

U.S. and Brazilian Health Workforce Summit

September 1, 2026

University at Albany, State University of New York
1400 Washington Avenue | Albany, NY 12222

AGENDA

9:00 – 9:30 am

Welcome

9:30 – 10:30 am

Primary Care Session

10:30 – 10:45 am

Break

10:45 – 11:45 am

Nursing Session

11:45am – 12:00 pm

Break

12:00 – 2:00 pm

Working Lunch/Public Health Session

2:00 – 3:00 pm

Oral Health Session

3:00 pm

Closing Remarks



Trends in Newly Trained Physicians: Findings From the NY Resident Exit Survey

Presented by: David Armstrong, PhD

Research Assistant Professor

Project Director

Center for Health Workforce Studies

College of Integrated Health Sciences | University at Albany

dparmstrong@albany.edu

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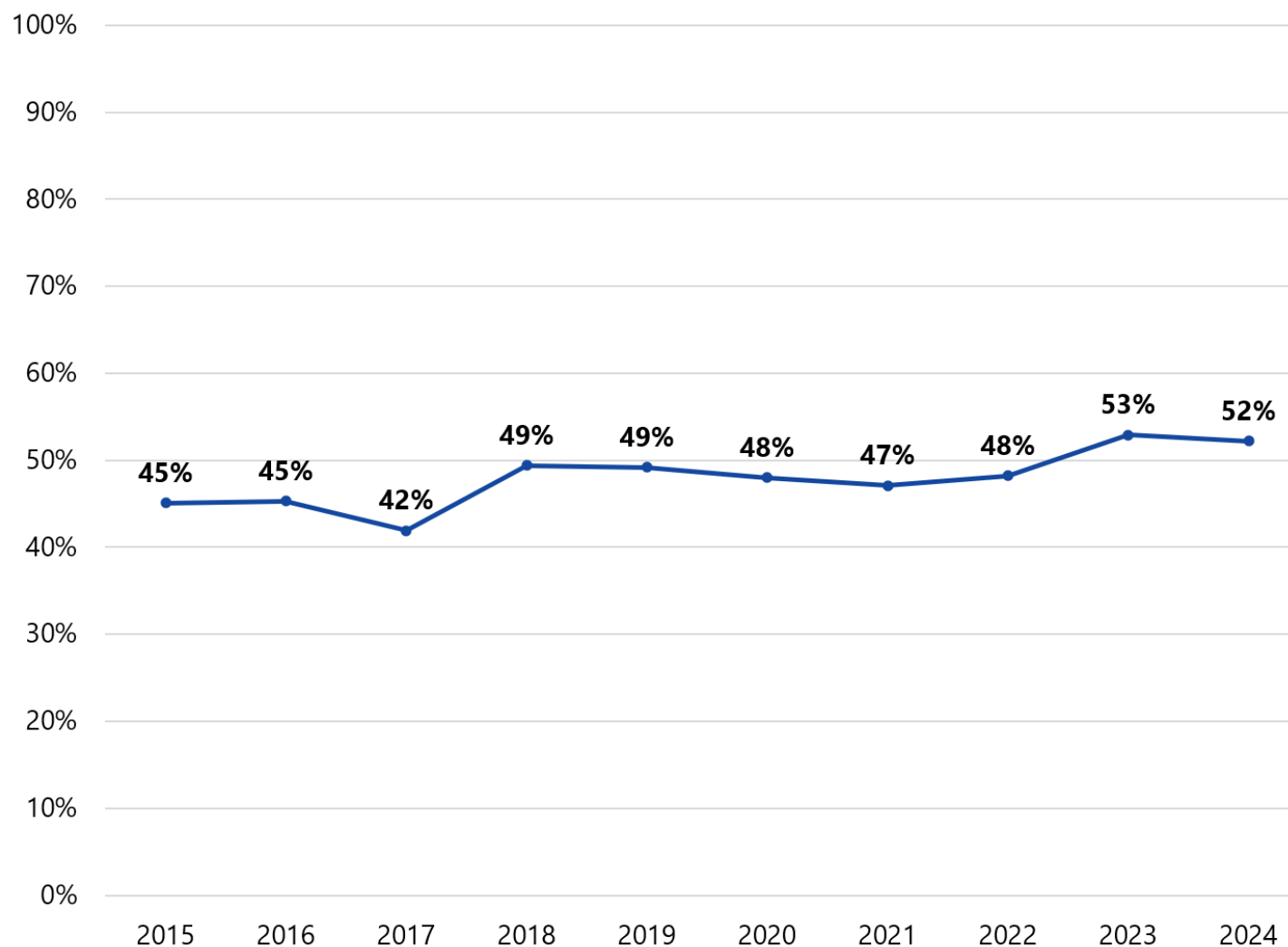
Albany, NY



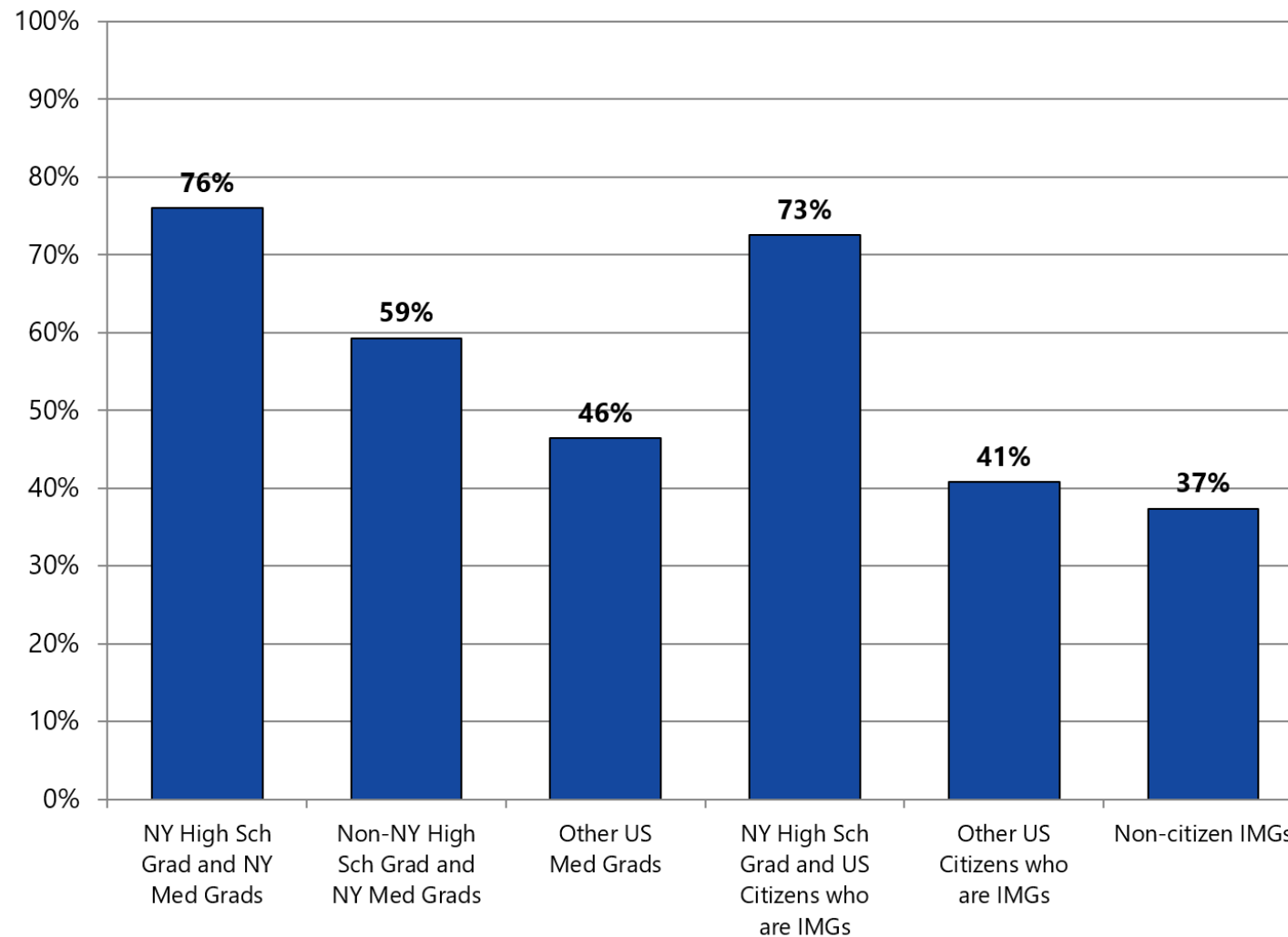
New York Resident Exit Survey

- New York State annually trains more than 20,000 physicians and each year and more than 6,000 physicians complete a training program annually
- The New York Resident Exit Survey has been conducted annually since 1998 (with exceptions of 2004, 2006, and 2020)
 - Survey of all residents and fellows completing training in New York State
 - Collects information on demographics, upcoming practice characteristics, expected starting income, and job market experiences, among others
 - Monitors trends over time

In-State Retention of New Physicians Has Increased Over Time



Physicians Who Attended Both a High School and Medical School in NY Had Higher Rates of In-state Retention

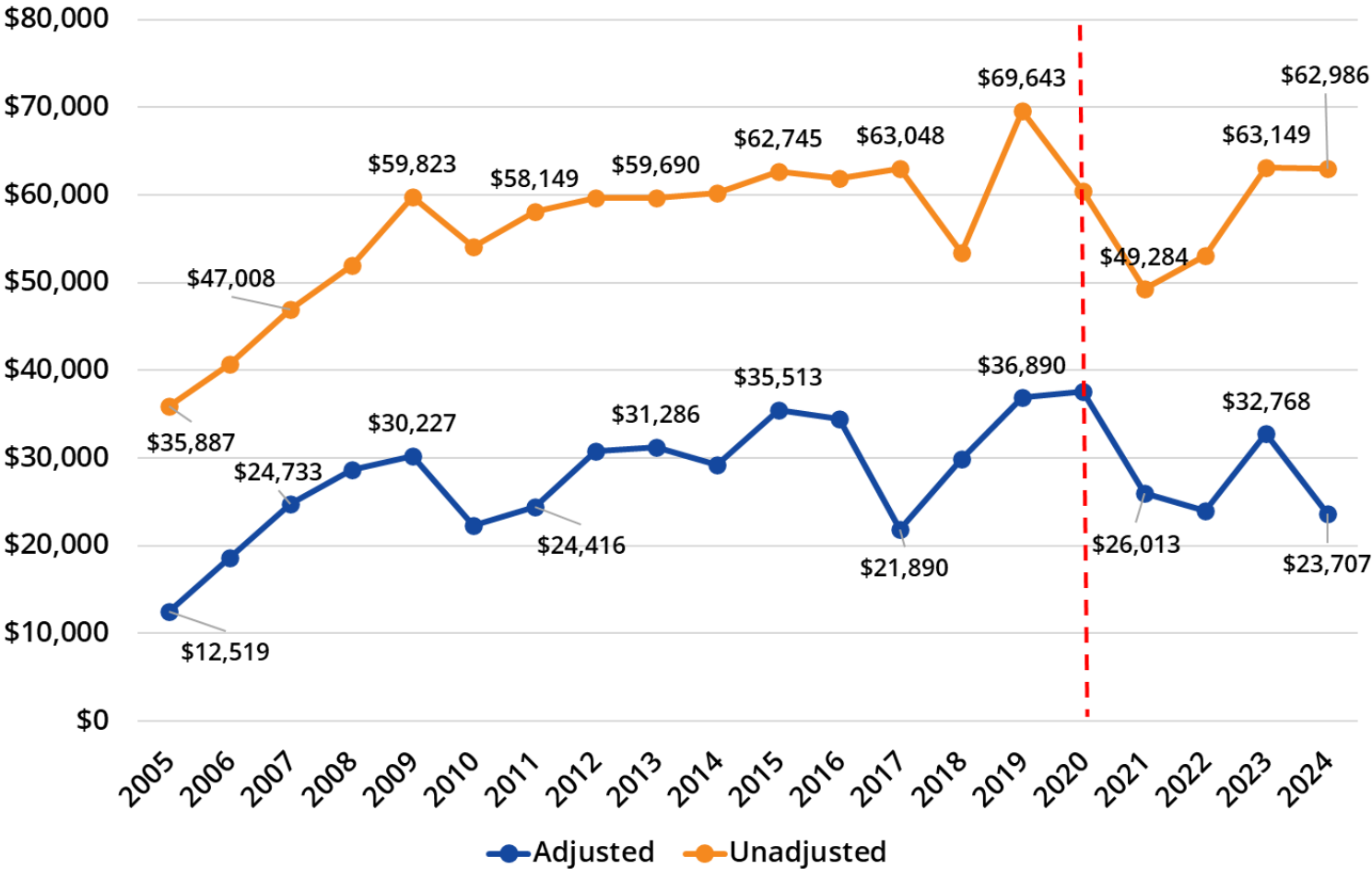


Fewer Physicians Practice in Underserved Areas

- Relatively few newly-trained physicians intended to practice in rural areas or federally-designated Health Professional Shortage Areas (HPSAs)
 - Only 4% indicated plans to practice in a rural area
 - Just 16% reported they would be working in a HPSA
- There remains a significant gap between the racial/ethnic diversity of newly-trained physicians and that of the United States (US) population
 - Among physicians completing training in New York, only 15% identified as underrepresented in medicine (URiMs), compared to 34% of the overall US population

Gender Differences in Physician Income Persists

Adjusted and Unadjusted Gender Difference in Physician Income
in 2024 Dollars



Note: All dollar amounts are adjusted for inflation to 2024.

