



AGENCY FOR HEALTHCARE RESEARCH AND QUALITY



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

Herbert S. Wong, Ph.D.

Zeynal Karaca, Ph.D.

*Agency for Healthcare Research and Quality*

AcademyHealth – HWTAC Webinar ♦ February 8, 2023

# Agenda

- Introductions
- Motivation
- Overview
  - ▶ Plan, Acquire, Process, Build, Test, Share
- Descriptive Statistics
- How to Obtain 3P-RD?
- Questions & Answers

# 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



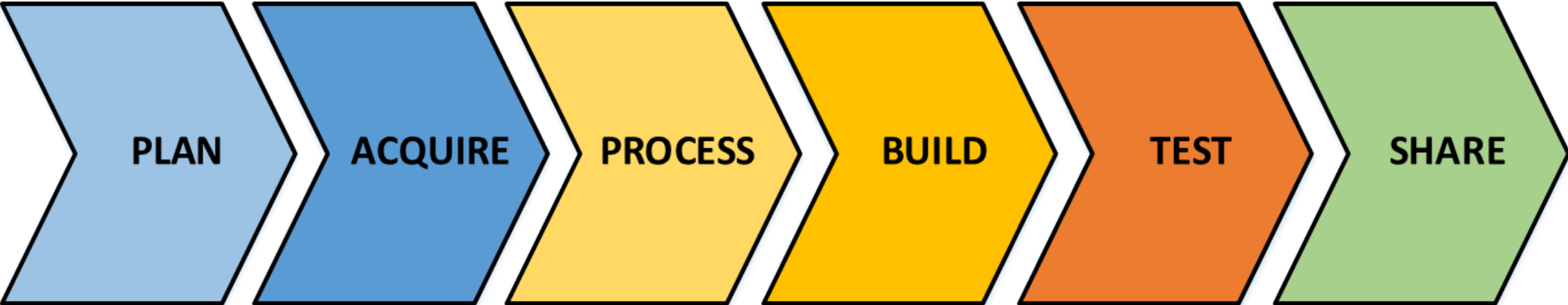
- March 2020: COVID-19 National Emergency
- The Coronavirus Aid, Relief, and Economic Security Act (CARES Act) signed into law on March 27, 2020.
  - ▶ Federal response to economic consequences of COVID-19
  - ▶ Growing recognition of health care disparities issue
- How best to implement components of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

# What is 3P-RD?

- Individual state-level databases
  - ▶ Census of physicians and physician practices
  - ▶ Characteristics useful for health care analysis
  - ▶ Data Year 2019-2020
- Prime Contractor – NORC
- States

AR	MA	NY
AZ	MD	TX
CA	MN	WA
CO	MO	
FL	MT	

# 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

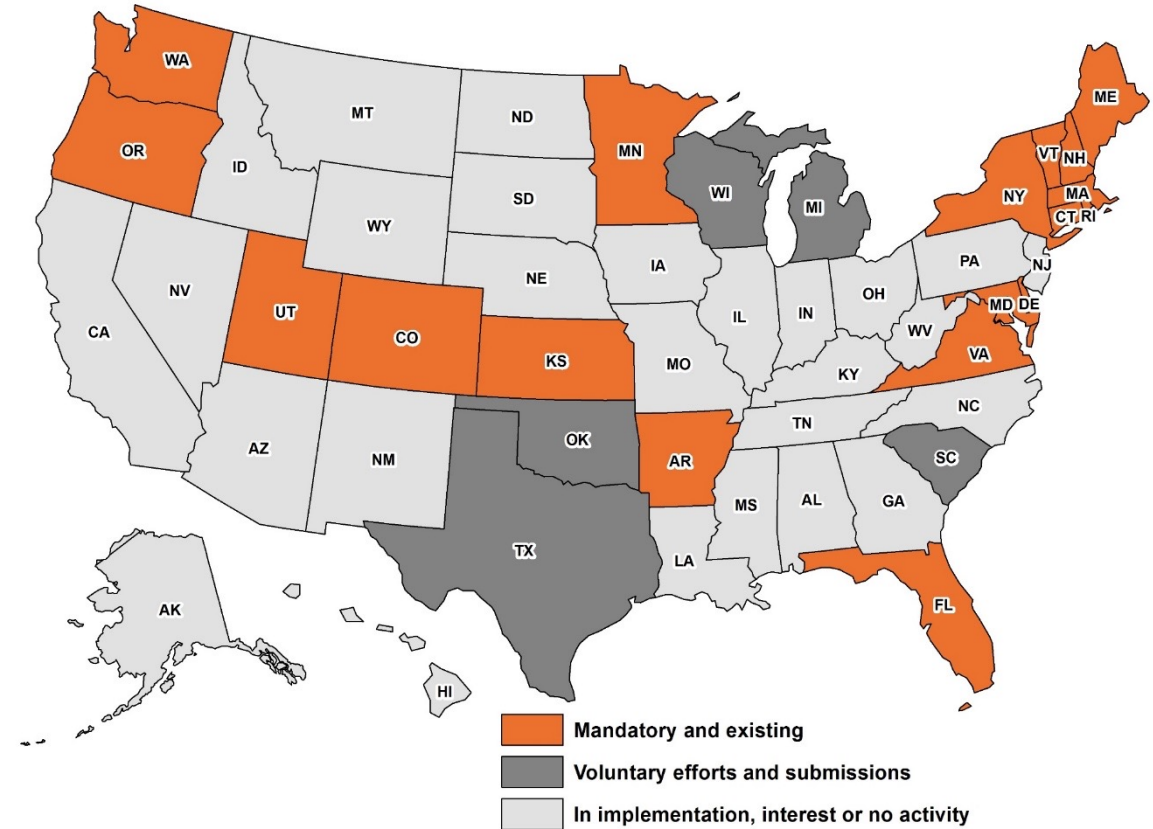


- Data Sources Common to States
  - ▶ Three (3) physician datasets (NPPES, FSMB, AMA Masterfile)
  - ▶ Four (4) physician practice datasets (MD-PPAS, PECOS, HCRIS, IQVIA OneKey)
- Data Sources Unique to States
  - ▶ Claims Databases (APCD and other claims sources)
  - ▶ State Medical Boards (SMB)
- Nine (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



