Using Data to Inform Health Workforce Development

Arizona Center for Rural Health Workforce Data Resources

June 6, 2023

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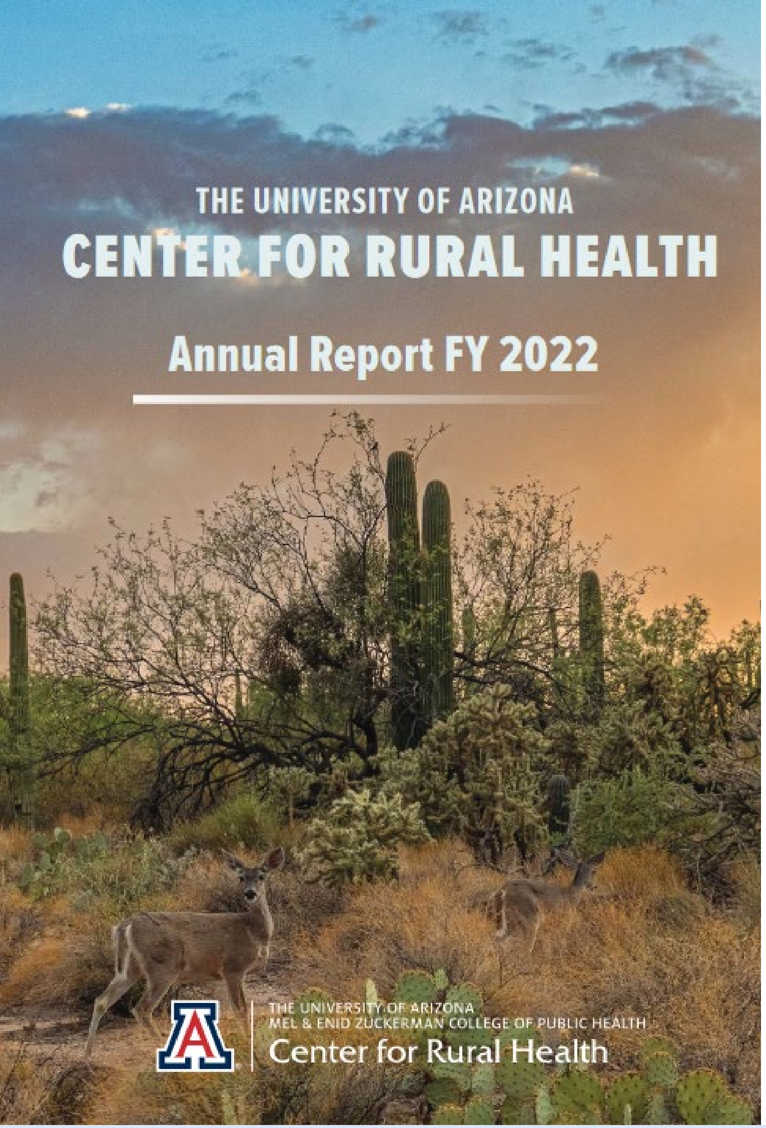
Center for Rural Health

Session Overview

- Identify health workforce data resources from the Arizona Center for Rural Health (AzCRH) and other sources like the Arizona Department of Health Services (ADHS),
- Describe how health workforce data can be leveraged in grant applications, policy briefs etc., to educate and inform stakeholders and,
- Collaborate to identify what health workforce data is needed to fully address health workforce needs in rural and underserved Arizona.

Our Workforce Efforts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Annual Report FY 2022

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Health workforce **data and analysis** to inform program and policy development.

Collaboration with AzDHS Health Systems Development and other stakeholders.

Training through grants and partnerships with organizations like the AzAHEC and regional centers.

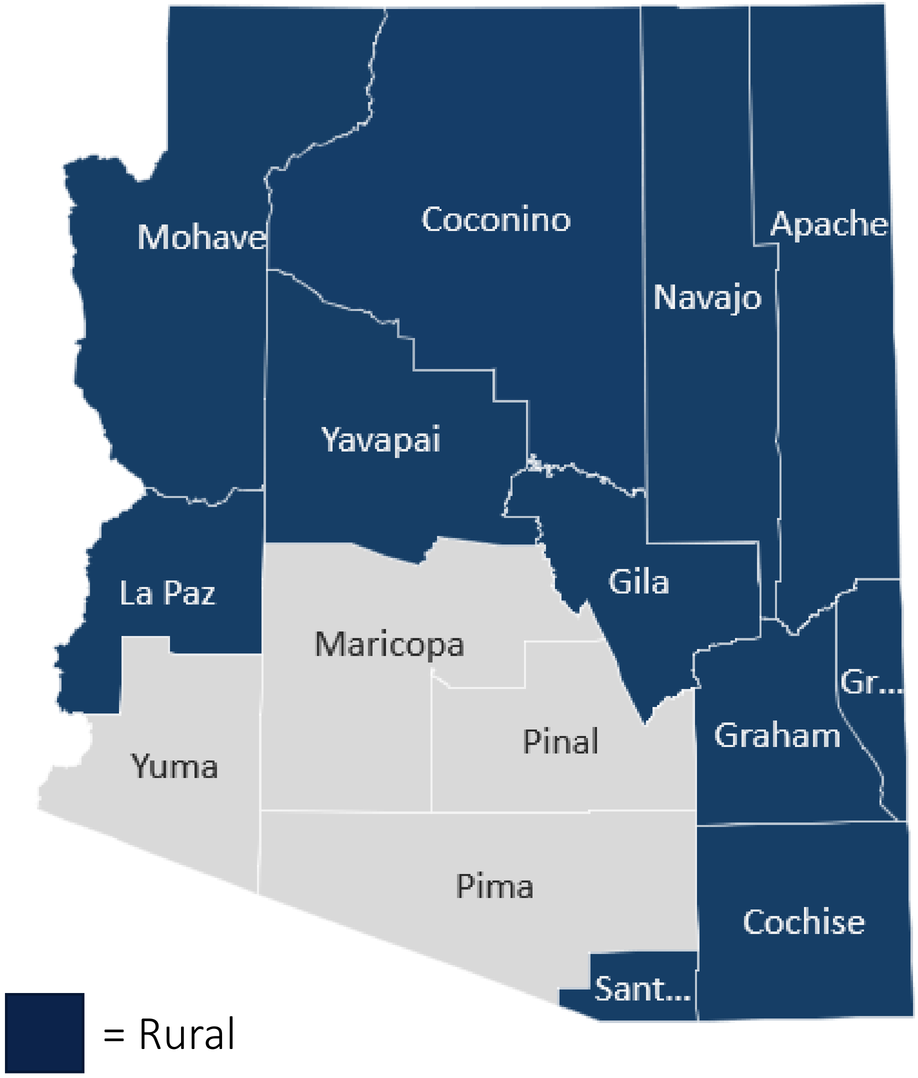
Partnership with AzDHS and Arizona Alliance for Community Health Centers (AACHC) to support 3RNet a rural recruitment program for health professionals.

Improve the health and wellness of Arizona’s rural populations.

Health Care Context in Rural Arizona

- Definitions of rural vary
- Up to 25% of Arizona's population lives outside of a metro area
- Low population, low pop. density, large physical spaces, longer travel distance/time to urban areas
- Healthcare resources concentrated in urban areas
- Fewer total health care providers and lower ratios of providers per population

AzDHS Rural Counties


Mohave
Coconino
Navajo
Apache
Yavapai
La Paz
Gila
Maricopa
Gr...
Graham
Pinal
Yuma
Pima
Cochise
Sant...
= Rural

Access to Care

"The timely use of personal health services to achieve the best health outcomes" (IOM, 1993)

Agency for Healthcare Research and Quality (AHRQ) Elements of Access:

