

The Healthcare Workforce in a
Post-Pandemic World

**Report to the Governor's
Task Force on Academic
Health at the University
of Minnesota**



PART 1:

Look at big-picture trends in the healthcare workforce before and after COVID.

PART 2:

Examine more deeply areas of concern within primary and specialty care, nursing, mental health, and oral health.

Plan for this presentation

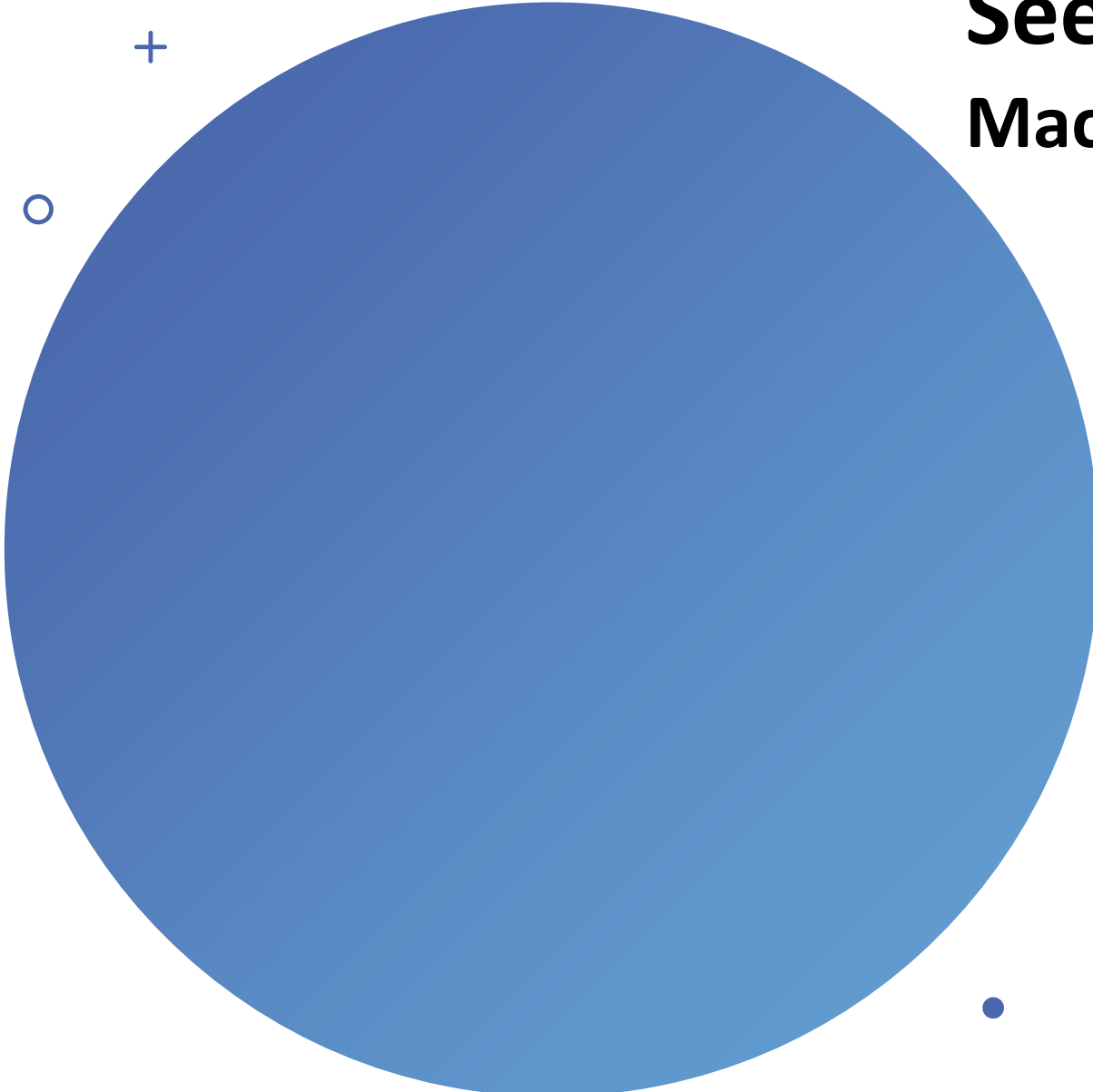
Minnesota specific

- ❖ MDH Healthcare Workforce Survey
- ❖ MDH analysis of Health Licensing Boards' administrative records
- ❖ MN-DEED Job Vacancy Survey and Employment Projections
- ❖ MN Office of Higher Education Graduation Data

A word about our data sources

Part 1:

Big-picture healthcare workforce trends,
before and after COVID



Seeing the big picture:

Macro trends that will affect healthcare

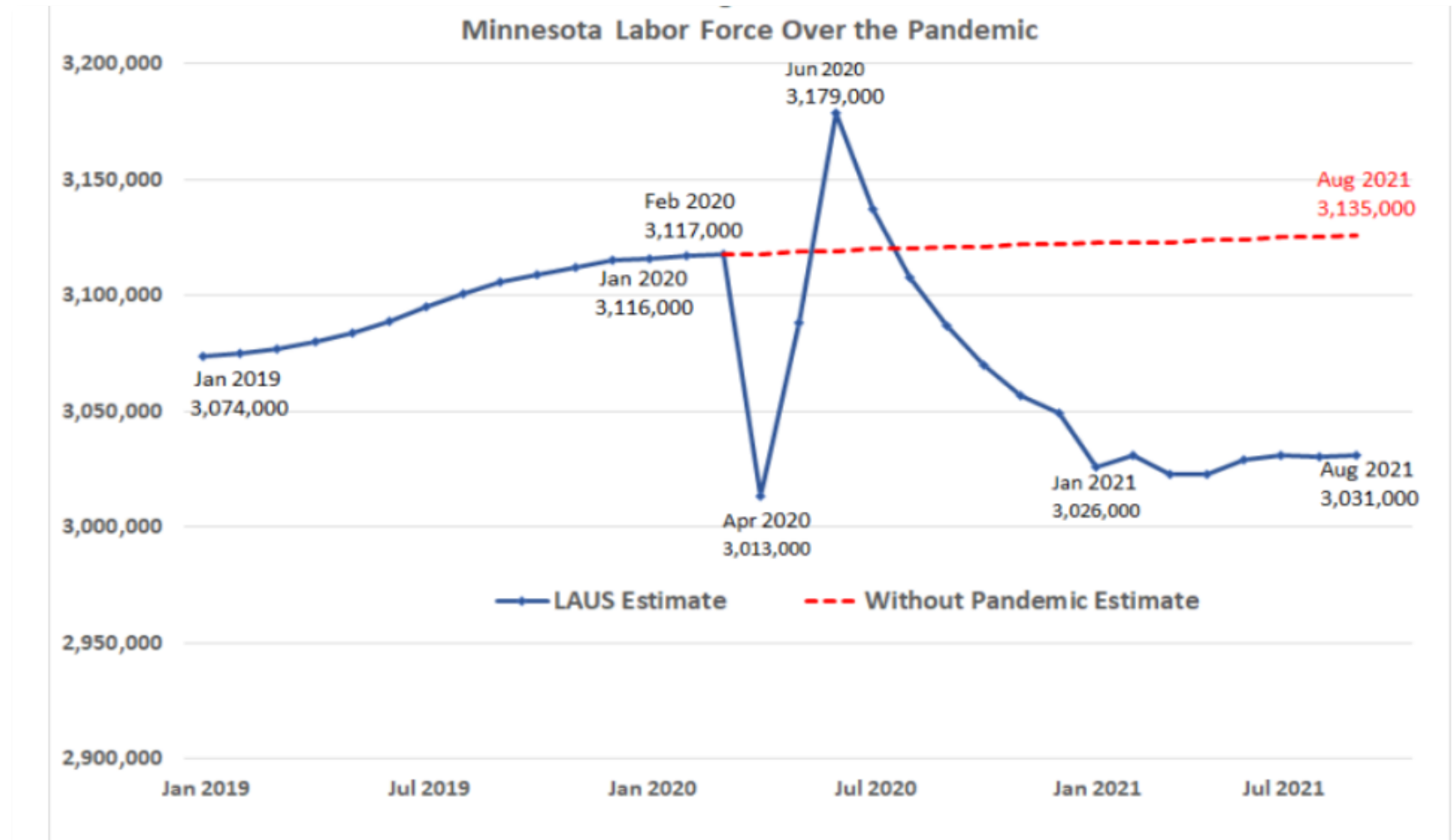
- ✓ **Aging population:** The number of Minnesotans turning 65 in this decade (about 285,000) will be greater than the past four decades combined. (Source: State Demographic office.)
- ✓ **Increasing diversity:** Between 2010 and 2018, populations of color have been growing substantially. (Source: State Demographic office)
- ✓ **Telehealth** use skyrocketed during COVID, and for many providers and patients, it's a new normal, with the potential for ameliorating some problems associated with workforce maldistribution.
- ✓ **Technology** (e.g., EHRs, patient portals) is a part of health care delivery for better or worse.
- ✓ There is a desire to **age in place**, changing the way care is delivered.

Unavoidable empirical conclusions

From nursing assistants to the most sophisticated medical specialties, Minnesota's entire healthcare workforce is:

- In severe shortage
- Burned out, and exiting prematurely
- Geographically maldistributed, and
- With a pipeline of new workers that isn't keeping up with current or future hiring demand or population needs.

Minnesota's overall labor market: COVID caused a sharp and unexpected drop in labor force participation.

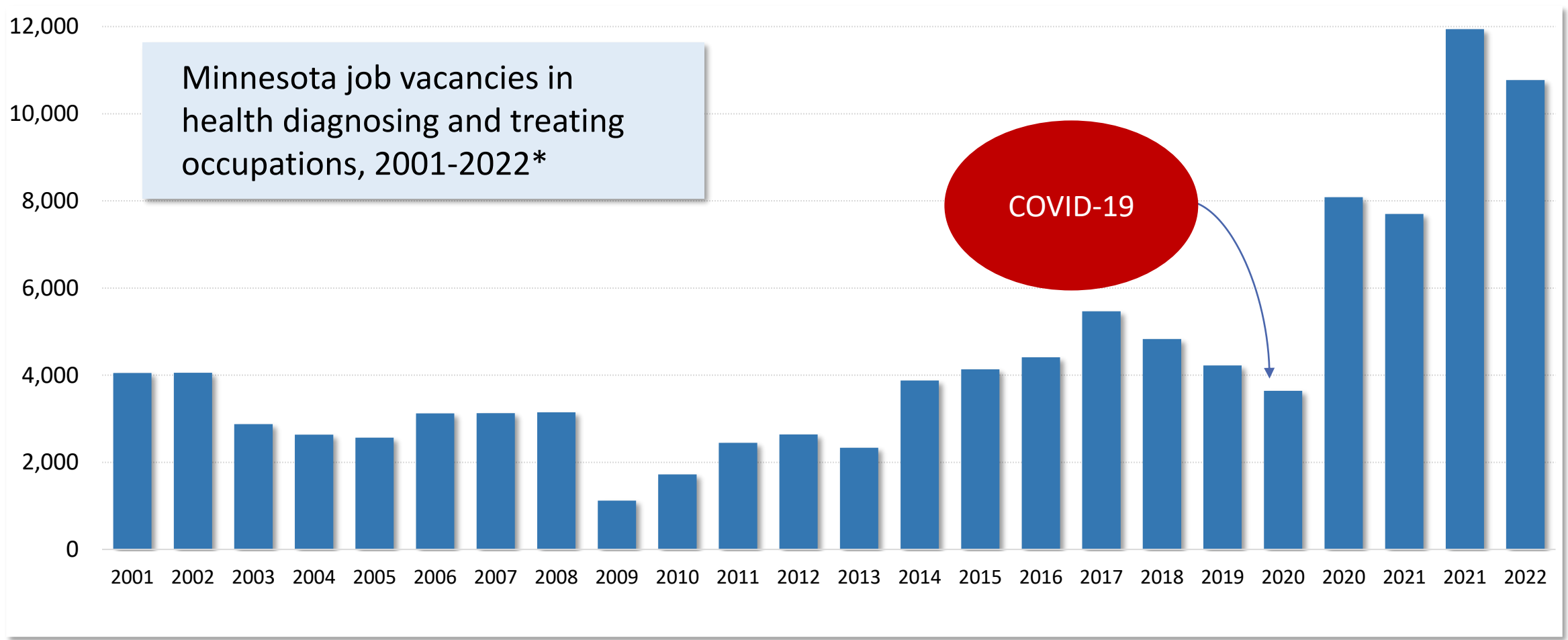


What was projected (without COVID)

What actually happened

(We were “short” nearly 100,000 workers—or about .33 of one percent the state’s labor force)

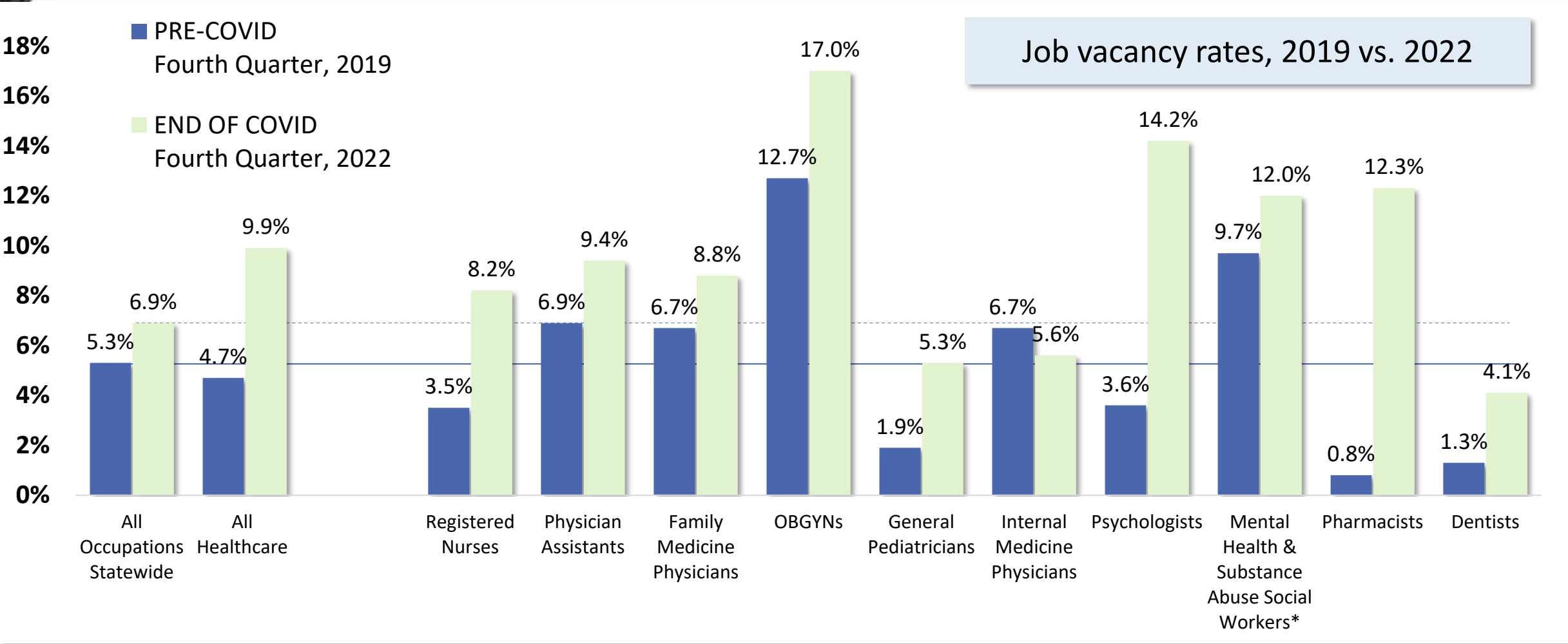
Healthcare occupations were particularly hard-hit by retirements and premature exits, and they have not recovered.



*Data source: MN Department of Employment and Economic Development Labor Market Information Office Job Vacancy Survey Program, for the 2nd quarter of each year. “Health Diagnosing and Treating” occupations includes the following specific titles: Dentists, Dental Hygienists, Dietitians & Nutritionists, Optometrists, Pharmacists, Physician Assistants, Occupational Therapists, Physical Therapists, Radiation Therapists, Recreational Therapists, Respiratory Therapists, all Advanced Practice Nurses, Registered Nurses, all Physicians, and Veterinarians.

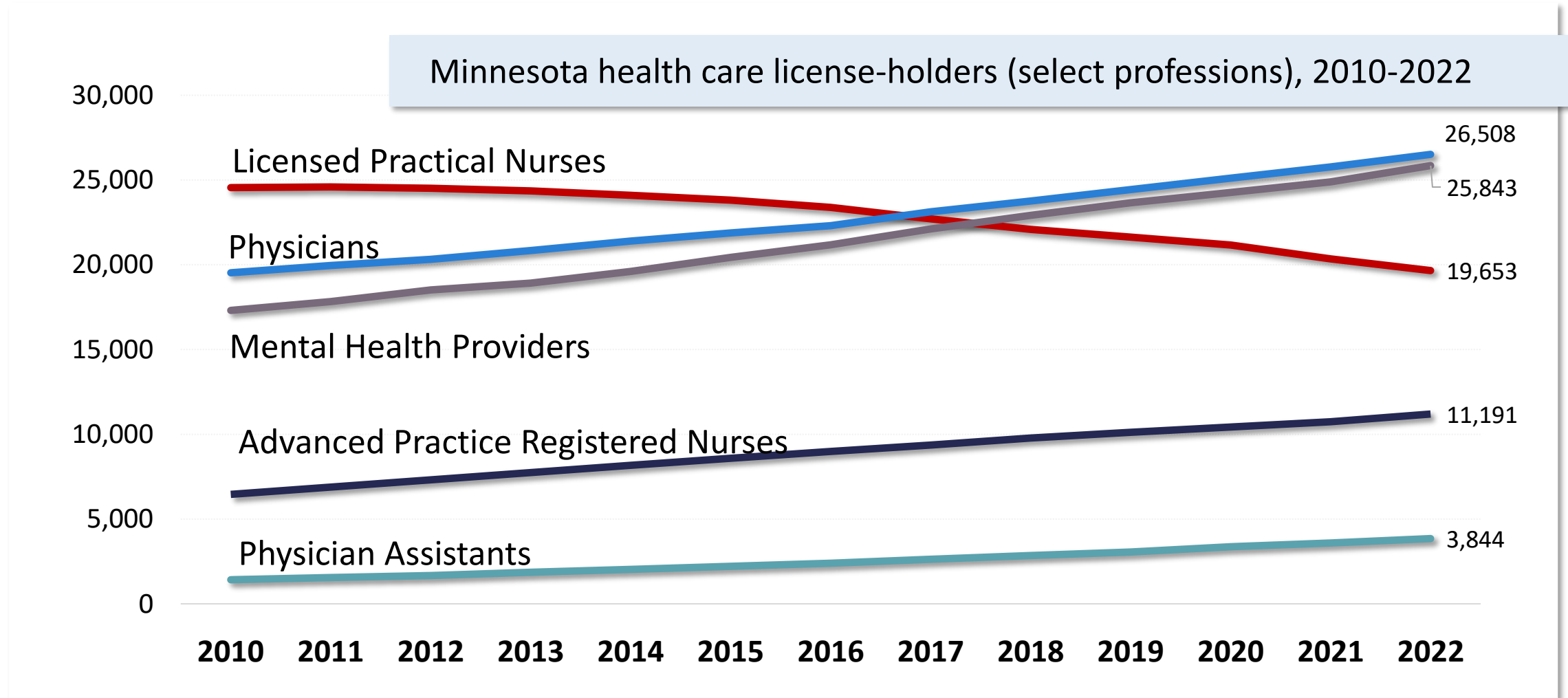


A closer look at specific occupations: hiring demand still hasn't returned to pre-COVID levels.