Conclusions

- While the in-state retention of new physicians has increased over time...
- Few physicians enter practice in underserved areas
- Demographics of the physician workforce does not match the population
- Gender differences in physician income persist
 - In 20 of 25 specialties examined, female physicians reported lower starting income compared to their male counterparts

Questions?

For more information, please email me at: dparmstrong@albany.edu



CONNECT WITH US:



Health Professional Shortage Areas in New York

Presented by: Nafin Harun, MA

Center for Health Workforce Studies

College of Integrated Health Sciences | University at Albany

nharun@albany.edu

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Center for Health Workforce Studies

- **Under contract with the New York State Department of Health, the Center conducts shortage area work:**
 - Develop statewide sets of rational service areas for primary care, dental health, and mental health
 - Develop needs assessments for primary care, dental health, and mental health
 - Develop shortage area applications
 - Provide technical assistance

Health Professional Shortage Areas (HPSAs) in NY

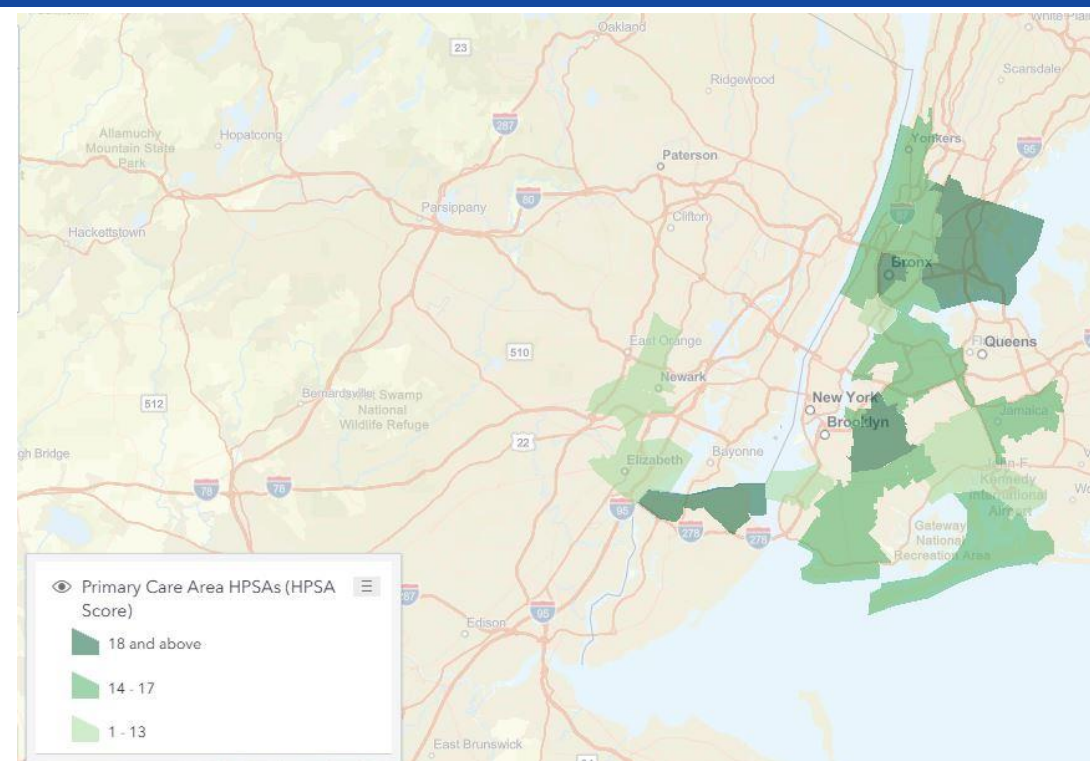
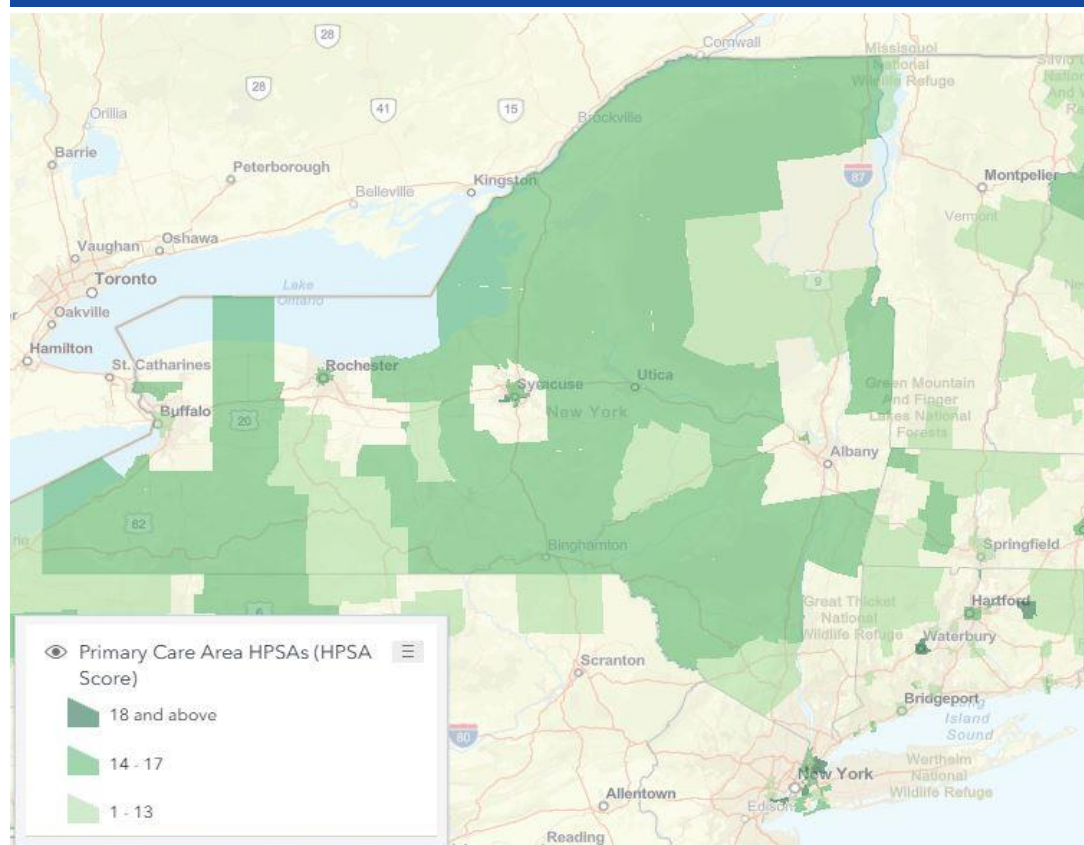
HPSA Disciplines: Primary care, Mental health, Dental health

Total of
583
Designations

12
Geographic HPSAs

380
Facilities

191
Special Population
HPSAs



Needs Assessment Studies

- CHWS conducts primary care (PC), mental health (MH), and dental health (DH) needs assessment studies to identify areas with the highest needs

1. Identified the most pressing primary care needs

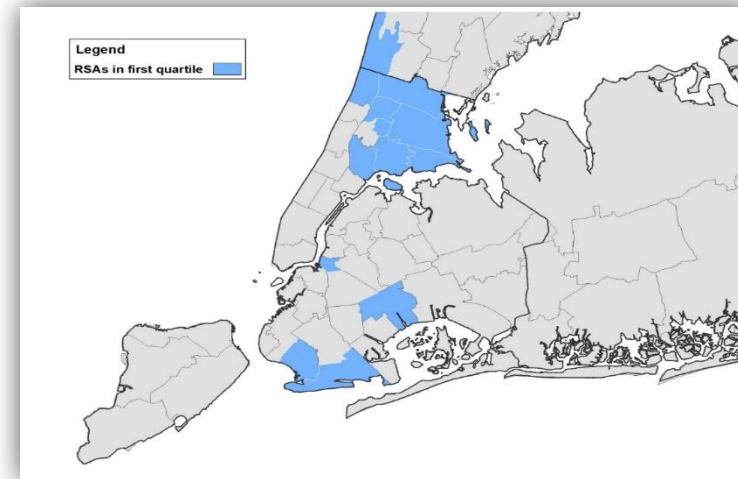
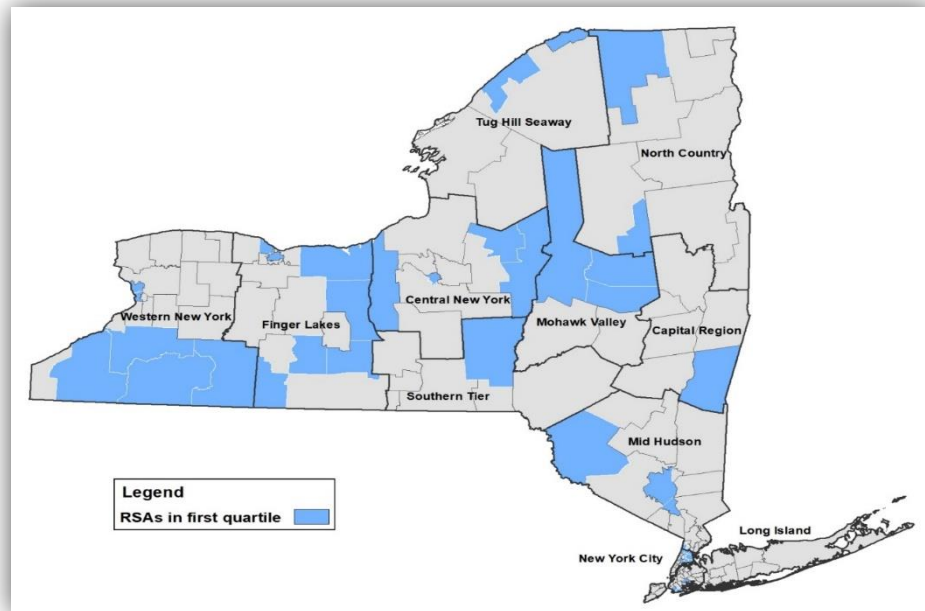