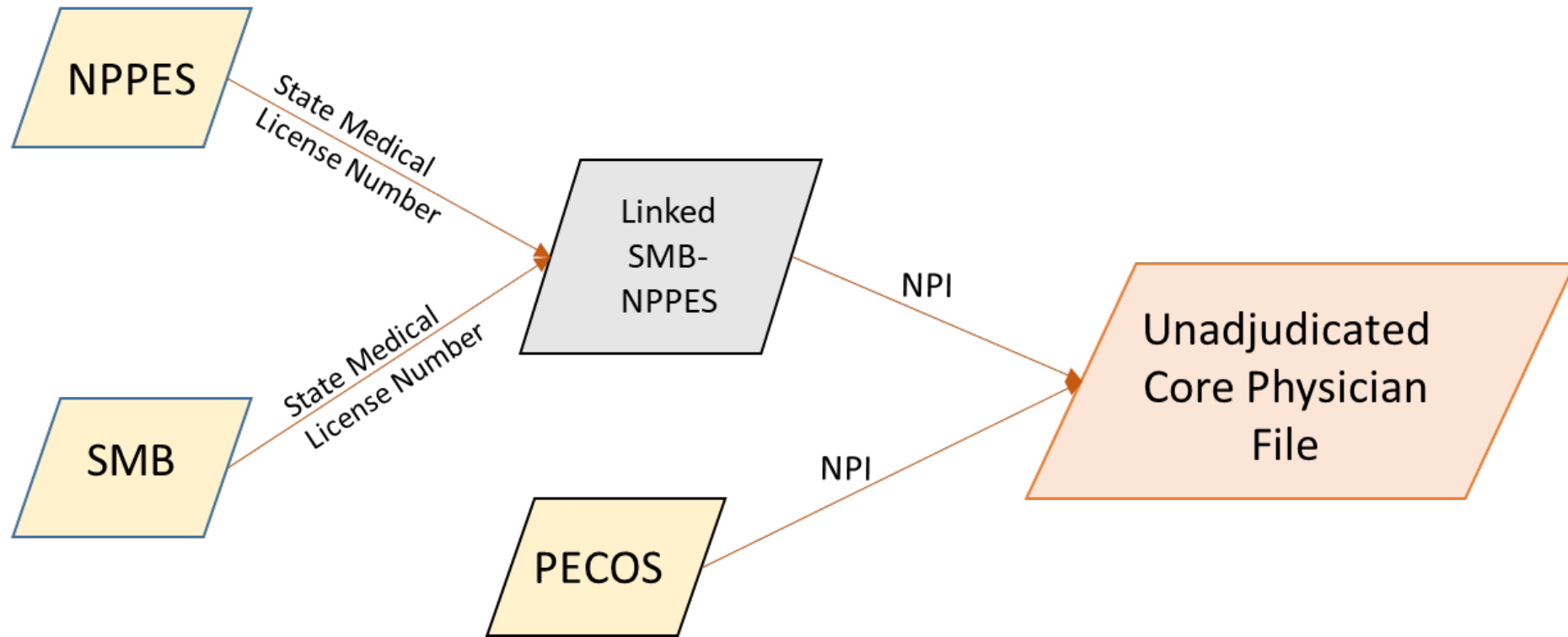


# Process Stage

- 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

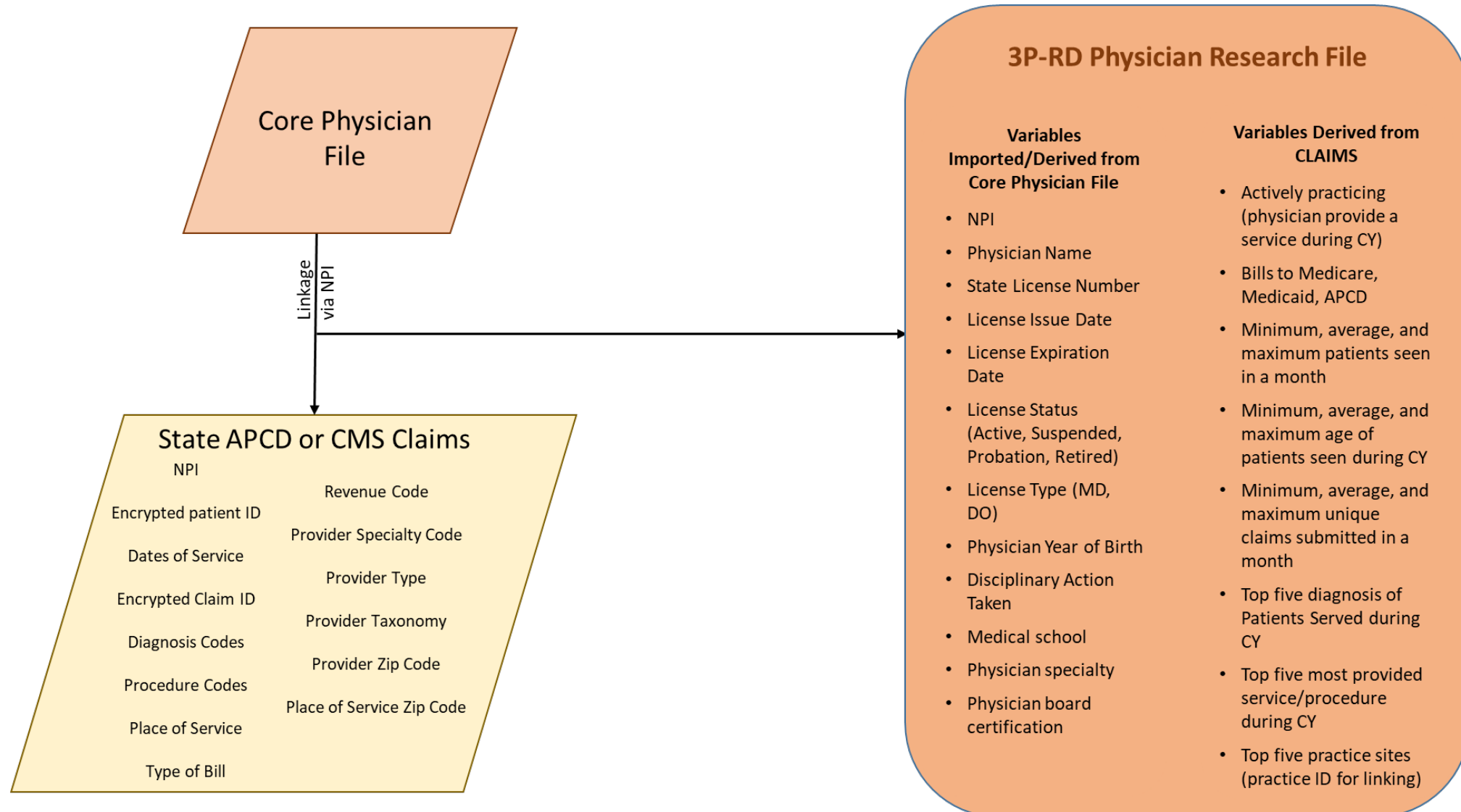
# Build Stage: Final 13 States

- 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
- Only states with APCD data include
  - ▶ Medicare Advantage data
  - ▶ Commercial data