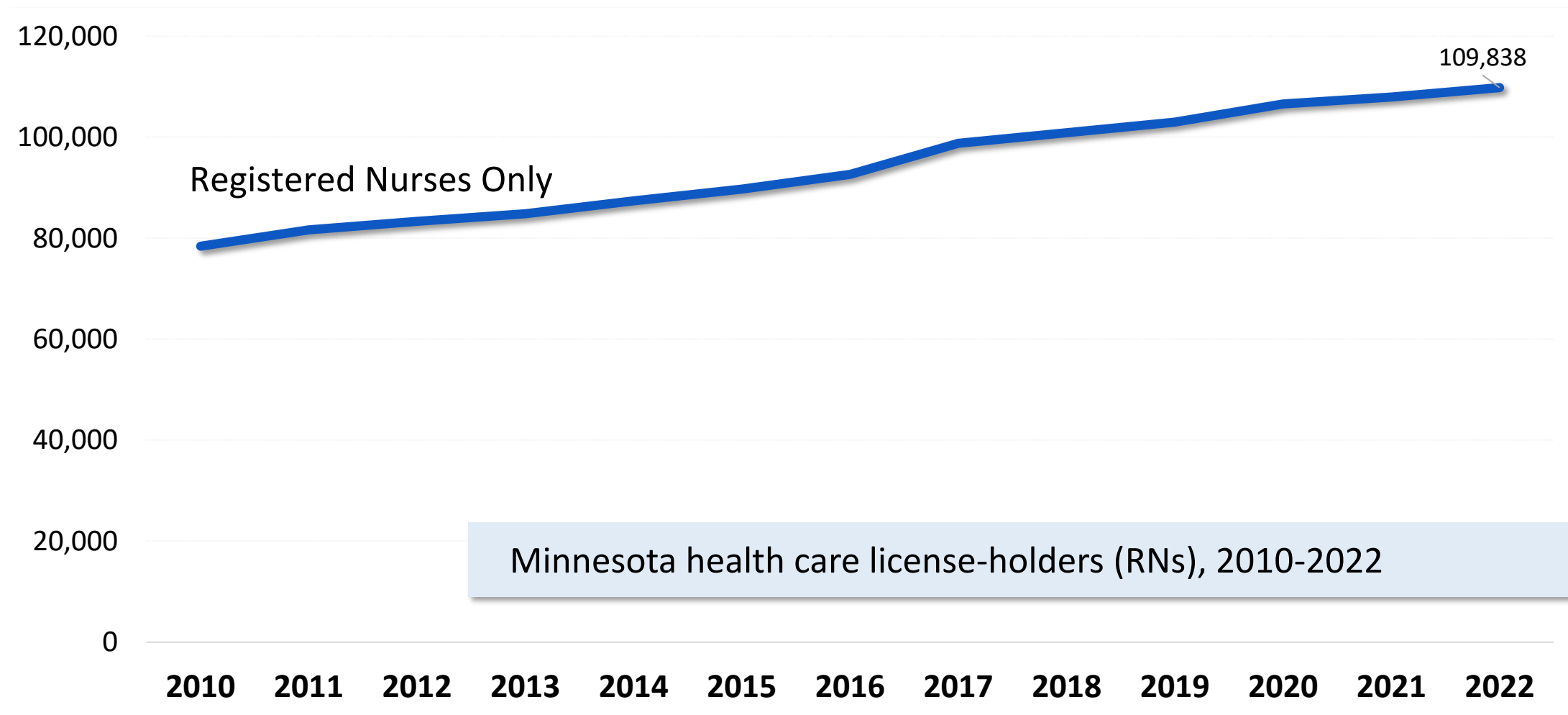
Data source: MN Department of Employment and Economic Development Labor Market Information Office Job Vacancy Survey Program. The data above are from the 2nd quarter of 2019 and the second quarter of 2022.

The supply of health care providers continued to increase during the pandemic (with one exception)



Data source: MN Department of Health's analysis of administrative data from the Boards of Nursing, Medical Practice, Behavioral Health and Therapy, Psychology, Marriage and Family Therapy, and Social Work. Note: Dentists and Pharmacists are omitted from this analysis for visual clarity. However, the supply of active licensees in Dentistry stayed relatively stagnant (from 3,960 in 2010 to 4,084 in 2022). The number of active pharmacist licenses grew from 7,356 in 2010 to 9,354 in 2023.

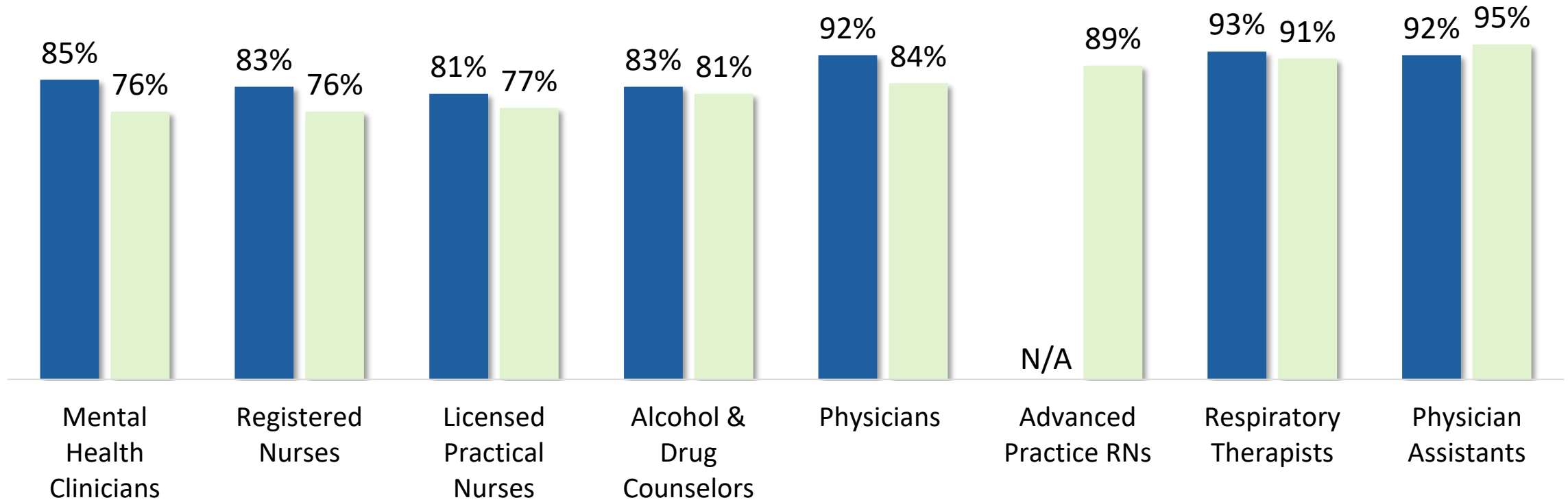
The net supply of health care providers continued to increase during the pandemic (RNs only).



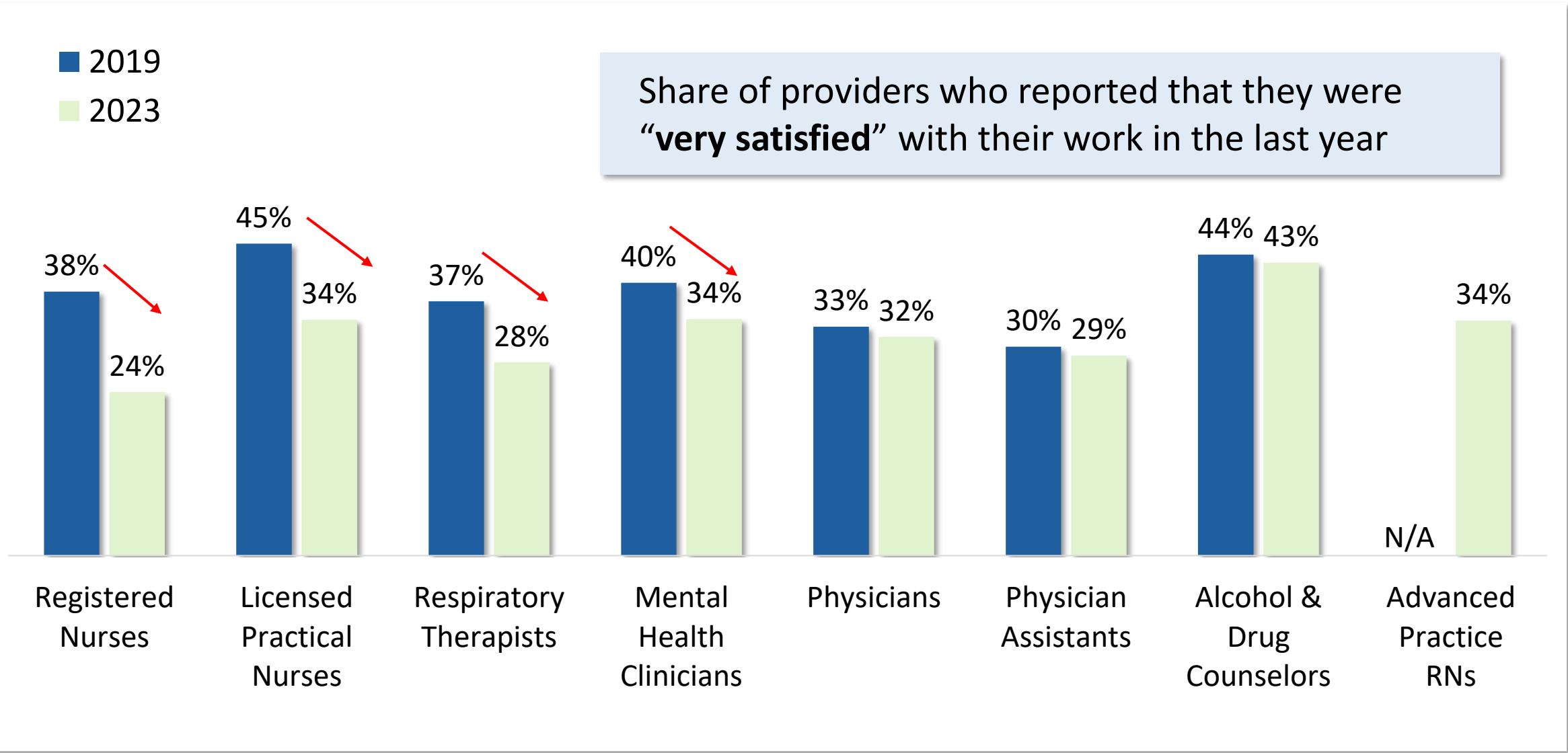
But in the last four years, we've lost net supply to retirement, other fields, and non-patient care roles.

Share of licensees working in a position that involves **patient care**, 2019 versus 2023

■ 2019
■ 2023



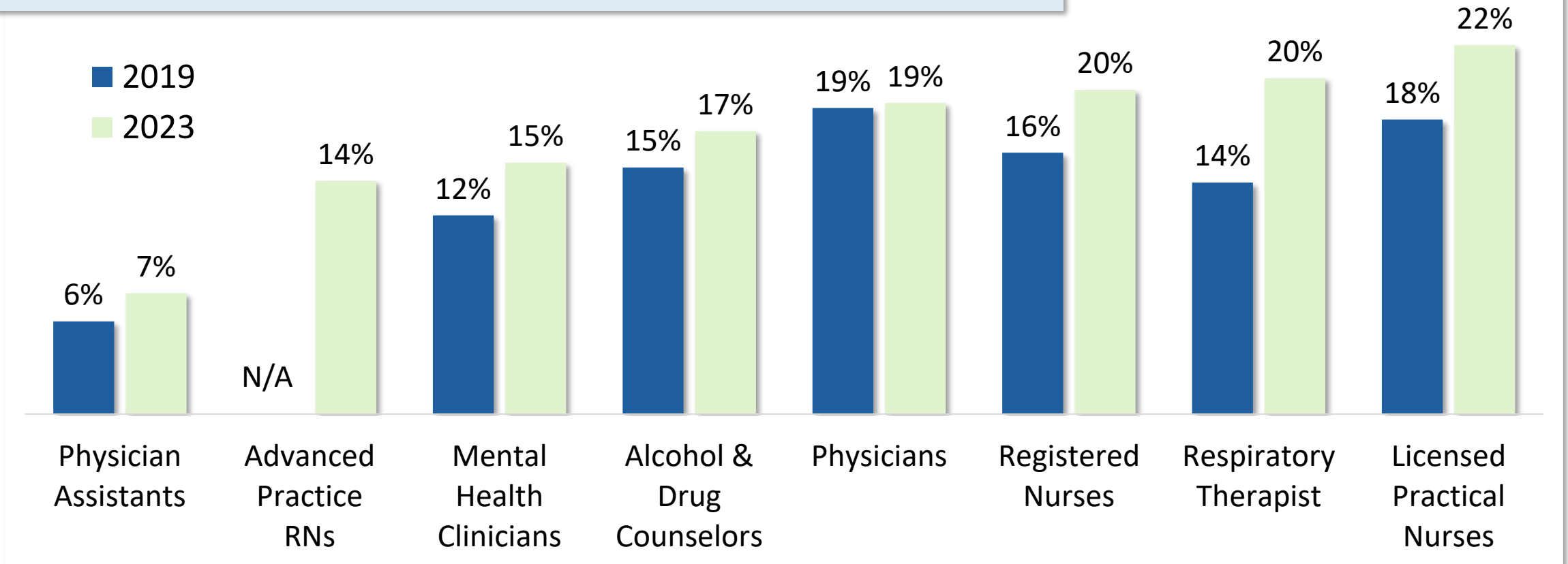
Work satisfaction is lower among nearly all health professionals.



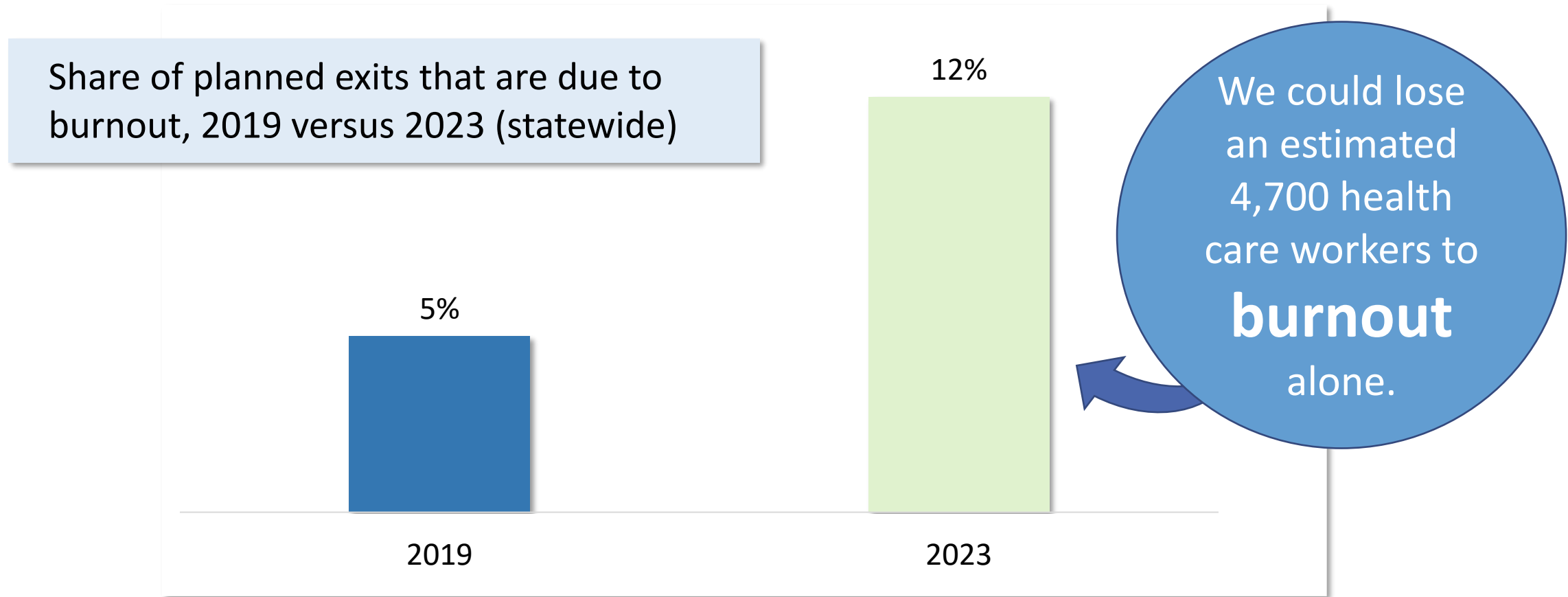
Data source: MN Department of Health’s Healthcare Workforce Survey, including data from the complete calendar year of 2019 and February through May of 2023.

And the future is troubling: more clinicians say they plan to leave their professions within the next five years.

Share of licensees who plan to leave their profession within the next five years, 2019 versus 2023.



Across professions,* **more than double** of these planned exits are due to burnout, compared to pre-pandemic levels.

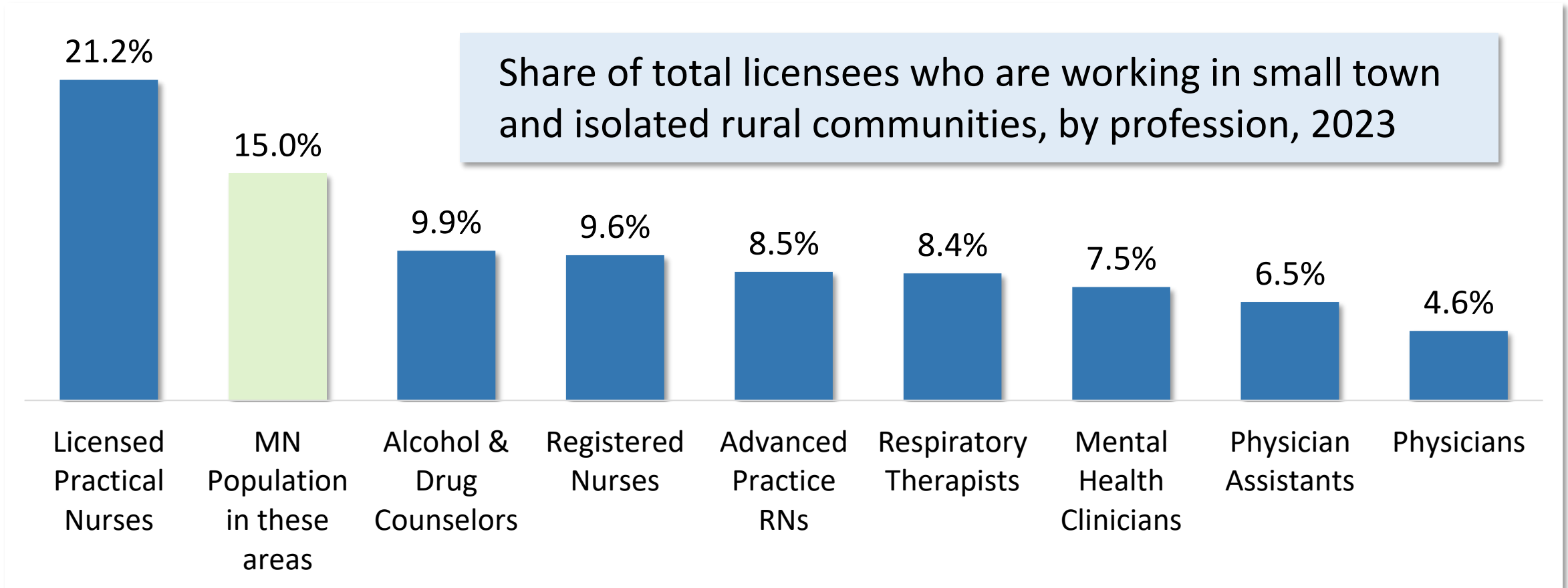


Data source: MN Department of Health's Healthcare Workforce Survey, including data from the complete calendar year of 2019 and February through May of 2023.