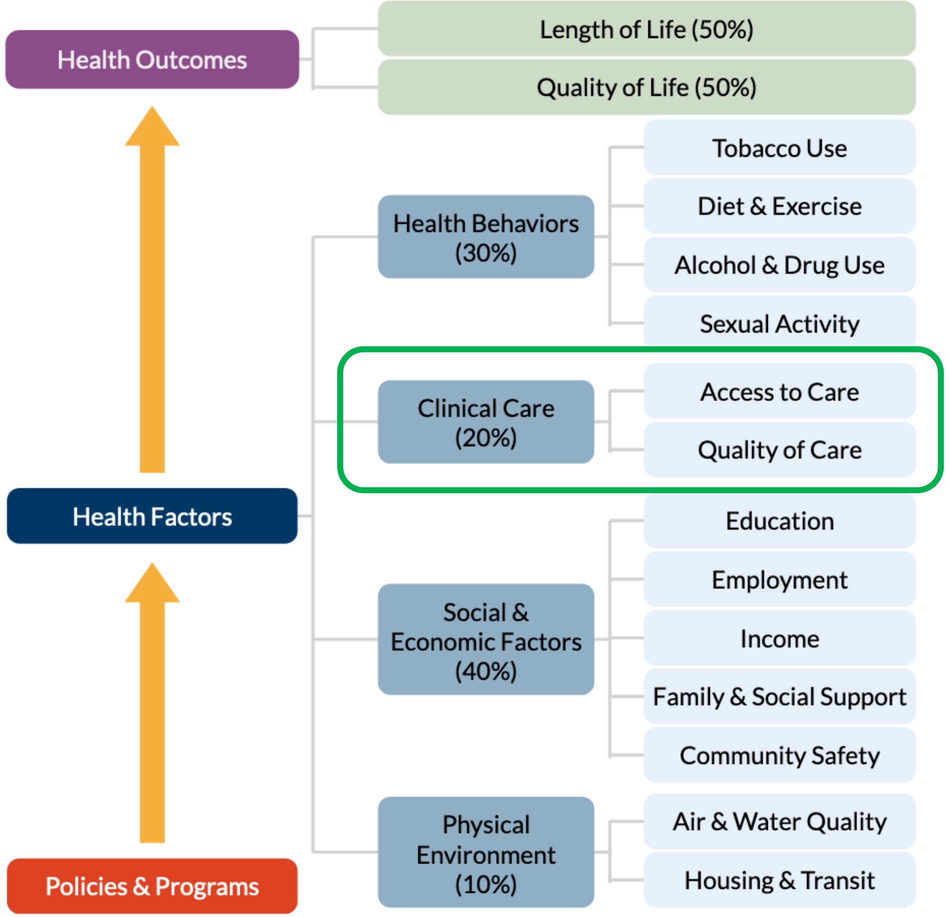
Affordability: facilitates entry into the health care system. Uninsured people are less likely to receive medical care and more likely to have poor health.

Availability: Having a usual source of care with the requisite resources (staff, equipment, etc.).

Accommodation: Timely ability to provide health care when the need is recognized, in a way that meets client preference and need.

Acceptable: Care is culturally appropriate, and client is comfortable.

Accessible: Services (workforce) are geographically proximal.



Health Outcomes
- Length of Life (50%)
- Quality of Life (50%)

Health Factors
- Health Behaviors (30%)
  - Tobacco Use
  - Diet & Exercise
  - Alcohol & Drug Use
  - Sexual Activity
- Clinical Care (20%)
  - Access to Care
  - Quality of Care
- Social & Economic Factors (40%)
  - Education
  - Employment
  - Income
  - Family & Social Support
  - Community Safety
- Physical Environment (10%)
  - Air & Water Quality
  - Housing & Transit

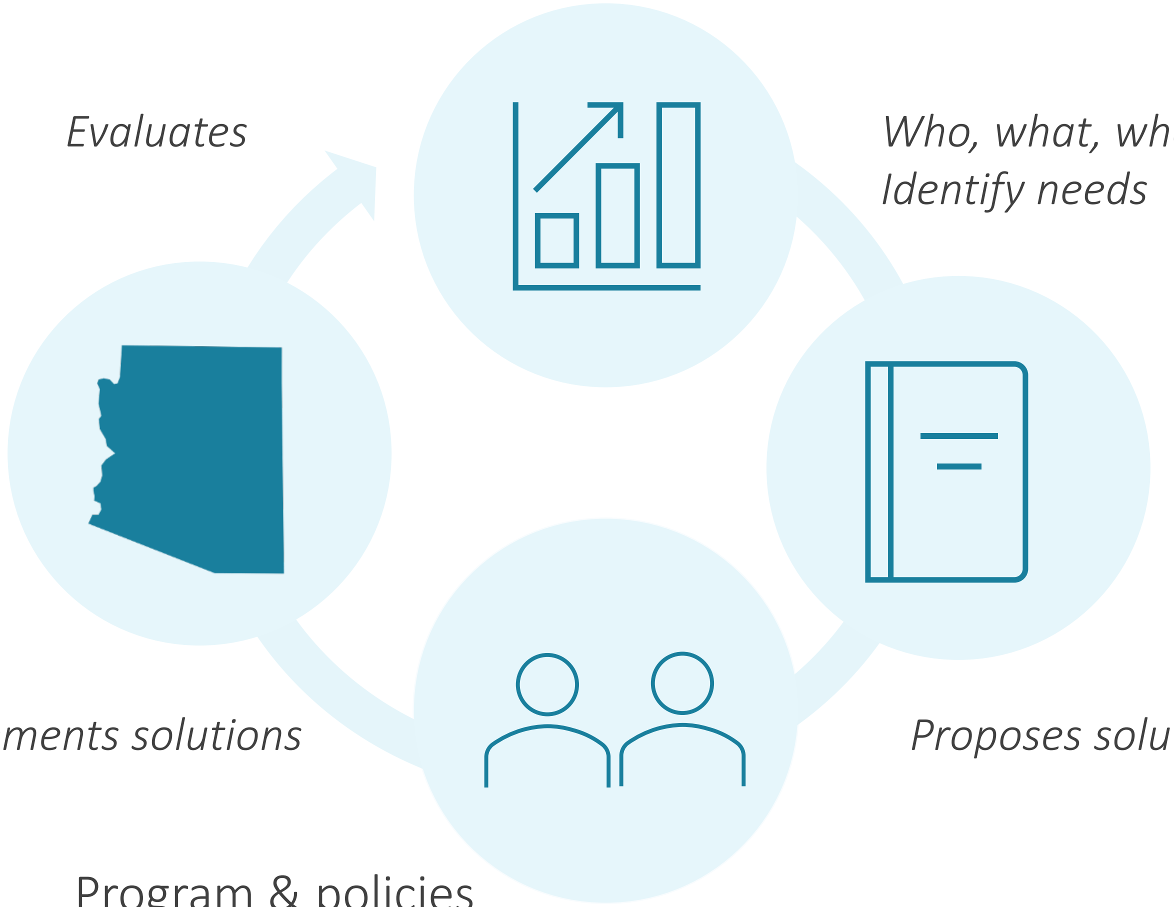
Policies & Programs

County Health Rankings model © 2014 UWPHI

Geographic Proximity

- Further away = less likely to receive care, Decreases the likelihood of receiving preventive care
- Disproportionately affects more rural, lower income, lower literacy, older, and under-resourced communities
- Costs include economic, time, social etc.
- Department of Health and Human Services (DHHS) travel standard > 30 minutes is excessively distant

Data is Part of Health Workforce Development



Health workforce data & analysis

Who, what, where?
Identify needs

Informs program & policy proposals

Proposes solutions

Program & policies strengthen the workforce

Implements solutions

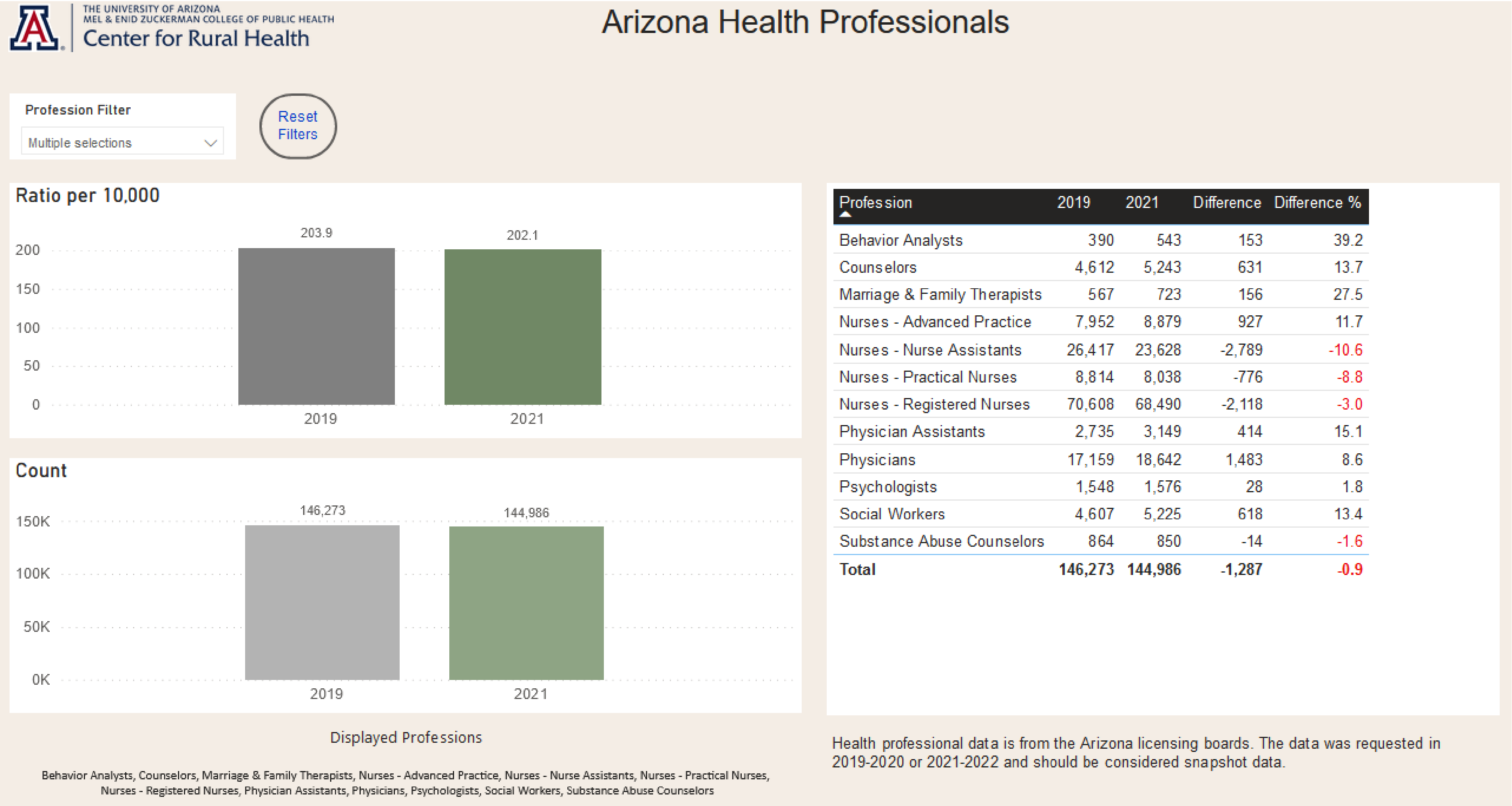
Are program & policies addressing the needs of Arizonans?