# Build Stage: Physician Variables

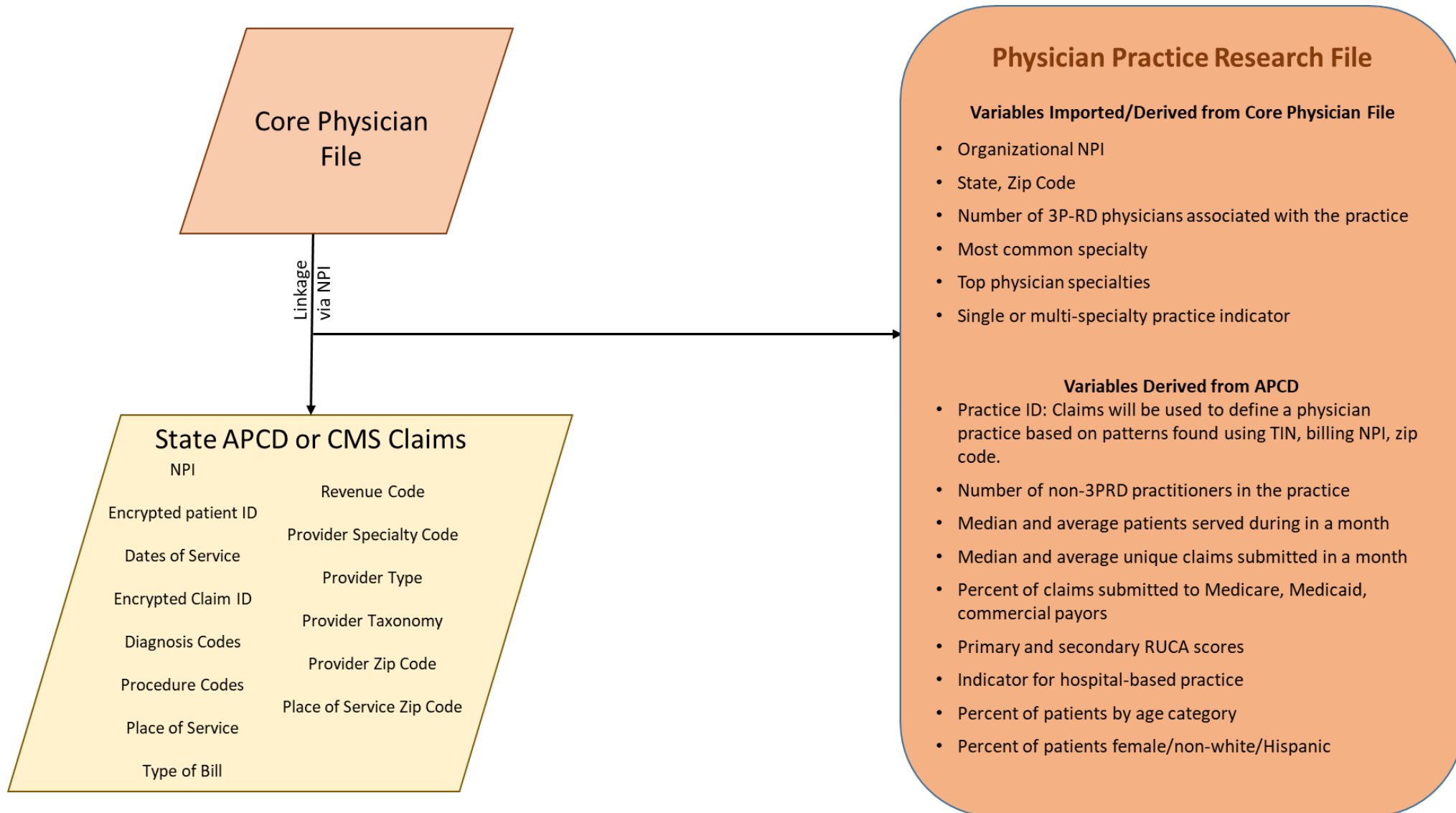


# Build Stage: Physician Variables

- 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 Practice Variables



# Build Stage: Physician Practice Variables



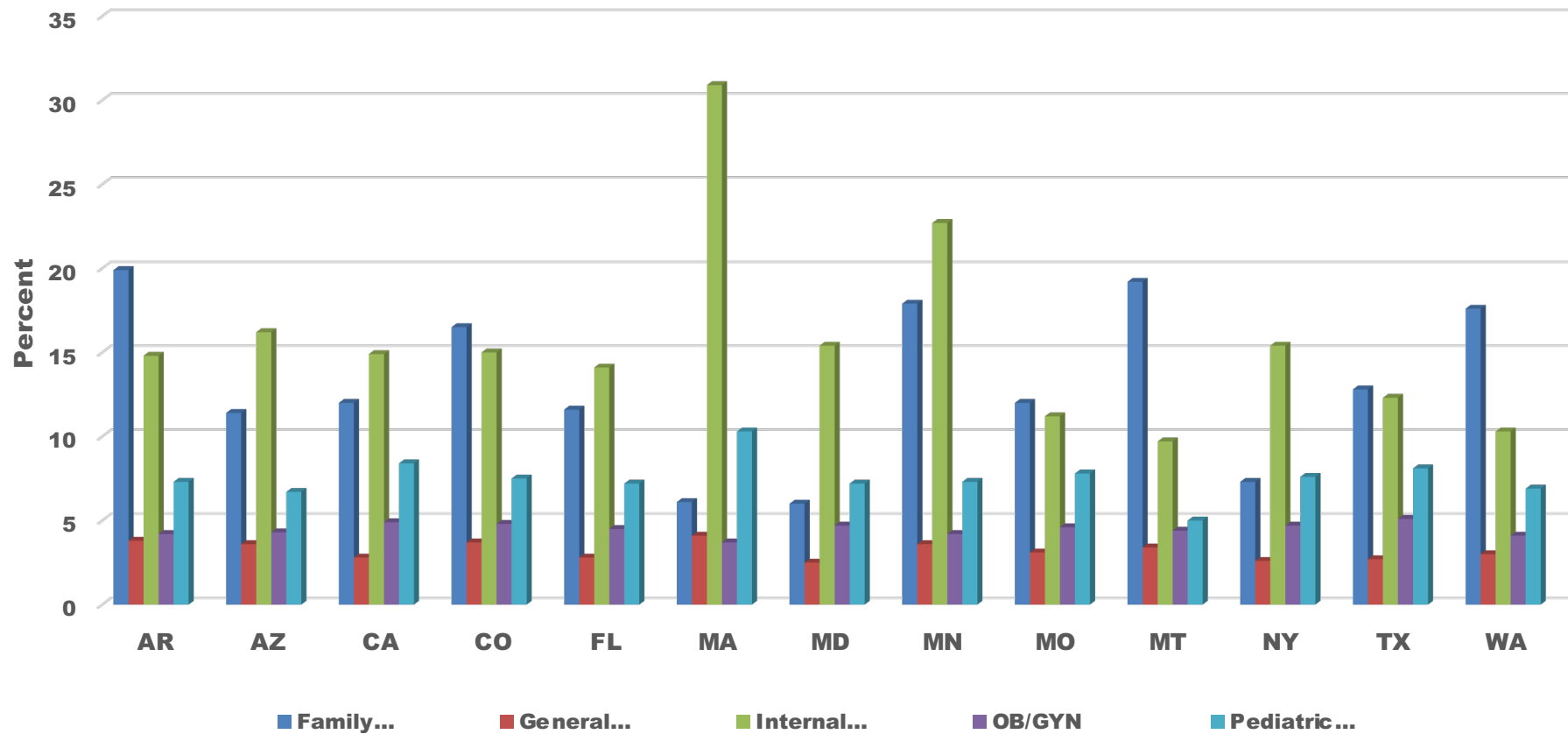
- Organizational NPI
- Number of 3P-RD physicians associated with practice
- Number of other providers associated with practice
- Total number of providers associated with practice
- Demographics of patient panel (% of patients in age groups, % female, % non-White, % Hispanic)
- Claims and patients per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

