ▶ Harmonized specialty information

# Build Stage

- Finalizing the 13 3P-RD States
  - ▶ Name, date, and full address clean-up
- Develop Physician characteristics from claims data
- Identify Physician Practice sites
  - ▶ TIN-ORG NPI-Servicing Zip Code
  - ▶ Not all APCD had TIN
- Develop Physician Practice characteristics from claims data

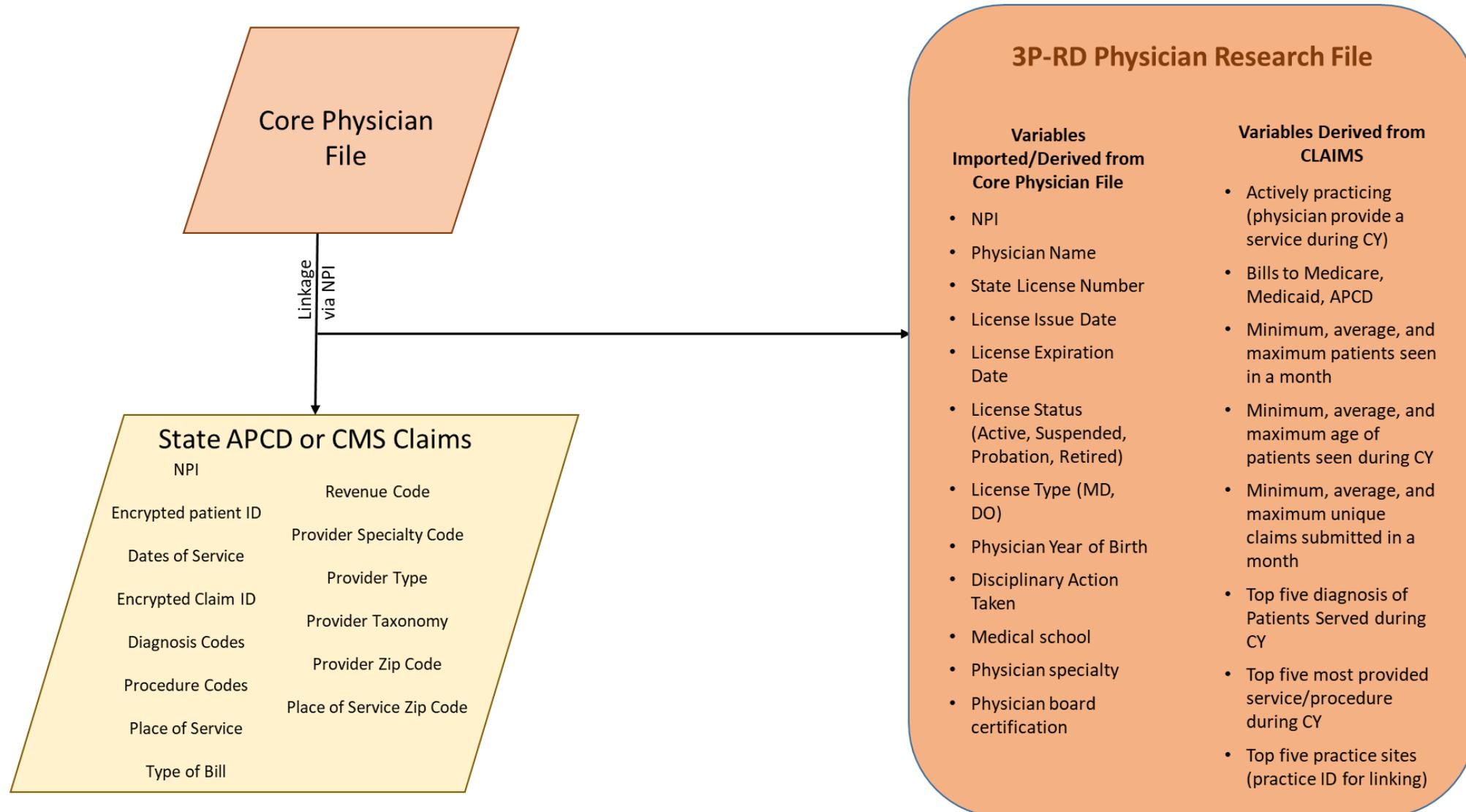
# Build Stage: Final 13 States

- Four APCD states
  - ▶ Arkansas, Colorado, Maryland, Washington
- States with APCD programs or developing programs
  - ▶ California, Florida, Massachusetts, Minnesota, New York, Texas
- States for geographical representativeness
  - ▶ Arizona (southwest), Missouri (borders AR), Montana (frontier)