*Includes Physicians, PAs, RNs, APRNs, LADCs, Respiratory Therapists, and Mental health clinicians.

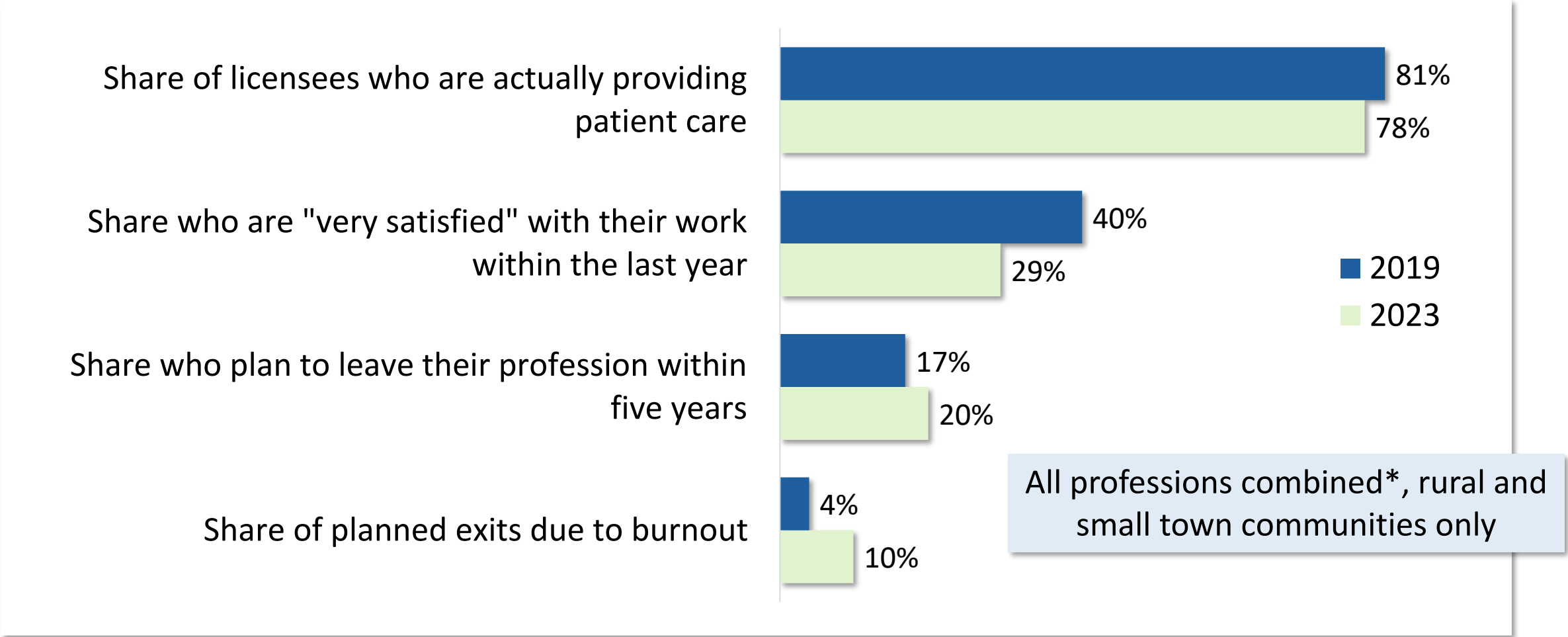
AND RURAL MINNESOTA?

Workforce shortages have always been more extreme in rural areas, where there are fewer providers per capita.



Data source: MDH analysis of providers' practice location addresses (as reported to their respective licensing boards. "Rural" and "small town" designations are based on Rural-Urban Commuting Area methodology developed by the U.S. Department of Agriculture. Examples of "small towns" include areas such as Grand Rapids, Little Falls, and International Falls. Isolated rural communities includes areas such as Pine River, Dawson, and Crosslake.

Rural Minnesota—*already* facing severe and intractable shortages—has the same post-COVID problems as urban areas in the state.



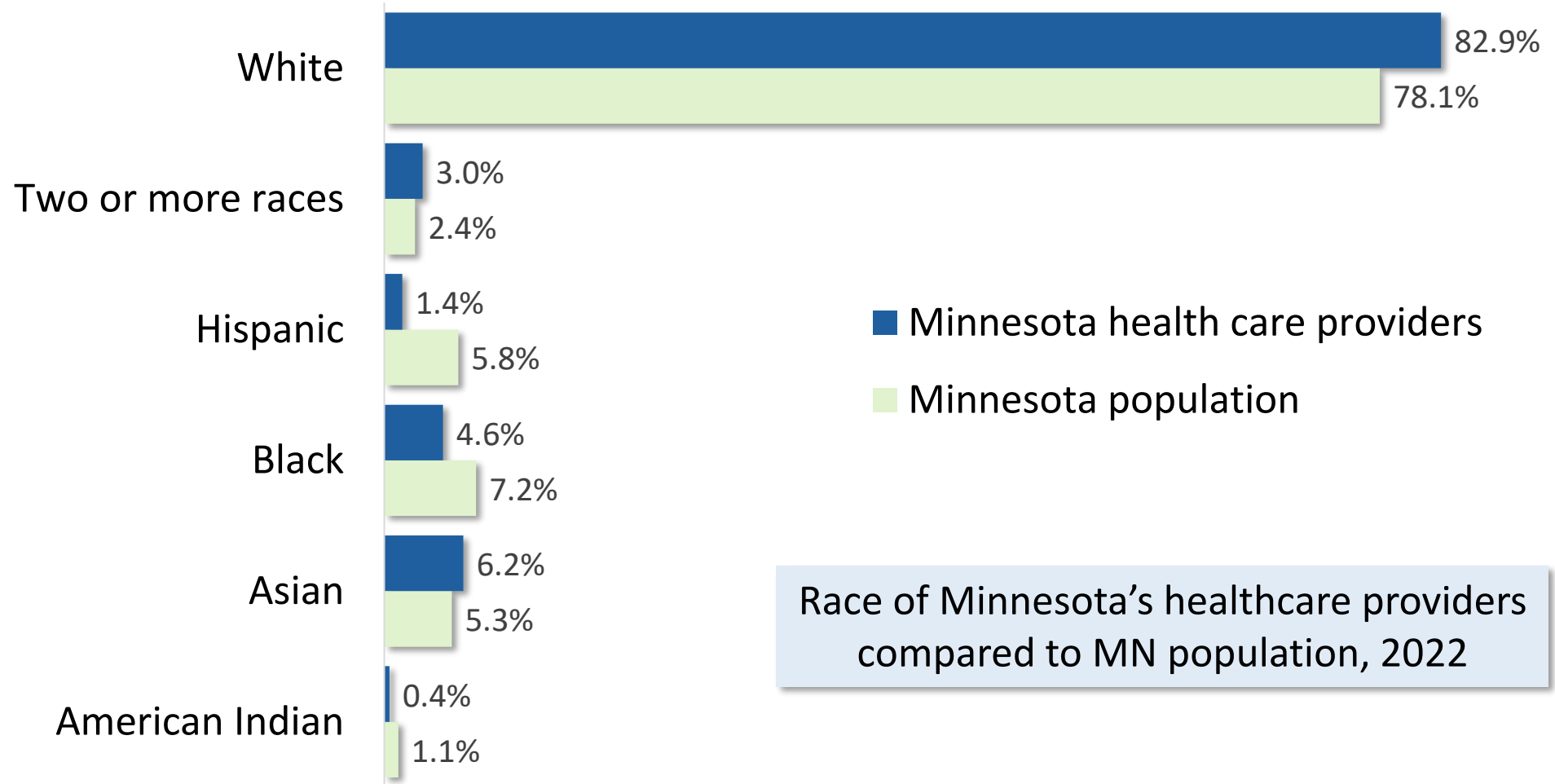
Data source: MDH Healthcare Workforce Survey, calendar year of 2019 compared to February through May of 2023.

*Includes Physicians, PAs, RNs, APRNs, LADCs, Respiratory Therapists, and Mental health clinicians.

Diversity in the healthcare workforce

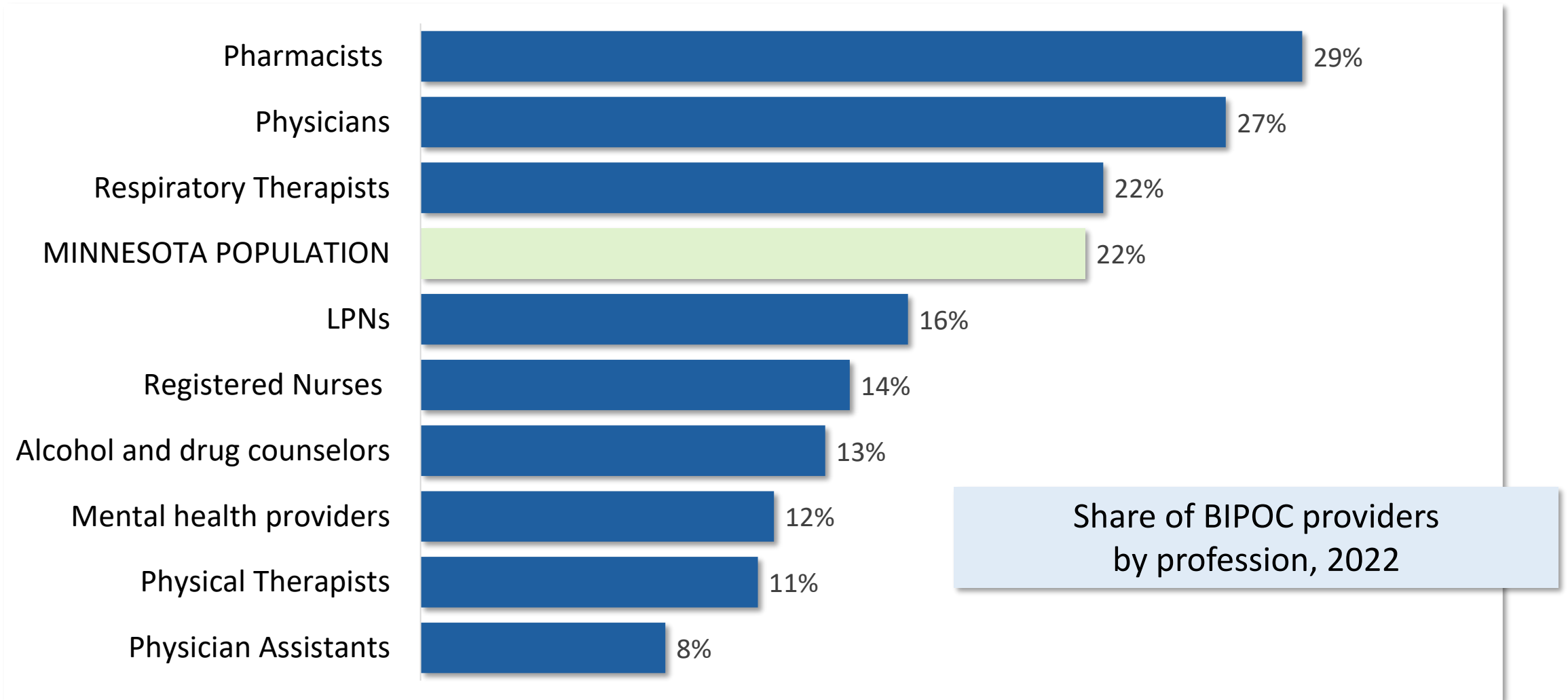


People of color are still underrepresented in Minnesota's health care workforce.



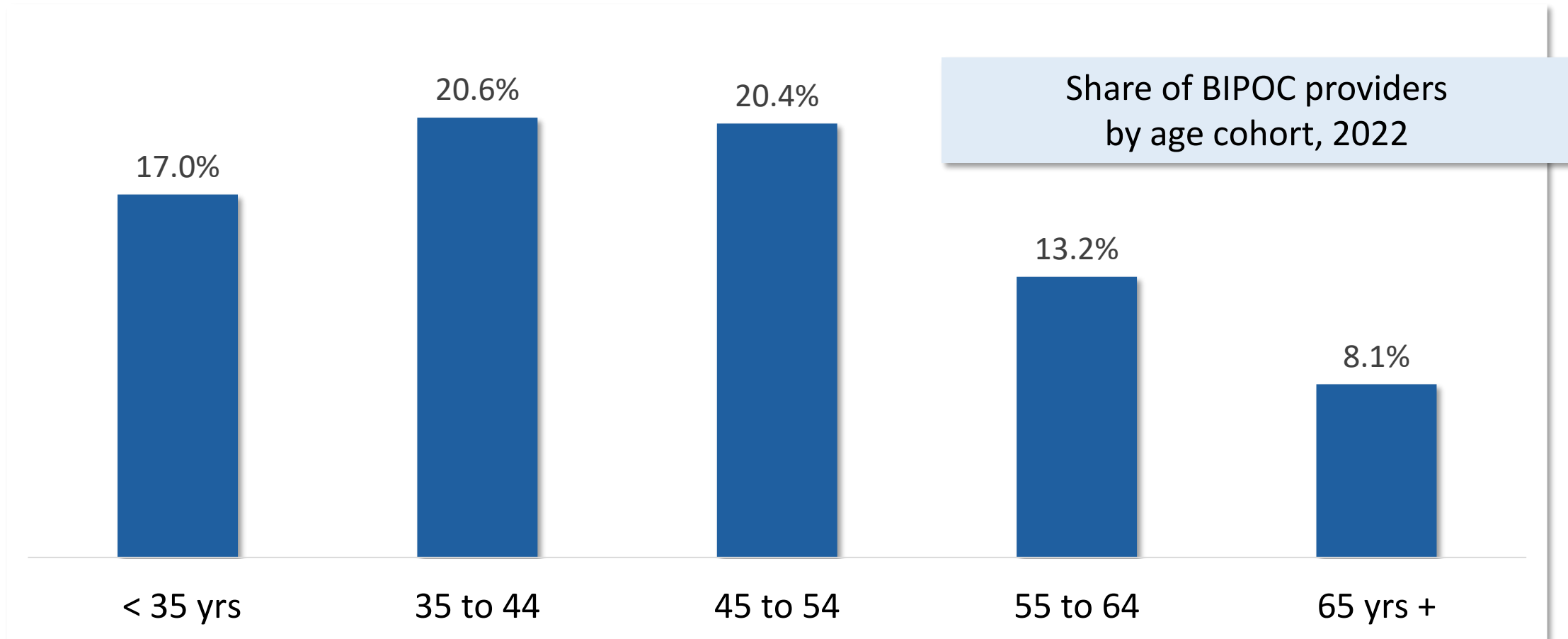
Data sources: Population data are from U.S. Census Bureau and compiled by Minnesota Compass. Data on Minnesota's health care providers are from the Minnesota Department of Health's Healthcare Workforce Survey. Data collected from February 7, 2022 through February 7, 2023. Health care providers included in this chart are physicians, physician assistants, nurses, mental health providers, alcohol and drug treatment counselors, physical therapists, respiratory therapists, and pharmacists.

Diversity varies substantially across professions.



Data sources: Population data are from U.S. Census Bureau and compiled by Minnesota Compass. Data on Minnesota's health care providers are from the Minnesota Department of Health's Healthcare Workforce Survey. Data collected from February 7, 2022 through February 7, 2023.

Cohorts of younger providers are more diverse, suggesting that the workforce is slowly becoming more representative of Minnesota as a whole.



Data source: Minnesota Department of Health's Healthcare Workforce Survey. Data collected from February 7, 2022 through February 7, 2023. Health care providers included in this chart are physicians, physician assistants, nurses, mental health providers, alcohol and drug treatment counselors, physical therapists, respiratory therapists, and pharmacists.

A growing body of national research shows that a more diverse health workforce creates better health outcomes in communities of color.

Communication study

Patient–clinician ethnic concordance and communication in mental health intake visits

[Margarita Alegría](#)^{a b}  , [Debra L. Roter](#)^c, [Anne Valentine](#)^a, [Chih-nan Chen](#)^a, [Xinliang Li](#)^a, [Julia Lin](#)^{a b}, [Daniel Rosen](#)^d, [Sheri Lapatin](#)^a, [Sharon-Lise Normand](#)^e, [Susan Larson](#)^b, [Patrick E. Shrout](#)^f

Elsevier, February 2013

Study Finds Patients Prefer Doctors Who Share Their Same Race/Ethnicity

In an analysis of more than 100,000 patient surveys, Penn researchers found that patient-provider race concordance led to higher odds of receiving maximum patient experience scores

Penn Medicine News

HEALTH

In counties with more Black doctors, Black people live longer, ‘astonishing’ study finds



By [Usha Lee McFarling](#) April 14, 2023

[Reprints](#)



JAMA Open Network, April 2023

Patient–Physician Racial Concordance Associated with Improved Healthcare Use and Lower Healthcare Expenditures in Minority Populations

[Anuradha Jetty](#)¹, [Yalda Jabbarpour](#)², [Jack Pollack](#)³, [Ryan Huerto](#)⁴, [Stephanie Woo](#)⁵, [Stephen Petterson](#)⁶

Journal of Racial and Ethnic Health Disparities, Feb 2022

And in Minnesota, we know that mental health providers of color are more likely to serve vulnerable populations than their white counterparts.