# 3P-RD Key Characteristics

- 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 recalled if necessary

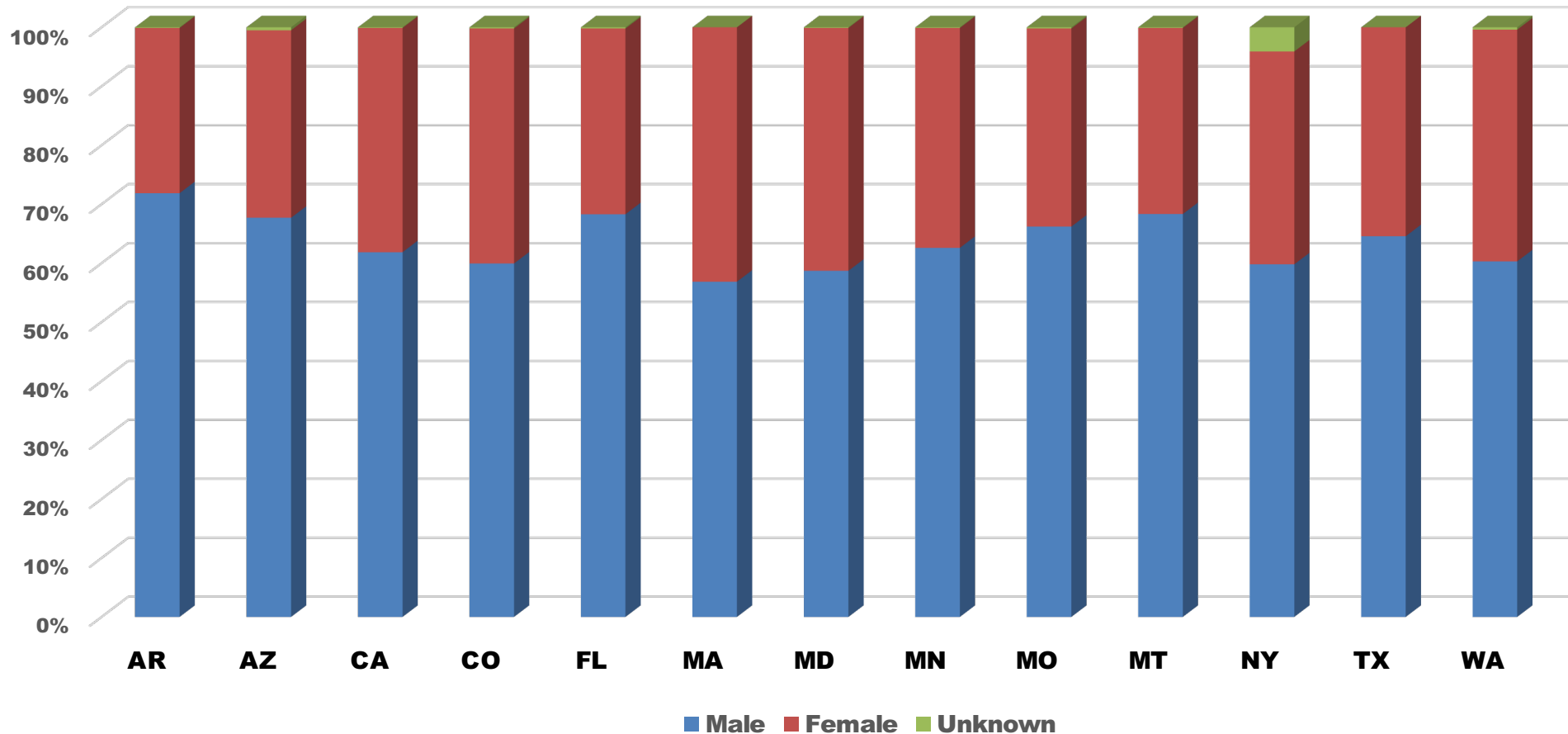
# Selected Statistics of Physician Files