# Build Stage: Claims Variables

- All variables standardized across all states regardless of claims data source
- All states include
  - ▶ CMS Medicare FFS data
  - ▶ Medicaid data; data sources vary
    - CO 3P-RD uses the Medicaid data from the APCD
- Only states with APCD data include
  - ▶ Medicare Advantage data
  - ▶ Commercial data

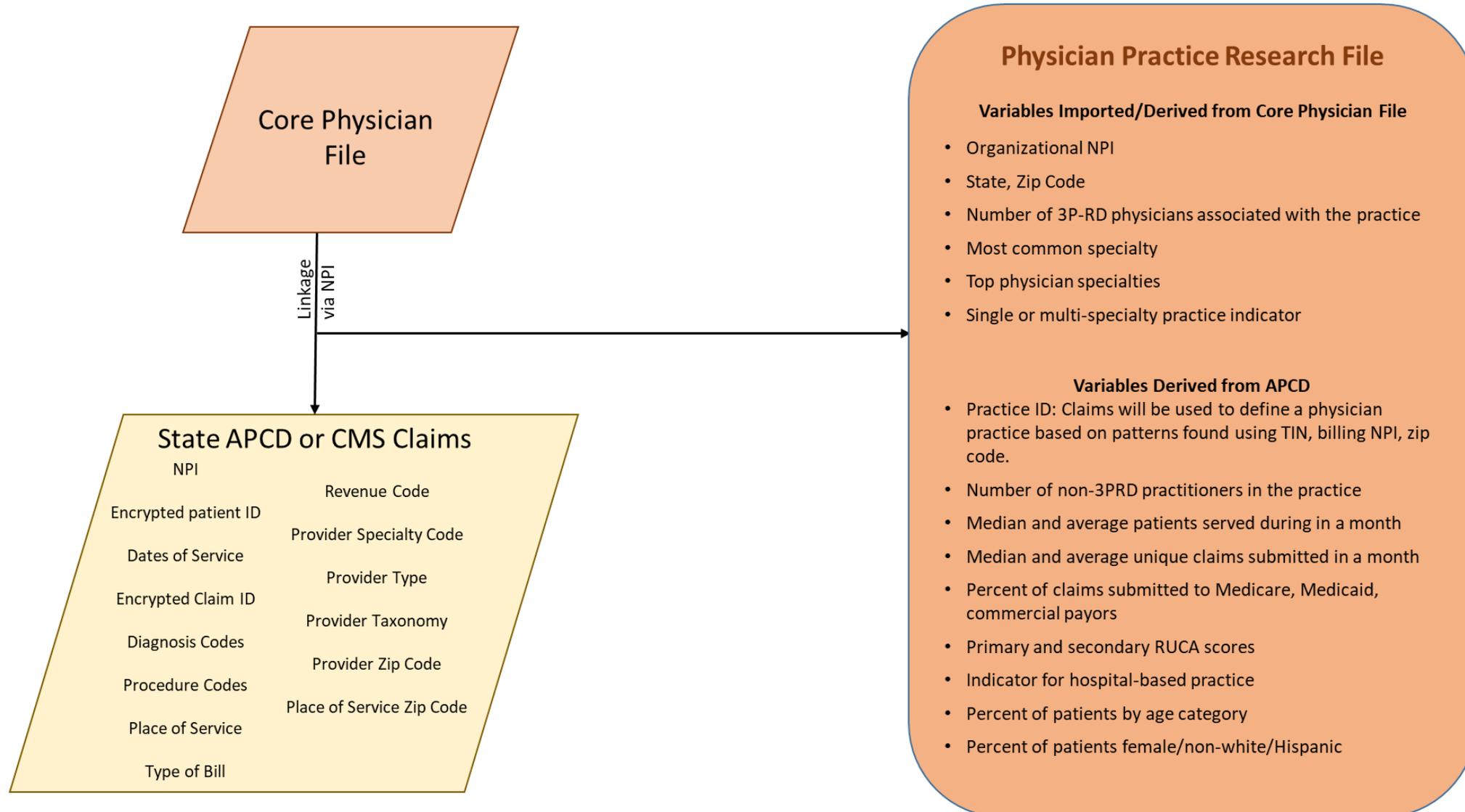
# Build Stage: Physician Variables



# Build Stage: Physician Variables

- NPI
- Actively practicing flag
- Types of insurance billed: Medicare, Medicaid, Commercial
- Patient panel age variables
- Claims per month (total and by payor)
- Patients per month (total and by payor)
- Claims per patient per month (total and by payor)
- Percentage of claims by payor
- Top procedures performed (code and category)
- Top diagnoses observed (code and category)

# Build Stage: Physician Variables



# Build Stage: Practice Variables

- Organizational NPI
- Number of 3P-RD physicians associated with practice
- Number of other providers associated with practice
- Total number of providers associated with practice
- Demographics of patient panel (% of patients in age groups, % female, % non-White, % Hispanic)
- Claims and patients per month
- Most common specialty
- PCP, Medical, Surgical focus for practice
- Hospitalist and Hospital based indicators
- Zip code of practice

# Test Stage

- Benchmark against the Association of American Medical Colleges Workforce Survey

State	3P-RD Physicians	Workforce Survey Physicians	Difference (3PRD – AAMC)	% Difference from AAMC (Difference/AAMC)
Colorado	22,743	16,956	5,787	34.13%

- Assess impact of cell suppression

# Test Stage: Analysis of Outlier Data

- **Potential issue:** After visual inspection, there are excessively large values in the claims per month variables. When compared to the global average and median, these maximum values are outliers and should be further explored. Further, graphical representation shows the severity of the outlier when compared to other physicians in the file.

