

# Data Definition for HRSA AHRF Dashboard

The data used for the AHRF dashboard application are a subset of the AHRF. The full public use AHRF files, including county-level and national/state-level data files, user documentations, and technical documentation, are located on the HRSA Data Warehouse website (<https://data.HRSA.gov/topics/health-workforce/ahrf>), available for download by the Bureau of Health Workforce (BHW).

## AHRF Release Year

The AHRF is released annually by the Bureau of Health Workforce. The AHRF release year corresponds to the fiscal year (October 1 to September 30) the data was published. In each release, the data source years included vary based on data availability and data use agreements. For example, the 2022-2023 AHRF release includes M.D. data through 2021 (from the AMA Masterfile), and Nurse Practitioner data are through 2022 (from CMS NPI file).

## Population Estimates (county-level file)

Population Estimates in prior releases used the most recently published year of Census data for the topline county population estimate. For detailed population subcategories, the prior year of estimates were used due to data availability. For example, in the AHRF 2021-2022 release, the dashboard used 2021 Census county population estimate for the total county population, and 2020 data for detailed population subcategories.

However, for the AHRF 2022-2023 release, the dashboard uses prior year 2021 Census population data for both the total county population as well as the detailed population subcategories. The change is due to Census' adoption of the state of Connecticut's nine county-equivalent geographic units in its 2022 estimates, replacing the previous eight county designations. The Census Bureau is the only data provider in the AHRF to switch to the new Connecticut geographic units for 2022; all health profession data from other data sources in the AHRF continue to use the older eight county designations for Connecticut. To maintain AHRF data users' ability to calculate provider ratios for Connecticut, the dashboard retains coverage consistency by using Census' 2021 county population estimates for the 2022-2023 AHRF release.

## AHRF data

There are two main datasets for each AHRF release: county-level and state/national-level data files. These two data files were created using different data sources. Therefore, the sum of county-level data to the state/national-level file do not equate to counts from the state/national-level data file. Health profession data included in the AHRF dashboard application are shown below:

<b>Release Year</b>	<b>Health Profession (County Level Data from various sources)</b>	<b>Data year</b>	<b>Health Profession (State Level Data from American Community Survey)</b>	<b>Data Year (5-year average)</b>
2022-2023	Doctor of Medicine (M.D.)	2021	Physician Assistant	2017-2021
	Doctor of Osteopathic Medicine (D.O.)	2021	Psychologist	2017-2021
	Physicians*	2021		
	Dentist	2021	Dental Hygienist	2017-2021
	Physician Assistant	2022	Pharmacist	2017-2021
	Nurse Practitioner	2022	Chiropractor	2017-2021
	Clinical Nurse Specialist	2022	Optometrist	2017-2021
	Nurse Anesthetist	2022	Social Worker	2017-2021
	Nurse Midwife	2022	Registered Nurse	2017-2021
	Advanced Practice Registered Nurse	2022	Licensed Practical/ Vocational Nurse	2017-2021
			Physical Therapist	2017-2021
			Occupational Therapist	2017-2021
			Respiratory Therapist	2017-2021
			Speech Language Pathologist	2017-2021
			Dietitian and Nutritionist	2017-2021
			EMT and Paramedic	2017-2021

\* Physicians include both Doctor of Medicine (M.D.) and Doctor of Osteopathic Medicine (D.O.)

### Clinician Rate (per 100,000 population)

Clinician rate used in this application is calculated as clinician count divided by the respective population. The result then is multiplied by 100,000.

### Data Note

When data is not available or suppressed, it is shown in this application as NA (not applicable).

### AHRF County-Level Data File Definition

County-Level data for selected health professions used in this application come from various data sources and include 50 U.S. state, District of Columbia, Puerto Rico, U.S. Virgin Island and Guam.