Evaluates

Arizona Health Workforce Profile Report

Arizona Health Workforce Profile Report

Arizona Health Workforce Profile Report



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Arizona Health Professionals

Profession Filter
Multiple selections

Profession	2019	2021	Difference	Difference %
Behavior Analysts	390	543	153	39.2
Counselors	4,612	5,243	631	13.7
Marriage & Family Therapists	567	723	156	27.5
Nurses - Advanced Practice	7,952	8,879	927	11.7
Nurses - Nurse Assistants	26,417	23,628	-2,789	-10.6
Nurses - Practical Nurses	8,814	8,038	-776	-8.8
Nurses - Registered Nurses	70,608	68,490	-2,118	-3.0
Physician Assistants	2,735	3,149	414	15.1
Physicians	17,159	18,642	1,483	8.6
Psychologists	1,548	1,576	28	1.8
Social Workers	4,607	5,225	618	13.4
Substance Abuse Counselors	864	850	-14	-1.6
Total	**146,273**	**144,986**	**-1,287**	**-0.9**

Displayed Professions

Behavior Analysts, Counselors, Marriage & Family Therapists, Nurses - Advanced Practice, Nurses - Nurse Assistants, Nurses - Practical Nurses, Nurses - Registered Nurses, Physician Assistants, Physicians, Psychologists, Social Workers, Substance Abuse Counselors

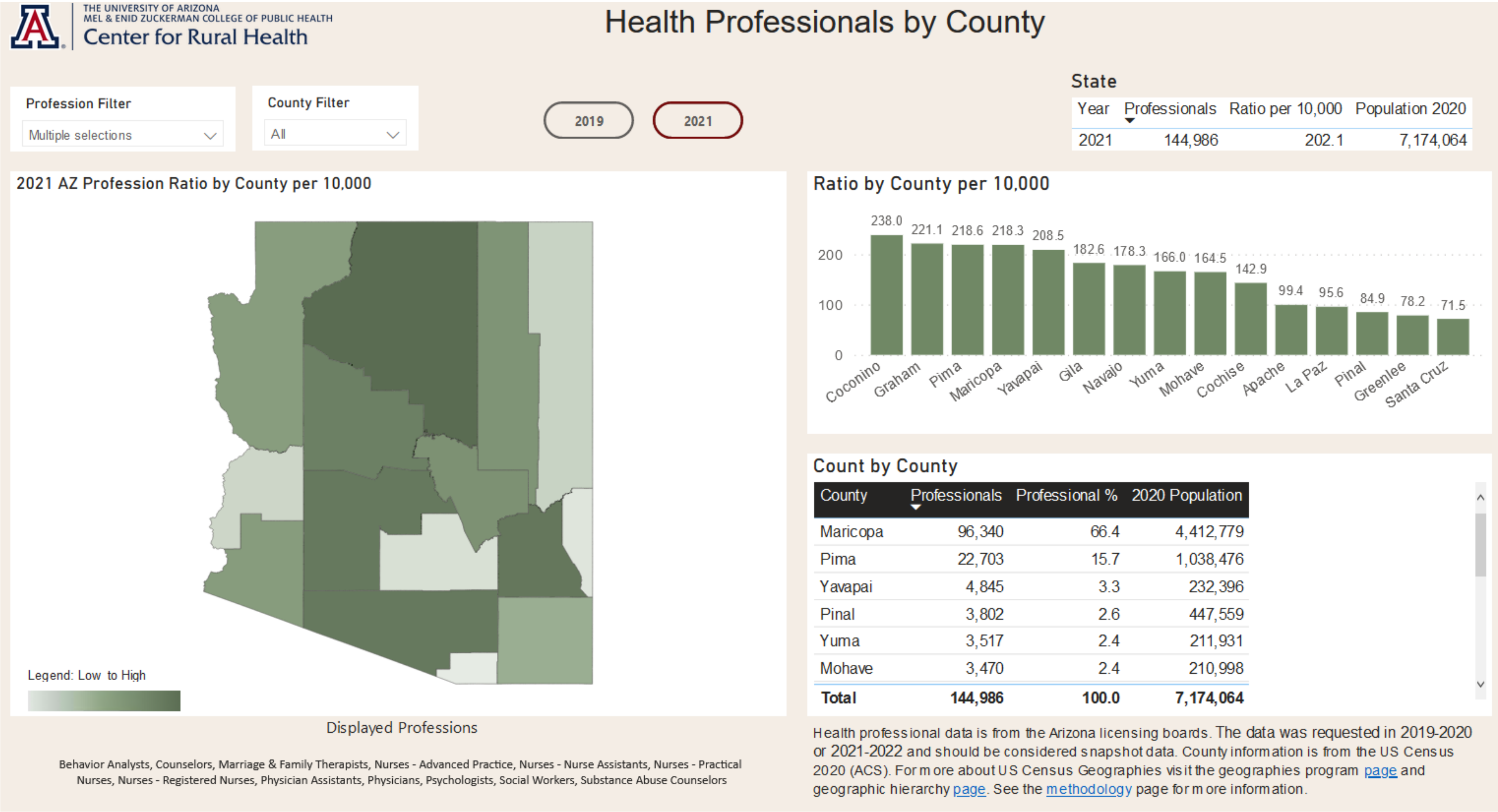
Health professional data is from the Arizona licensing boards. The data was requested in 2019-2020 or 2021-2022 and should be considered snapshot data.

Arizona Health Workforce Profile Report

Sources of Health Workforce Data

- Healthcare workforce licensing data from the Arizona licensing boards:
  - Nurses (advance practice, registered nurses, nurse assistants, licensed practical nurses)
  - Physicians, physician assistants
  - Dentists, dental hygienists
  - Behavior analysts, counselors, marriage & family therapists, psychologists, social workers, substance abuse counselors
- Combined with geographic data, U.S. Census population data

Arizona Health Workforce Profile Report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2019
2021
Legend: Low to High
0
100
200
238.0
221.1
218.6
218.3
208.5
182.6
178.3
166.0
164.5
142.9
99.4
95.6
84.9
78.2
71.5
Coconino
Graham
Pima
Maricopa
Yavapai
Gila
Navajo
Yuma
Mohave
Cochise
Apache
La Paz
Pinal
Greenlee
Santa Cruz

Health Professionals by County

Profession Filter: Multiple selections

County Filter: All

State

Year	Professionals	Ratio per 10,000	Population 2020
2021	144,986	202.1	7,174,064

2021 AZ Profession Ratio by County per 10,000

Ratio by County per 10,000

Count by County

County	Professionals	Professional %	2020 Population
Maricopa	96,340	66.4	4,412,779
Pima	22,703	15.7	1,038,476
Yavapai	4,845	3.3	232,396
Pinal	3,802	2.6	447,559
Yuma	3,517	2.4	211,931
Mohave	3,470	2.4	210,998
Total	**144,986**	**100.0**	**7,174,064**

Displayed Professions

Behavior Analysts, Counselors, Marriage & Family Therapists, Nurses - Advanced Practice, Nurses - Nurse Assistants, Nurses - Practical Nurses, Nurses - Registered Nurses, Physician Assistants, Physicians, Psychologists, Social Workers, Substance Abuse Counselors