**Distribution by medical specialties**



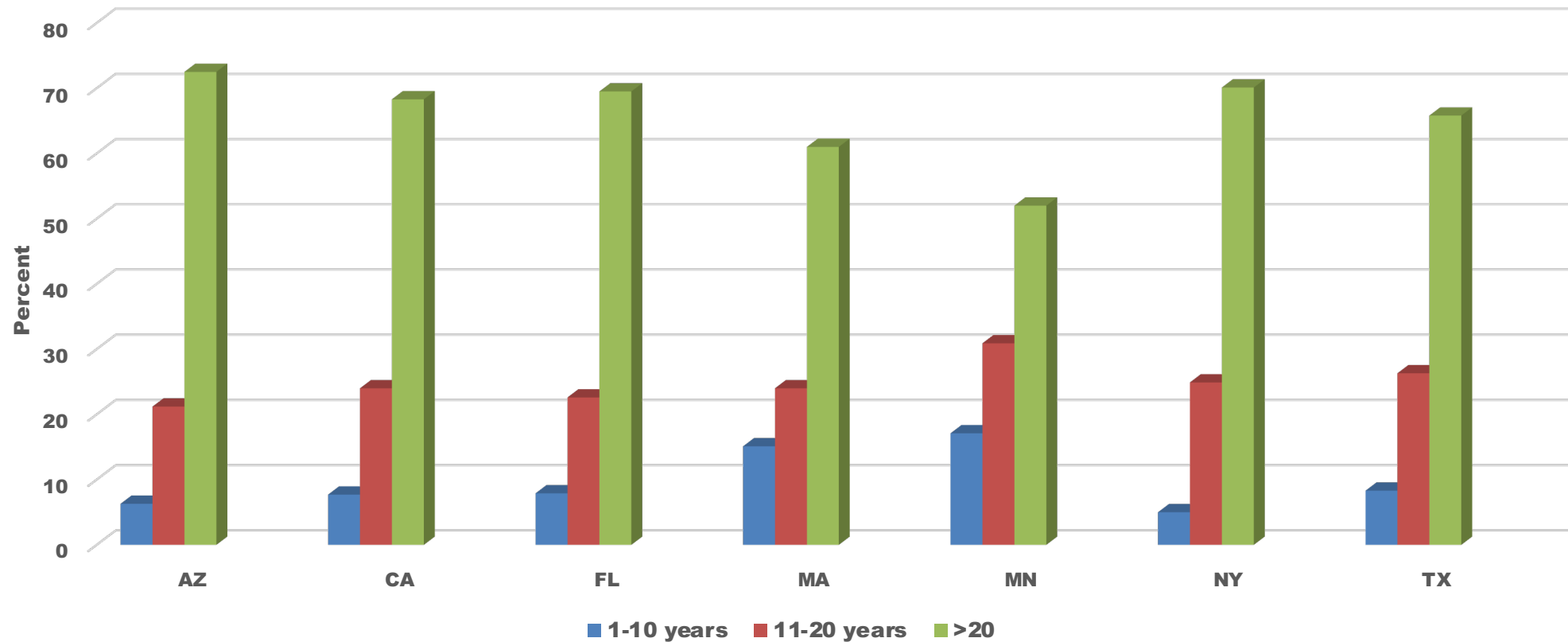
# Selected Statistics of Physician Files

## Distribution by gender



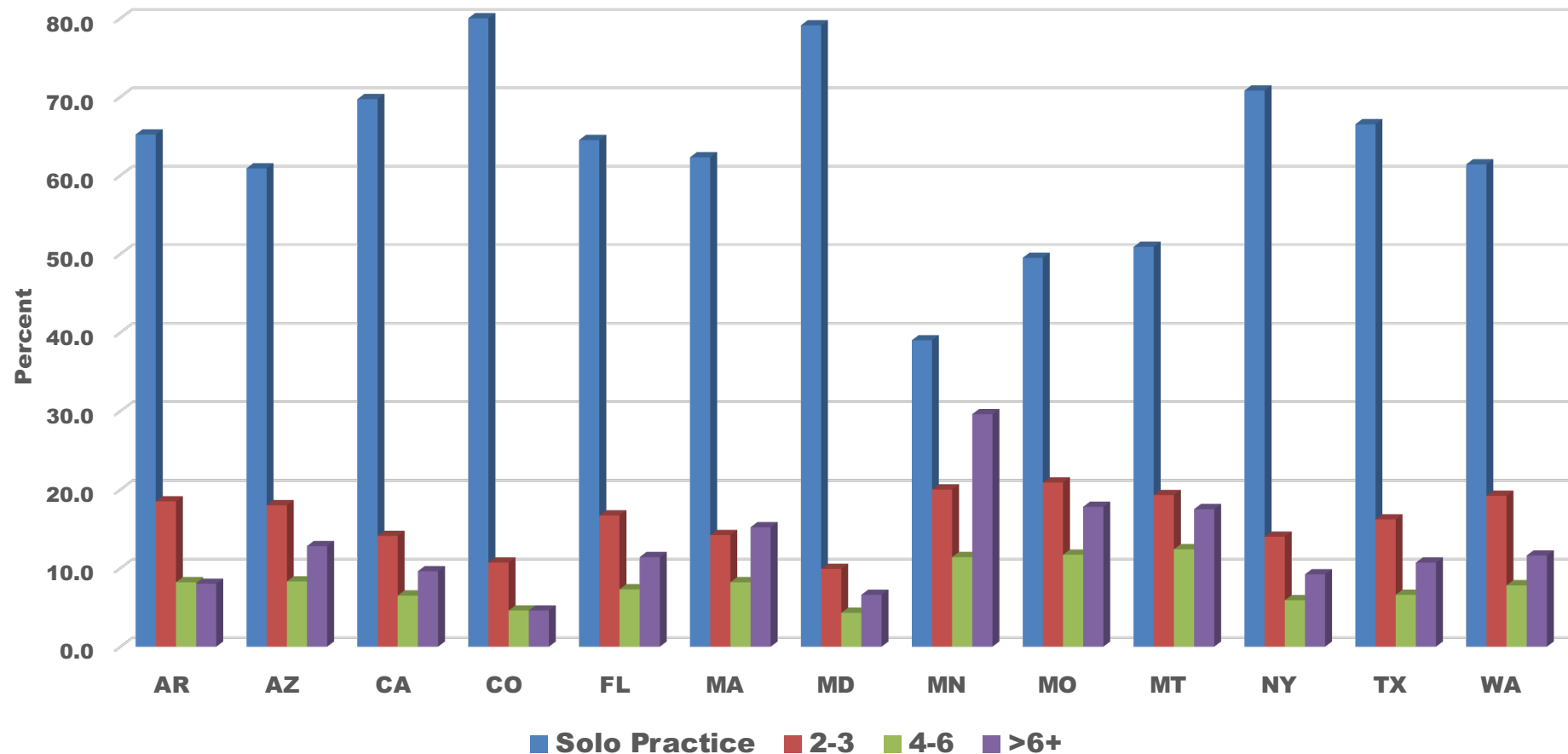
# Selected Statistics of Physician Files