- Physician data are from the 2021 American Medical Association (AMA) Masterfile  
The AMA Physician Masterfile was initially developed as a record keeping device supporting membership and mailing activities. It has expanded to include significant education, training and professional certification information on virtually all Doctors of Medicine (MD) and Doctors of Osteopathic Medicine (DO) in the United States, Puerto Rico, Virgin Islands and certain Pacific Islands.
- Dentist data are from the 2021 American Dental Association (ADA) Masterfile

The American Dental Association (ADA) Masterfile includes a census of all professionally active dentists in the United States, Puerto Rico, Virgin Islands and Guam.

- Nurses and Physician Assistant data are from the 2022 Centers for Medicare and Medicaid Services (CMS) National Provider Identification (NPI) file.

The CMS NPI File contains FOIA disclosable National Plan and Provider Enumeration System (NPPES) health care provider data for health care providers who have been assigned National Provider Identifiers.

## Health Profession Data

### Physicians (AMA Masterfile)

- **Physician** fields contain only active physicians with classified major professional activity, unless specifically stated that inactive and/or not classified are included. Physician include both Doctor of Medicine (M.D.) and Doctor of Osteopathic Medicine (D.O.).
- **Inactive Status** includes physicians who are retired, semiretired, working part-time, temporarily not in practice, or not active for other reasons and indicated they worked 20 hours or less per week
- **Not Classified Status** includes physicians who did not provide information on their type of practice or their present employment
- **Federal Status** is defined as full-time employment by the federal government, including the Army, Navy, Air Force, Veteran's Administration, the Public Health Service and other federally funded agencies.
- **Primary Care** includes General Family Medicine, General Practice, General Internal Medicine and General Pediatrics. Subspecialties within these specialties are excluded.

### Dentist (ADA Masterfile)

- **Dentist** includes professionally active dentists whose primary occupation is dental related. This includes Full-time and Part-time Private Practice; Dental School Faculty; Armed Forces; Other Federal Service; State or Local Government; Hospital Staff Dentist; Graduate Student/Resident; Other Health/Dental Organization Staff; and Part-Time Faculty/Part-Time Practice. Only those identified as active and licensed are included

### Physician Assistance (CMS NPI file)

- **Physician assistants** are formally trained to perform many of the routine, time-consuming tasks a physician can do. In some states, they may prescribe medications. They take medical histories, perform physical exams, order lab tests and x-rays, and give inoculations. Most states require that they work under the supervision of a physician.
- **National Provider Identification (NPI)** is a unique identifier developed by CMS. Covered health care providers and all health plans and health care clearinghouses must use the NPIs in the administrative and financial transactions adopted under HIPAA.

### Nurses (CMS NPI file)

- **Advanced Practice Registered Nurse (APRN)** is a registered nurse having education beyond the

basic nursing education and certified by a nationally recognized professional organization in a nursing specialty, or meeting other criteria established by a Board of Nursing. APRN includes advanced practice midwife, certified registered nurse anesthetist, clinical nurse specialist, and nurse practitioner.

- **Nurse Practitioner** is a registered nurse provider with a graduate degree in nursing prepared for advanced practice involving independent and interdependent decision making and direct accountability for clinical judgment across the health care continuum or in a certified specialty. Nurse practitioner specialists include, but are not limited to, family nurse practitioners, gerontological nurse practitioners, pediatric nurse practitioners, obstetric-gynecologic nurse practitioners, and school nurse practitioners.
- **Certified Registered Nurse Anesthetist (CRNA)** is a licensed registered nurse with advanced specialty education in anesthesia who, in collaboration with appropriate health care professionals, provides preoperative, intraoperative, and postoperative care to patients and assists in management and resuscitation of critical patients in intensive care, coronary care, and emergency situations. A CRNA is qualified by special training to administer anesthesia in collaboration with a physician or dentist and who can assist in the care of patients who are in critical condition.
- **Nurse Midwives** includes both certified nurse-midwives (CNMs) and certified midwives (CMs). Midwifery practice is the independent management of women's health care, focusing particularly on pregnancy, childbirth, the post-partum period, care of the newborn, and the family planning and gynecologic needs of women. The CNM and CM practice within a health care system that provides for consultation, collaborative management, or referral, as indicated by the health status of the client.
- **Clinical Nurse Specialist** is a registered nurse who, through a graduate degree program in nursing, or through a formal post-basic education program or continuing education courses and clinical experience, is expert in a specialty area of nursing practice within one or more of the components of direct patient/client care, consultation, education, research and administration.
- **National Provider Identification (NPI)** is a unique identifier developed by CMS. Covered health care providers and all health plans and health care clearinghouses must use the NPIs in the administrative and financial transactions adopted under HIPAA.