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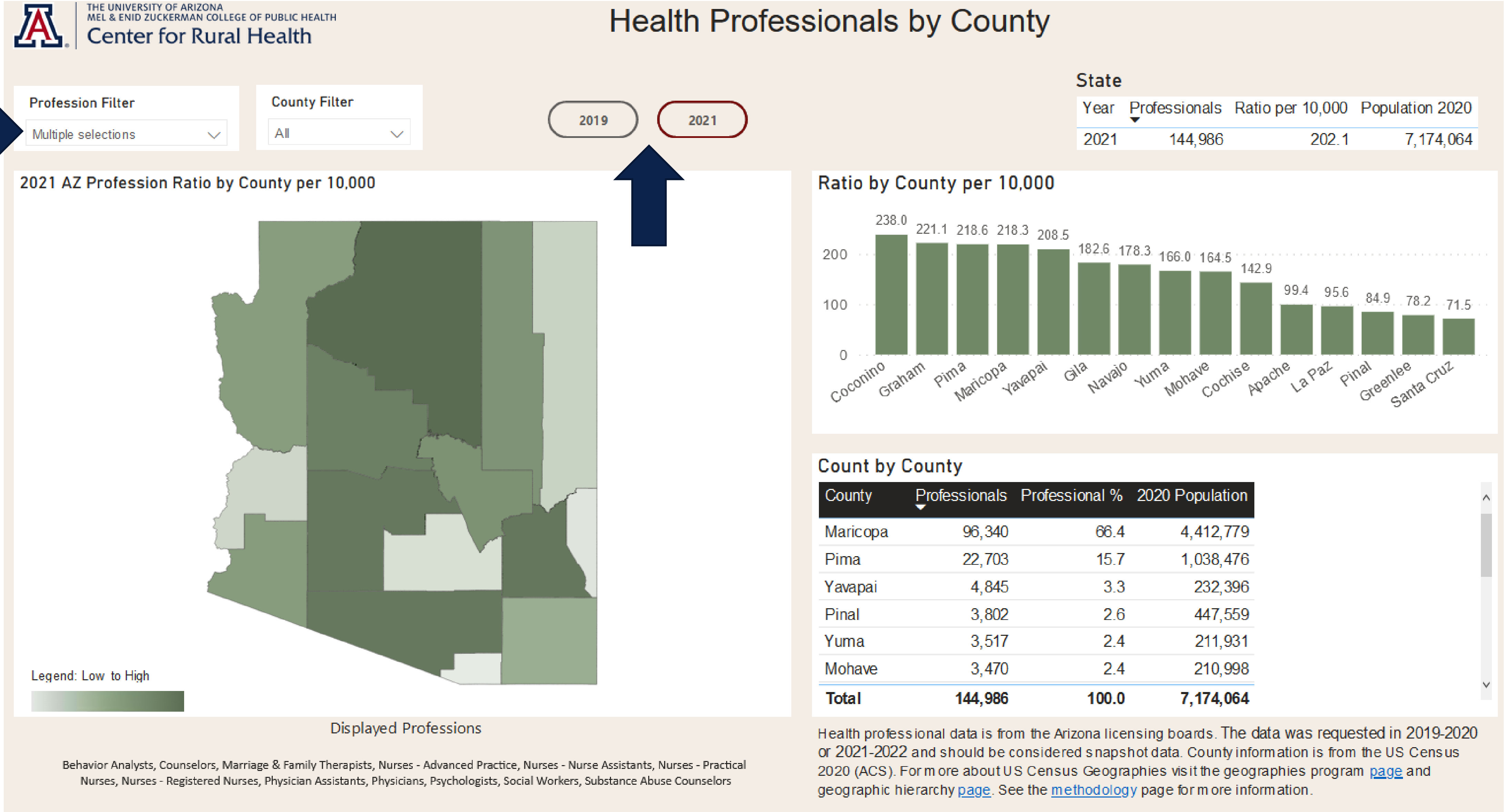
[Arizona Health Workforce Profile Report]



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Health Professionals by County

Profession Filter: Multiple selections

County Filter: All

2019
2021

State

Year	Professionals	Ratio per 10,000	Population 2020
2021	144,986	202.1	7,174,064

2021 AZ Profession Ratio by County per 10,000

Legend: Low to High

Ratio by County per 10,000

200
100
0
Coconino 238.0
Graham 221.1
Pima 218.6
Maricopa 218.3
Yavapai 208.5
Gila 182.6
Navajo 178.3
Yuma 166.0
Mohave 164.5
Cochise 142.9
Apache 99.4
La Paz 95.6
Pinal 84.9
Greenlee 78.2
Santa Cruz 71.5

Count by County

County	Professionals	Professional %	2020 Population
Maricopa	96,340	66.4	4,412,779
Pima	22,703	15.7	1,038,476
Yavapai	4,845	3.3	232,396
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Behavior analysts