2. Created and calculated indicators



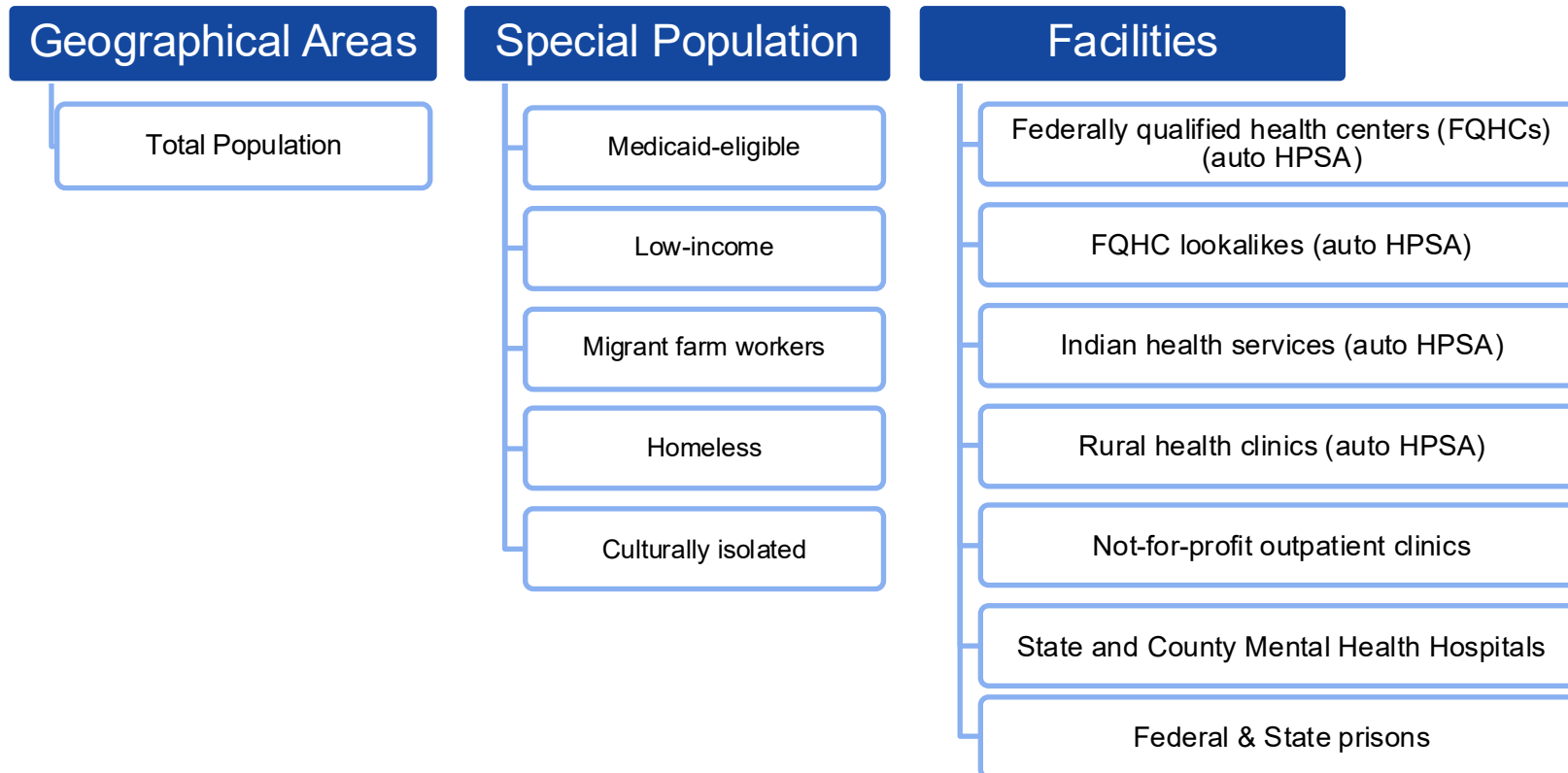
3. Ranked and identified high-need RSAs

In total, 40 high-need PC RSAs were identified, distributed across the state



Types of HPSA Designations

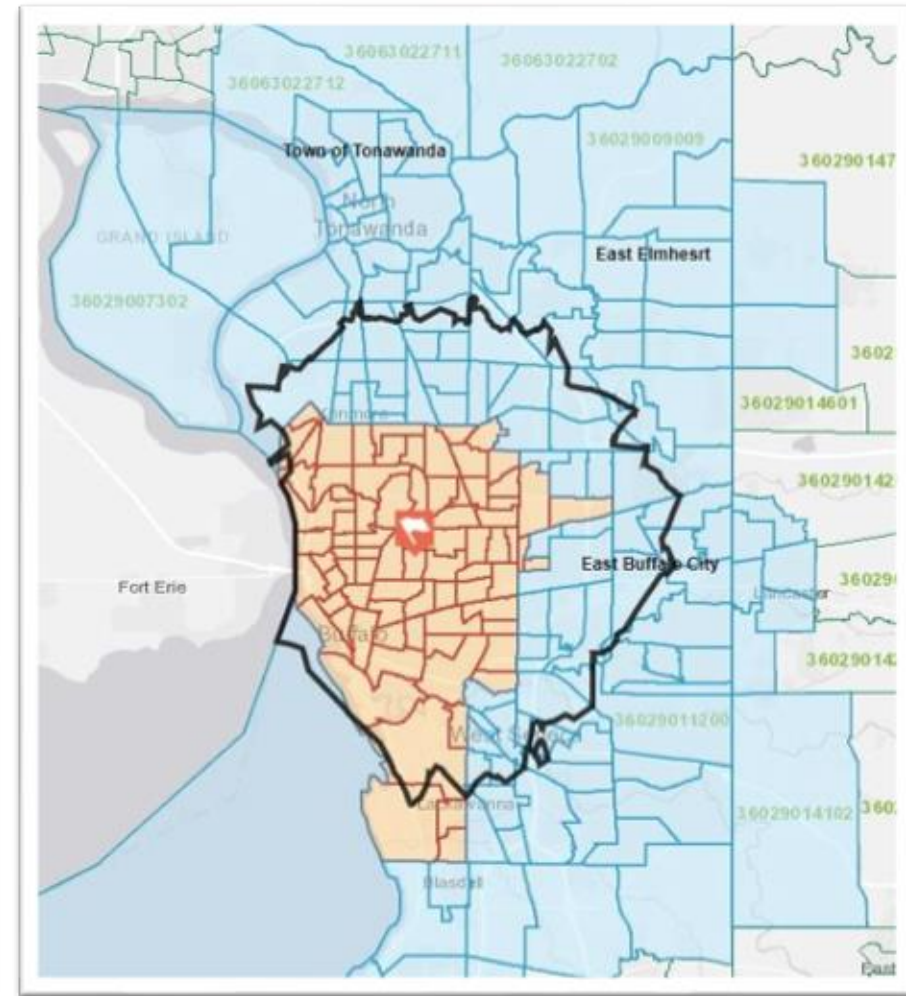
HPSA Disciplines: Primary care, Mental health, Dental health



Levels of Geography

Levels of Geography:

- Whole counties (rural)
- One or more townships
- One or more census tracts



Required Data for HPSA Analysis

Health and demographic characteristics:

- Population count
- 100%/200% of Federal Poverty Level
- Racial/ethnic composition
- Medicaid population

Provider capacity:

- Providers' practice, FTE, and specialty information - multiple sources
- Medicaid visits

Population characteristics for different types of HPSAs:

- Alcoholism and substance abuse (mental health HPSA)
- Water fluoridation (dental health HPSA)

Score Calculation

Scores:

- Primary care: 1 – 25
- Dental health: 1 – 26
- Mental health: 1 - 26



Higher score means greater need

Scores used to allocate state and federal resources

Benefits of Shortage Designations

- Federal
 - Federal National Health Service Corps (loan repayment and scholarship)
 - Other NHSC Programs:
 - Nurse Corps (loan repayment and scholarship)
 - Rural Community Loan Repayment
 - Student to Service Loan Repayment
 - SUD Workforce Loan Repayment
- State (varies)
 - J-1 visa waivers
 - Doctors Across New York
 - Nurses Across New York
- Enhanced reimbursement for geographic and mental health HPSAs

Questions?

For more information, please email me at: nharun@albany.edu



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PROGRAM BREAK

We'll resume shortly

Coming Up: Nursing Session



Understanding the New York State Registered Nursing Workforce

Presented by: Robert Martiniano, DrPH, MPA

Senior Program Manager

Center for Health Workforce Studies

College of Integrated Health Sciences | University at Albany

rmartiniano@albany.edu

(518) 442-2503

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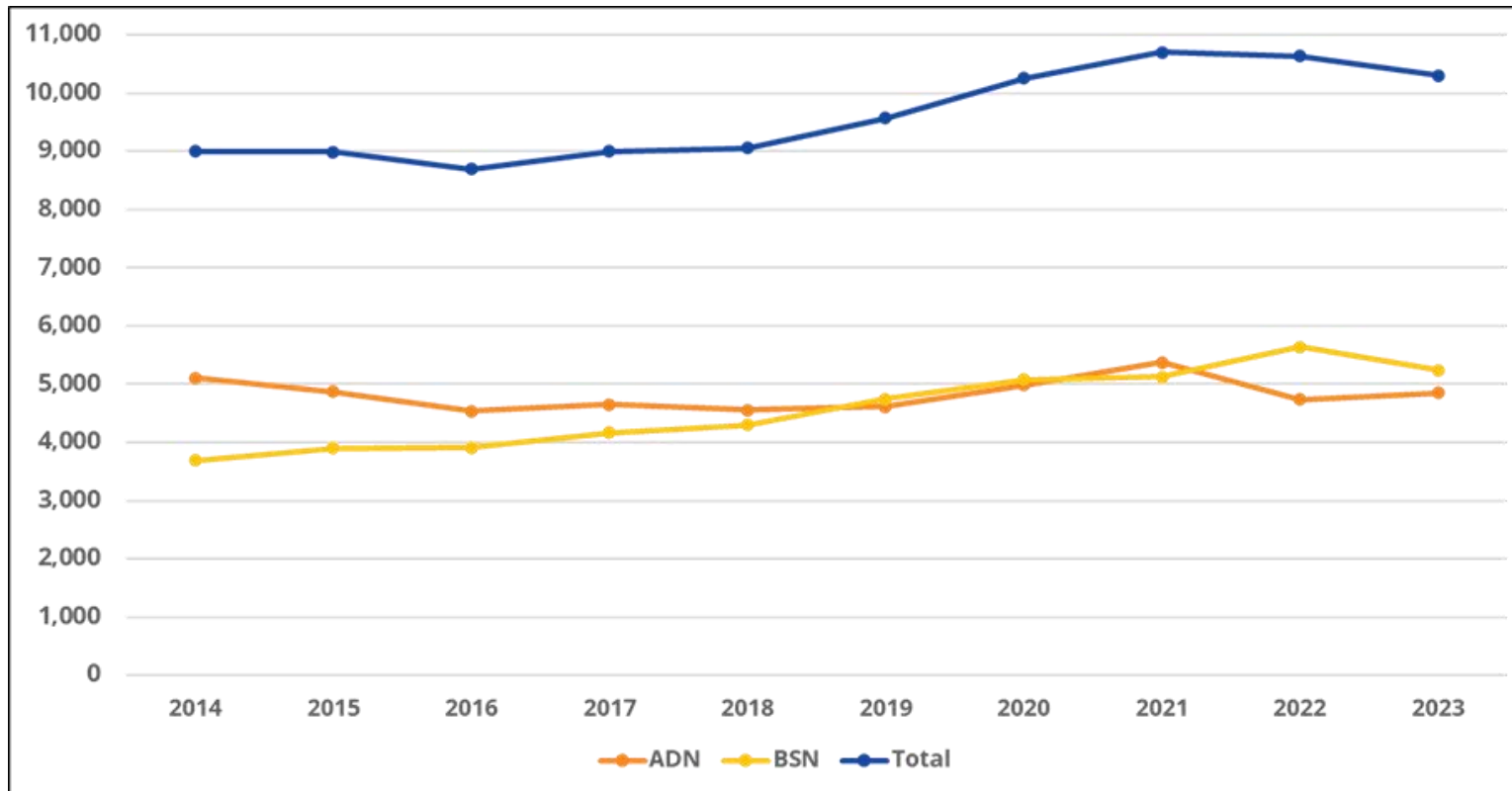
CHWS Nursing

- RN Education Survey
- Recruitment and Retention of RNs in Acute Care Settings
- Recruitment and Retention Surveys
- Re-Registration Surveys
 - LPNs
 - RNs
 - NPs

THE NURSING PIPELINE

New RN Graduations Have Remained Steady Statewide

RN Graduations in New York State, Total and by Degree Type, 2014-2024



Sources: New York State Education Department; National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS); the City University of New York 2025 Nursing Degree Programs Report; Excelsior University.

New RN Graduations Declined in Many NYS Regions

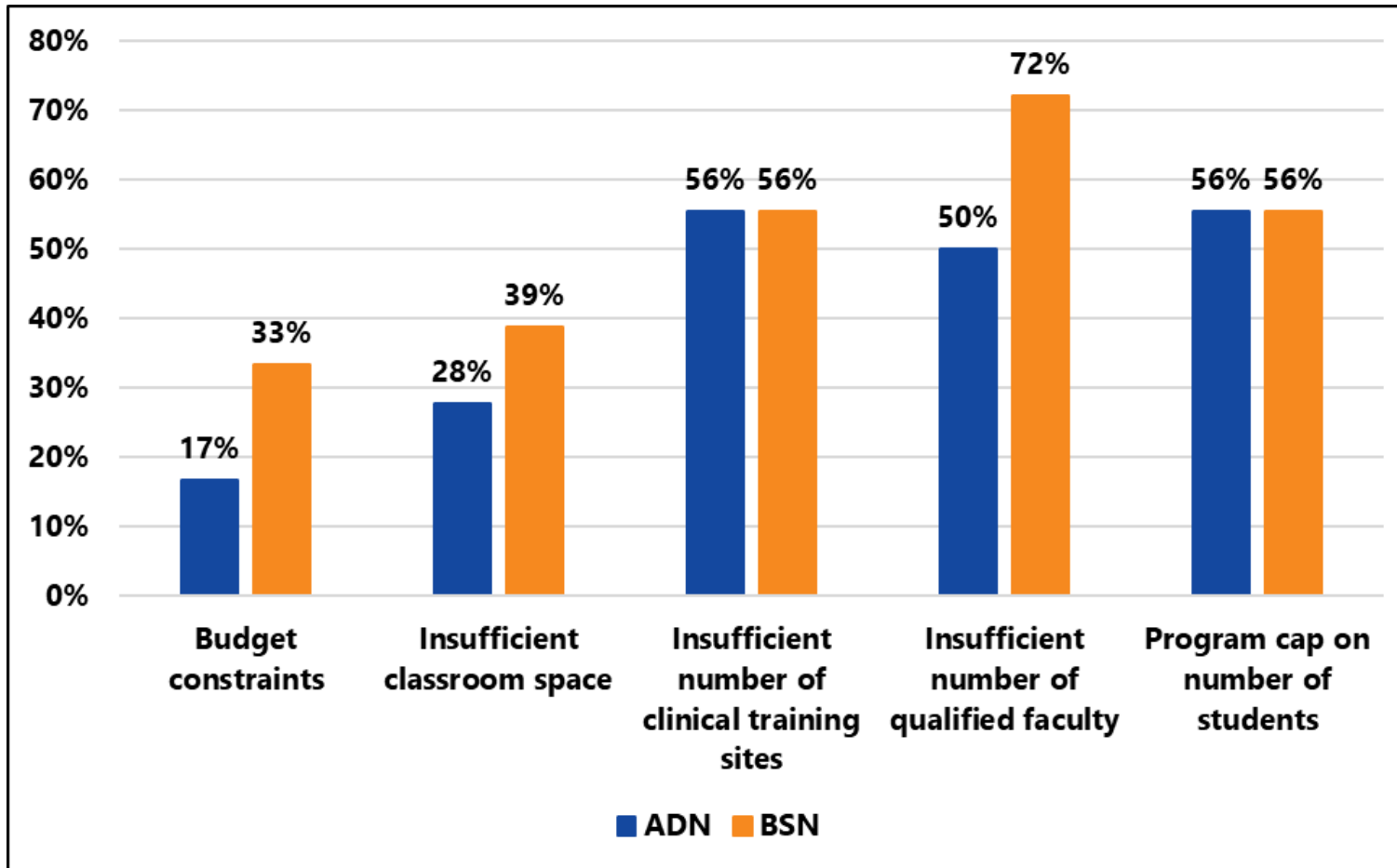
RN Graduations in New York State, Total and by Region, 2020-2024