Mental health and substance use clinicians

Patient Group	White providers	Providers of color
Immigrants/refugees	21%	39%
Other racial or ethnic minority group members	52%	68%
Low-income or uninsured patients	59%	68%
Medicaid, MinnesotaCare, or other Minnesota health care program recipients	63%	62%
Patients who require an interpreter	19%	29%
Veterans	24%	21%
Populations with disabilities	45%	47%
Unsure	3%	4%
None of these	7%	4%

Survey question:

*“Which of the following underserved patient groups do you serve on a **daily basis**, if any? (Check all that apply.)”*

Part 2:

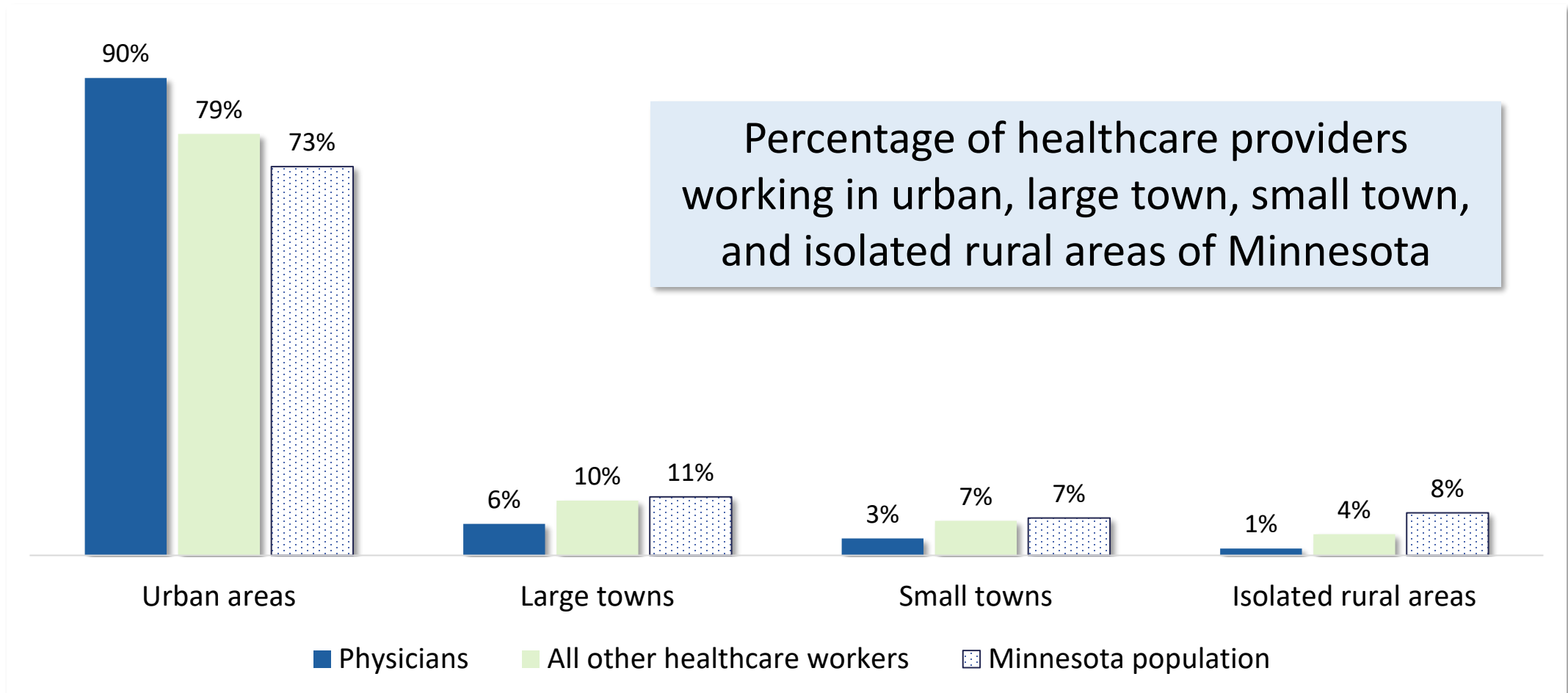
A deeper look at specific professions

Physicians:

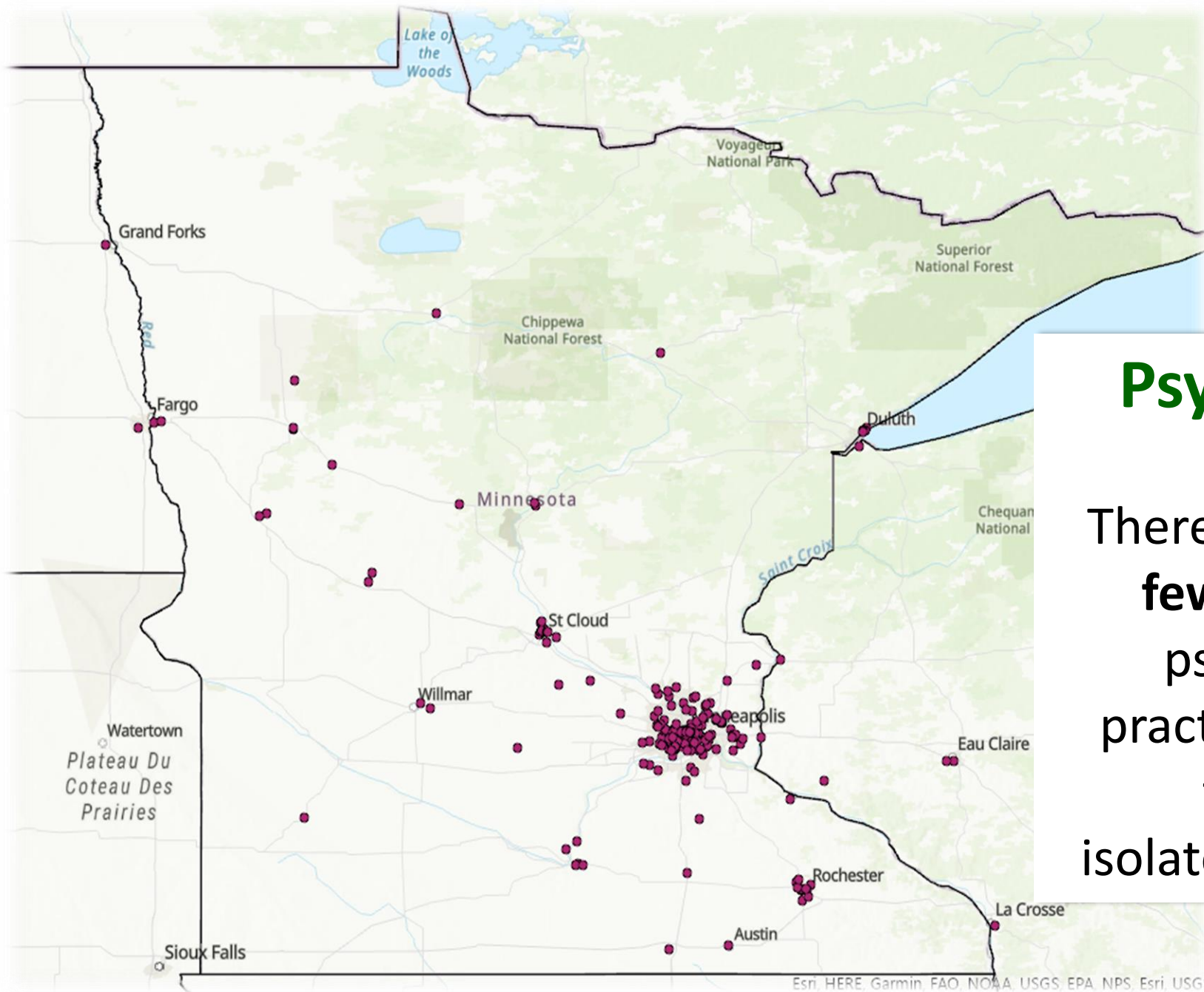
**Geographic
Maldistribution**



Geographic maldistribution (i.e., rural workforce shortage) is most severe among physicians.



Data source: MDH analysis of providers' 2023 practice location addresses (as reported to their respective licensing boards. "Rural" and "small town" designations are based on Rural-Urban Commuting Area methodology developed by the U.S. Department of Agriculture. Urban areas include the major metropolitan areas of the Twin Cities, Rochester, Duluth, Saint Cloud, and Fargo-Moorhead. Examples of "large towns" include areas such as Bemidji, Brainerd, and Alexandria. Examples of "small towns" include areas such as Grand Rapids, Little Falls, and International Falls. Isolated rural communities includes areas such as Pine River, Dawson, and Crosslake.

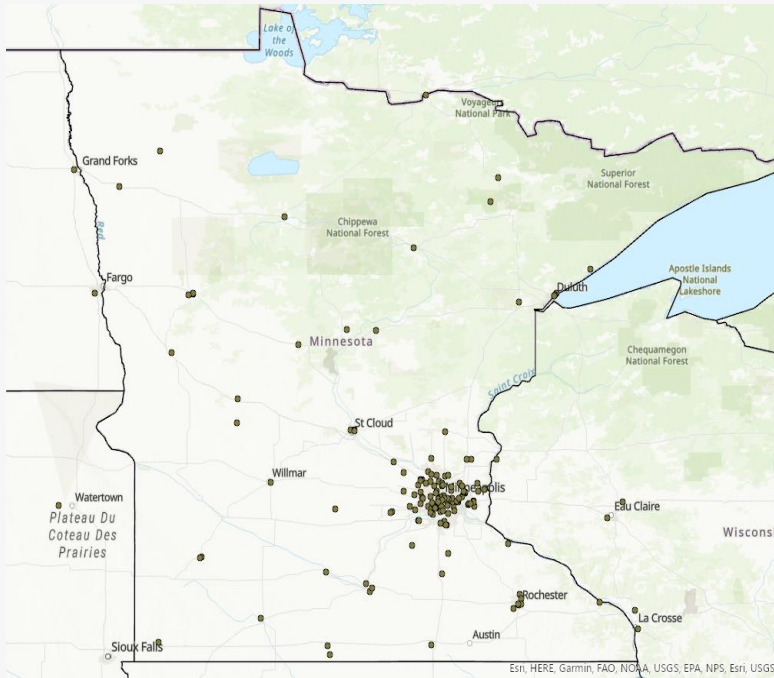


Psychiatrists

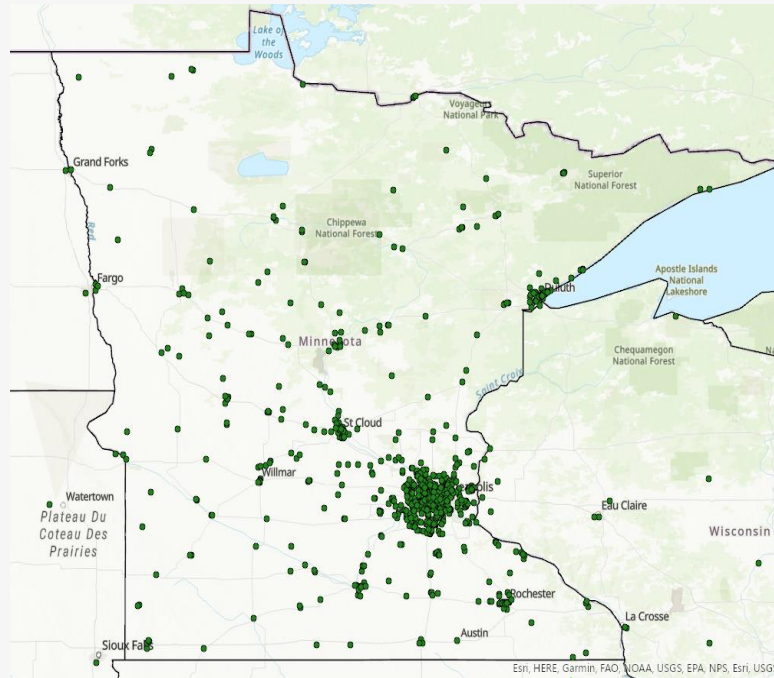
There are currently
fewer than 20
psychiatrists
practicing in small
towns or
isolated rural areas.

Other select physician specialties

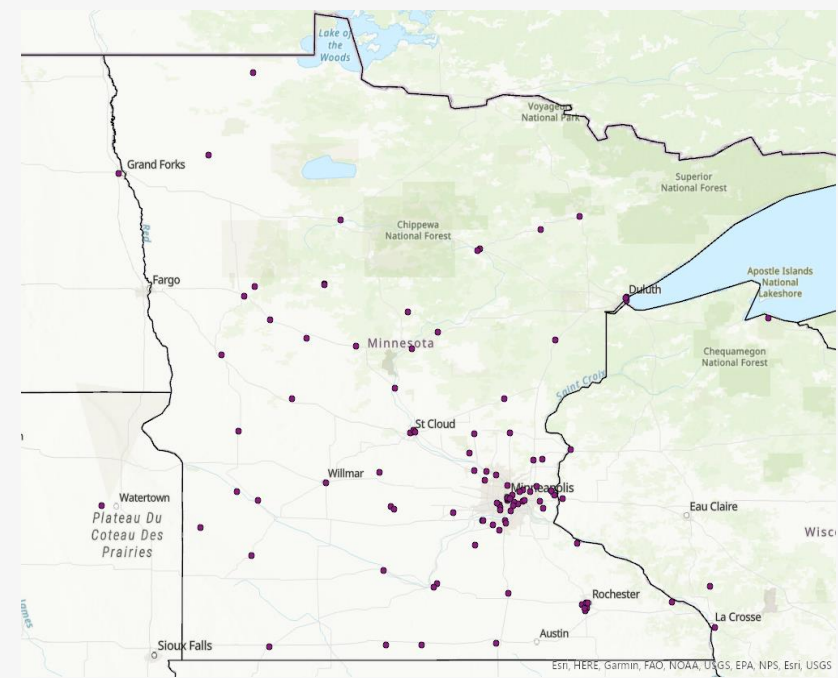
OBGYNs



Family Medicine Physicians

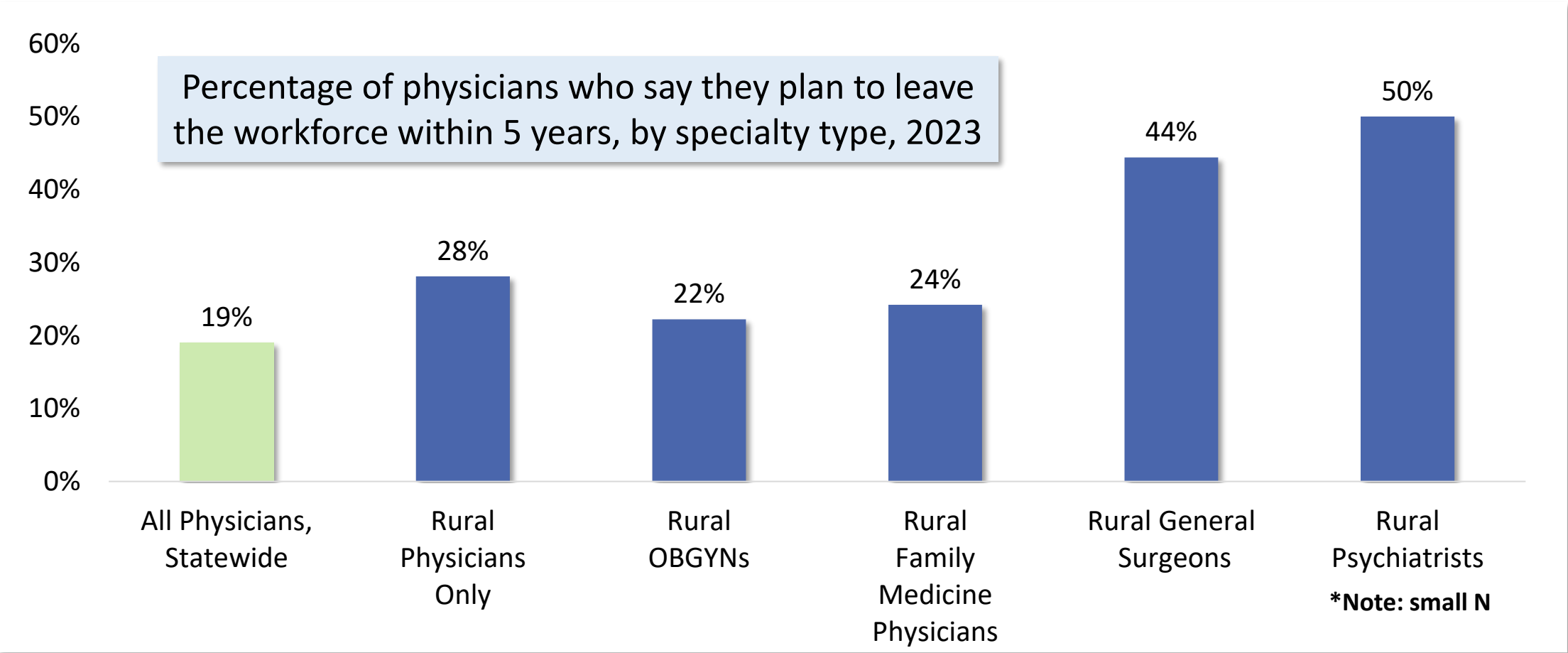


General Surgeons



Data source: MDH analysis of providers' 2023 practice location addresses (as reported to their respective licensing boards).

Nearly one-third of all rural physicians say they plan to leave the workforce within the next five years.



Data source: MDH Healthcare Workforce Survey, data collected from February through May of 2023. Here “rural” refers to clinicians working in small town or isolated rural areas of the state. Examples of “small towns” include areas such as Grand Rapids, Little Falls, and International Falls. Isolated rural communities includes areas such as Pine River, Dawson, and Crosslake.

This has led to a critical question (and a fruitful research partnership):

What factors—both fixed and modifiable—are associated with health professionals' choices about where to live and practice?



Factors that increase the likelihood of physicians choosing rural practice

(Results from a binary logistic regression model [N=11,039 physicians])

Having grown up in a rural area

2.5

The ability to have a broad scope of practice

1.6

Whether I could (or did) receive loan forgiveness

1.5

The ability to have autonomy in my work

1.5

My formal educational program prepared me

1.3

Increased odds of practicing in a rural area

No significant net effect of:

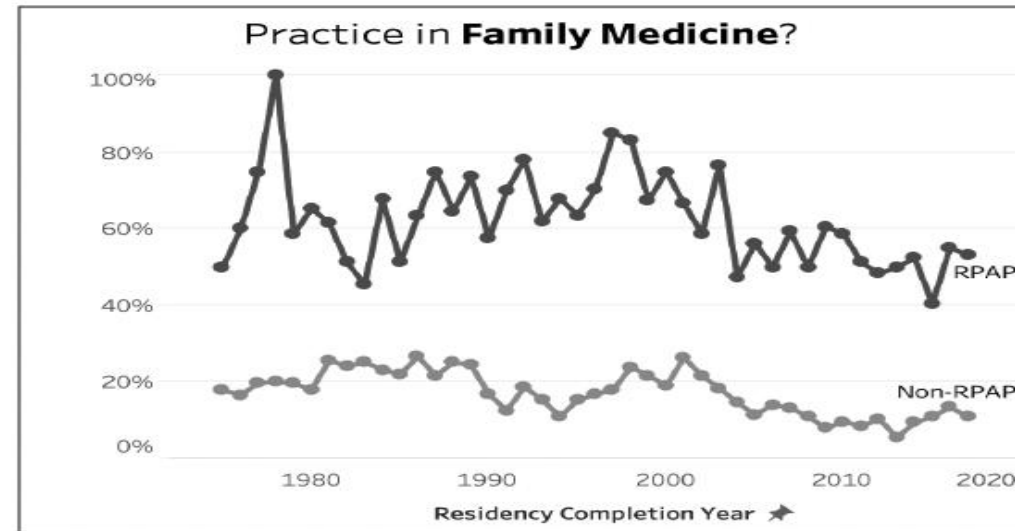
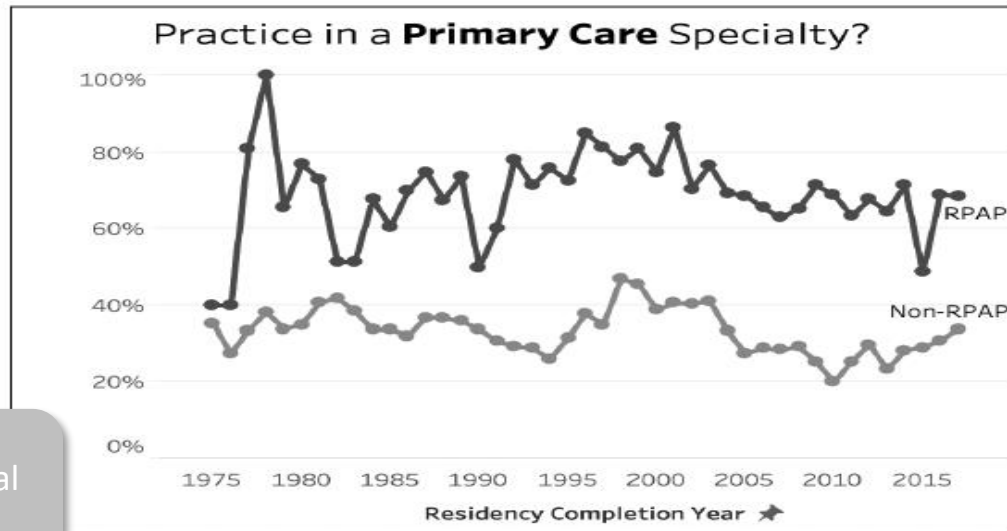
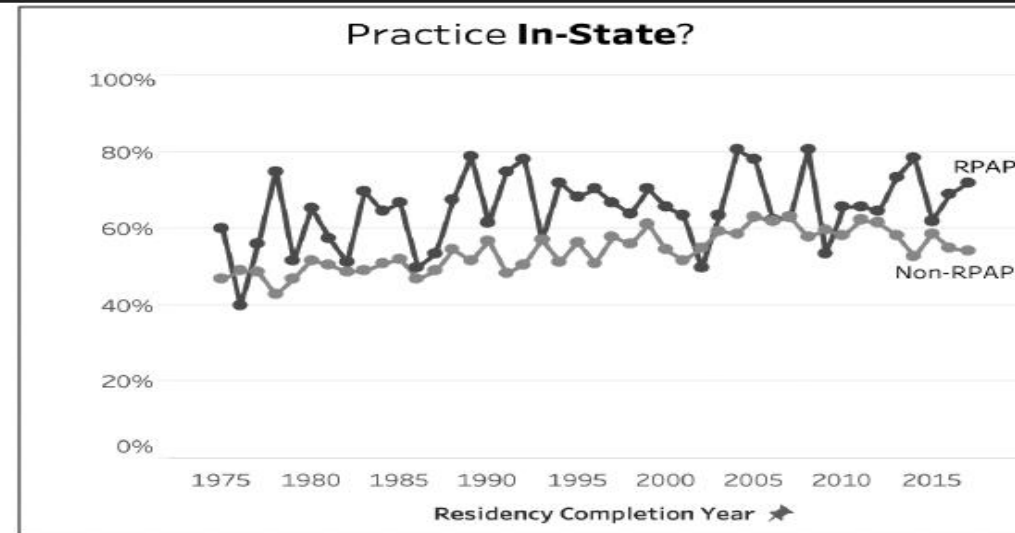
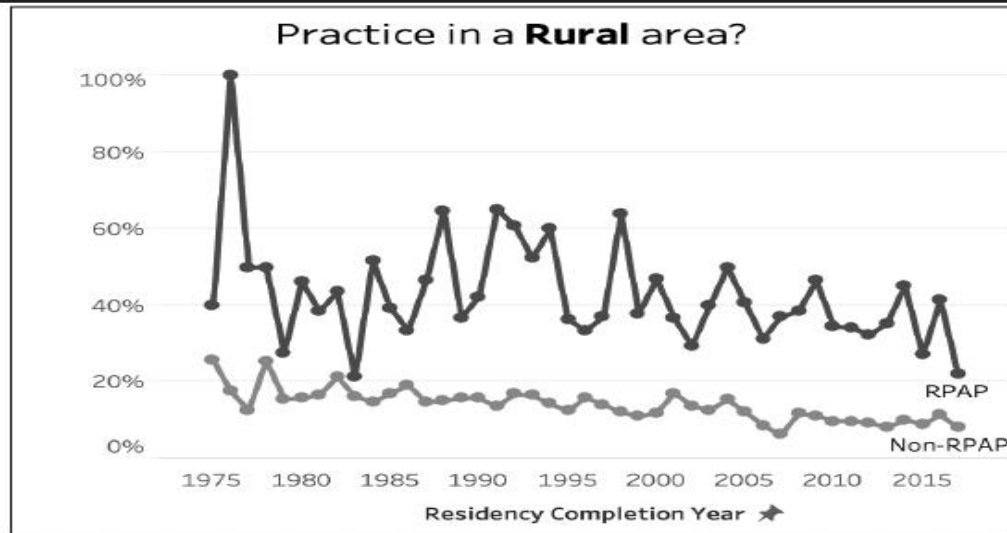
Considerations about the area itself