Counselors

Dental Hygienists

Dentists

Marriage & Family Therapists

Nurses – Advance Practice

Nurses – Nurse Assistants

Nurses –Practical Nurses

Nurses – Registered Nurses

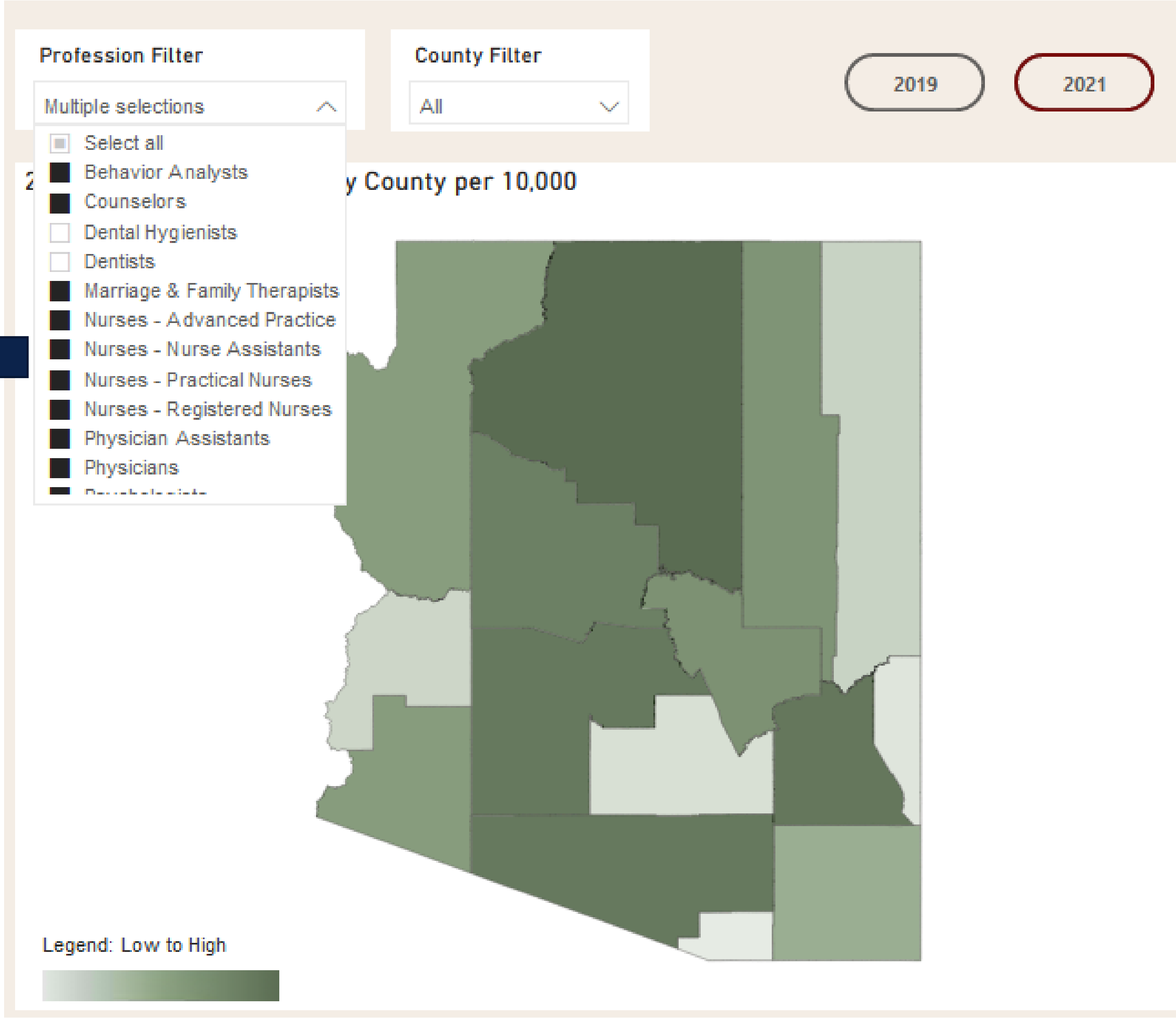
Physician Assistants

Physicians

Psychologists

Social Workers

Substance Abuse Counselors



Profession Filter

Multiple selections

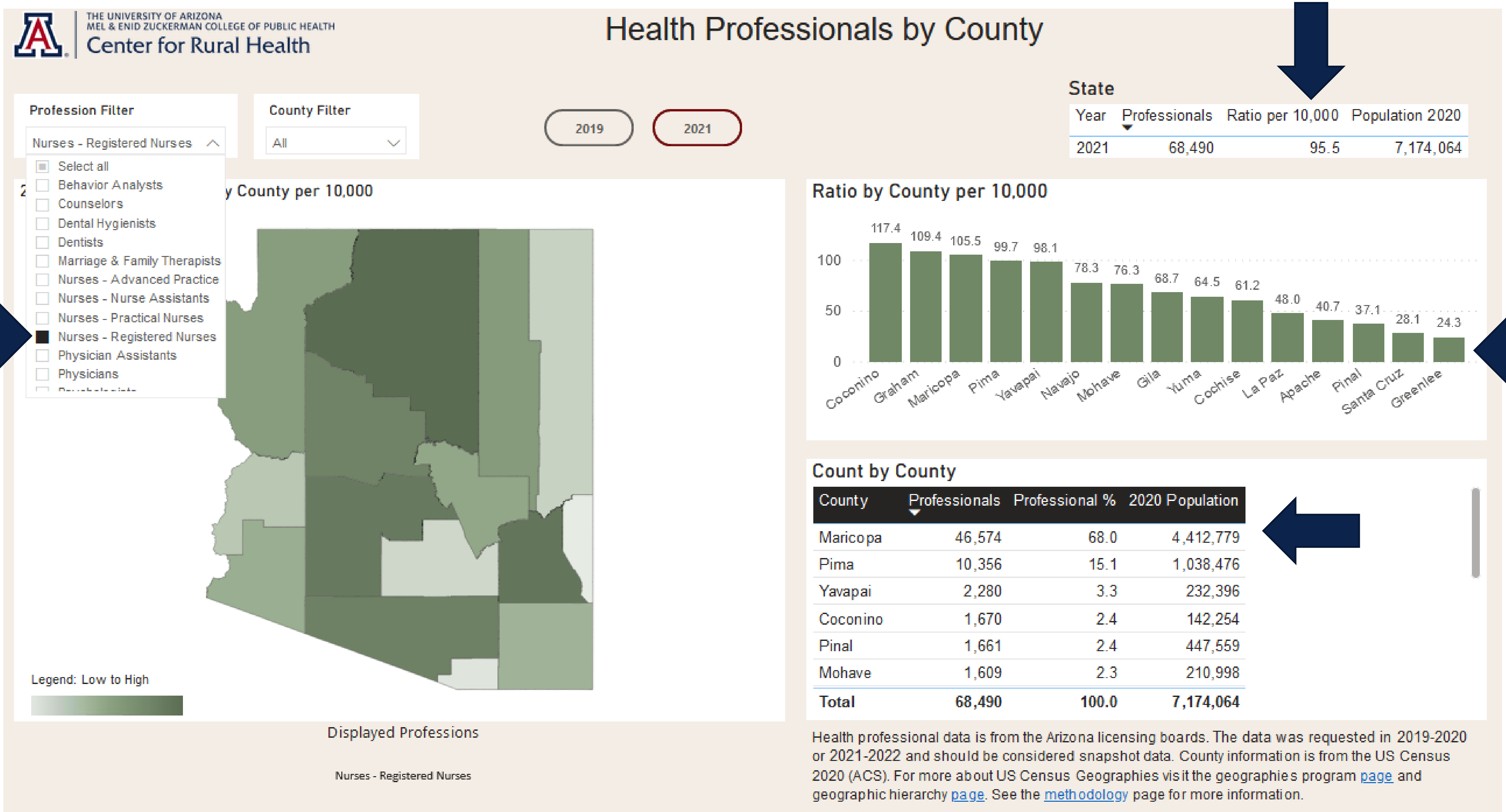
▣ Select all
☑ Behavior Analysts
☑ Counselors
☐ Dental Hygienists
☐ Dentists
☑ Marriage & Family Therapists
☑ Nurses - Advanced Practice
☑ Nurses - Nurse Assistants
☑ Nurses - Practical Nurses
☑ Nurses - Registered Nurses
☑ Physician Assistants
☑ Physicians

County Filter

All

2 y County per 10,000

Legend: Low to High



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Health Professionals by County

Profession Filter

Nurses - Registered Nurses

- ☐ Select all
- ☐ Behavior Analysts
- ☐ Counselors
- ☐ Dental Hygienists
- ☐ Dentists
- ☐ Marriage & Family Therapists
- ☐ Nurses - Advanced Practice
- ☐ Nurses - Nurse Assistants
- ☐ Nurses - Practical Nurses
- ☒ Nurses - Registered Nurses
- ☐ Physician Assistants
- ☐ Physicians

County Filter

All

State

Year	Professionals	Ratio per 10,000	Population 2020
2021	68,490	95.5	7,174,064

2 y County per 10,000

Legend: Low to High

Ratio by County per 10,000

100
50
0
117.4
109.4
105.5
99.7
98.1
78.3
76.3
68.7
64.5
61.2
48.0
40.7
37.1
28.1
24.3
Coconino
Graham
Maricopa
Pima
Yavapai
Navajo
Mohave
Gila
Yuma
Cochise
La Paz
Apache
Pinal
Santa Cruz
Greenlee

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Coconino	1,670	2.4	142,254
Pinal	1,661	2.4	447,559
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Displayed Professions

Nurses - Registered Nurses

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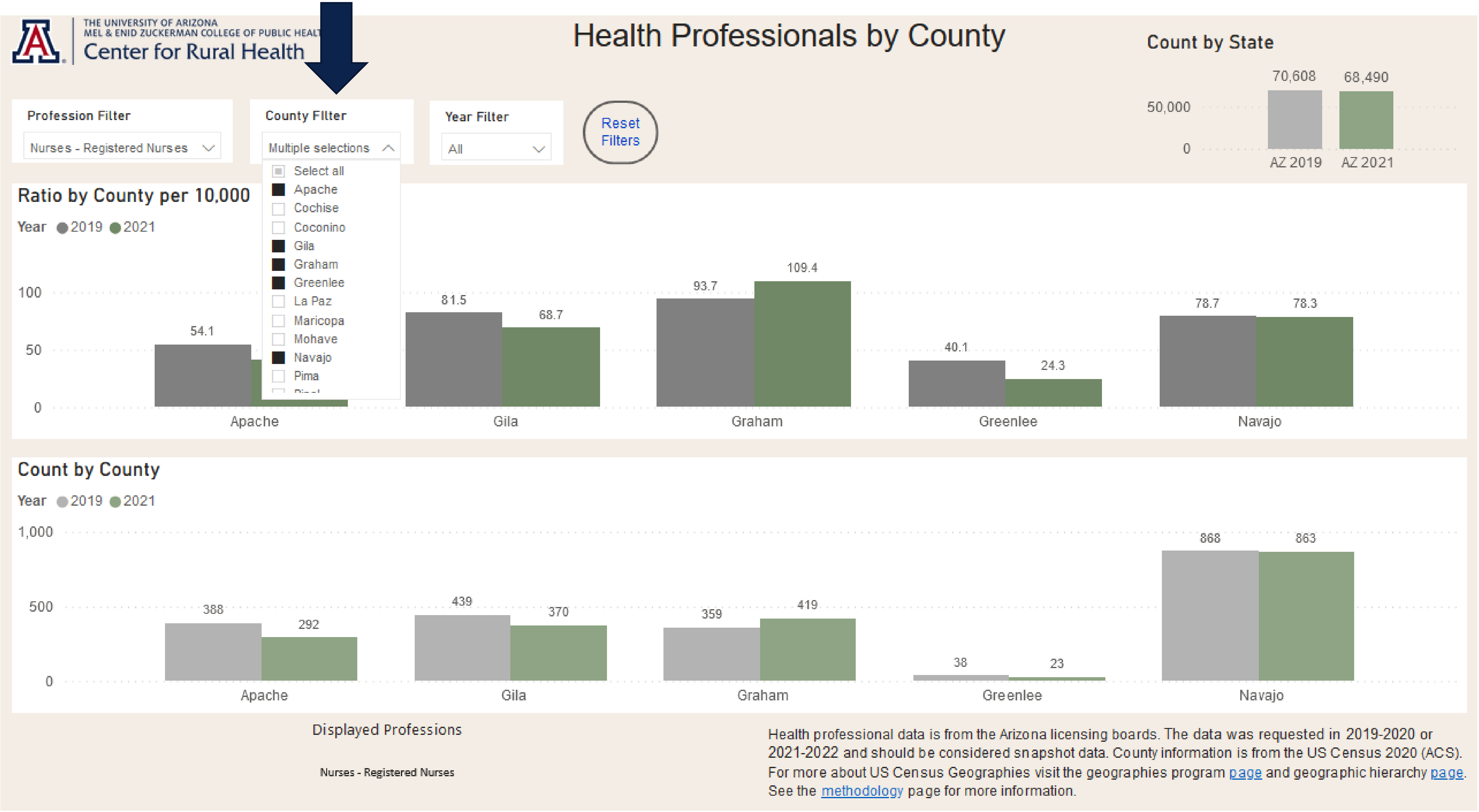
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Center for Rural Health
Reset Filters
Count by State
70,608
68,490
50,000
0
AZ 2019
AZ 2021
Ratio by County per 10,000
Year ● 2019 ● 2021
100
50
0
54.1
81.5
68.7
93.7
109.4
40.1
24.3
78.7
78.3
Apache
Gila
Graham
Greenlee
Navajo
Count by County
Year ● 2019 ● 2021
1,000
500
0
388
292
439
370
359
419
38
23
868
863
Apache
Gila
Graham
Greenlee
Navajo