## Population Data

**Census County Population Estimates:** Each year, the Census Bureau's Population Estimates Program uses current data on births, deaths, and migration to calculate population change since the most recent decennial census and produces a time series of estimates of population, demographic components of change, and housing units.

**Census County Characteristic File:** Each year, the Census Bureau produces and publishes estimates of the population for the nation, states, counties, state/county equivalents, and Puerto Rico. The county characteristic file provides estimates of states and counties by age, sex, race, and Hispanic origin.

**Census Small Area Income and Poverty Estimates (SAIPE):** The Census Bureau's SAIPE program provides annual estimates of income and poverty statistics for all school districts, counties, and states. It is designed to provide estimates of income and poverty for the administration of federal

programs and the allocation of federal funds to local jurisdictions.

## State-level Data File Definition

State-Level Data used in this application come from the American Community Survey (ACS), 2017-2021 5-year Public Use Microdata Sample (PUMS) File.

- The ACS, an annual household survey, provides detailed self-reported data about U.S. household and persons, including information on individuals working across various industries and occupations. It is the major source of data for AHRF state-level data file.
- Health occupations included are classified based on the U.S. government’s 2010 Standard Occupational Classification (SOC) system.
- The “workforce” is defined as individuals aged 16+ who worked within the previous five years. Does not new workers (persons seeking employment for the first time and who had not yet secured their first job). All counts include 50 U.S. states and District of Columbia.
- For employed individuals, the occupation refers to the person’s job during the previous week. For those who worked two or more jobs, the occupation refer to the job where the person worked the greatest number of hours (primary job).
- For unemployed individuals and those who are not currently employed but report having a job within the last five years, the data refer to their last job.
- ACS data are suppressed for any value where the percent relative standard error (PRSE) is greater than 30%. When data is suppressed, it is shown as NA (not applicable) in this dashboard application.

## Health Profession Data

Only selected health professions from the AHRF state-level data file are included in this application. The table below list selected health profession and associated SOC codes.

Profession	SOC Code
Physician Assistants	29-1071
Registered Nurses	29-1141
Licensed Practical and Licensed Vocational Nurses	29-2061
Dental Hygienists	29-2021
Pharmacists	29-1051
Chiropractors	29-1011
Optometrists	29-1041
Psychologists	19-3030

Social Workers	21-1020 where NAICS Industry Code is Medical Setting and Individual and Family Services: 6211,6212,62131,62132,6213zm,6214,6216,621m,622,6231,623m,6241
Physical Therapists	29-1123
Occupational Therapists	29-1122
Respiratory Therapists	29-1126
Speech-Language Pathologists	29-1127
Dietitians and Nutritionists	29-1031
Emergency Medical Technicians and Paramedics	29-2041

**Population Data**

Population data used for state-level data came from ACS 2017-2021 5-year Public Use Microdata Sample (PUMS) File. Please note that prior to the 2021-2022 AHRF release, the population categories for non-Hispanic Asian and non-Hispanic Native Hawaiian and Pacific Islander were combined in the state-level data file and the AHRF dashboard. Beginning in 2021-2022, these two population categories were separated in the underlying data file. The current dashboard maintains the combined version of this population subcategory when state-level data is selected. To extract population count for Non-Hispanic Asian and Non-Hispanic Hawaiian and Pacific islander, please download the AHRF state-level data file.