A financial incentive, such as higher pay or a hiring bonus

These four factors had a significant effect over and above having grown up rural.

Education makes a difference:

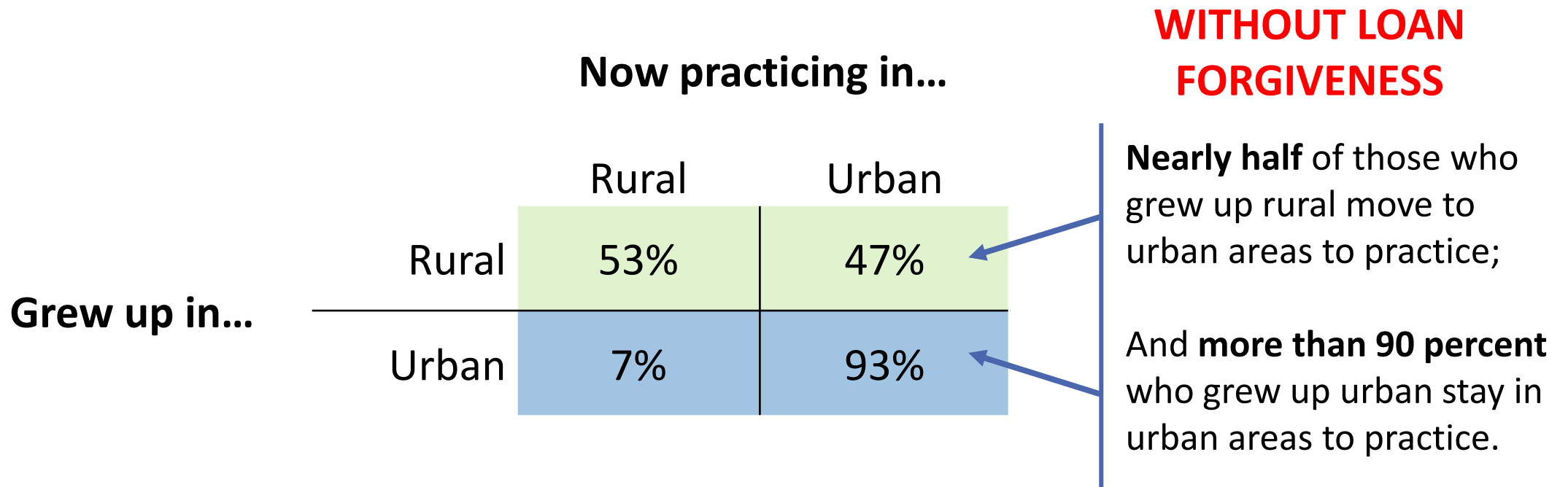
Residents from the U of MN Rural Physician Associate Program (RPAP) are more likely to **practice rural**, **in-state**, **primary care/family medicine**.



Source: Adapted from [Family Medicine](#): "Impact of the Rural Physician Associate Program on Workforce Outcomes." Butler, Rosenberg, Miller-Chang, et. Al. Nov-December 2021.

And loan forgiveness makes a difference:

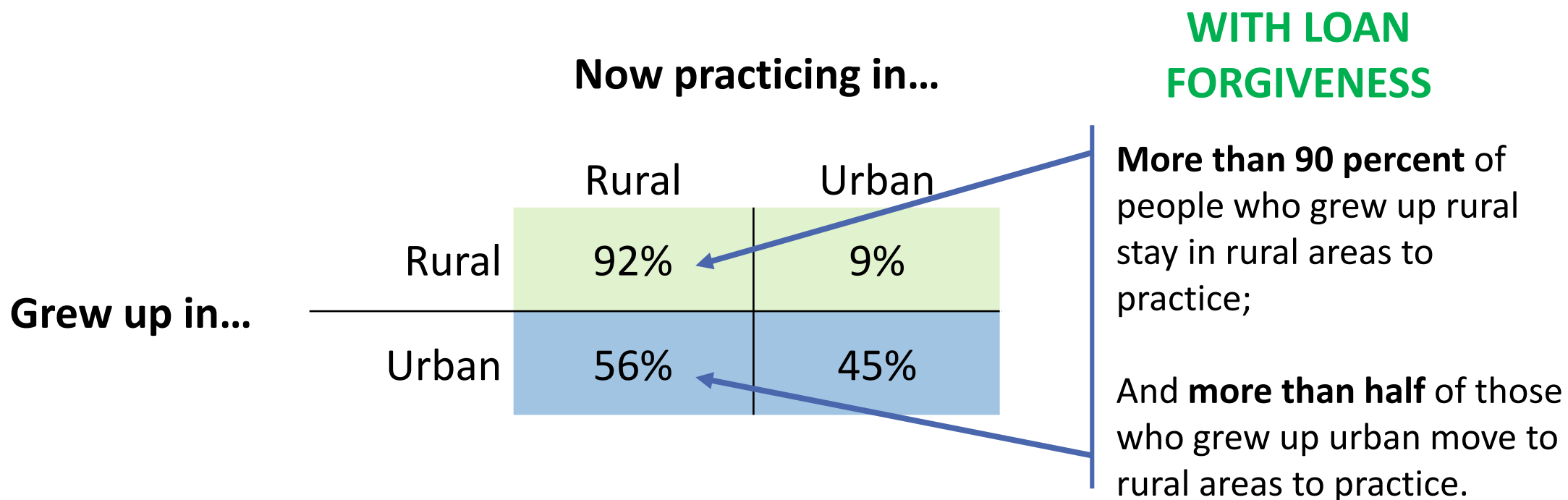
It **retains** rural providers and **redistributes** urban providers to rural areas.



Data Source: MDH analysis of data from the Statewide Education Longitudinal Education Database. This analysis includes data for 631 providers who received rural loan forgiveness anytime over the last 30 years. Providers were excluded from this analysis if they were working out of state and/or did not provide a practice address to their respective licensing boards. Provider types include Advance Practice Registered Nurses (87); Dentists (59); Dental Hygienists (8); Dental Therapists (12); Licensed Practical Nurses (7); Mental Health Clinicians (15); Nurse Faculty (61); Physician Assistants (53); Pharmacists (64); Public Health Nurses (35); Physicians (224); and Registered Nurses (6)

And loan forgiveness makes a difference:

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Nursing:

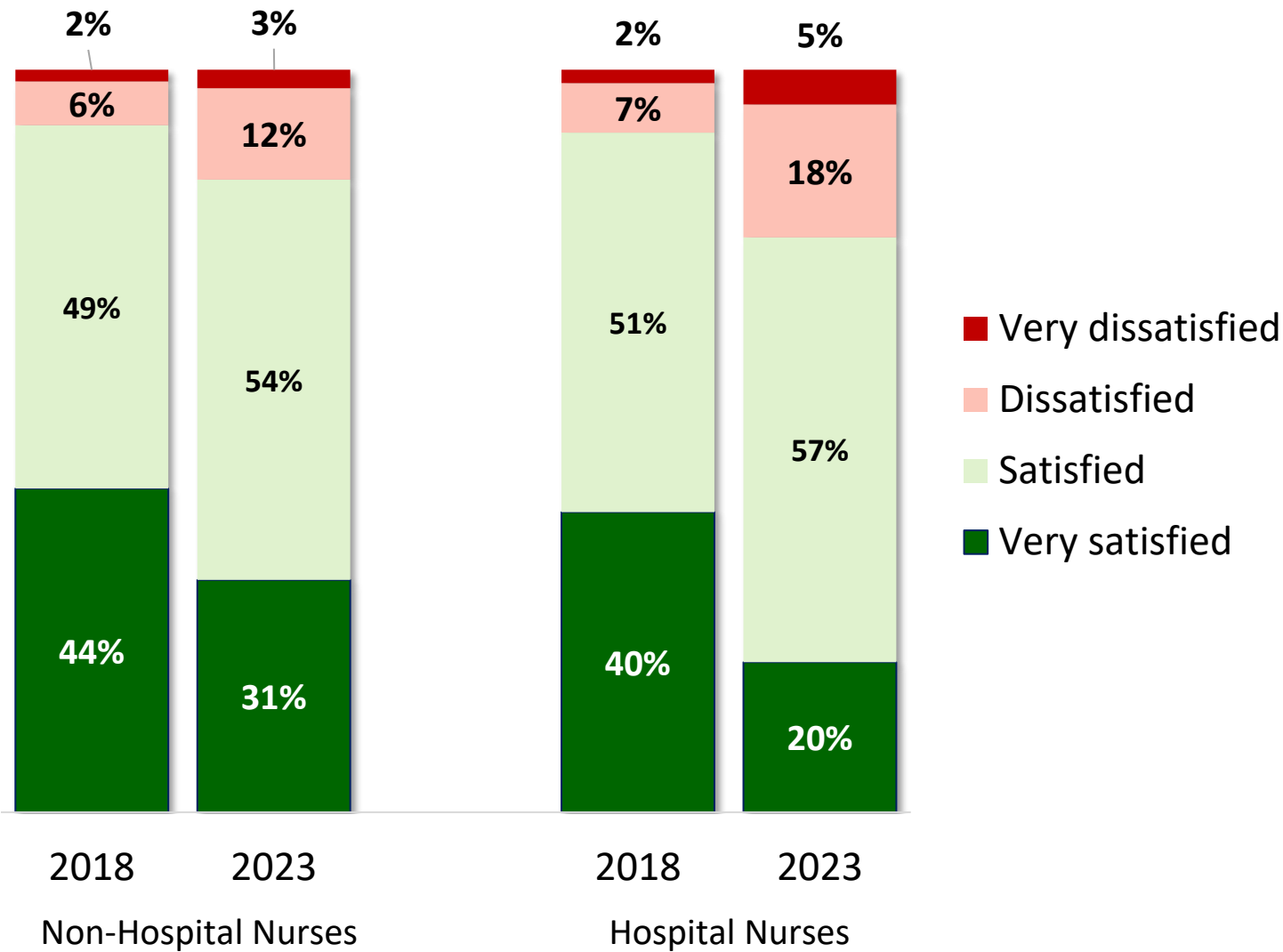
**Burnout, workforce
losses, and
undersupply**



RNs report lower levels of work satisfaction since COVID.

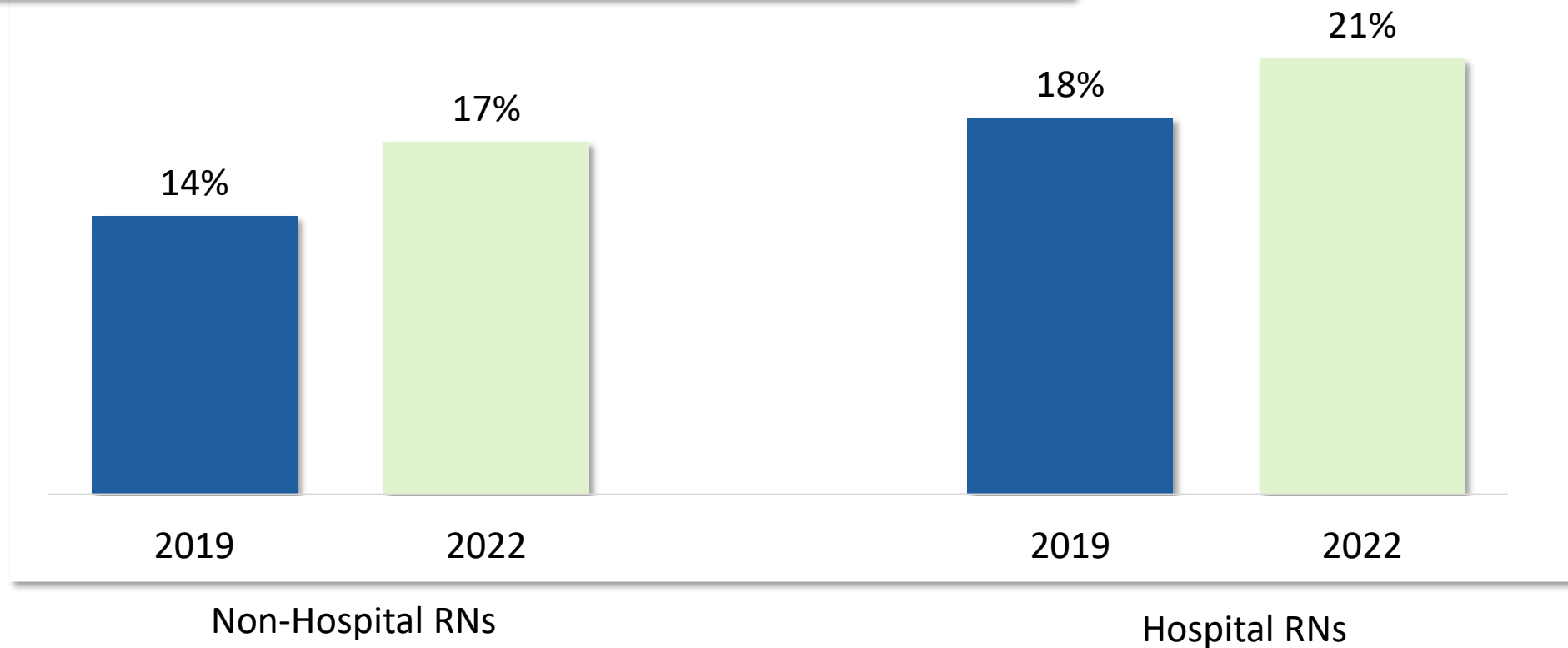
Survey question:

“How satisfied have you been with your career in the last twelve months?”



More RNs say they plan to leave the profession within the next five years.

Percentage of RNs who say they plan to leave the workforce within 5 years (hospital vs. non-hospital based RNs)

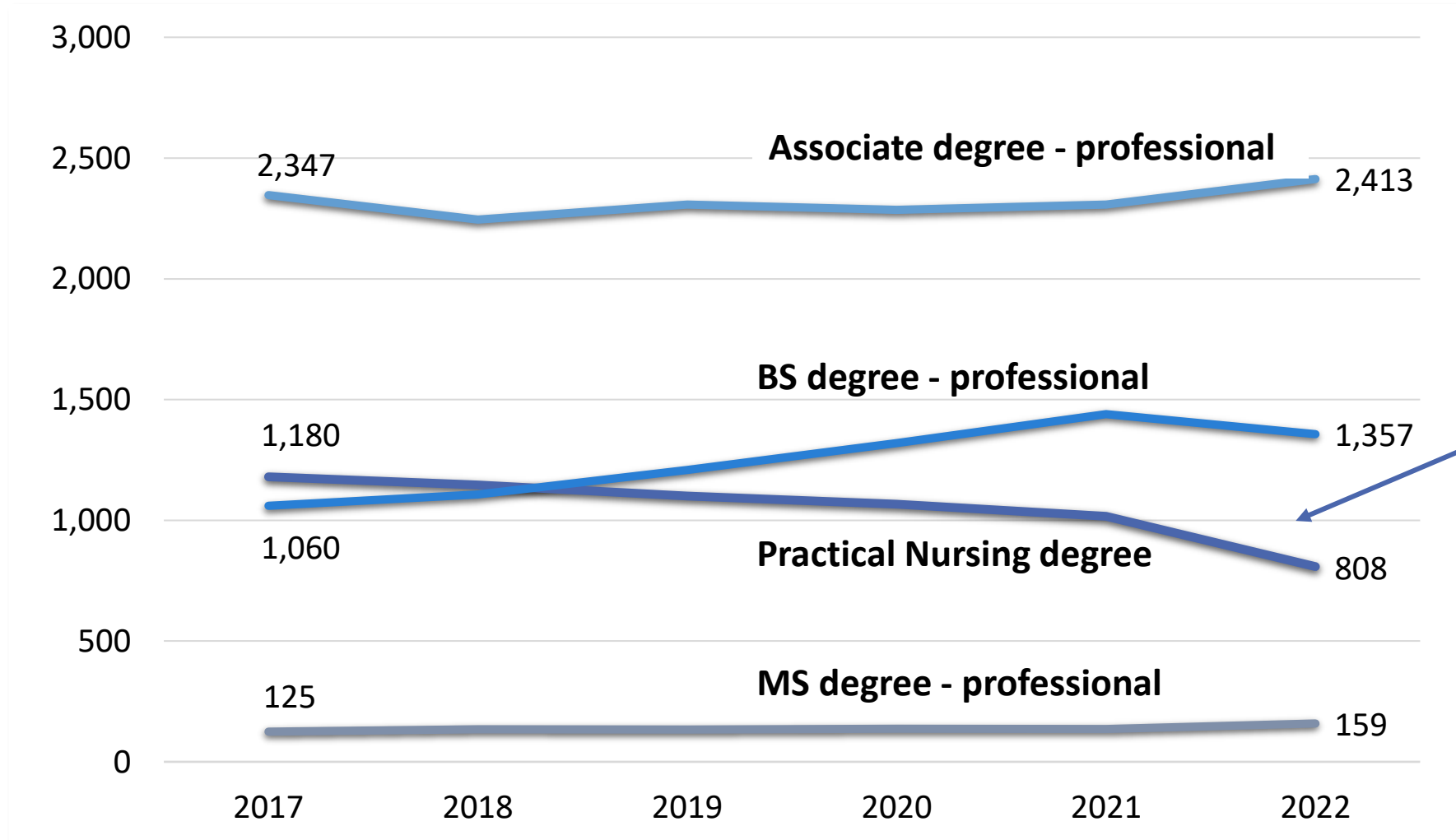


More RNs plan to leave the profession because of burnout (and the situation is worse among hospital-based RNs).