## Number of years since medical degree obtained



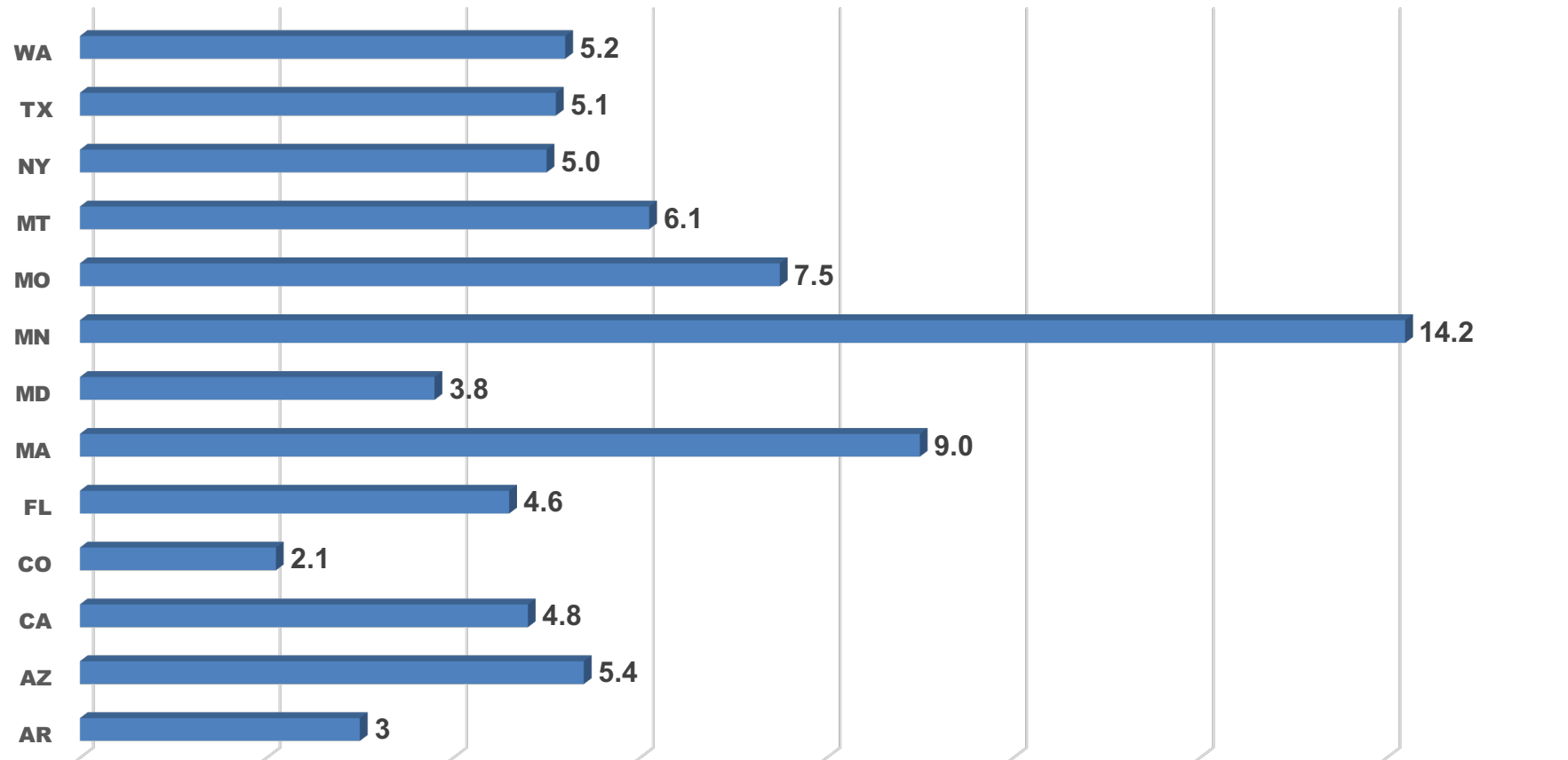
# Selected Statistics of Physician Practice Files

### Distribution by practice size



# Selected Statistics of Physician Practice Files

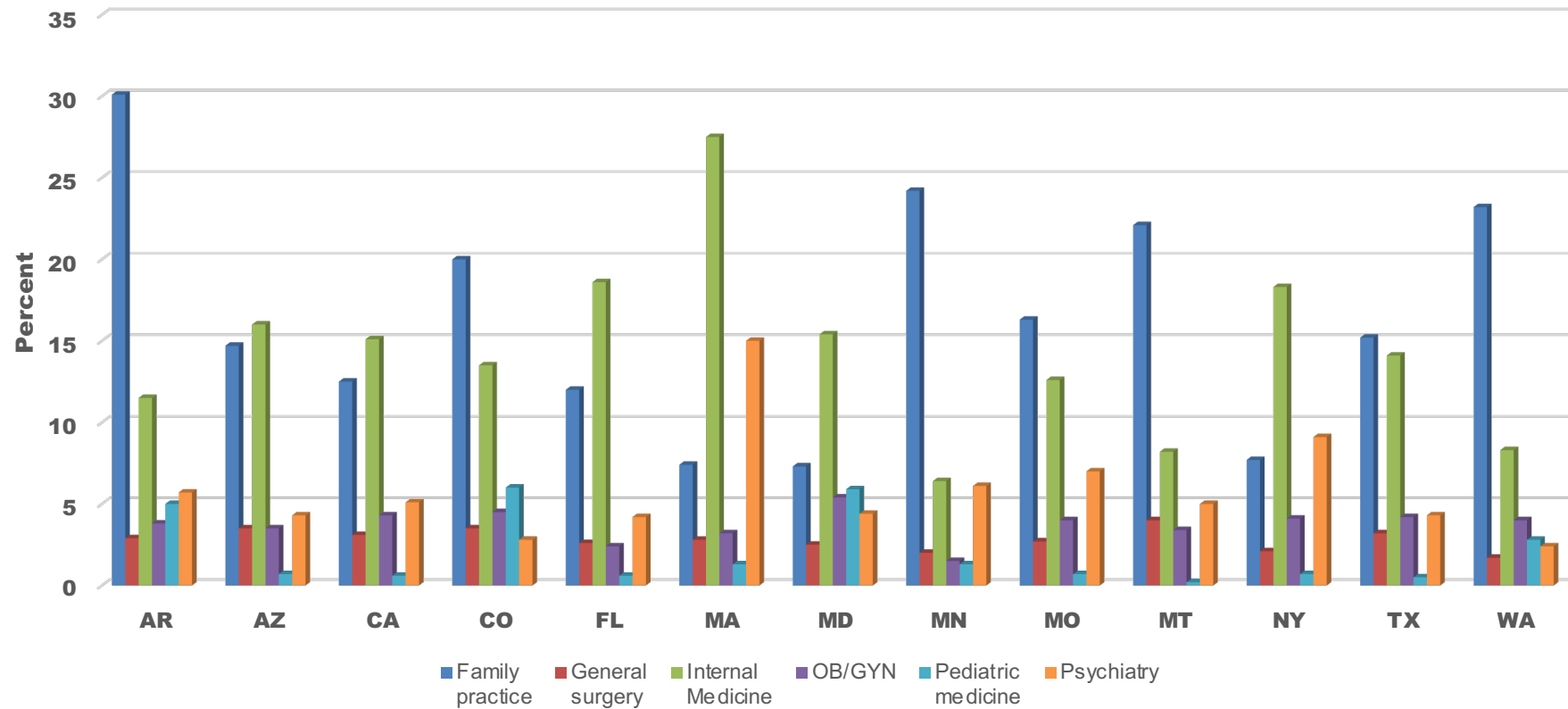
Average number of physicians per physician practice site