Region	School Year					% of NYS RN Graduations	2020-2024	
	2020	2021	2022	2023	2024		Number	Percent
Capital District	515	505	520	508	486	4.7%	-29	-5.7%
Central NY	505	530	449	402	424	4.1%	-81	-20.1%
Finger Lakes	901	783	884	895	822	8.0%	-79	-8.8%
Hudson Valley	919	1,144	1,305	1,222	1,107	10.8%	188	15.4%
Long Island	1,513	1,512	1,585	1,346	1,363	13.3%	-150	-11.1%
Mohawk Valley	374	339	318	343	443	4.3%	69	20.1%
New York City	3,863	3,907	3,945	3,752	3,840	37.3%	-23	-0.6%
North Country	355	345	299	300	321	3.1%	-34	-11.3%
Southern Tier	414	420	346	376	368	3.6%	-46	-12.2%
Western NY	756	983	950	932	841	8.2%	85	9.1%
Online Only	138	235	145	189	271	2.6%	133	70.4%
Grand Total	10,253	10,703	10,746	10,265	10,286	100.0%	33	0.3%

Sources: New York State Education Department; National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS); the City University of New York 2025 Nursing Degree Programs Report; Excelsior University.

Lack of Faculty and Clinical Training Sites Major Barriers to Expanding RN Education Programs

Reasons for Turning Away Qualified Applicants, by Degree Type, 2025



Where Are the RN Jobs?

Percentage of RN Education Programs Reporting Many Jobs, by Degree and Setting, 2025

Degree	All Health Settings	Hospital Inpt/Ed	Nursing Homes	Home Health Care	Ambulatory Care
Associate	85.3%	79.4%	73.5%	50.0%	44.1%
Bachelor's	55.6%	69.4%	80.6%	63.9%	47.2%

RECRUITMENT AND RETENTION

RNs and LPNs the Most Difficult to Recruit Across All Settings

	% of Respondents Who Reported	
	Recruitment Difficulties (ADN/BSN)	Retention Difficulties (ADN/BSN)
Hospitals	38.5%/61.5%	61.5%/61.5%
Nursing Homes and Assisted Living Facilities	60%/65.0%	13.3%/10.5%
Home Health Care	28.6%/70.0%	14.3%/33.3%
Clinics	54.5%/56.0%	19.0%/20.0%

Reasons for Recruitment and Retention Issues in Healthcare

- Recruitment
 - General shortage of workers
 - Non-competitive salaries and benefits
 - Location/transportation
- Retention
 - Left for better salaries
 - Left for better work-life balance
 - Left for family commitments
 - Career change

RECRUITMENT AND RETENTION IN ACUTE CARE SETTINGS

Nursing Problems in Acute Care Settings Are Both Personal and Organizational

- Increased retirements
- Shorter bedside lives
- Lack of experienced preceptors and mentors
- Generational differences
- Work environment
 - Culture
 - Persistent nursing shortages
 - Violence

Percentage of Hospital RNs Burned Out Compared to RNs in Other Settings

Percentage of NYS Active RNs Reporting High Levels of Burnout by Practice Setting, 2023

Practice Setting	% With High Levels of Burnout
Hospital Inpt/Ed	57.6%
Hospital Outpatient	46.0%
Other Outpatient	41.7%
Other Inpatient/Long Term Care	43.0%
Other	38.7%
Statewide	49.0%

Source: New York State RN Registration Survey, 2023

Solutions Need to be Broad-Based

No one solution addresses nursing recruitment and retention issues

- Improved compensation
- Magnet or Pathway to Excellence designations
- Nurse residency programs
- Stay interviews
- Violence prevention
- Virtual nursing
- Workforce development

Start With the Work Environment

“There’s no amount of money that I can pay you to be miserable...I think you need to understand the environment that people are working in, you need to work on culture. You need to make sure you’ve got strong managers and we have a lot of work that we do to survey our staff to talk to them about their employment experience.”

Questions?

For more information, please email me at: rmartiniano@albany.edu



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PROGRAM BREAK

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Coming Up: Public Health Session



Advancing the Oral Health Workforce: Research and Insights From OHWRC

Presented by: Simona Surdu, MD, PhD

Director, Oral Health Workforce Research Center (OHWRC)

Program Manager, Center for Health Workforce Studies

College of Integrated Health Sciences | University at Albany

ssurdu@albany.edu

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Oral Health Workforce Research Center (OHWRC)

- Established in 2014 and 1 of 9 health workforce research centers funded by the *US Health Resources and Services Administration (HRSA)*
- The only HRSA-funded research center uniquely focused on the oral health workforce
- Based at the *Center for Health Workforce Studies (CHWS)*, College of Integrated Health Sciences, University at Albany, State University of New York
- Conducts policy-relevant research on how the oral health workforce impacts access to care and oral health outcomes
- Provides evidence to inform workforce planning, service delivery innovation, and strategies that improve access for underserved populations

Oral Health: A Persistent Public Health Challenge

- Oral diseases remain among the most prevalent chronic health conditions worldwide
- Dental caries is the most common chronic disease of childhood
- Oral health is closely linked to overall health, including diabetes, cardiovascular disease, pregnancy outcomes, and quality of life
- Despite progress in prevention and treatment, major barriers to care persist:
 - Workforce shortages and maldistribution
 - Social and economic factors
 - Fragmented care delivery and payment systems

Oral Health Transformation: Implications for Care Delivery and the Workforce

- Care Delivery Transformation
 - Shift from treatment to **prevention** and **early intervention**
 - **Risk-based approaches** to identify high-need populations
 - Increased use of **teledentistry** and digital health technologies
 - Growing emphasis on **oral health literacy** and patient engagement
- Workforce Transformation
 - **Team-based** and community-based models of care
 - **Expanded roles** for dental hygienists and other oral health professionals
 - **Emerging workforce models**, including dental therapists
 - **Integration** of oral health, primary care, and behavioral health
- **Transforming oral health care** requires changes in workforce models, roles, and policy

Dental Hygiene Scope of Practice: Why State Policy Matters

- State Variation
 - States vary in allowable services, supervision requirements, and practice settings
- Why It Matters
 - SOP policies influence workforce capacity and access to care
 - **Broader SOP** is associated with improved oral health outcomes
- OHWRC Contribution
 - Developed several tools to measure variation in dental hygiene SOP policies across states:
 - Dental Hygiene Professional Practice Index (DHPPI): Measures and compares SOP laws across states
 - Dental Hygiene SOP Infographics: Depict key state policy differences

Dental Hygiene Professional Practice Index (DHPPI)

- Measuring SOP Across States
 - Developed in 2001 and updated in 2016 and 2026
 - Comprehensive measure of state dental hygiene SOP laws
 - Includes about 50 policy variables across 4 domains:
 - Regulation, supervision, tasks, and reimbursement
- 2026 Updates
 - Added new measures such as:
 - License portability
 - Administration of nitrous oxide
- Why It Matters
 - Supports comparisons across states and tracks policy changes over time

State Variation in Dental Hygiene Scope of Practice: 2026 DHPPI Results

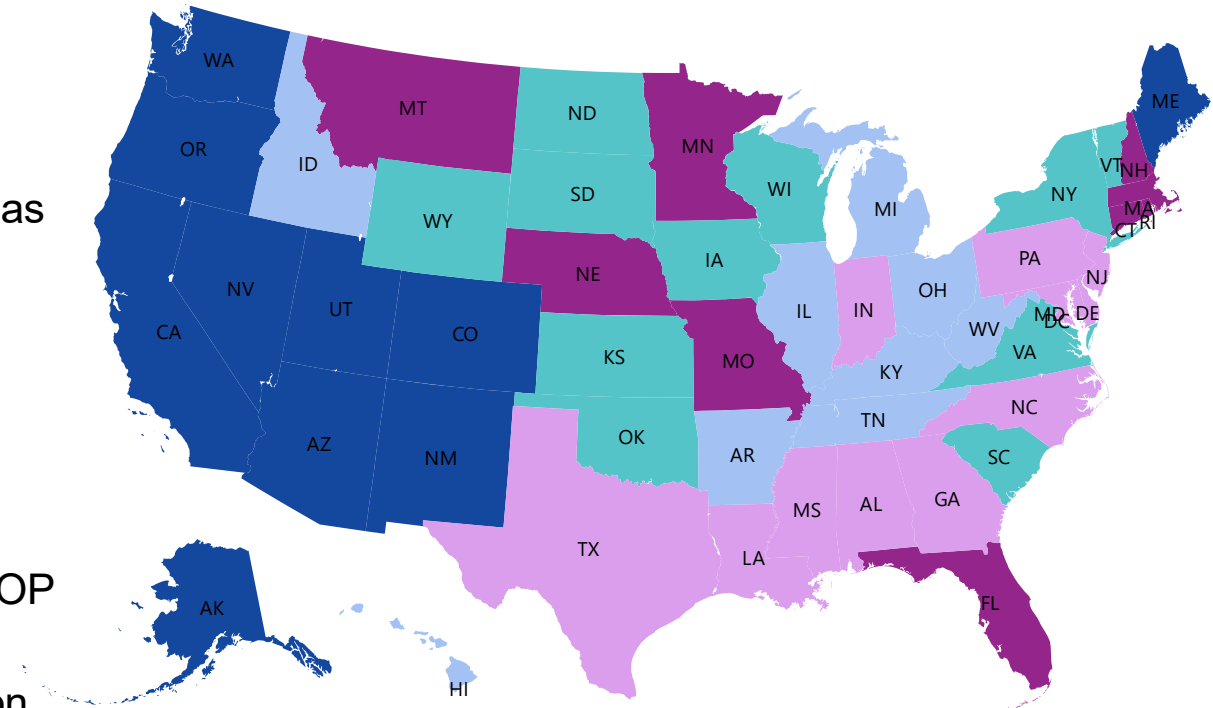
- Key Findings

- Scores ranged from **10 (Alabama)** to **97 (Oregon)**
- **Western states** consistently ranked among the most expansive practice environments
- Some states adopted innovative workforce models, such as **Minnesota's** advanced dental therapy pathway
- **Other states** expanded SOP incrementally over time
- Several **Southern states** remained among the most restrictive practice environments across assessment

- Research Implications

- **Previous research** found that broader dental hygiene SOP was associated with improved oral health outcomes
- OHWRC is **evaluating the impact of the 2026 DHPPI** on oral health outcomes among adults and children