# Test Stage: Analysis of Outlier Data

- The top offender has 46,195 max claims per month with the next closest three physicians having 8,005, 5,436, and 4,595 respectively.
  - ▶ Is an internal medicine and geriatric medicine physician in Denver
  - ▶ Has specialty in the aging process and skills in the diagnostic, therapeutic, and rehabilitative aspects of illness in the elderly. Specializes in care for geriatric patients in long-term care settings
  - ▶ Has entity codes of only 'practitioner' (individual)
  - ▶ Is a part of the Kaiser Colorado Permanente Medical Group where he/she is the Vice President and Chief Quality Officer and is responsible for the oversight of a 1,200+ physician group which gives care to 650,000+ members in the region
  - ▶ His/her claims per months are as follows in ascending order: 7, 16, 41, 49, 62, 62, 93, 115, 2718, 4996, 27678, 46195, with an average of 6836

# Test Stage: Analysis of Outlier Data

- ***Final Findings:*** Based on the above information, the patterns seen among physicians with high max claims per months are similar to those seen in other states. Uniquely, it appears that many of these physicians in CO are a part of the Kaiser Colorado Permanente Medical Group which may be contributing to their higher max claims per month values.

# 3P-RD Key Elements

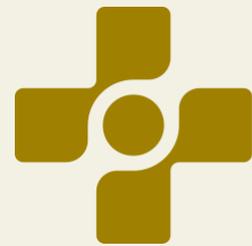
- Physician and Physician Practice files are linkable
- Global 3P-RD Provider ID will allow the identification of providers across state lines
- Can be used to answer key policy questions
  - ▶ Number of physicians have a license
  - ▶ Number of physicians with an active license actively provide care
  - ▶ Number of physicians with licenses that recently expired and can be re-called if necessary

# Share Stage

- Public Use File (PUF)
  - ▶ Directory of physicians and practices
  - ▶ No variables from APCD data
- Restricted Use File (RUF)
  - ▶ Limited variables from APCD data
- Geographic PUF
  - ▶ Aggregated to the zip code level