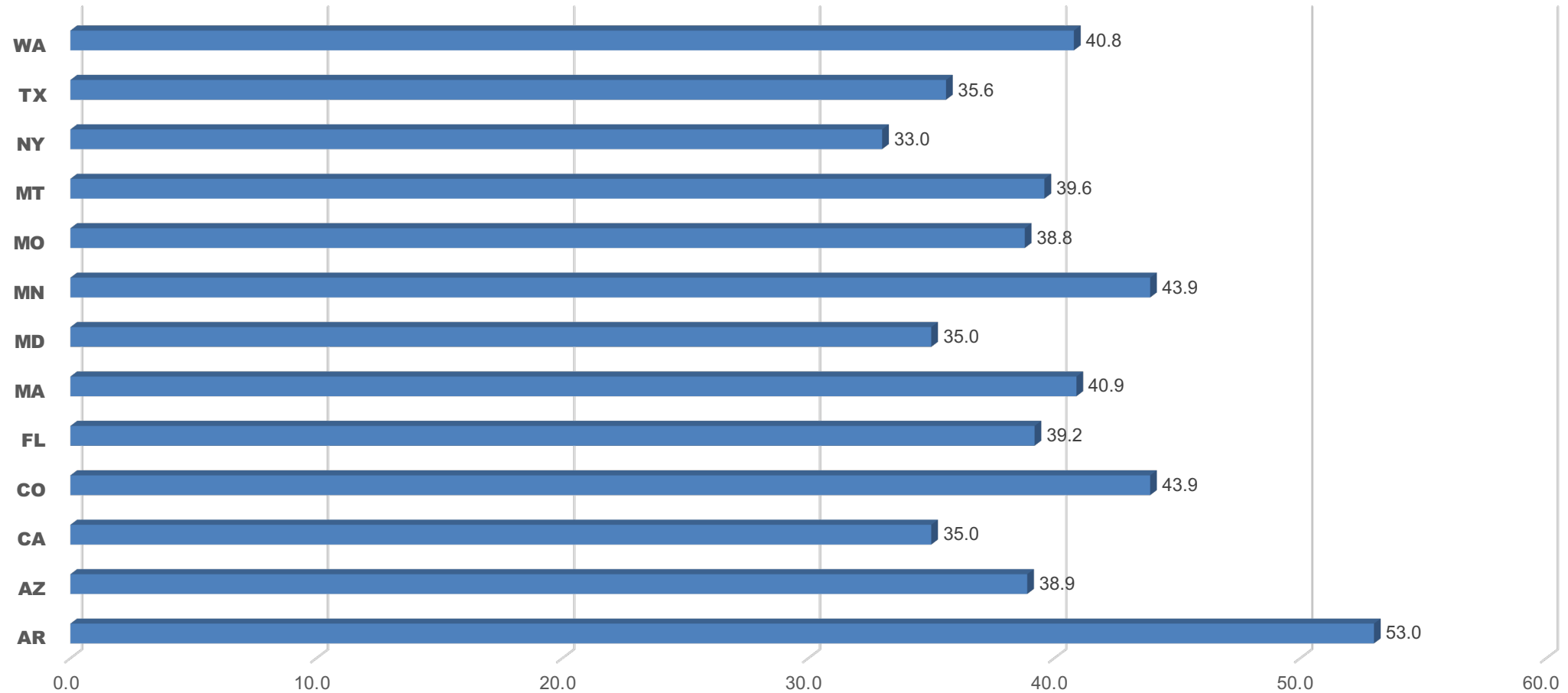
# Selected Statistics of Physician Practice Files

Common medical specialties among physicians practices



# Selected Statistics of Physician Practice Files

## Percent of physician practices with primary care



# Selected Statistics of Physician Practice Files (Geographic Level)



Massachusetts Zip Code	# of Unique Practice IDs	Average # of physicians associated with a practice	Average # of providers submitting Medicare FFS claims	% of practices with single specialty	% of practices with OB/GYN specialty	% of practices with psychiatrist specialty
010	208	5	9	76	4	22
011	124	12	21	79	6	12
012	100	6	9	85	4	20
013	24	5	9	67		4
014	104	4	6	88	1	11
015	118	6	9	85	7	10
016	134	16	25	79	7	20
017	319	8	12	85	6	18
018	450	8	13	81	7	10
019	264	6	10	81	6	10
020	232	4	7	87	2	16
021	757	16	21	80	5	16
022	58	48	62	59	10	17
023	198	7	11	82	7	17
024	495	4	6	89	7	36
025	107	5	6	87	9	14
026	145	4	8	83	5	8
027	247	7	12	80	7	12

# How to Obtain 3P-RD?

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

# Website: ahrq.gov/data/innovations.html



AHRQ CONNECT - Home | Data Innovations | Agency for He

ahrq.gov/data/innovations.html

MSN.com - Hotmail... | Welcome to HHS! | my.ahrq.gov - Goo... | AHRQ Intranet | Google | Introduction | AHRQ Connect | Launch Meeting - Z... | Other bookmarks

An official website of the Department of Health and Human Services

Careers | Contact Us | Español | FAQs | Email Updates

**AHRQ** Agency for Healthcare Research and Quality

Search all AHRQ sites

Topics ▾ | Programs ▾ | Research ▾ | **Data ▾** | Tools ▾ | Funding & Grants ▾ | News ▾ | About ▾

Home > Data > Data Innovations

SHARE: [f](#) [t](#) [e](#) [p](#) [+](#)

Data

- Data Infographics
- Data Visualizations
- Data Tools
- Data Innovations**

## Data Innovations

Data Innovations provides a one-stop shop for AHRQ databases that can enhance research by filling data gaps.

The delivery of healthcare services in the United States is continuously evolving and undergoing significant changes. The consolidation of healthcare providers, growing role of healthcare systems, and implementation of alternative healthcare delivery models have changed the dynamics of healthcare service delivery, access, and payments. While existing data resources may be used to address many issues, additional data

8:45 AM 2/3/2023

# Website: ahrq.gov/data/innovations.html



The screenshot shows a web browser window with the URL [ahrq.gov/data/innovations.html](https://ahrq.gov/data/innovations.html). The page features a left-hand navigation menu with several database categories, and a main content area with introductory text and a list of databases.

**Left-hand navigation menu:**

- Practice Research Database (3P-RD)
- Synthetic Healthcare Database for Research (SyH-DR)
- All-Payer Claims Databases
- Healthcare Cost and Utilization Project (HCUP)
- Medical Expenditure Panel Survey (MEPS)
- AHRQ Quality Indicator Tools for Data Analytics
- MONAHRQ
- State Snapshots

**Main content area:**

To address these issues, AHRQ is engaged in several data development activities that have become known as "AHRQ Data Innovations." These activities include identifying data needs and data gaps, creating new research databases, and disseminating the data to support research and analysis to inform public and private policy.