2026 DHPPI

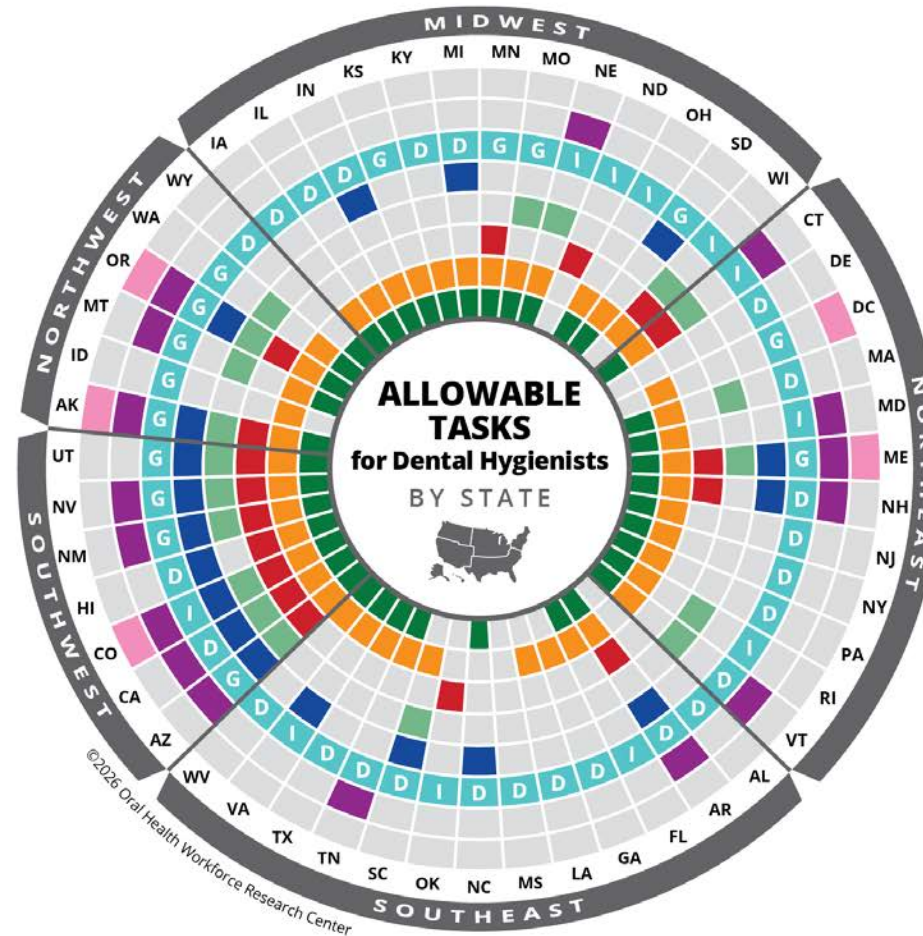


■ 76 - 97 (Excellent) ■ 63 - 71 (Favorable) ■ 54 - 59 (Satisfactory) ■ 46 - 52 (Limiting) ■ 10 - 45 (Restrictive)

From Measurement to Policy Insight: OHWRC Dental Hygiene SOP Tool

Variation in Dental Hygiene SOP by State, 2026

- **Developed** in 2017 and updated in 2019, 2024, and 2026
- **Visualizes** state variation in dental hygiene SOP policies
- **Highlights** key indicators of dental hygienists' practice authority
- **Supports** researchers, educators, policymakers, and stakeholders interested in workforce planning and policy development



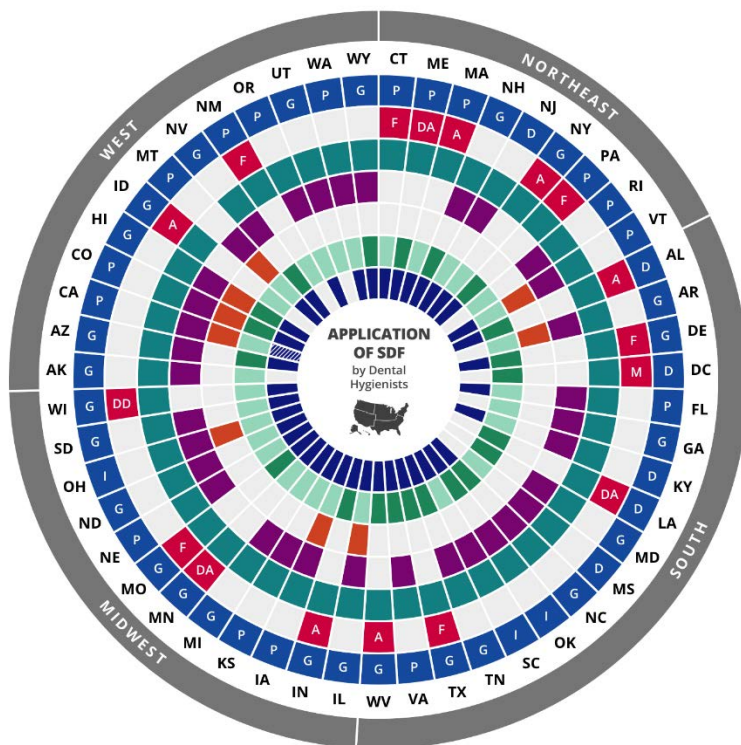
The purpose of this graphic is to help planners, policymakers, and others understand differences in legal scope of practice across states, particularly in public health settings.

Research has shown that a broader scope of practice for dental hygienists is positively and significantly associated with improved oral health outcomes in a state's population.^{1,2}

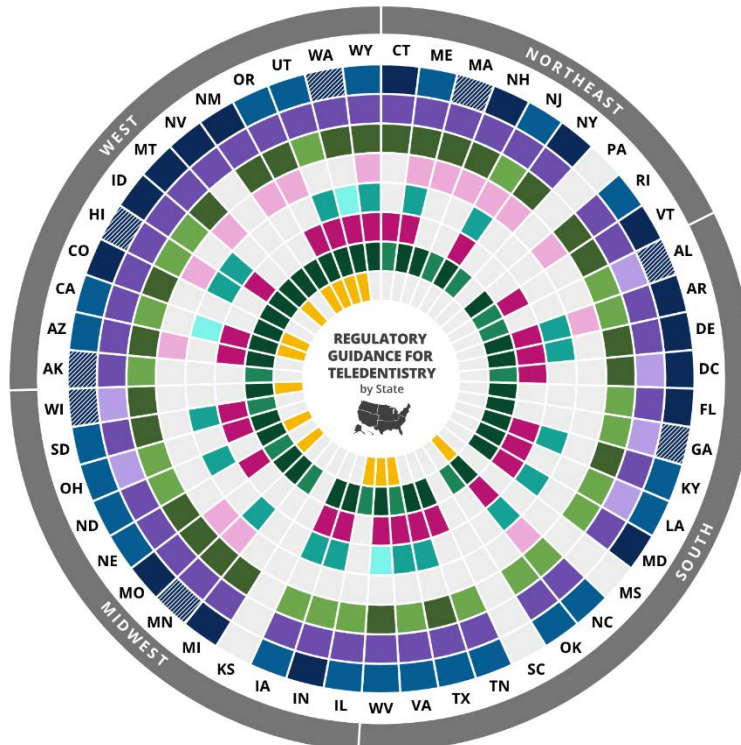


Workforce Innovation and Regulatory Variation

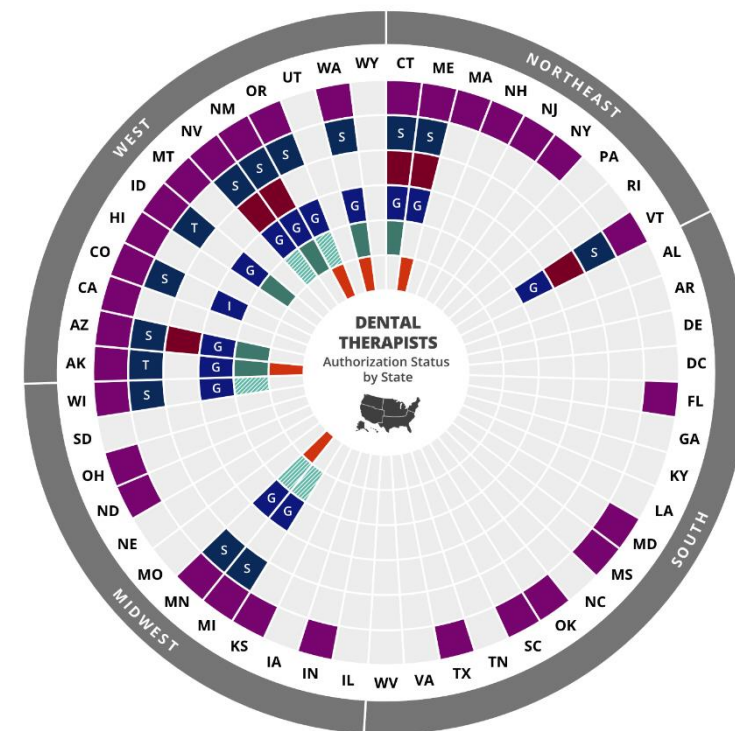
Application of Silver Diamine Fluoride (SDF) by Dental Hygienists, 2020



Variation in Teledentistry Regulations by State, 2022



Authorization Status of Dental Therapists By State, 2024



State policies influence adoption of workforce innovations and access to oral health services

OHWRC Research: Recent Projects and Ongoing Priorities

- **Care Delivery and Access**
 - Oral health integration with primary care and behavioral health
 - Teledentistry adoption, regulation, and reimbursement
 - Maternal and child oral health, including oral health during pregnancy
 - Oral health services in safety-net settings and Federally Qualified Health Centers (FQHCs)
- **Workforce Innovation and Well-Being**
 - Oral health workforce burnout, job satisfaction, and workforce well-being
 - Workforce diversity and health equity
 - Dental education, training, and emerging workforce models
 - SOP and utilization of dental hygienists and dental therapists
- **Policy and Population Health**
 - Barriers to accessing oral health services
 - Oral health literacy and patient engagement
 - State oral health needs assessments
 - Regulatory and workforce policy analysis

Acknowledgements

The Oral Health Workforce Research Center (OHWRC) is supported by the Health Resources and Services Administration (HRSA) of the US Department of Health and Human Services (HHS) as part of an award totaling \$450,000 with 0% financed with nongovernmental sources. The content of this presentation are those of the authors and do not necessarily represent the official views of, nor an endorsement, by, HRSA, HHS, or the US government. For more information, please visit [HRSA.gov](https://www.hrsa.gov).

We thank our research team, advisory board members, collaborators, students, and stakeholders whose contributions support this work.

Questions?

For more information, please email me at: ssurdu@albany.edu



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Thank You



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Physician Workforce Shortage and Planning in Brazil: Territorial Inequities and Challenges

Sábado Nicolau Girardi

Market Signals Research Station – Observatory of Human Resources for Health

Center for Public Health Education NESCON – School of Medicine FM – Federal University of Minas Gerais UFMG

Market Signals Research Station

Observatory of Human Resources for Health

The Market Signals Research Station (EPSM), Observatory of Human Resources for Health at NESCON/FM/UFGM

Since 1999, EPSM/ObserVaRH – NESCON/FM/UFGM has monitored the health labor market and produced evidence on **the shortage and workforce planning of health professionals**, informing policies for the management of work and education in health.

It is part of the **Network of Observatories of Human Resources for Health (ObserVaRH Network)**, in technical cooperation with PAHO/WHO, serving as the technical arm of the **Ministry of Health** in planning the SUS health workforce.

27

Years of history

100+

**Studies/research
projects**

500+

Publications

Thematic areas and lines of work

EPSM analyzes labor markets and health services and systems, combining qualitative and quantitative methods.

Labor market

Structure, dynamics, and signals of the health labor market

Professional regulation

Education, practice, and regulation of the health professions

Public management

Planning and management of health work in the SUS

Management of systems and services

Organization and provision of health services

Assessment of systems and services

Performance assessment of health systems and services

Research methodologies

EPSM combines quantitative, qualitative, and deliberative approaches.