# Questions/Comments?





**Icon Health**

**How Musculoskeletal (MSK) Navigation Can Help  
Solve the Cost & Outcomes Disconnect**

CIVHC

Duncan Sibson

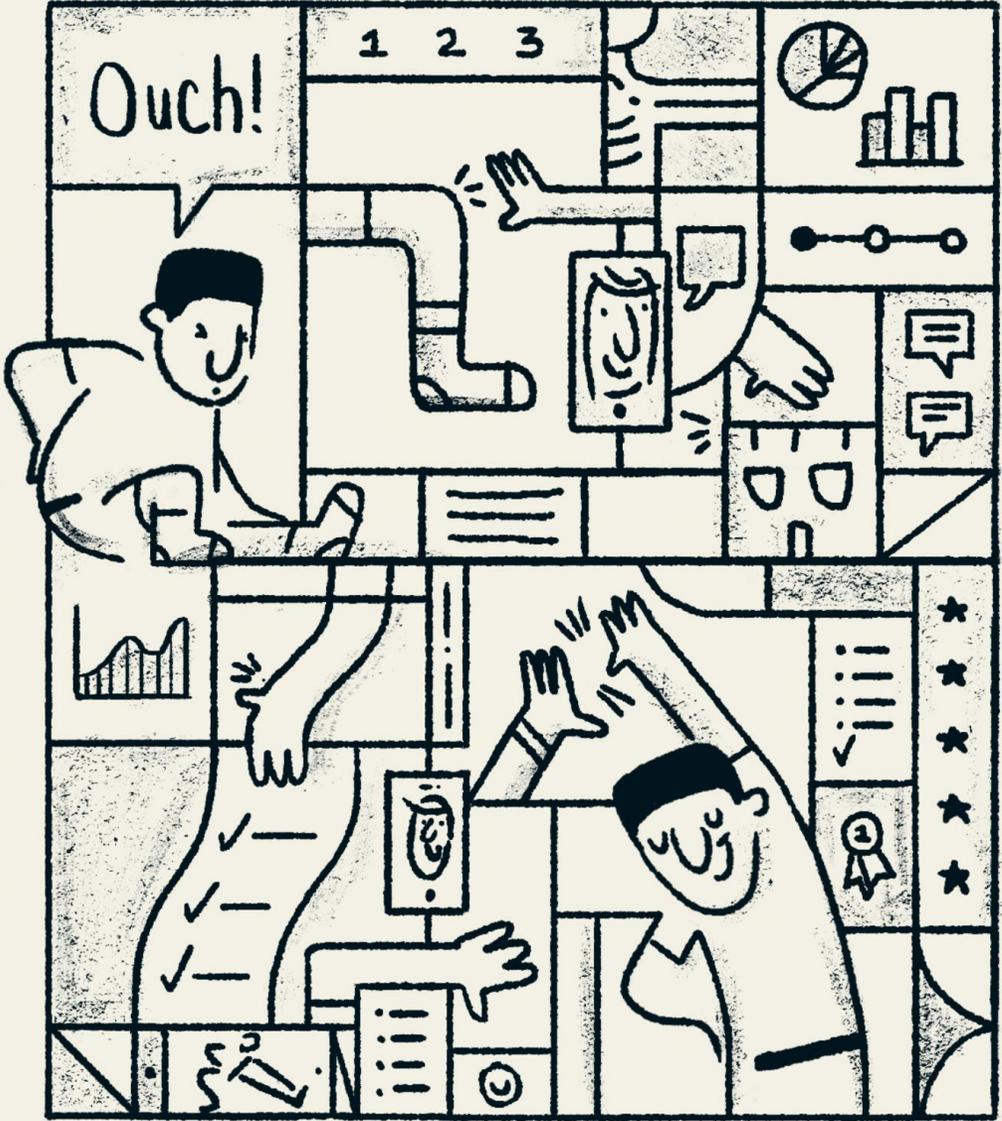
COO & Cofounder

June 23, 2022

Thank you to CIVHC







# Personalized and Comprehensive Orthopedic Benefit Management

# Right time. Right care. Right setting.

Engage



Engaged  
Member

Assess



Virtual Consult  
&  
Ortho Expert  
Assignment