The AHRQ Data Innovations initiative has resulted in the creation of databases for public dissemination. Some databases can be accessed directly through the AHRQ website and other databases require an application and signed data use agreement to ensure that privacy and confidentiality are protected.

## Databases

- [Synthetic Healthcare Data for Research \(SyH-DR\)](#) (application required).
- [Social Determinants of Health \(SDOH\)](#).
- [Physician and Physician Research Database \(3P-RD\)](#).

A red arrow points to the [Physician and Physician Research Database \(3P-RD\)](#) link.

[Back to Top](#)

# Website: ahrq.gov/data/innovations/3p-rd.html



The screenshot shows a web browser window with the URL [ahrq.gov/data/innovations/3p-rd.html](http://ahrq.gov/data/innovations/3p-rd.html). The browser tabs include "AHRQ CONNECT - Home" and "Physician and Physician Practice". The address bar shows the URL and navigation icons. The browser's bookmark bar contains links to "MSN.com - Hotmail...", "Welcome to HHS!", "my.ahrq.gov - Goo...", "AHRQ Intranet", "Google", "Introduction", "AHRQ Connect", "Launch Meeting - Z...", and "Other bookmarks". Below the browser window, the website header features the AHRQ logo and the text "Agency for Healthcare Research and Quality". A search bar is present with the placeholder text "Search all AHRQ sites". The navigation menu includes "Topics", "Programs", "Research", "Data", "Tools", "Funding & Grants", "News", and "About". The breadcrumb trail reads "Home > Data > Data Innovations > Physician and Physician Practice Research Database (3P-RD)". The main content area has a "SHARE:" section with icons for Facebook, Twitter, Email, Print, and a plus sign. The left sidebar lists "Data", "Data Infographics", "Data Visualizations", "Data Tools", and "Data Innovations". The main heading is "Physician and Physician Practice Research Database (3P-RD)". The introductory text states: "The Physician and Physician Practice Research Database captures information on physician and physician practice characteristics. AHRQ created the database to help address current data gaps in physician information within health services at the state and market levels. Data files are available for download." The Windows taskbar at the bottom shows the date and time as "Wednesday, February 8, 2023 11:28 AM 2/8/2023".

# Website: ahrq.gov/data/innovations/3p-rd.html



The screenshot shows a web browser window with the URL [ahrq.gov/data/innovations/3p-rd.html](http://ahrq.gov/data/innovations/3p-rd.html). The page title is "Physician and Physician Practice Research Database Data Files". The left sidebar contains navigation links: "MONAHRQ", "State Snapshots", "United States Health Information Knowledgebase", and "Data Sources Available from AHRQ". The main content area features a heading "Physician and Physician Practice Research Database Data Files" followed by a paragraph: "The following files include helpful documentation, data dictionaries, and codebooks for the 3P-RD data:". Below this is a bulleted list of seven links, each with a brief description of the file type and size. At the bottom of the list, there is a link "Back to Top" with an upward arrow icon. The Windows taskbar at the bottom shows the time as 11:35 AM on 2/8/2023.

## Physician and Physician Practice Research Database Data Files

The following files include helpful documentation, data dictionaries, and codebooks for the 3P-RD data:

- [AHRQ Physician and Physician Practice Research Database Methodology Report](#), February 2023 (PDF, 6 MB).
- AHRQ Physician and Physician Practice Research Database Data Dictionary.
- AHRQ Physician and Physician Practice Research Database Physician Directory Public Use File Codebook.
- AHRQ Physician and Physician Practice Research Database Physician Practice Directory Public Use File Codebook.
- [AHRQ Physician and Physician Practice Research Database Data Dictionary - Geographic Level](#) (XLSX, 26 KB).
- [AHRQ Physician and Physician Practice Research Database Geographic Physician Public Use File Codebook](#) (PDF, 758 KB).
- [AHRQ Physician and Physician Practice Research Database Geographic Physician Practice Public Use File Codebook](#) (PDF, 5 MB).

The 3P-RD Public Use Files for each state include the following four public use data files: [Back to Top](#)

- Physician Directory



# Website: ahrq.gov/data/innovations/3p-rd.html



AHRQ CONNECT - Home x Physician and Physician Practice | x +

ahrq.gov/data/innovations/3p-rd.html

MSN.com - Hotmail... Welcome to HHS! my.ahrq.gov - Goo... AHRQ Intranet Google Introduction AHRQ Connect Launch Meeting - Z... Other bookmarks

The Geographic files are available for download in CSV, SAS, and STATA formats. Each zipped file contains a file for Physician and a file for Physician Practice.

State	Comma-Separated Values (.csv)	SAS Datasets (.sas7bdat)	Stata Datasets (.dta)
AR-Arkansas	<a href="#">Physician and Practice</a> (zip, 3 KB)	<a href="#">Physician and Practice</a> (zip, 8 KB)	<a href="#">Physician and Practice</a> (zip, 6 KB)
AZ-Arizona	<a href="#">Physician and Practice</a> (zip, 3 KB)	<a href="#">Physician and Practice</a> (zip, 7 KB)	<a href="#">Physician and Practice</a> (zip, 6 KB)
CA-California	<a href="#">Physician and Practice</a> (zip, 9 KB)	<a href="#">Physician and Practice</a> (zip, 15 KB)	<a href="#">Physician and Practice</a> (zip, 13 KB)
CO-Colorado	<a href="#">Physician and Practice</a> (zip, 4 KB)	<a href="#">Physician and Practice</a> (zip, 11 KB)	<a href="#">Physician and Practice</a> (zip, 8 KB)
FL-Florida	<a href="#">Physician and Practice</a> (zip, 5 KB)	<a href="#">Physician and Practice</a> (zip, 10 KB)	<a href="#">Physician and Practice</a> (zip, 8 KB)
MA-Massachusetts	<a href="#">Physician and Practice</a> (zip, 4 KB)	<a href="#">Physician and Practice</a> (zip, 8 KB)	<a href="#">Physician and Practice</a> (zip, 6 KB)
MD-Maryland	<a href="#">Physician and Practice</a> (zip, 4 KB)	<a href="#">Physician and Practice</a> (zip, 9 KB)	<a href="#">Physician and Practice</a> (zip, 7 KB)
MN-Minnesota	<a href="#">Physician and Practice</a>	<a href="#">Physician and Practice</a> (zip,	<a href="#">Physician and Practice</a>

[Back to Top](#)

Windows taskbar with icons for Chrome, Edge, Outlook, and PowerPoint. System tray shows 11:34 AM, 2/8/2023, and 23 notifications.

# Questions/Comments?