1

Secondary data analyses

Extraction, analysis, and dissemination from a range of secondary sources

2

Online surveys and computer-assisted interviews (CATI)

Structured large-scale data collection

3

Qualitative and deliberative research

Online Dialogues, mini-conventions, and focus groups

4

Field research

Shortage Routes and in-depth interviews

5

Discrete Choice Experiments (DCE)

Analysis of stated preferences and choices



Overview by health
profession and occupation

Health labour market
signals

Matrix of service
types - CNES

Education
flows

Pivot tables

Professional regulation

Health workforce panel — Brazil



**Overview by
profession and
occupation**

Open →



**Labour market
signals**

Open →



**Matrix of service
types – CNES**

Open →



Education flows

Open →



Pivot tables

Coming soon ⌚



**Professional
regulation**

Coming soon ⌚

 [Dashboard technical note](#)



1

Education and Training Market Signals



**ESTAÇÃO DE PESQUISA
DE SINAIS DE MERCADO**



NESCON
núcleo de educação em saúde coletiva
FACULDADE DE MEDICINA - UFMG

Medical education expanded sharply (2010–2024)

+158%

Medical programs

181 → 467

+312%

Seats

16,468 → 67,894

+227%

New enrollments

18,473 → 60,366

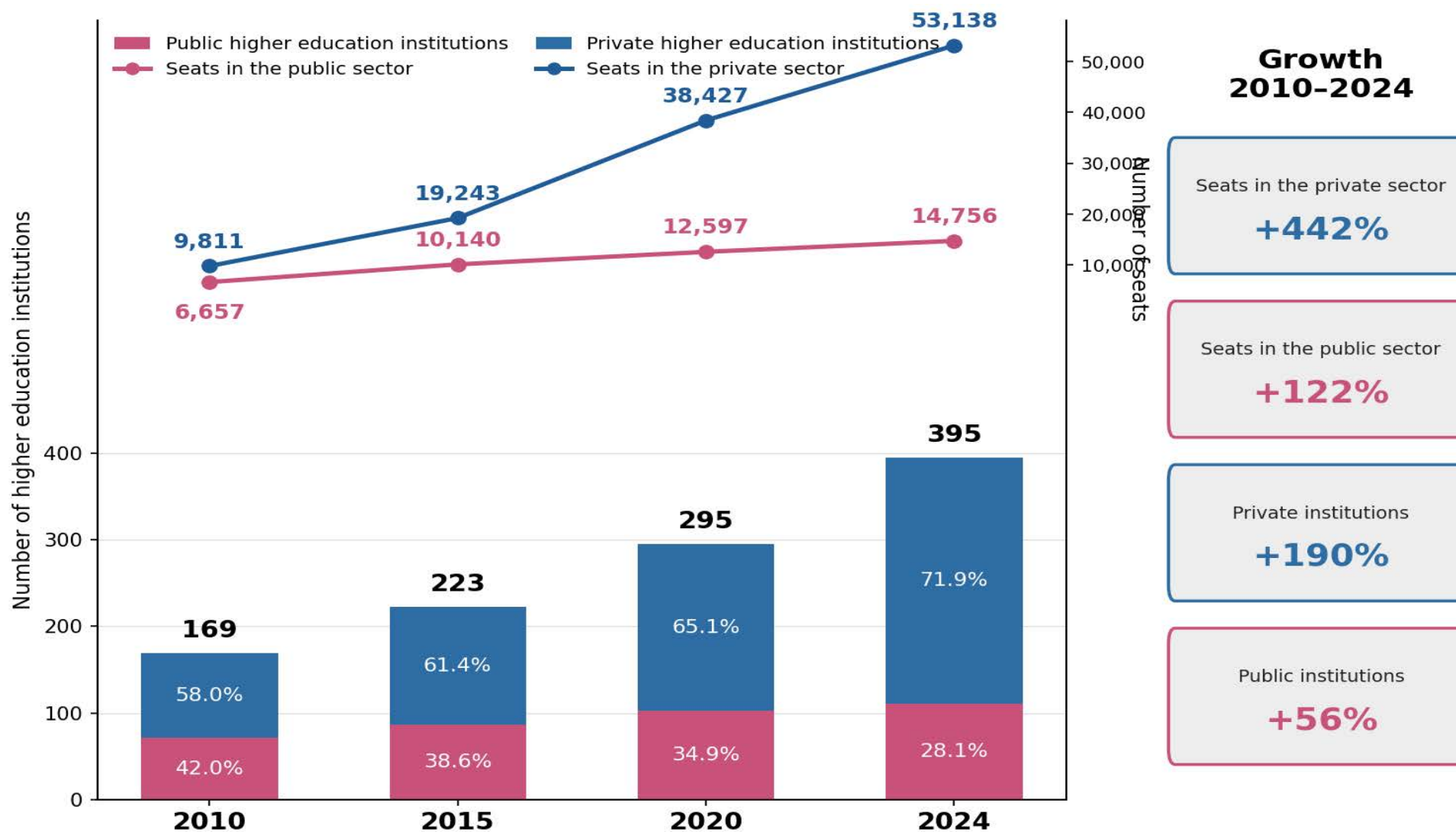
+197%

Graduates

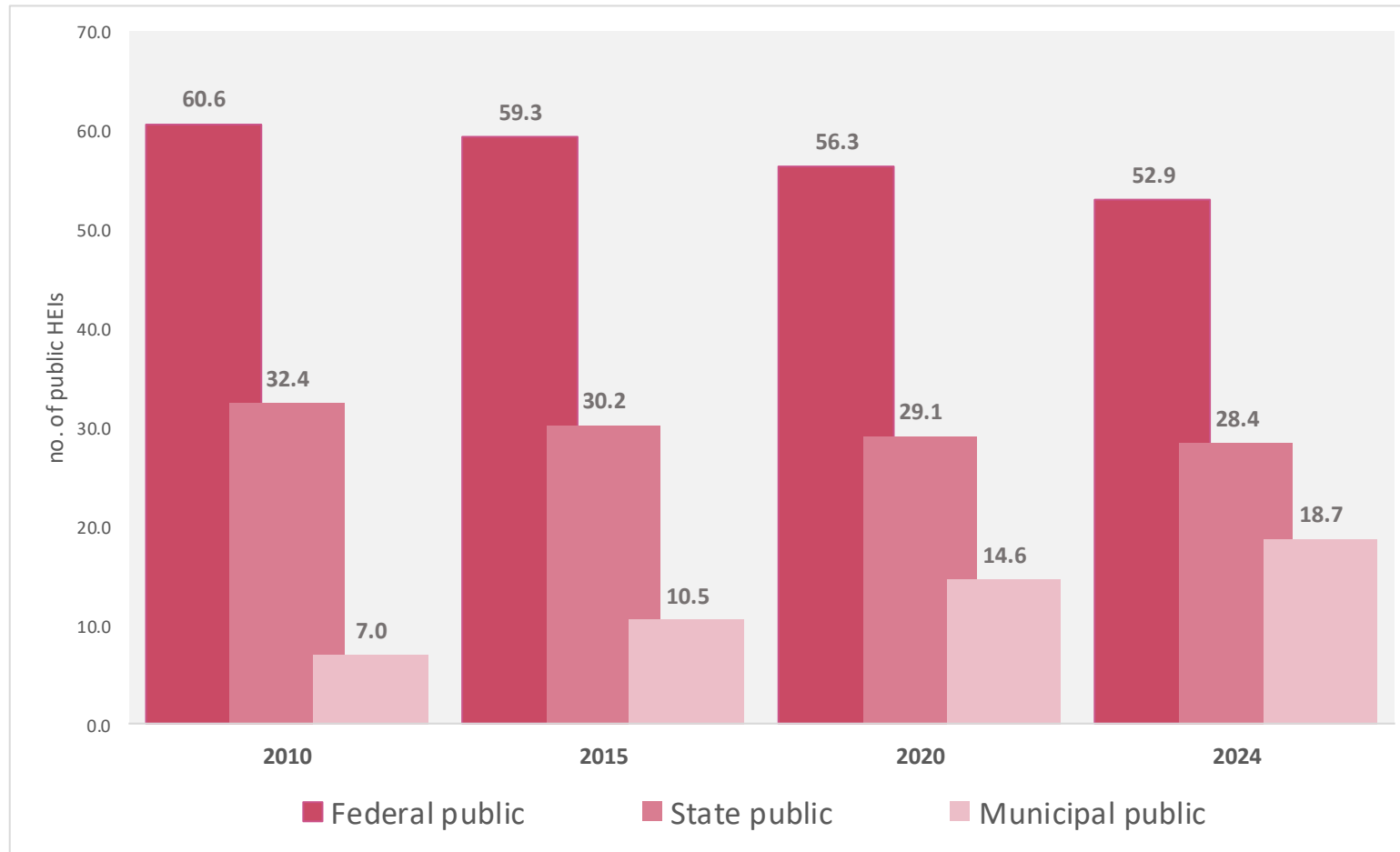
12,982 → 38,501

➡ Strong expansion of medical programs, seats, and graduates during the Mais Médicos Program period.

HEC/INEP – Trend in the number of higher education institutions (HEIs) and medical seats by administrative category: public and private, 2010, 2015, 2020, and 2024.

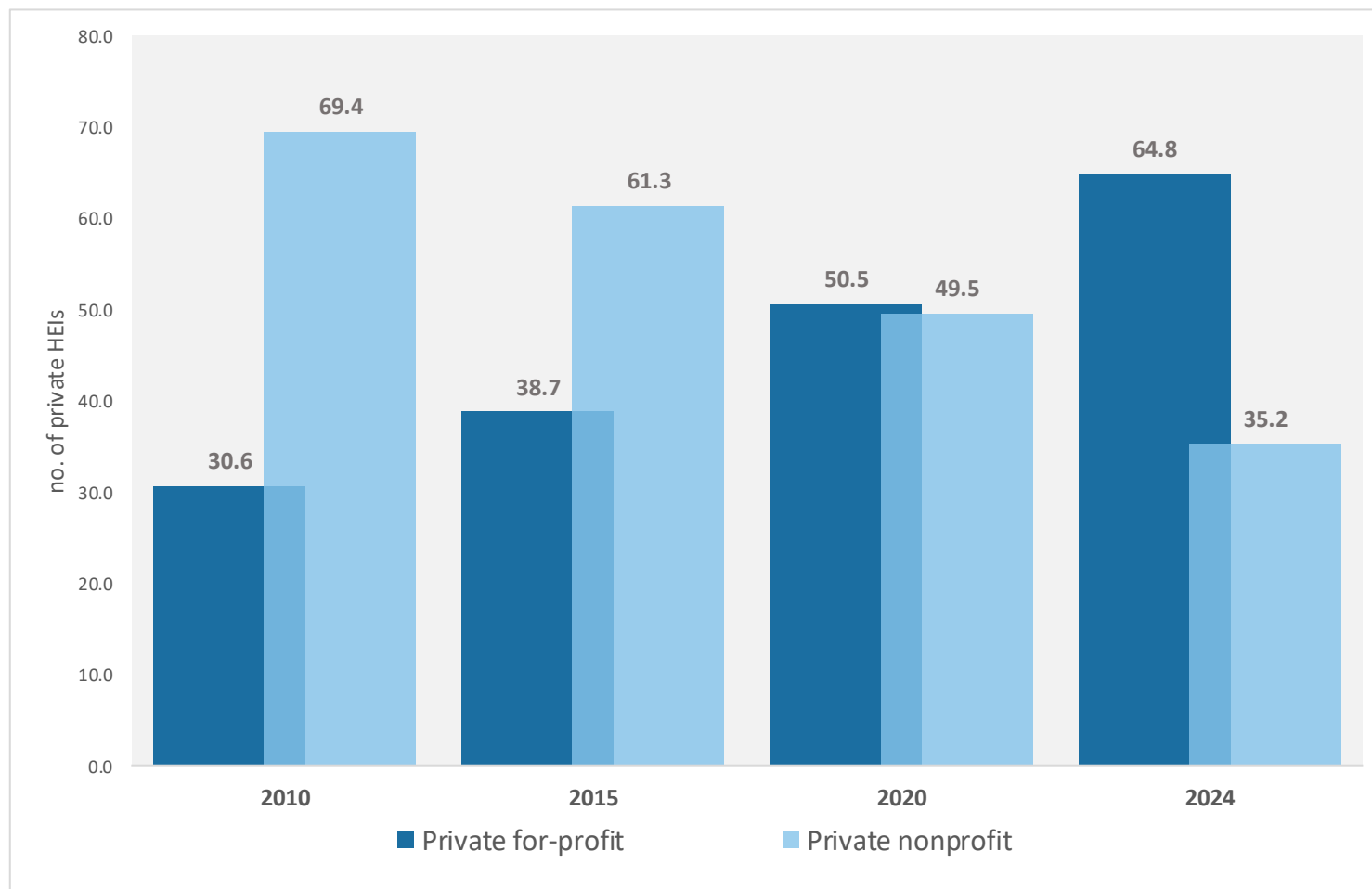


HEC/INEP – Trend in the number of public medical HEIs by administrative category: federal, state, and municipal. Brazil, 2010, 2015, 2020, and 2024.