Health Professionals by County

Profession Filter: Nurses - Registered Nurses

County Filter: Multiple selections

- ☐ Select all
- ■ Apache
- ☐ Cochise
- ☐ Coconino
- ■ Gila
- ■ Graham
- ■ Greenlee
- ☐ La Paz
- ☐ Maricopa
- ☐ Mohave
- ■ Navajo
- ☐ Pima

Year Filter: All

Displayed Professions

Nurses - Registered Nurses

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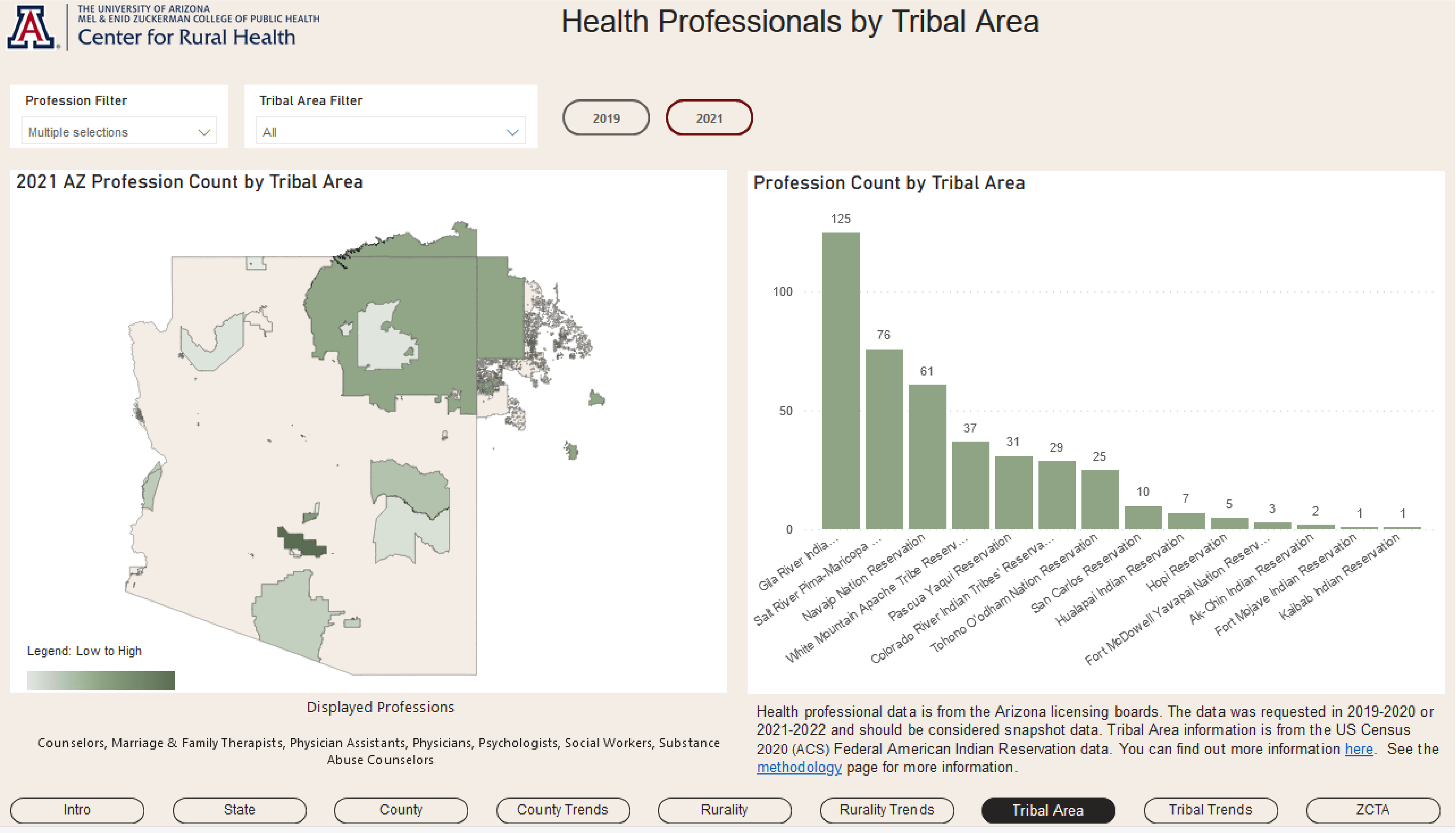
Data by Tribal Nation Area



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Health Professionals by Tribal Area

Profession Filter: Multiple selections

Tribal Area Filter: All

2019
2021

2021 AZ Profession Count by Tribal Area

Legend: Low to High

Profession Count by Tribal Area

0
50
100
125
76
61
37
31
29
25
10
7
5
3
2
1
1
Gila River India...
Salt River Pima-Maricopa ...
Navajo Nation Reservation
White Mountain Apache Tribe Reserv...
Pascua Yaqui Reservation
Colorado River Indian Tribes' Reserva...
Tohono O'odham Nation Reservation
San Carlos Reservation
Hualapai Indian Reservation
Hopi Reservation
Fort McDowell Yavapai Nation Reserv...
Ak-Chin Indian Reservation
Fort Mojave Indian Reservation
Kaibab Indian Reservation