Guide



In-Person Care  
from Icon  
Providers  
of Excellence

or

Conservative/Remote  
& Treatments

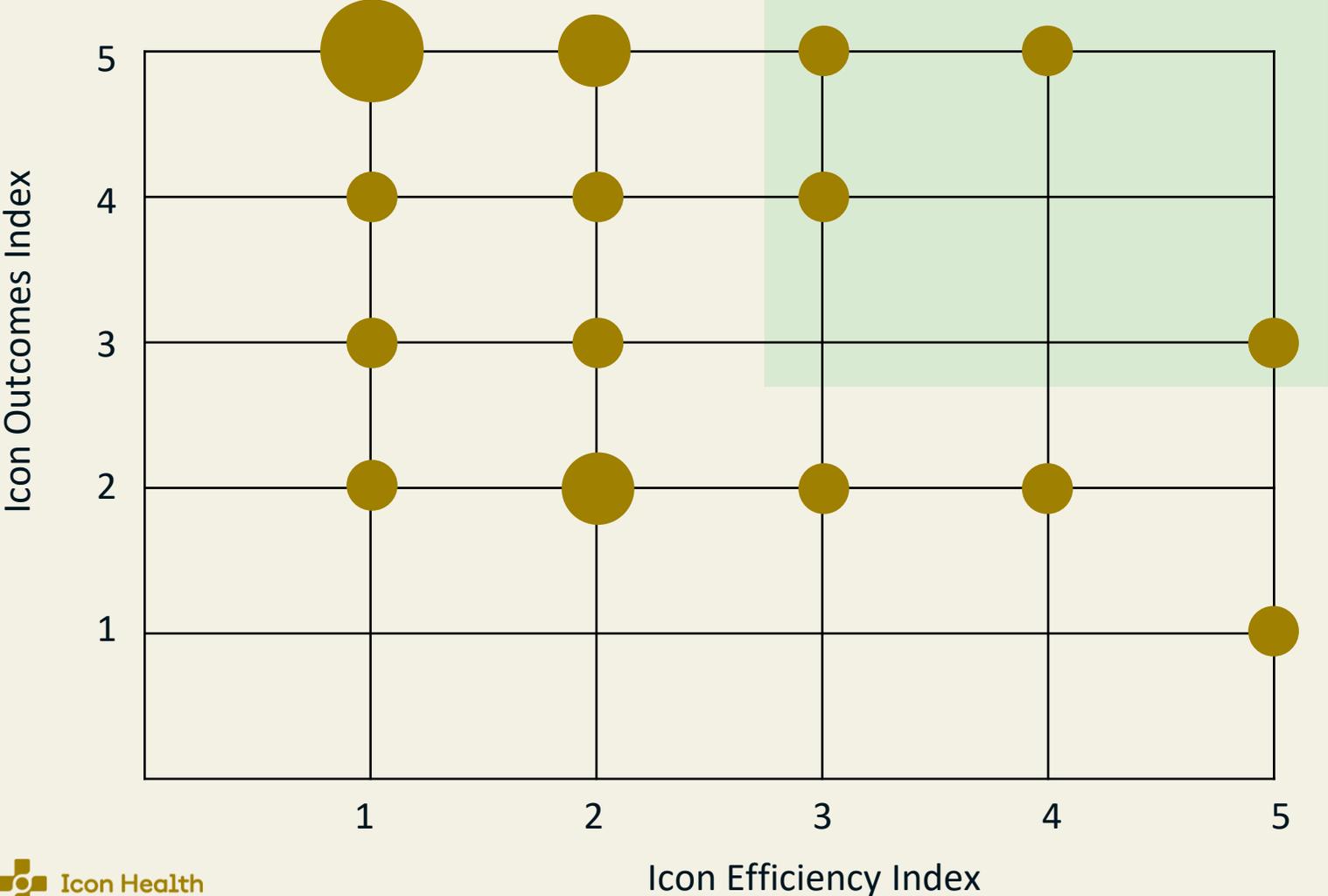
Thrive



Guided  
Recovery

# Providers of Excellence

Total Hip Arthroplasty Surgeons at Denver-Area Facilities



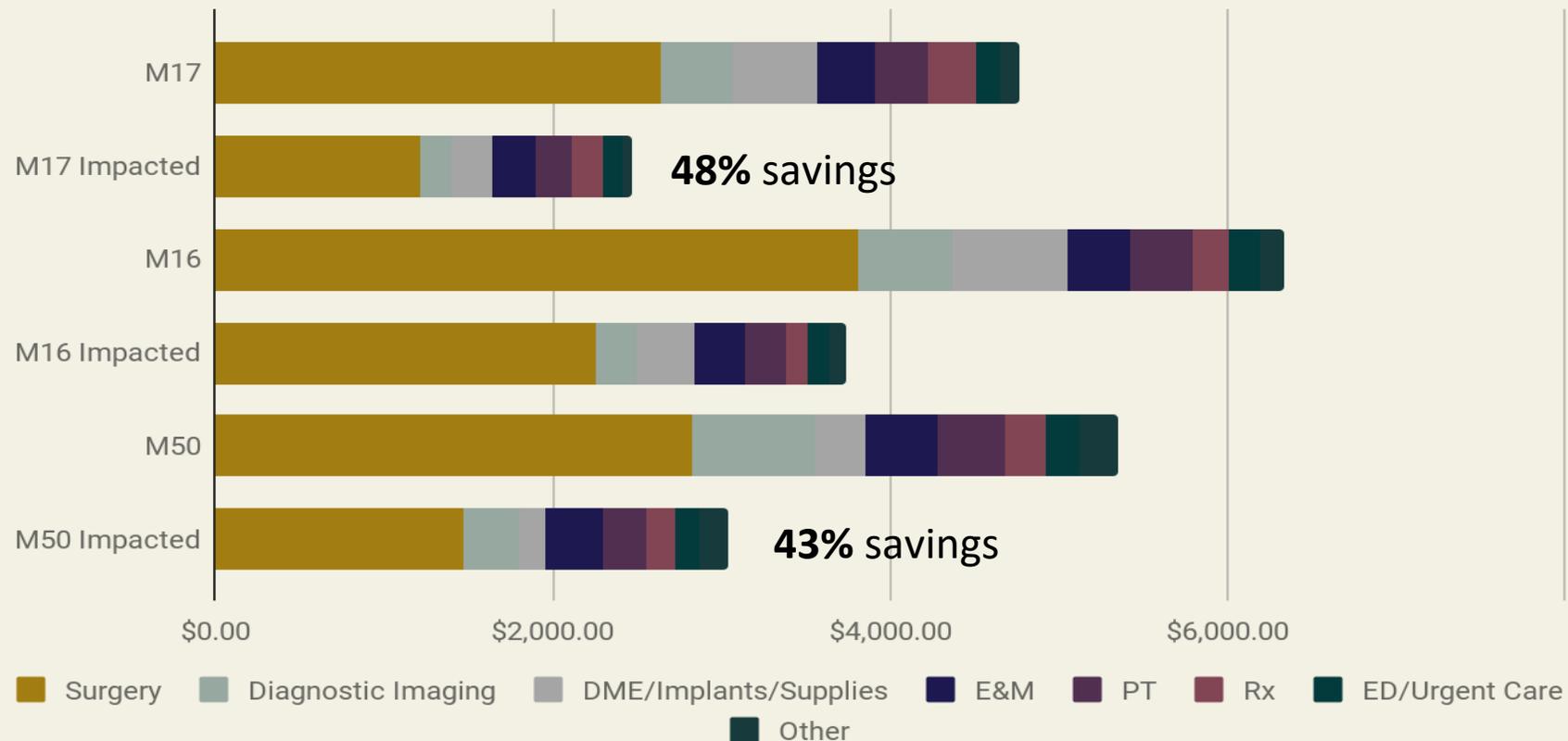
## Provider Selection Criteria

- **Locations**
  - Denver-Area
- **Specialty**
  - Assessed at the procedure level
- **Fit**
  - 300+ patient profile metrics
- **Quality**
  - Readmissions, avoidable ED visits, adverse sequelae, and condition-specific quality measures
- **Cost**
  - Plan-specific pricing data
  - Resource utilization and post-acute care management

# MSK Population: Icon Impacted

The result is 40%-60% savings opportunity vs. the unmanaged population

## Managed vs. Unmanaged MSK Diagnosis Cohorts



# Overall Opportunity

Across Colorado data, encompassing:

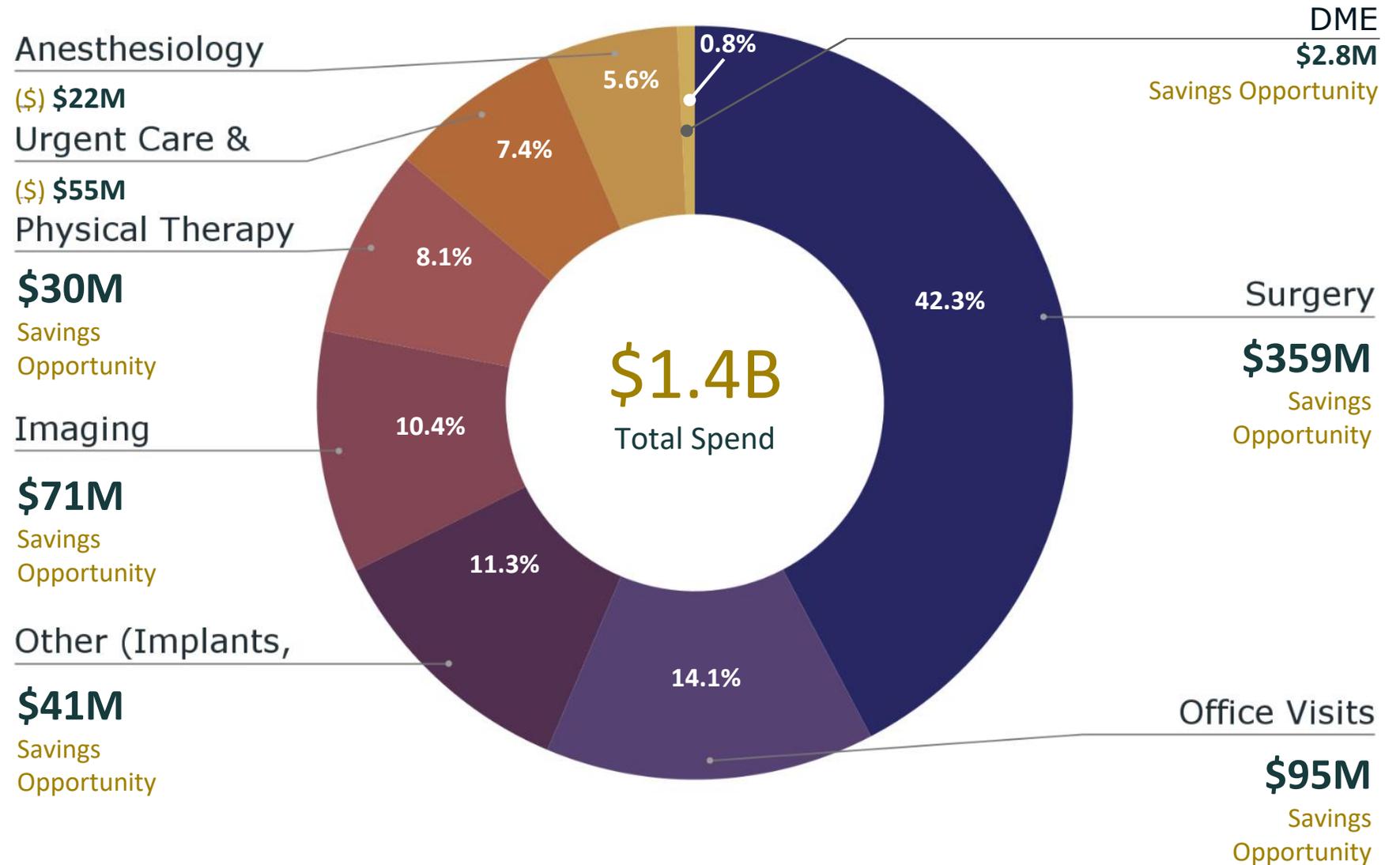
**93M** Individual Medical Claims

**5.6M** Covered Lives

**38** Individual Payers

**4 Years** of Claims History

## CO Commercial MSK Claims by Category



# Questions and Feedback



Reach out to [info@civhc.org](mailto:info@civhc.org)



Connect with CIVHC on Facebook, LinkedIn, and Twitter



Recording will be posted here:

[www.civhc.org/about-civhc/news-and-events/event-resources/](http://www.civhc.org/about-civhc/news-and-events/event-resources/)

# Next Webinar

- July 21, 12-1pm MT
- Shifting from Fee-for Service in Colorado: The Primary Care Collaborative and Alternative Payment Models
- **Presenters:** CIVHC and the Division of Insurance