REASON	Non-Hospital RNs		Hospital RNs	
	2019	2022	2019	2022
To retire	85%	74%	72%	50%
To leave the profession because of burnout or dissatisfaction	3%	9%	6%	21%
To pursue a different career	3%	4%	3%	4%
To pursue training in order to advance in my current or a related profession	4%	6%	15%	19%
For family or other personal reasons	3%	4%	2%	4%
For some other reason	2%	3%	2%	3%

Data source: MDH Healthcare Workforce Survey, data from the 2017-2018 survey compared to data collected from February 9 – May 11 of 2023. Please note: these percentages represent the share of RNs among those who have already indicated that they plan to leave the profession. So, for example, in 2022, 21 percent of hospital-based RNs said they planned to leave nursing (see previous slide) and *among that 21 percent*, 21 percent said that their reason for leaving was burnout.

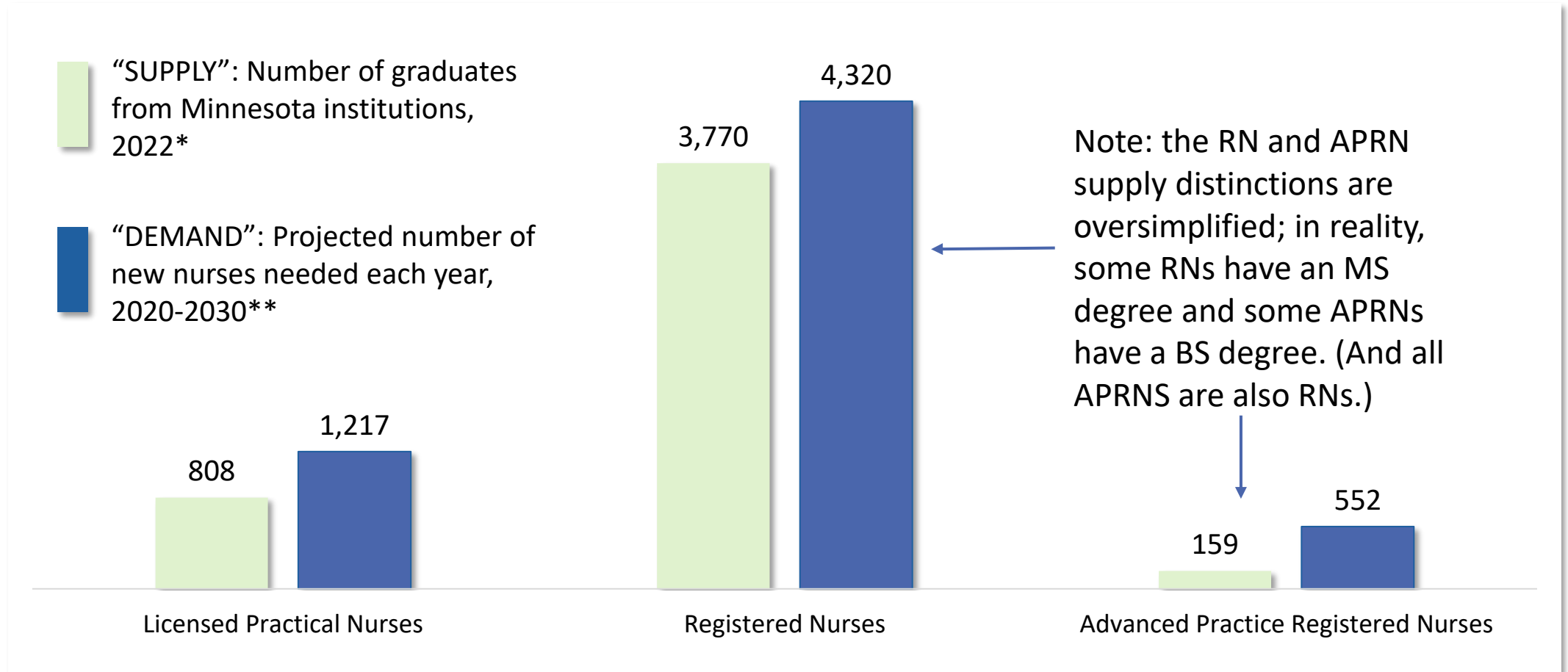
The 75 accredited nursing programs in Minnesota have produced thousands of new nurses each year.



Of note:
significant and
long-term
decline of **PN**
graduates

Putting
further
pressure on
long-term
care facilities

But the **supply** of new nurses still isn't keeping pace with **demand**.



Data sources: number of graduates comes from the Board of Nursing Education Report (2022). Number of projected job openings comes from the Department of Employment and Economic Development (DEED) Occupational Projections program. The Advanced Practice Nurse Practitioner category uses the supply of master's-prepared nurses as a proxy for APRN supply. The APRN "demand" number includes Nurse Practitioners, Nurse Anesthetists, and Nurse Midwives.

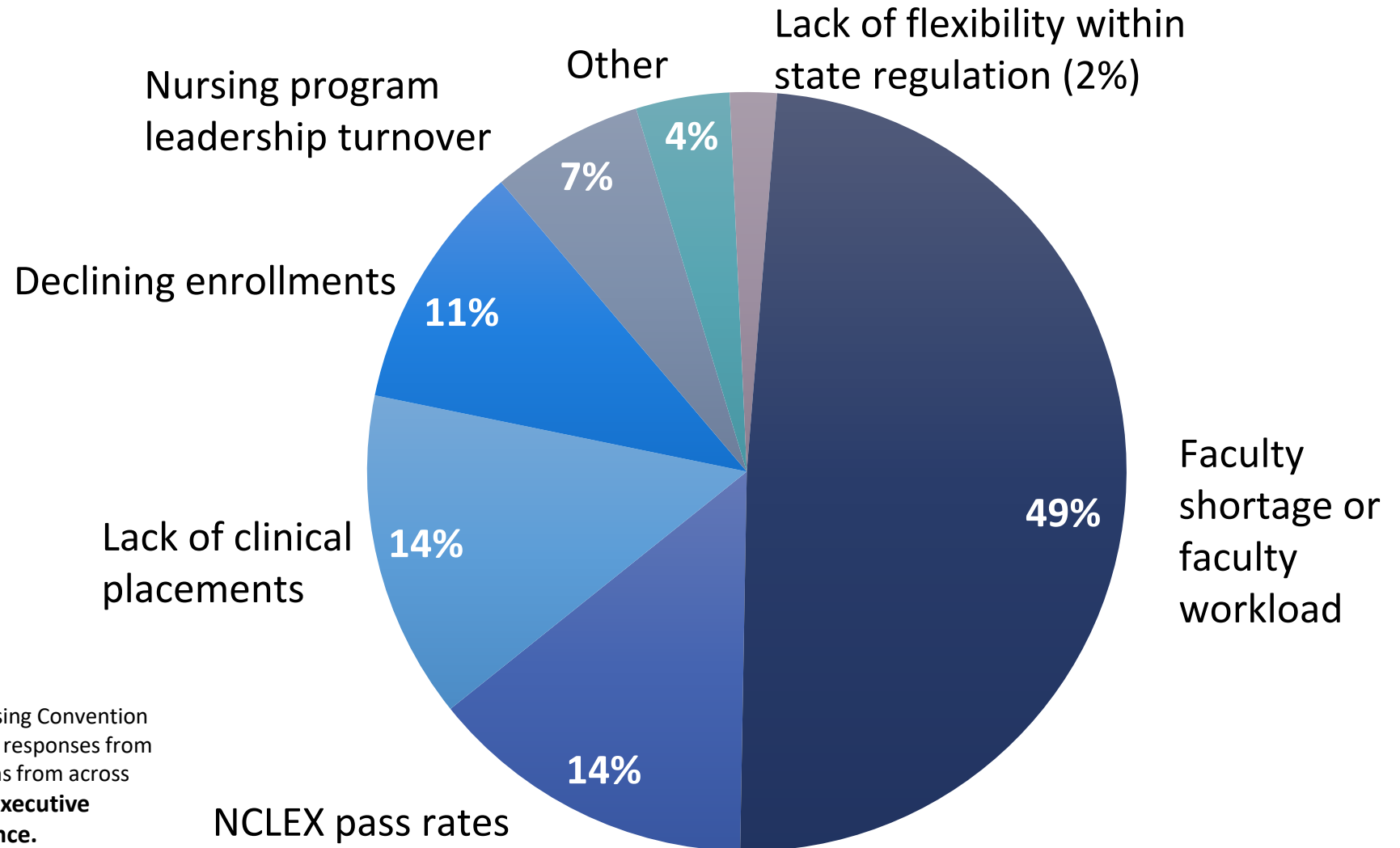
Nurse faculty shortages are one of the biggest challenges facing nursing programs today.

Survey question:

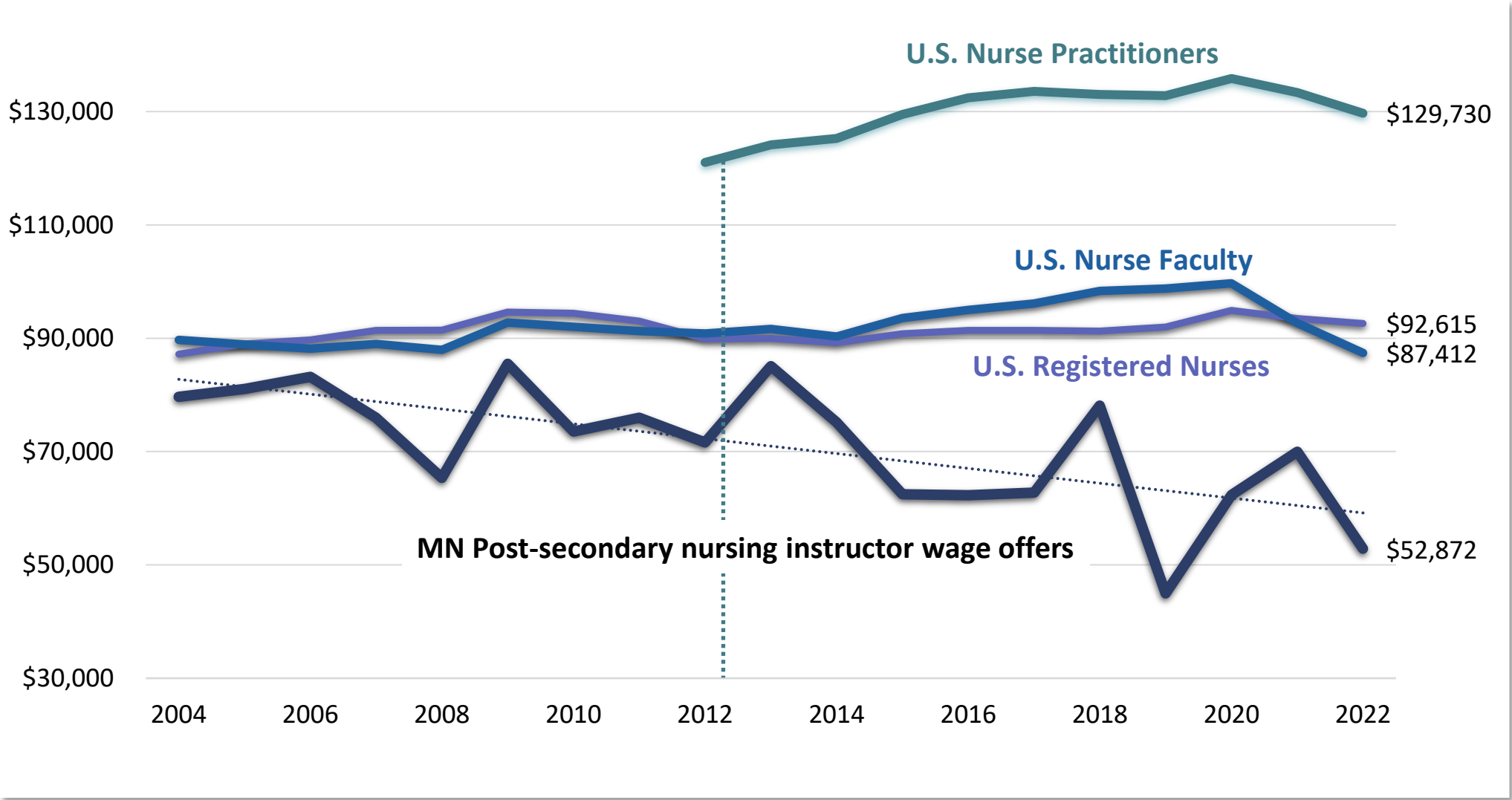
“What is the biggest challenge facing your program?”

N = 489

Data source: Organization for Associate Degree Nursing Convention Research Committee, November 2022. Data include responses from 489 leaders and faculty of associate degree programs from across the country. **Data compiled by Jennifer Eccles, Executive Director, Center for Nursing Equity and Excellence.**



Adjusted for inflation, salaries for MN nursing faculty have slumped over time, and lag behind salaries in competing professions.



Data Sources: data on U.S. wages for NPs, Nurse Faculty, and RNs are from the U.S. Bureau of Labor Statistics. Data on Minnesota post-secondary nursing instructor wage offers are from MN-DEED’s Job Vacancy Survey. All wages have been adjusted to 2022 dollars. Data compiled by Jennifer Eccles, Executive Director, Center for Nursing Equity and Excellence.

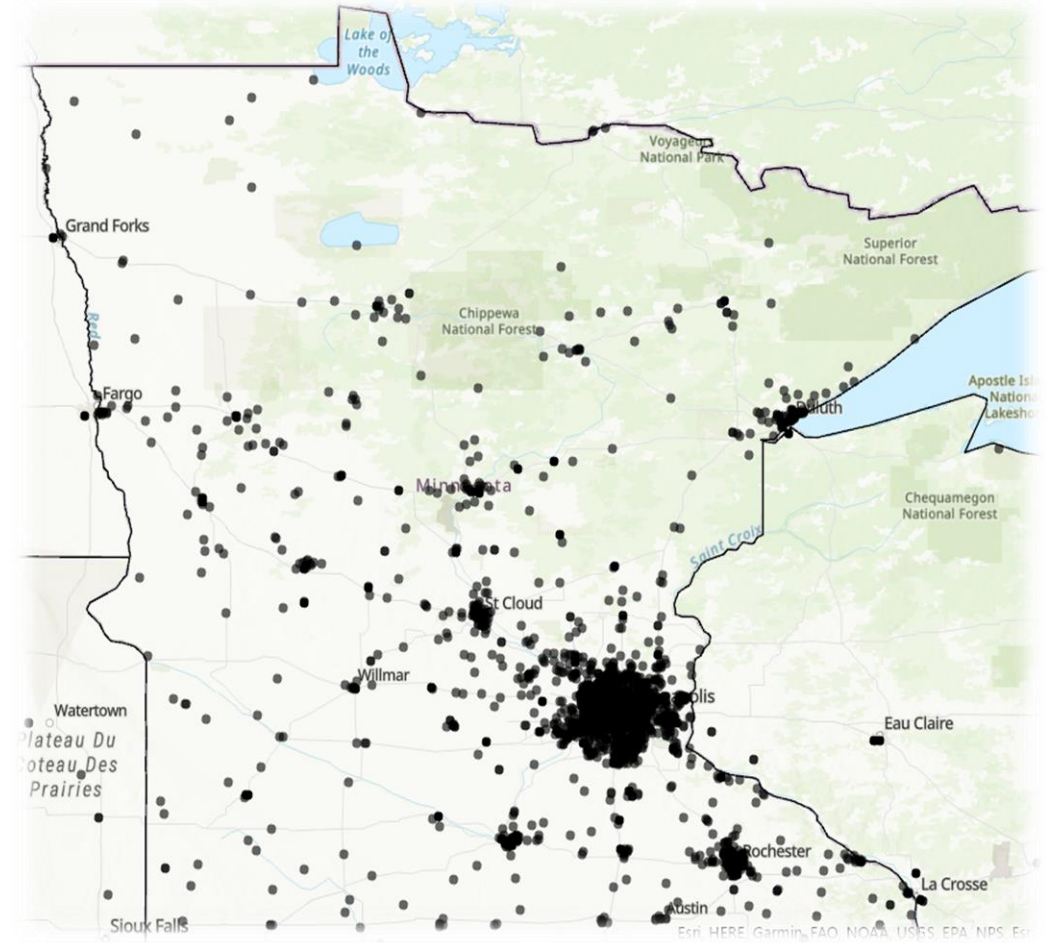
Physician Assistants

**Lesser-known
members
of the care team**

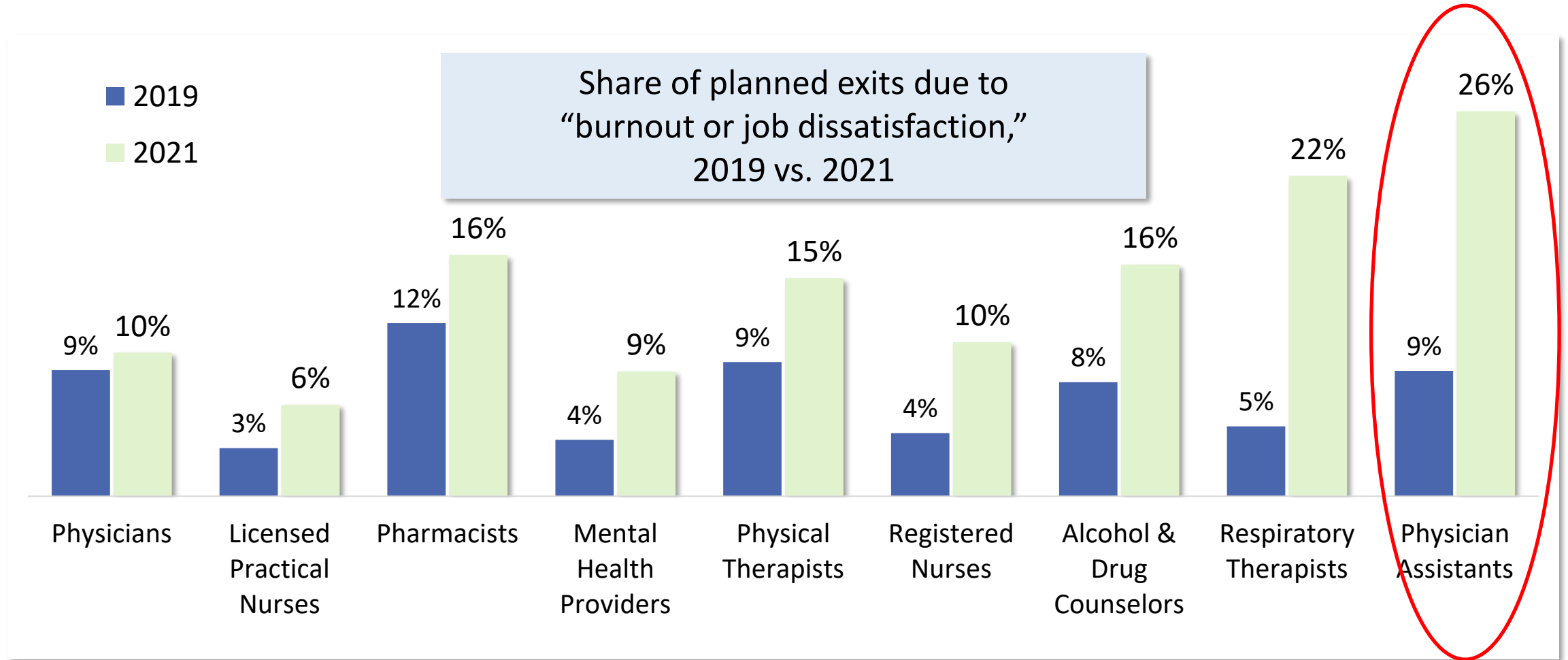


Based on their flexible scope of practice, PAs are “utility players” of healthcare

- ✓ There are just under 4,000 licensed PAs in Minnesota.
- ✓ By design, PAs have **the most flexible scope of practice**, and can work in any setting, practicing any specialty, under the general supervision of a physician.
- ✓ **95 percent** of PAs are providing patient care, and the majority work 40-50 hours per week, making this group the most fully utilized licensees in healthcare in terms of employment and patient care.