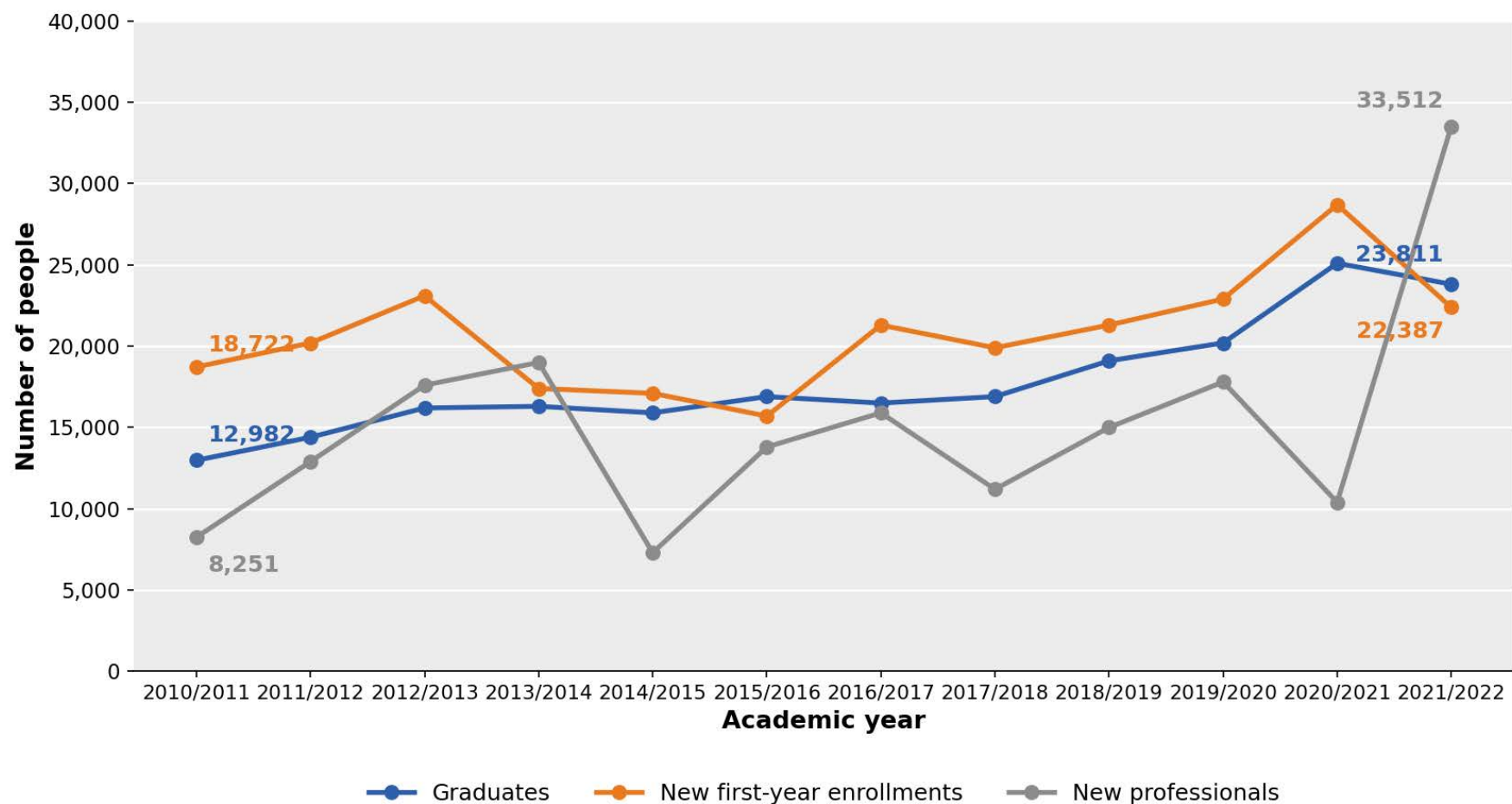
Source: EPSM-ObservaRH/NESCON/FM/UFMG based on the Higher Education Census (INEP/MEC), 2010–2024.

*Trend in the number of private medical by administrative category: for-profit and nonprofit.
Brazil, 2010, 2015, 2020, and 2024.*



Source: EPSM-ObservaRH/NESCON/FM/UFMG based on the Higher Education Census (INEP/MEC), 2010–2024.

Trend in the number of medical graduates per year, first-job hires, and the net stock of new professionals in health facilities. Brazil, 2011–2022.



Source: EPSM-ObservaRH/NESCON/FM/UFMG based on the Higher Education Census (INEP/MEC), 2021 and RAIS/MoL 2022.

2

Geographic Distribution



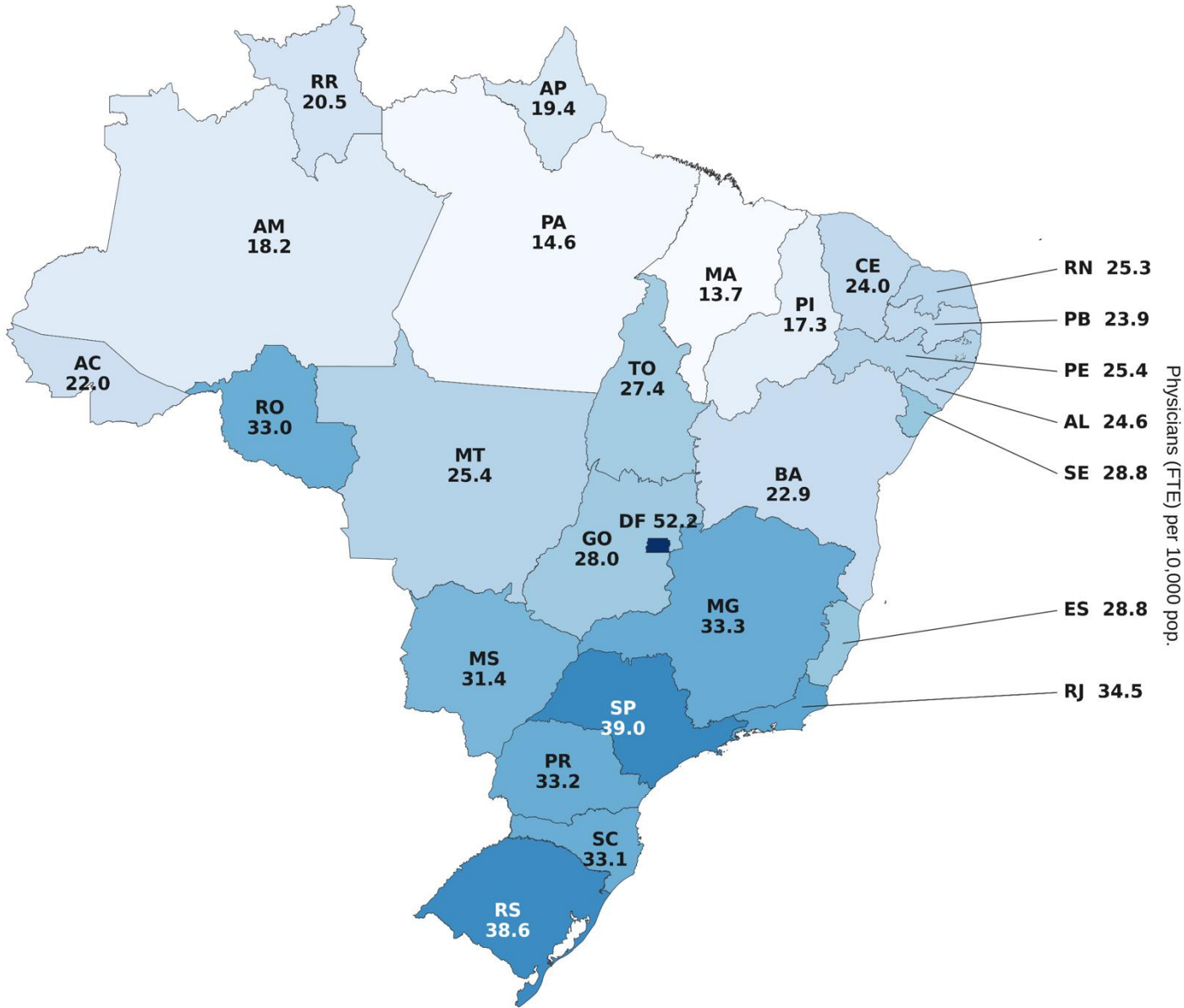
**ESTAÇÃO DE PESQUISA
DE SINAIS DE MERCADO**

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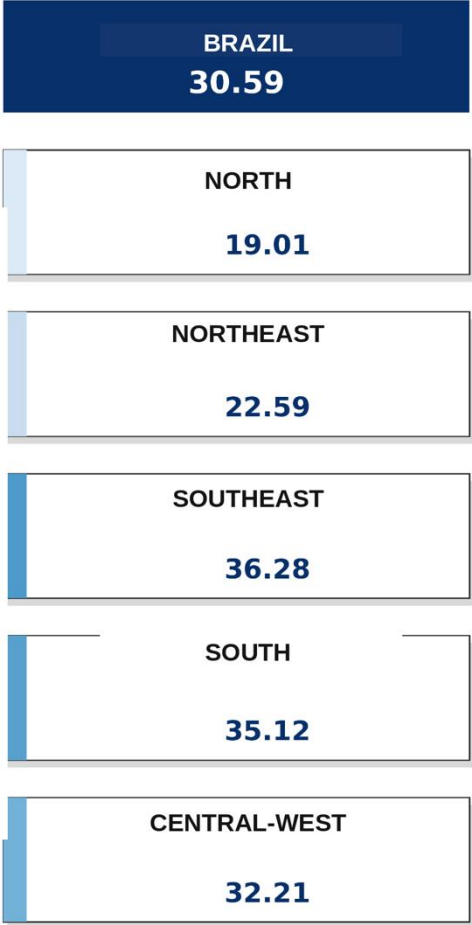


NESCON
núcleo de educação em saúde coletiva
FACULDADE DE MEDICINA - UFMG

Ratio of full-time-equivalent (FTE) physicians per 10,000 population – by federative unit (state) – Brazil, 2025

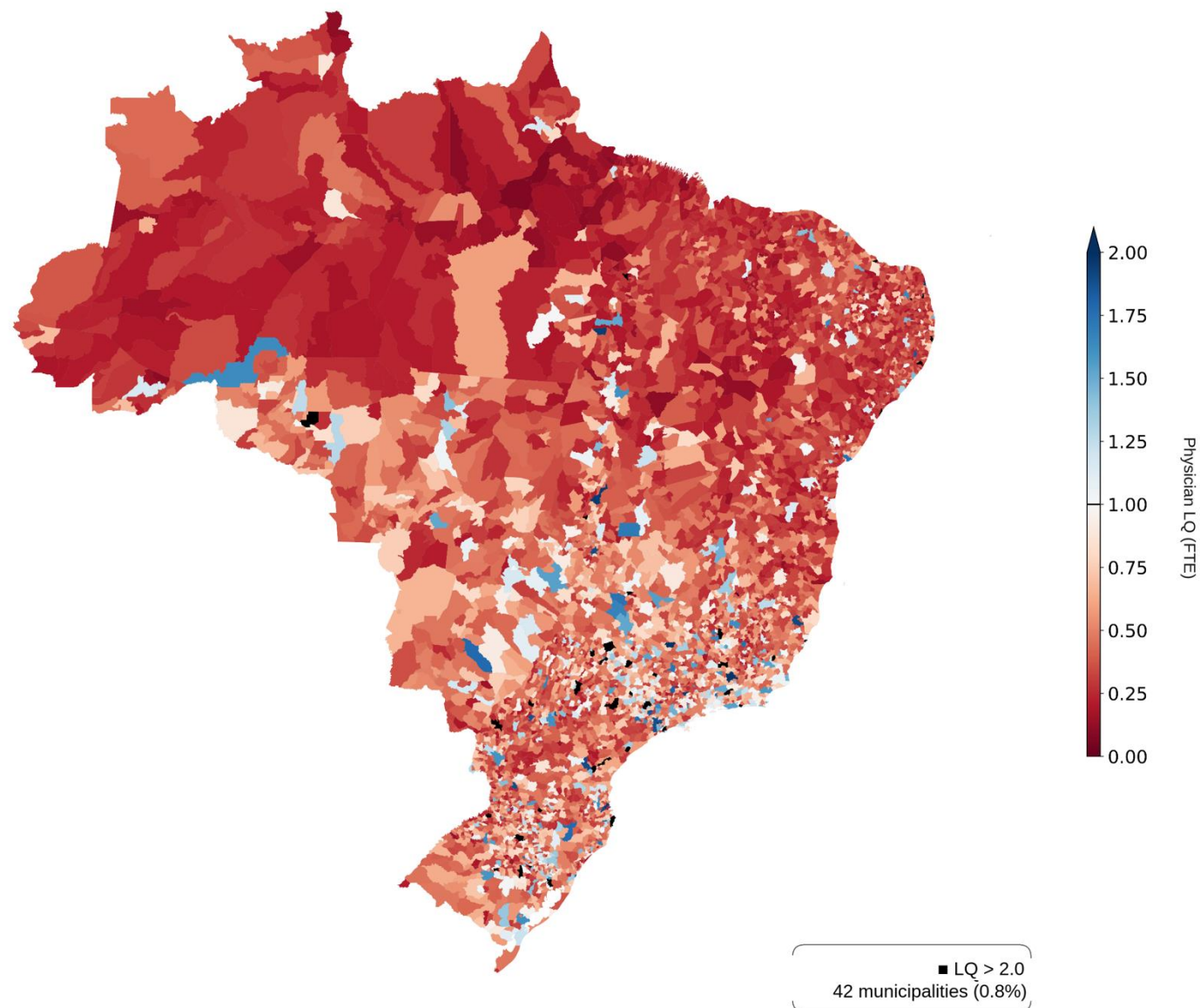


FTE Physicians per 10,000 pop.