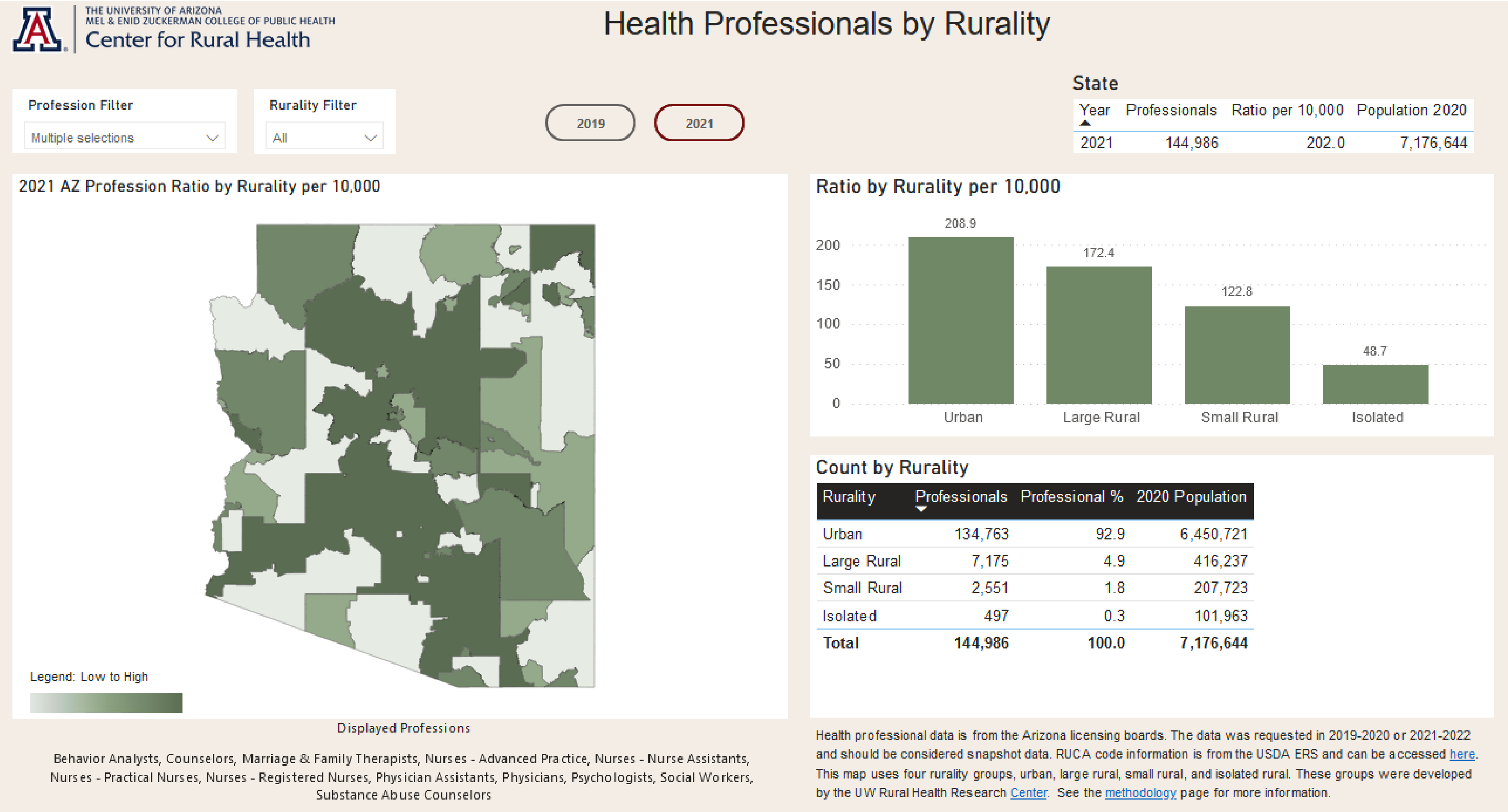
Displayed Professions

Counselors, Marriage & Family Therapists, Physician Assistants, Physicians, Psychologists, Social Workers, Substance Abuse Counselors

Health professional data is from the Arizona licensing boards. The data was requested in 2019-2020 or 2021-2022 and should be considered snapshot data. Tribal Area information is from the US Census 2020 (ACS) Federal American Indian Reservation data. You can find out more information here. See the methodology page for more information.

Intro
State
County
County Trends
Rurality
Rurality Trends
Tribal Area
Tribal Trends
ZCTA

Data by Rurality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Health Professionals by Rurality

Profession Filter: Multiple selections

Rurality Filter: All

2019
2021

State

Year	Professionals	Ratio per 10,000	Population 2020
2021	144,986	202.0	7,176,644

2021 AZ Profession Ratio by Rurality per 10,000

Legend: Low to High

Ratio by Rurality per 10,000

208.9
172.4
122.8
48.7
200
150
100
50
0
Urban
Large Rural
Small Rural
Isolated

Count by Rurality

Rurality	Professionals	Professional %	2020 Population
Urban	134,763	92.9	6,450,721
Large Rural	7,175	4.9	416,237
Small Rural	2,551	1.8	207,723
Isolated	497	0.3	101,963
Total	**144,986**	**100.0**	**7,176,644**

Displayed Professions

Behavior Analysts, Counselors, Marriage & Family Therapists, Nurses - Advanced Practice, Nurses - Nurse Assistants, Nurses - Practical Nurses, Nurses - Registered Nurses, Physician Assistants, Physicians, Psychologists, Social Workers, Substance Abuse Counselors

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Data by ZIP Code Tabulation Area

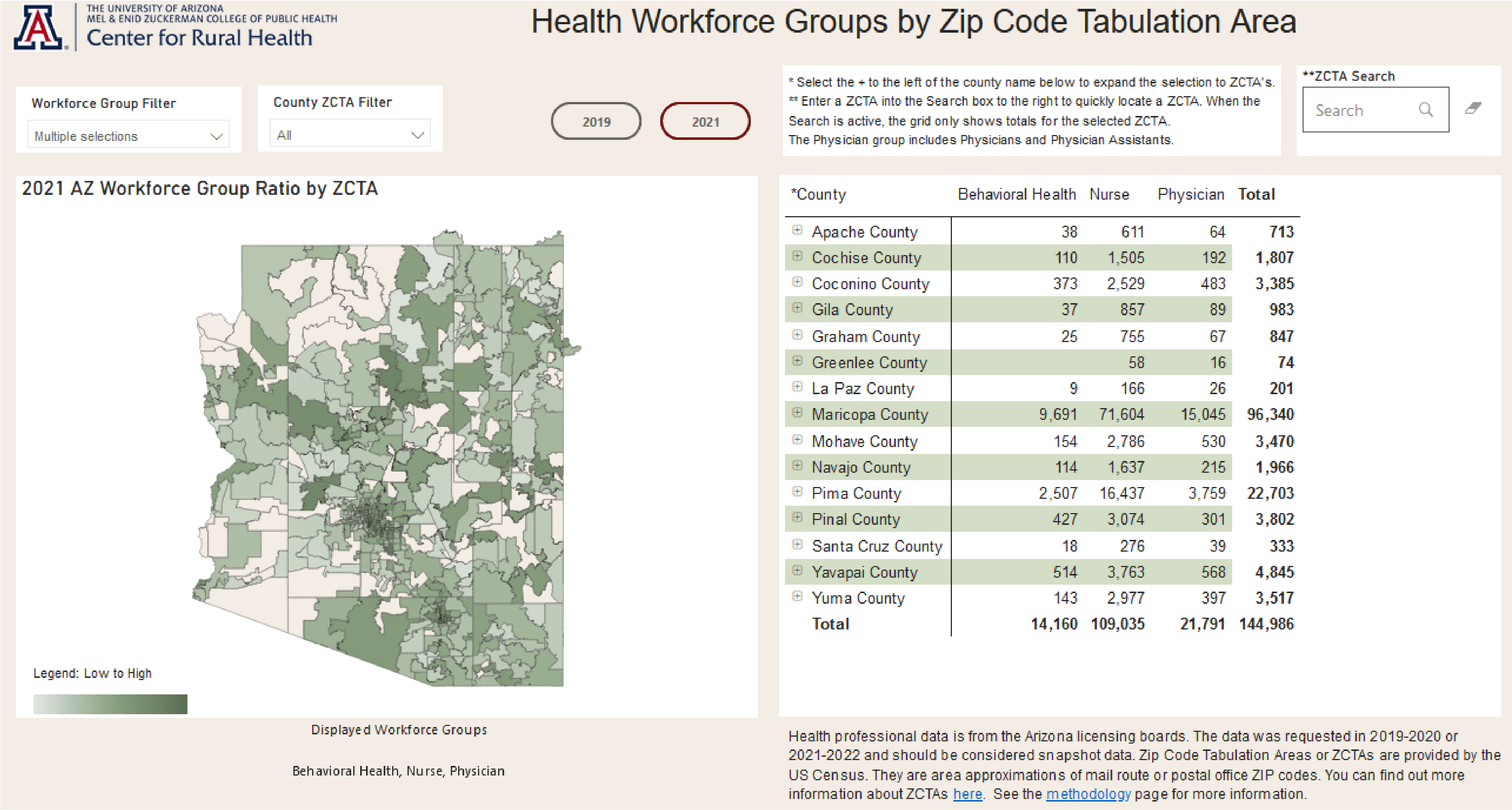
Workforce Groups:

Behavioral Health

Dental

Physician

Nurse



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Health Workforce Groups by Zip Code Tabulation Area

Workforce Group Filter: Multiple selections

County ZCTA Filter: All

* Select the + to the left of the county name below to expand the selection to ZCTA's.
** Enter a ZCTA into the Search box to the right to quickly locate a ZCTA. When the Search is active, the grid only shows totals for the selected ZCTA.
The Physician group includes Physicians and Physician Assistants.

**ZCTA Search

2021 AZ Workforce Group Ratio by ZCTA

Displayed Workforce Groups

Behavioral Health, Nurse, Physician

*County	Behavioral Health	Nurse	Physician	**Total**
⊞ Apache County	38	611	64	**713**
⊞ Cochise County	110	1,505	192	**1,807**
⊞ Coconino County	373	2,529	483	**3,385**
⊞ Gila County	37	857	89	**983**
⊞ Graham County	25	755	67	**847**
⊞ Greenlee County		58	16	**74**
⊞ La Paz County	9	166	26	**201**
⊞ Maricopa County	9,691	71,604	15,045	**96,340**
⊞ Mohave County	154	2,786	530	**3,470**
⊞ Navajo County	114	1,637	215	**1,966**
⊞ Pima County	2,507	16,437	3,759	**22,703**
⊞ Pinal County	427	3,074	301	**3,802**
⊞ Santa Cruz County	18	276	39	**333**
⊞ Yavapai County	514	3,763	568	**4,845**
⊞ Yuma County	143	2,977	397	**3,517**
Total	**14,160**	**109,035**	**21,791**	**144,986**

Health professional data is from the Arizona licensing boards. The data was requested in 2019-2020 or 2021-2022 and should be considered snapshot data. Zip Code Tabulation Areas or ZCTAs are provided by the US Census. They are area approximations of mail route or postal office ZIP codes. You can find out more information about ZCTAs here. See the methodology page for more information.