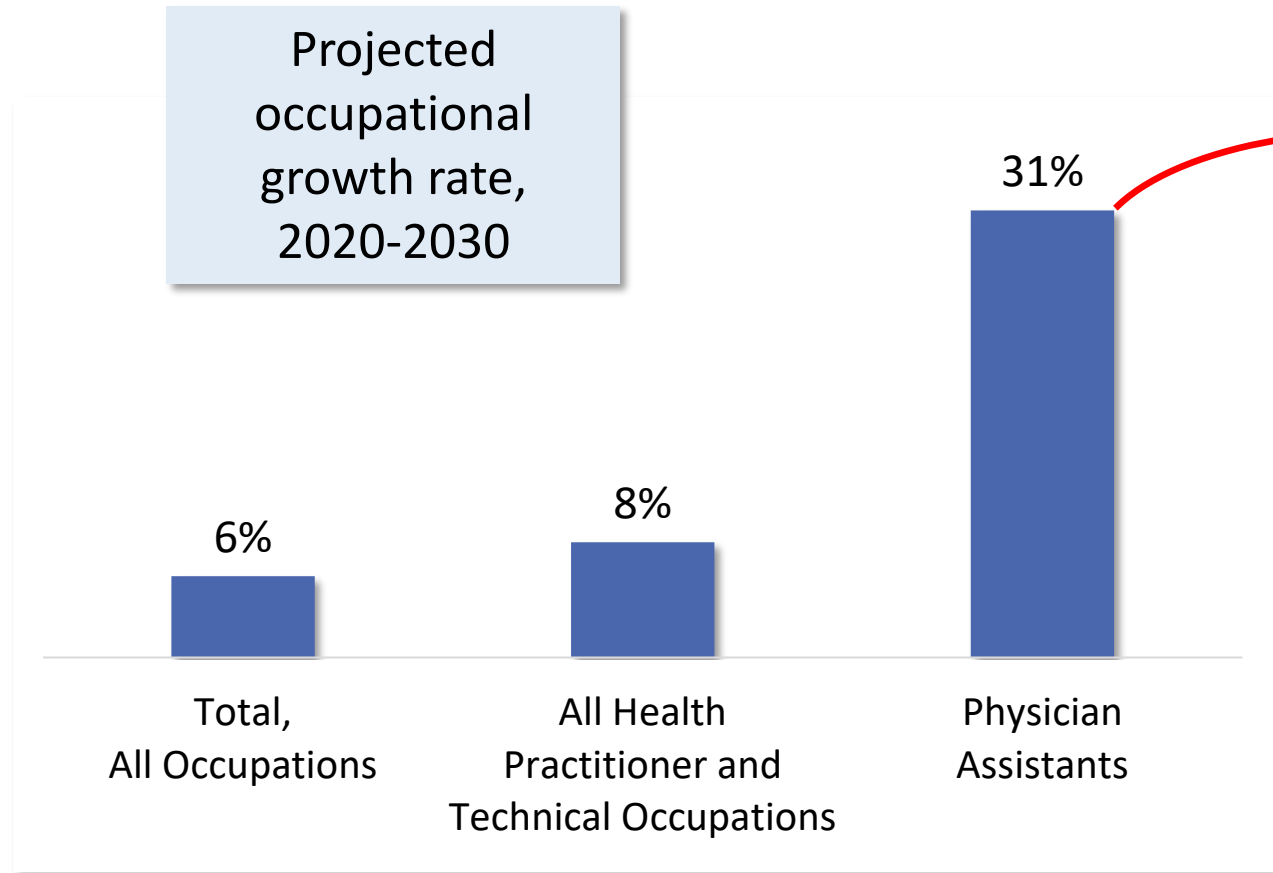


At the height of COVID, PAs experienced alarming levels of burnout



Data source: Minnesota Department of Health's Healthcare Workforce Survey. Data for the two time points presented above were collected (1) over the entire calendar year of 2019; and (2) 10/15 through 12/31 of 2021.

PAs are among the fastest-growing health professions (and we aren't keeping up with demand).



This translates to **244** new PAs needed each year to meet demand.

In 2022, MN colleges and universities graduated **124** master's level PAs.*

Data sources: Projections data are from the Minnesota Department of Employment and Economic Development Employment Projections program.

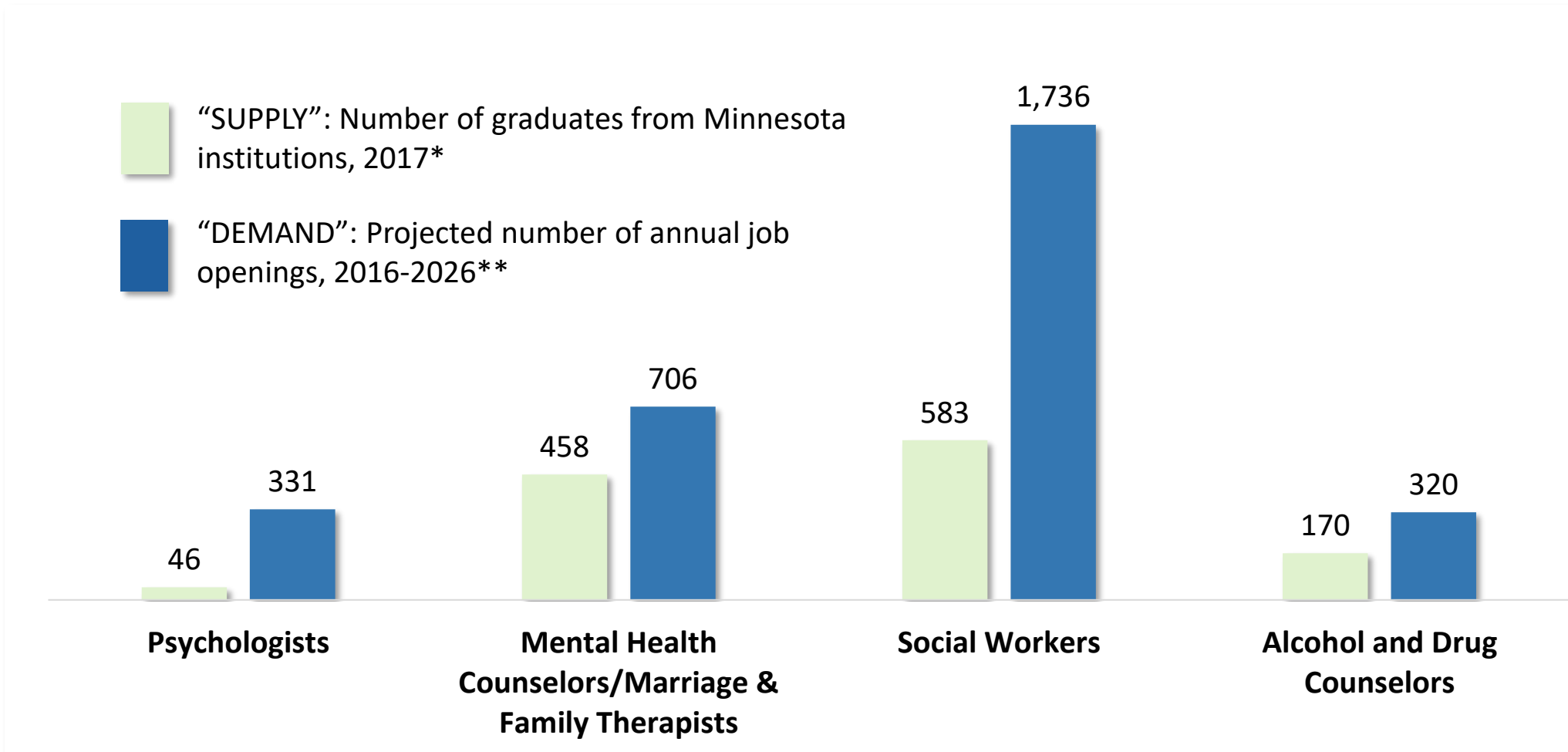
*The number of graduates comes from the Minnesota Office of Higher Education Awards Conferred Database.

Mental Health
Clinicians:

**Massive
Shortages and
Pipeline Losses**



Statewide supply and demand indicators for mental health providers



Data sources: number of graduates comes from the Integrated Postsecondary Education Data System (IPEDS), housed on the Minnesota Office of Higher Education website. Number of projected job openings comes from the Department of Employment and Economic Development (DEED) Occupational Projections program. Psychology graduates include only those in clinical or counseling psychology with a doctorate. Mental health counselors, MFTs, and Social Worker graduates include only masters'-prepared graduates. Alcohol and drug graduates include only those prepared with a bachelor's and above. These counts include graduates from Argosy, which has since closed. Argosy produced roughly half of the recent psychology Ph.D.s in the state.

What happens to mental health program graduates after they finish their degrees?

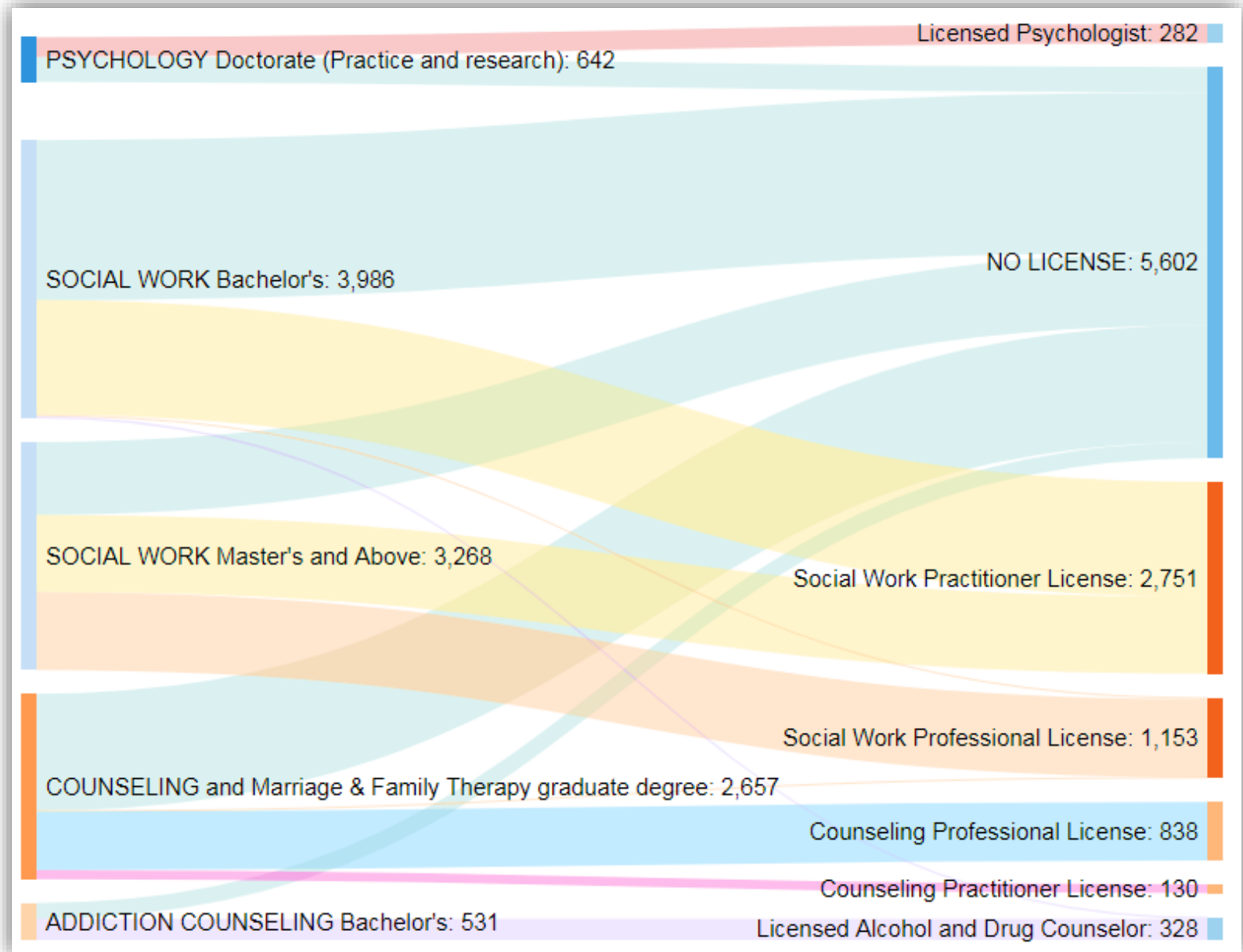
Minnesota graduates from **2007-2014** from the following programs:

- **psychology,**
- **social work,**
- **family and individual counseling,**
- **and substance abuse counseling**

By 2017, just 49.1 percent of these graduates had obtained a mental health professional or practitioner license.

MN MH program graduates, 2007-2014

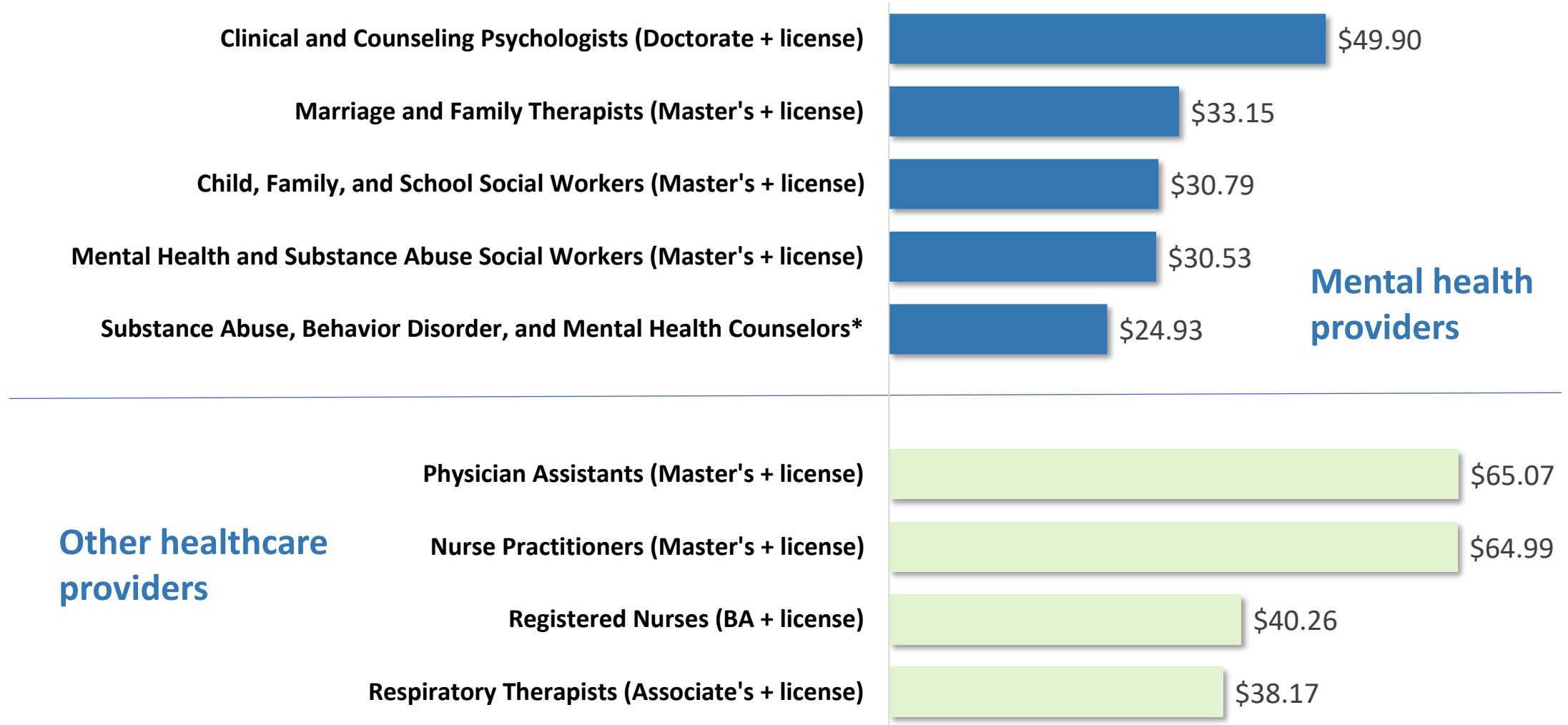
License types



Why the leaks in the mental health supply pipeline?

- More than enough interest in these majors, but not enough career guidance (the end of the road is unclear).
- Many argue that licensure exams are overly difficult and culturally biased.
- Moving from practitioner-level license to professional-level license (independent practice) requires 4,000 hours of clinical supervision, which many trainees must pay for out of their own pocket.
- Competing non-licensed “mental-health adjacent” careers exist, with similar levels of compensation.
- Low wages, low wages, low wages.

The root cause of mental health worker shortages: compensation.

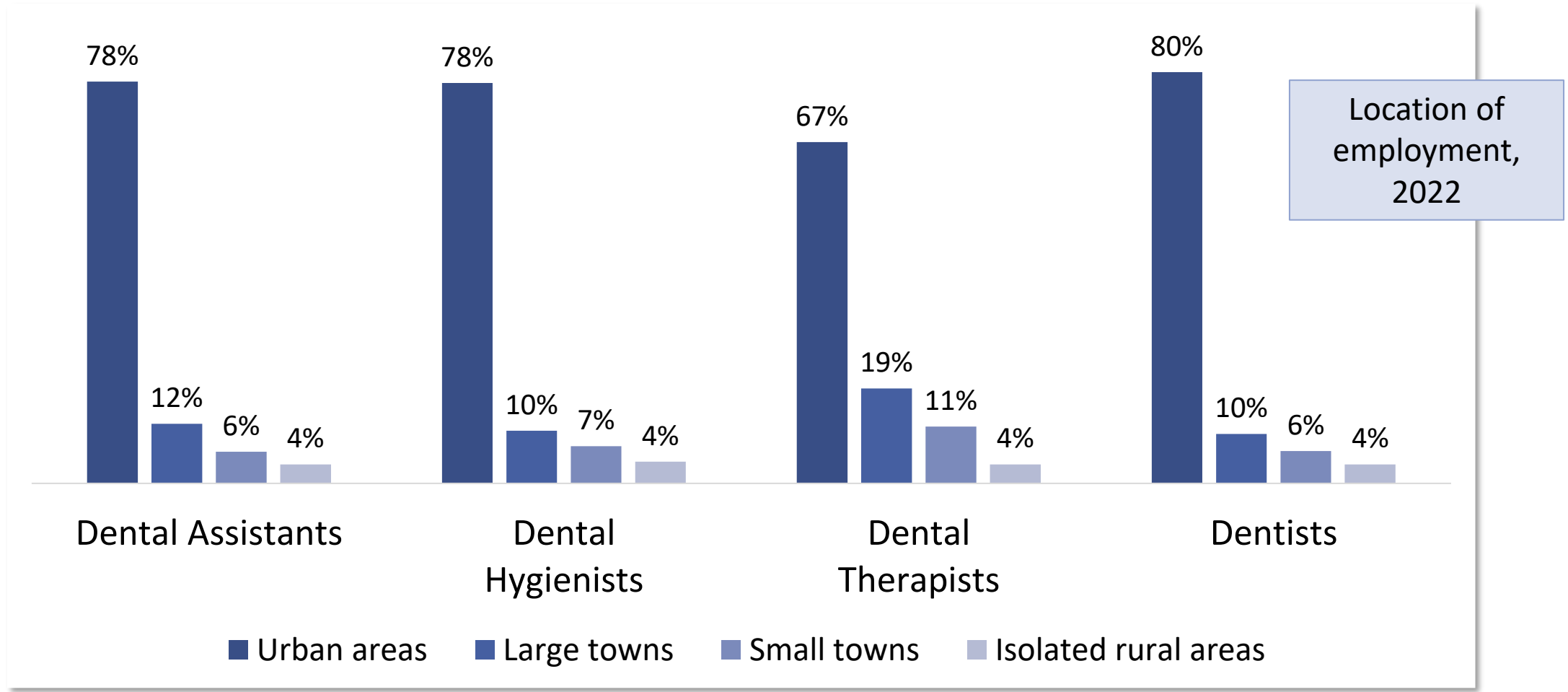


Oral Health
Professionals:

**An aging rural
workforce**

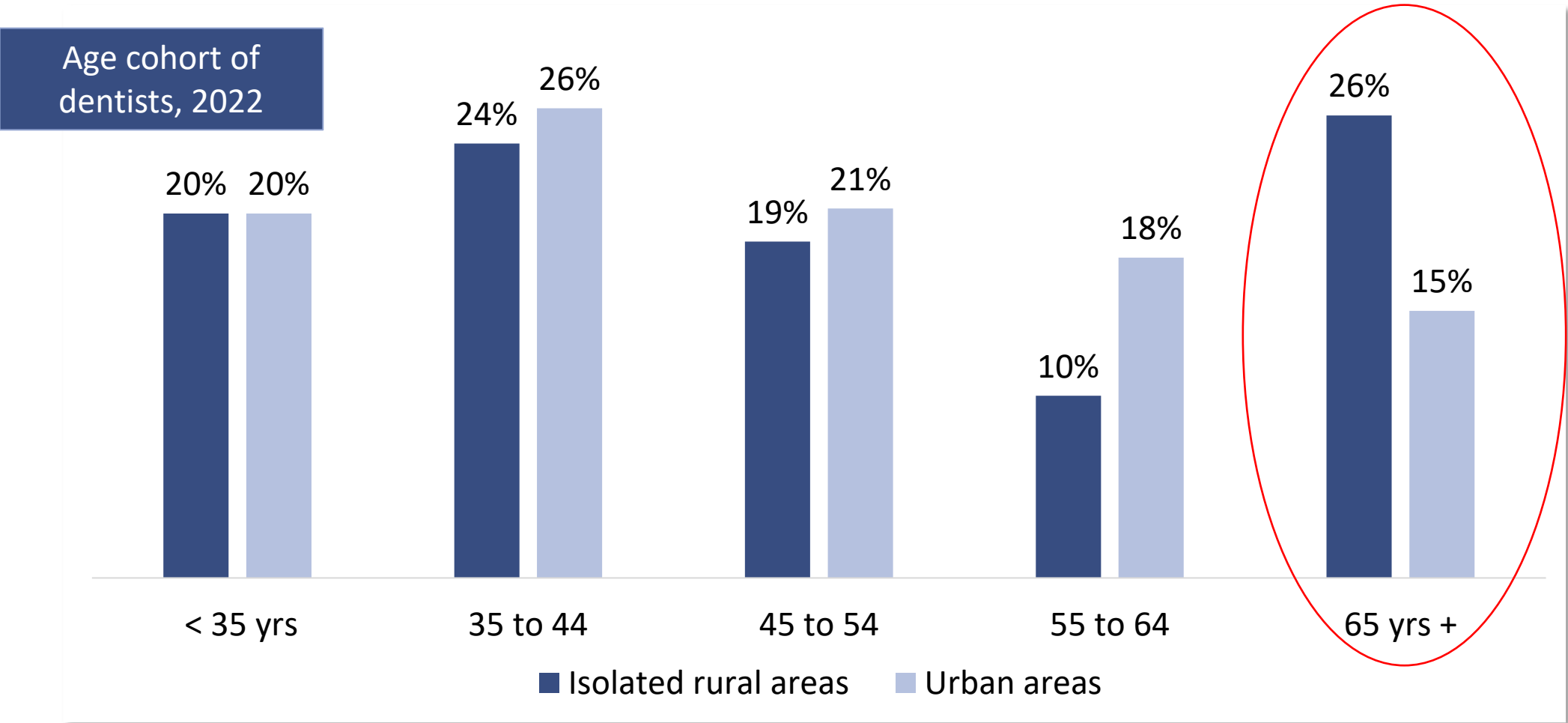


Oral health professionals are underrepresented in small towns and isolated rural areas of Minnesota.

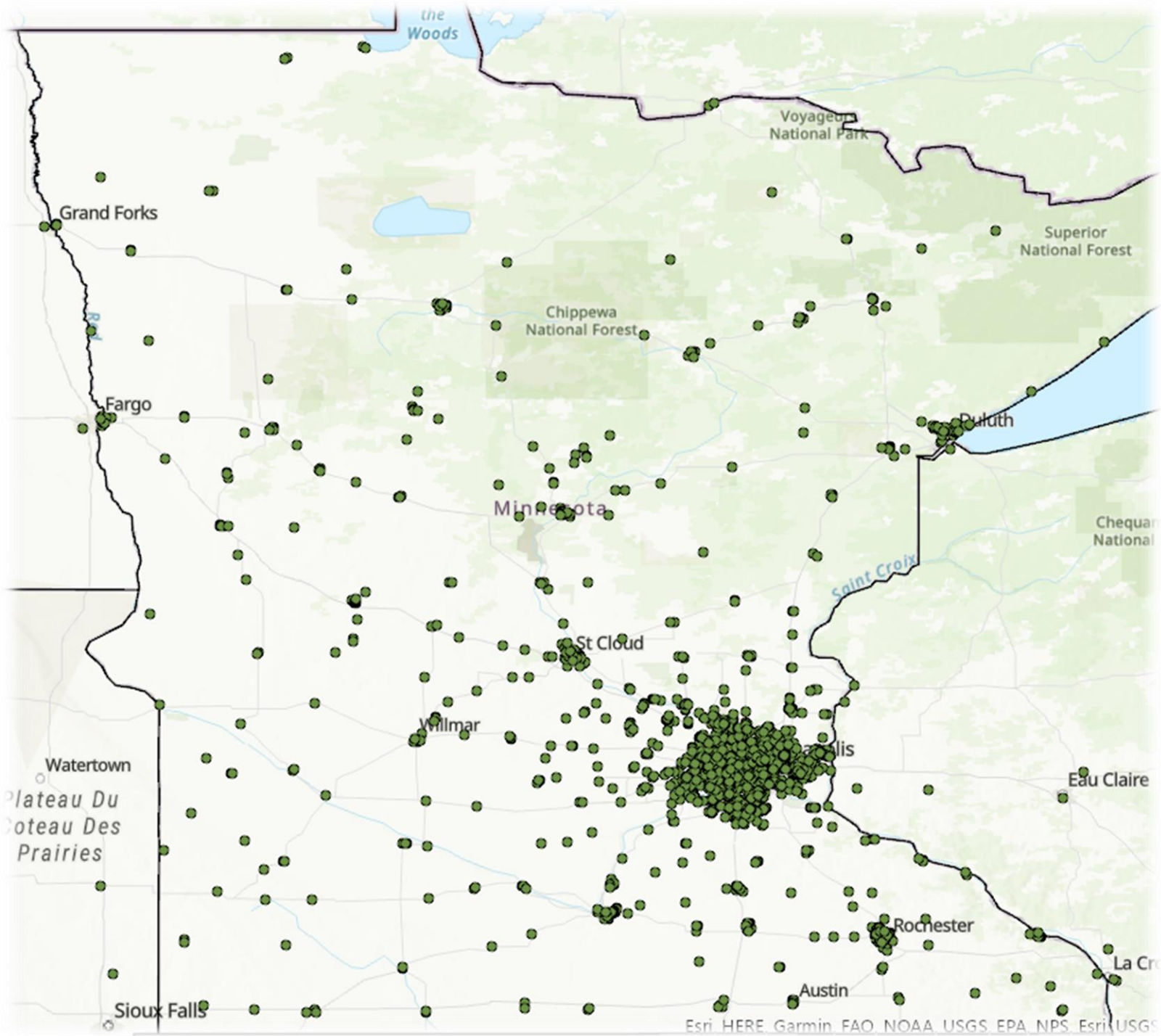


Data source: MDH's analysis of employment address records from the Board of Dentistry, 2022. Note: "urban" areas include the largest metropolitan centers, such as the Twin Cities, Duluth, Rochester, and Saint Cloud. "Large towns" include places like Bemidji, Cloquet, and Austin. Small towns include areas that are the size of Moose Lake, Thief River Falls, or Park Rapids. Finally, isolated rural areas that are very small without an urban core, such as Laverne, Jackson, or Nisswa.

More than one in four rural dentists is at or beyond retirement age.

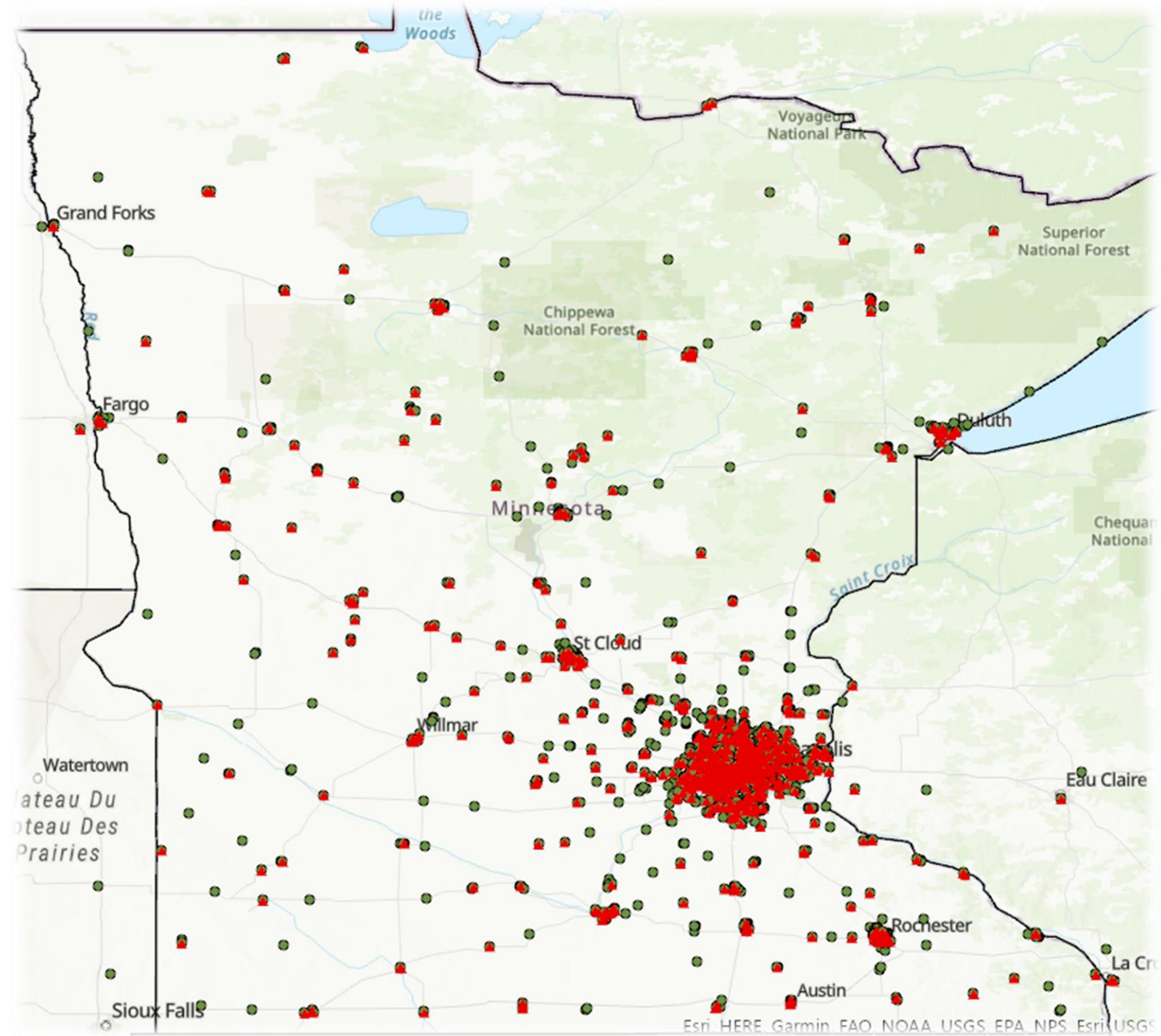


Data source: MDH’s analysis of age records from the Board of Dentistry, 2022. Note: “urban” areas include the largest metropolitan centers, such as the Twin Cities, Duluth, Rochester, and Saint Cloud. “Large towns” include places like Bemidji, Cloquet, and Austin. Small towns include areas that are the size of Moose Lake, Thief River Falls, or Park Rapids. Finally, isolated rural areas that are very small without an urban core, such as Luverne, Jackson, or Nisswa.



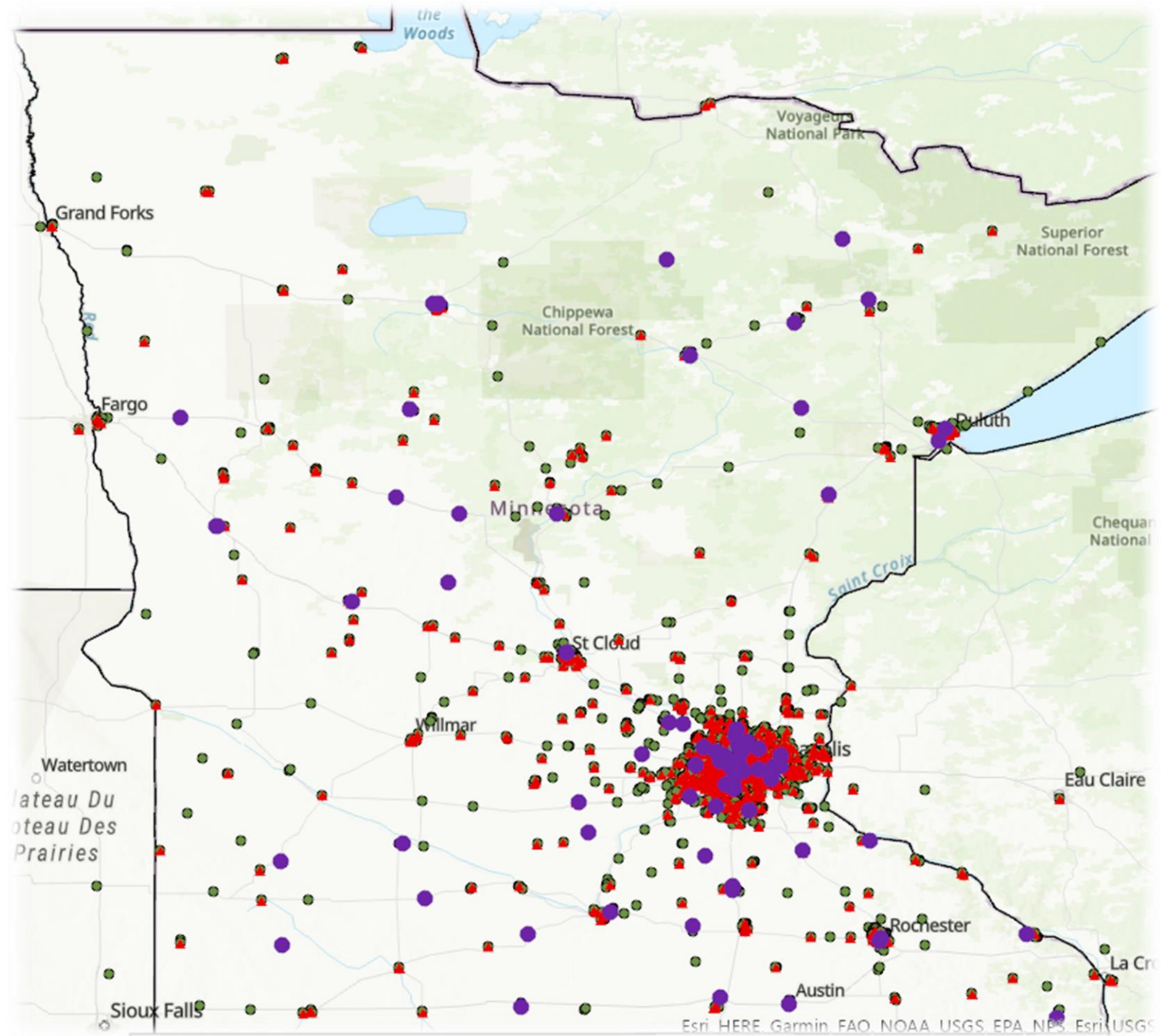
**Just 10 percent
of licensed
dentists
practice in rural
or small-town
communities.**

Data source: MDH analysis of providers' 2023 practice location addresses (as reported to their respective licensing boards).



**But nearly one
in four dentists
in small town
or isolated rural
communities is
age 60 or older. ▲**

Data source: MDH analysis of providers' 2023 practice location addresses (as reported to their respective licensing boards).



Dental Therapists ●
can begin to fill the
gap that retiring
dentists will leave
behind (but with
only 145 practicing
DTs in Minnesota, it's
not enough).

Data source: MDH analysis of providers' 2023 practice location addresses (as reported to their respective licensing boards).

The work ahead

Aligning the
academic healthcare
pipeline to meet
workforce needs of
the state.



Pipeline initiatives

- Career guidance and education beginning in high school (esp for mental health)
- Admit more students who are eager, prepared, and suited to serve rural or underserved communities.
- Create more pathways to licensure and practice for international graduates.

Training initiatives

- Rural and health equity focus in curriculum
- Require rural clinical rotations for **all** health professions
- More rural training tracks for all medical residents; maybe all 3 years in rural training
- Whole person, patient-centered care didactics
- Interprofessional education and practice

Workplace-focused initiatives

- Prepare students for the realities of health care employment while still finding/modeling joy at work.
- Encourage mentorship, clinical preceptors (and in mental health, work to ensure these are reimbursable).
- Emphasize that rural practice = more autonomy and broad scope of practice

For individual review

PRIORITIZE AND FUND EVALUATION, AND USE RESULTS TO IMPROVE PROCESSES

From nursing assistants to the most sophisticated medical specialties, Minnesota's entire healthcare workforce is:

- In severe shortage
- Burned out, and exiting prematurely
- Geographically maldistributed, and
- With a pipeline of new workers that isn't keeping up with current or future hiring demand or population needs.

Unavoidable empirical conclusions—

But this is not the end of the story.

Questions, or requests for additional analyses?

Teri Fritsma, Ph.D.

Lead Healthcare Workforce Analyst

Minnesota Department of Health,
Office of Rural Health and Primary Care

Teri.Fritsma@state.mn.us