Data Warehouse Content

Health Workforce Licensure Data

- Arizona Health Workforce Board Licensure Data - physicians, physician assistants, nurses, psychology, behavioral health
- CMS NPPES, NPI data

+

Geographic & Population Data

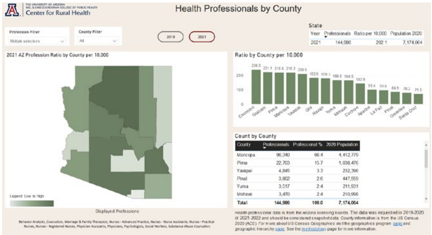
- U.S. Census data, population, social and demographic characteristics
- U.S. Census geographic characteristics, urban-rural, legislative districts
- USDA Rural Urban Commuting Area (RUCA) codes

+

Population Health & Health System Data

- HRSA Health Professional Shortage Area (HPSA) data
- ADHS licensed facilities data
- ADHS Uniform Account Reports for hospitals, nursing facilities & hospices

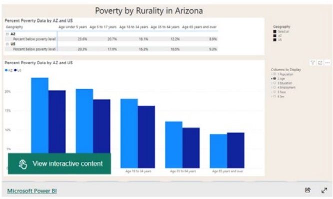
Data Warehouse


Center for Rural Health
Health Professionals by County

Arizona Health Workforce Profile: Direct Care Workers (DCWs)

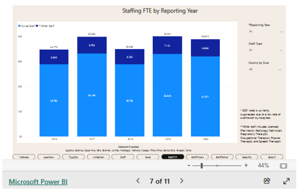
Poverty in Rural Arizona

Click on the diagonal arrow in the lower right corner of the viz to expand full screen


Poverty by Rurality in Arizona
View interactive content
Microsoft Power BI

Arizona Hospital Select Indicators Report

Click on the diagonal arrow in the lower right corner of the viz to expand full screen


Staffing FTE by Reporting Year
Microsoft Power BI
7 of 11

Health Workforce Data in Action

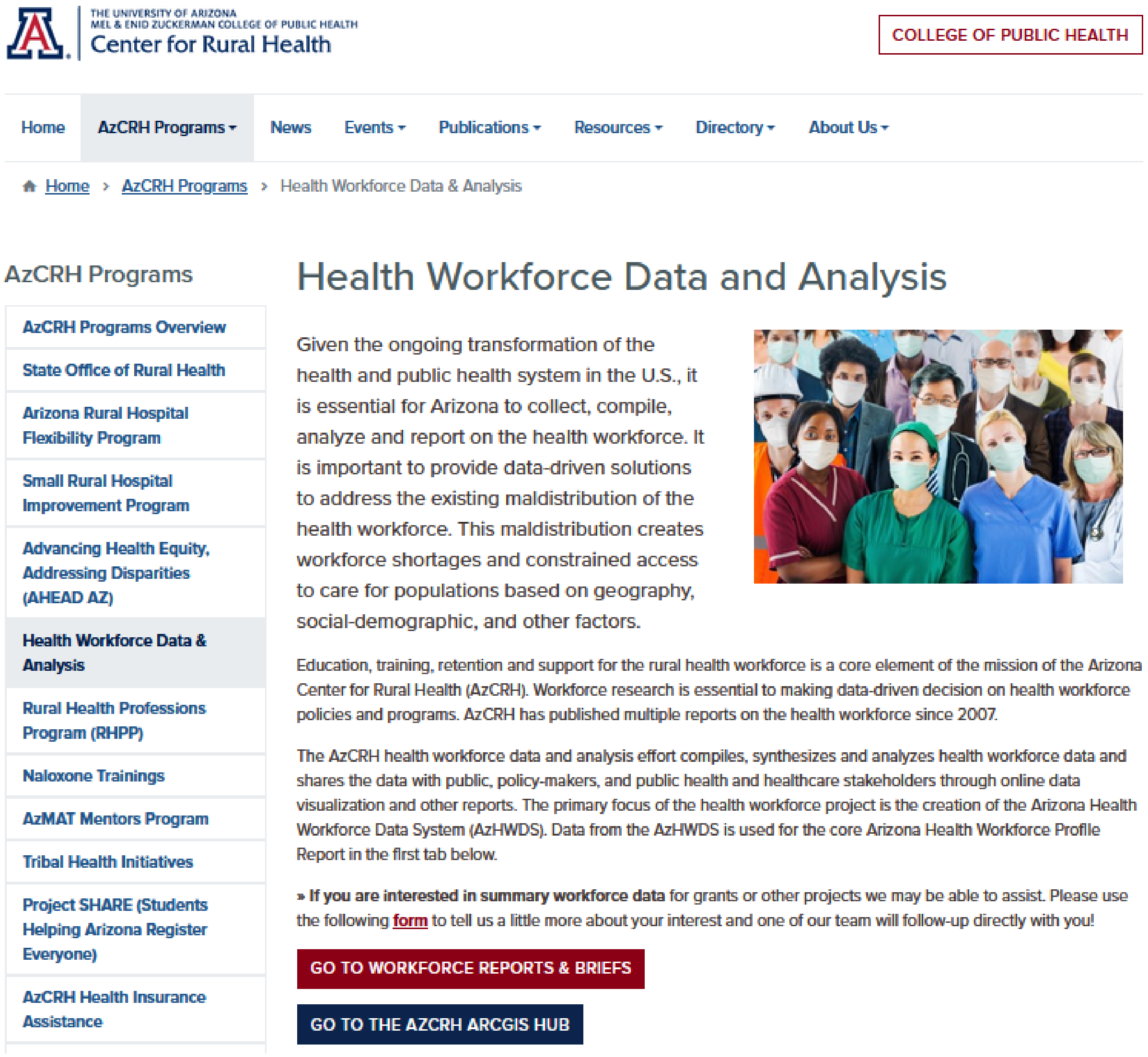
- Provided data for grant applications:
  - Rural residency development grant
  - Rural health network development grant
- Data to stakeholders to inform proposed policies (e.g., opportunities for GME support)
- Health system summary data for educational program accreditation needs assessment requirements (physical therapy and physician assistant)
- Data to inform educational program development (e.g., Certified Nurse Midwife)

Data by Request

Health workforce page on the AzCRH website

Form to request data

Email brynak@arizona.edu



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Home › AzCRH Programs › Health Workforce Data & Analysis
AzCRH Programs
AzCRH Programs Overview
State Office of Rural Health
Arizona Rural Hospital Flexibility Program
Small Rural Hospital Improvement Program
Advancing Health Equity, Addressing Disparities (AHEAD AZ)
Health Workforce Data & Analysis
Rural Health Professions Program (RHPP)
Naloxone Trainings
AzMAT Mentors Program
Tribal Health Initiatives
Project SHARE (Students Helping Arizona Register Everyone)
AzCRH Health Insurance Assistance
GO TO WORKFORCE REPORTS & BRIEFS
GO TO THE AZCRH ARCGIS HUB

Health Workforce Data and Analysis

Given the ongoing transformation of the health and public health system in the U.S., it is essential for Arizona to collect, compile, analyze and report on the health workforce. It is important to provide data-driven solutions to address the existing maldistribution of the health workforce. This maldistribution creates workforce shortages and constrained access to care for populations based on geography, social-demographic, and other factors.

Education, training, retention and support for the rural health workforce is a core element of the mission of the Arizona Center for Rural Health (AzCRH). Workforce research is essential to making data-driven decision on health workforce policies and programs. AzCRH has published multiple reports on the health workforce since 2007.

The AzCRH health workforce data and analysis effort compiles, synthesizes and analyzes health workforce data and shares the data with public, policy-makers, and public health and healthcare stakeholders through online data visualization and other reports. The primary focus of the health workforce project is the creation of the Arizona Health Workforce Data System (AzHWDS). Data from the AzHWDS is used for the core Arizona Health Workforce Profile Report in the first tab below.

» **If you are interested in summary workforce data** for grants or other projects we may be able to assist. Please use the following form to tell us a little more about your interest and one of our team will follow-up directly with you!

Other AzCRH Workforce Data Resources

Interactive Data Visualizations

- Arizona Healthcare Employment, Projections, and Wage Report
- Arizona Graduate Medical Education Funding Report

Workforce Reports and Briefs

- Physician Specialty
- Direct Care Workers
- Physical Therapists
- Critical Care Workforce

ArcGIS Maps Hub

Workforce Data Resources

Arizona Department of Health Services

- Shortage Designations
- Statistical Profiles - Primary Care Area Profiles

HRSA

- HPSA Find
- Workforce Projections
- Data Downloads

Workforce Data Resources (cont.)

Department of Labor Bureau of Labor Statistics

- Occupational Outlook Handbook & Occupational Profiles (example – dental hygienists)

Arizona Office of Economic Opportunity

- Labor Market
    - Industry Employment & Wages
    - Occupation Employment & Wages
    - Employment Projections

What Else Do You Need/Want to Know About the Health Workforce?

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