Location quotient (LQ) of full-time-equivalent (FTE) physicians by municipality – Brazil, 2025

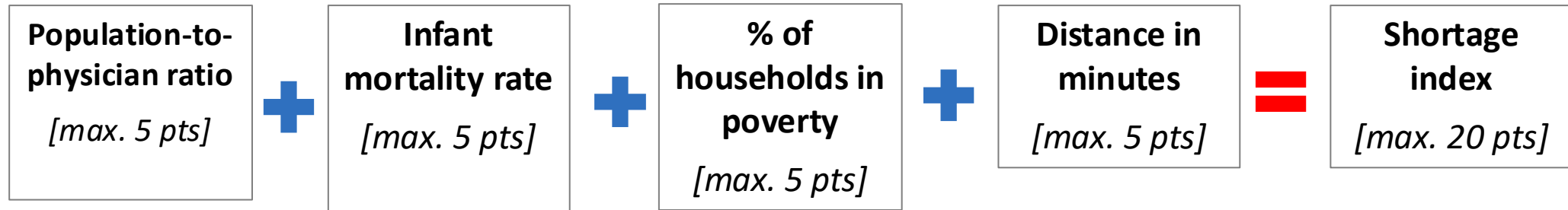
LQ < 1: relative physician density below the national average
LQ = 1: equal to the national average
LQ > 1: density above the national average



3

Identifying primary care physician shortage areas

Calculating the primary care physician shortage index

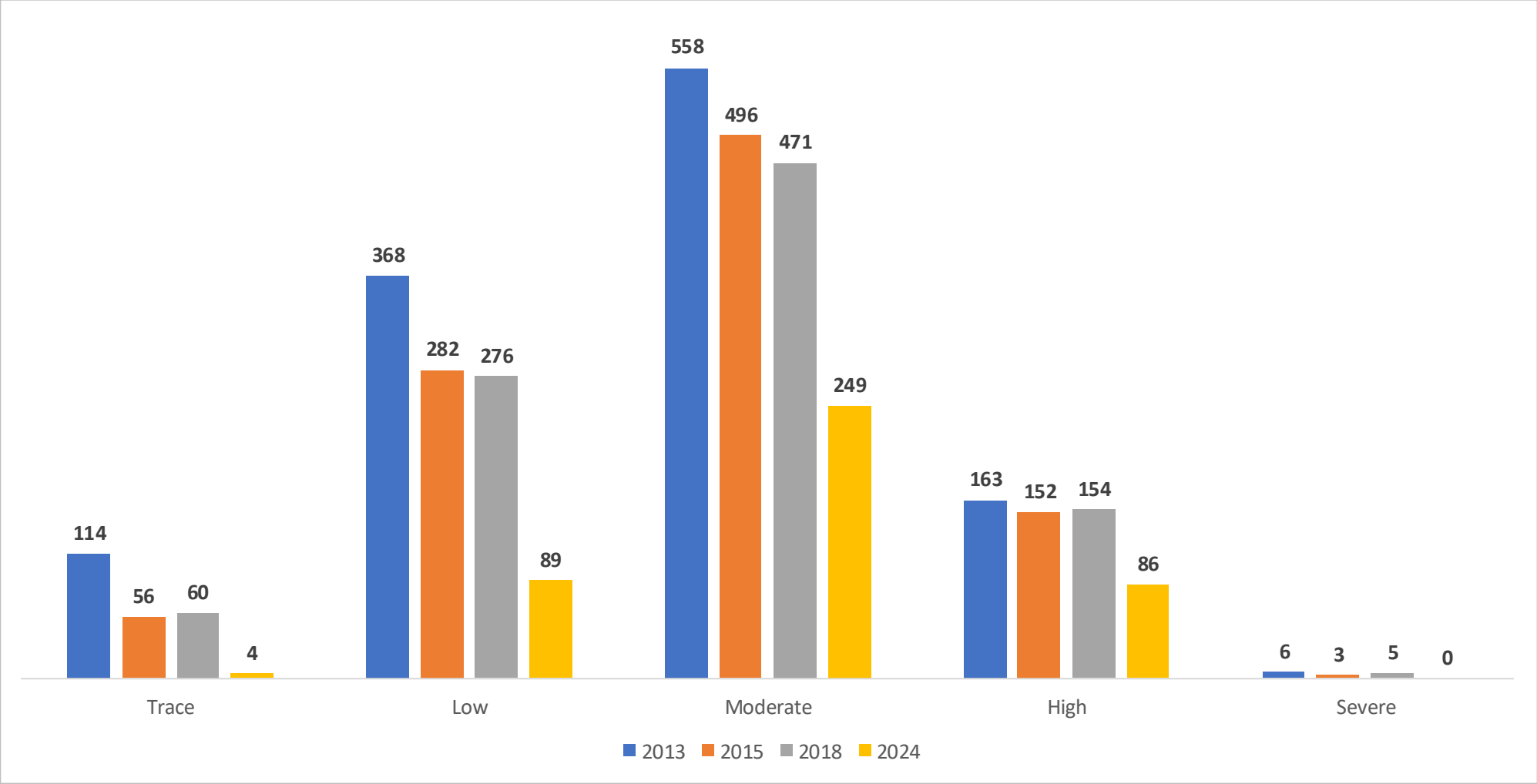


Defining shortage levels

Municipalities with a shortage are classified on a scale ranging from trace to severe shortage, according to the weights and scores obtained across the four dimensions.

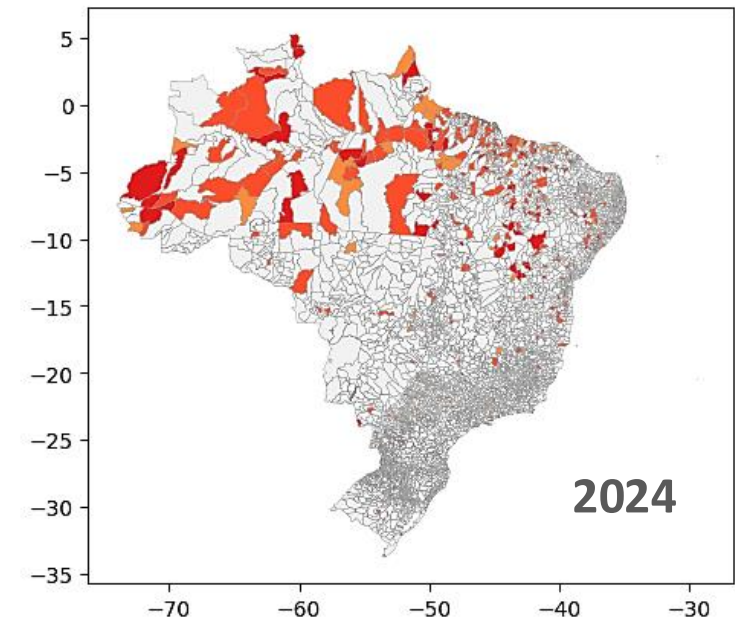
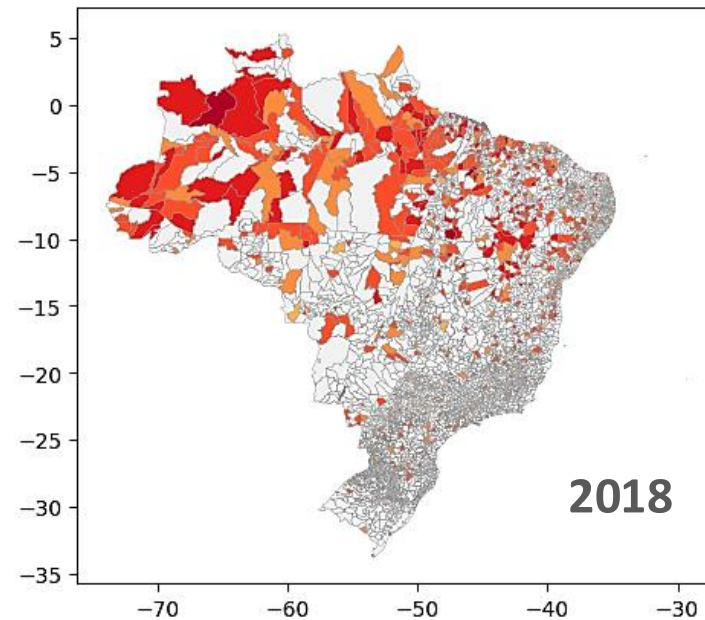
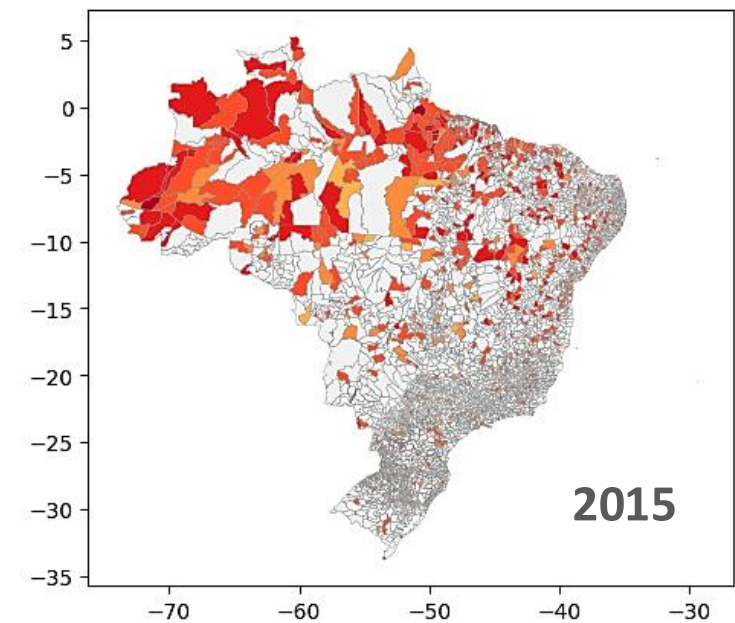
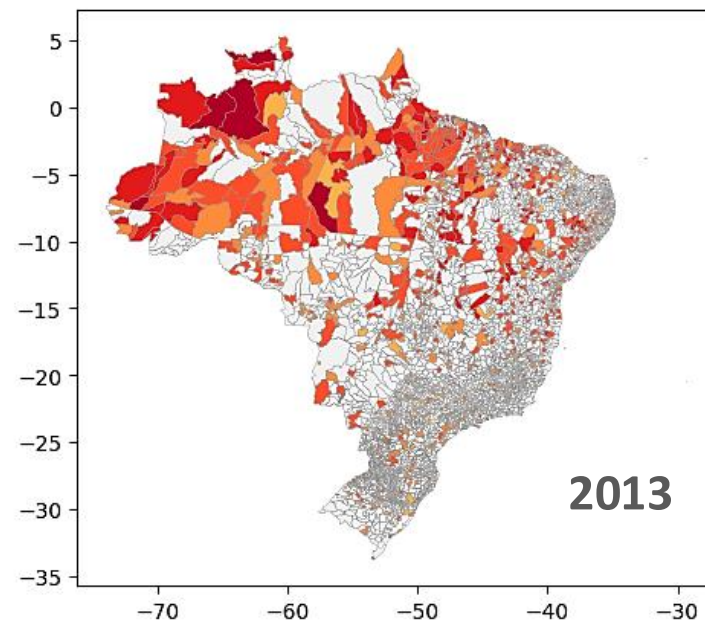
Trace				Low				Moderate				High				Severe			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Brazilian municipalities with a primary care physician shortage by shortage level – Brazil, 2013, 2015, 2018, and 2024.



Source: EPSM-ObservaRH/NESCON/FM/UFMG based on CNES/MoH, SIM, and SINASC/DATASUS data, the Population Census, IBGE population estimates, and OpenStreetMap.

Brazilian municipalities with a primary care physician shortage by shortage level – Brazil, 2013, 2015, 2018, and 2024.



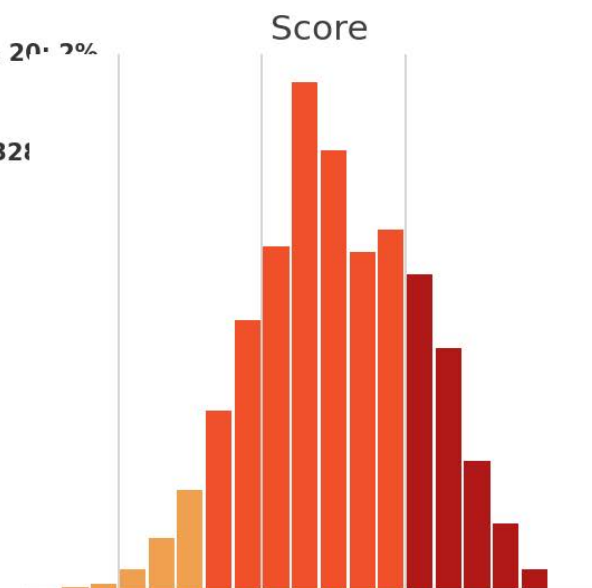
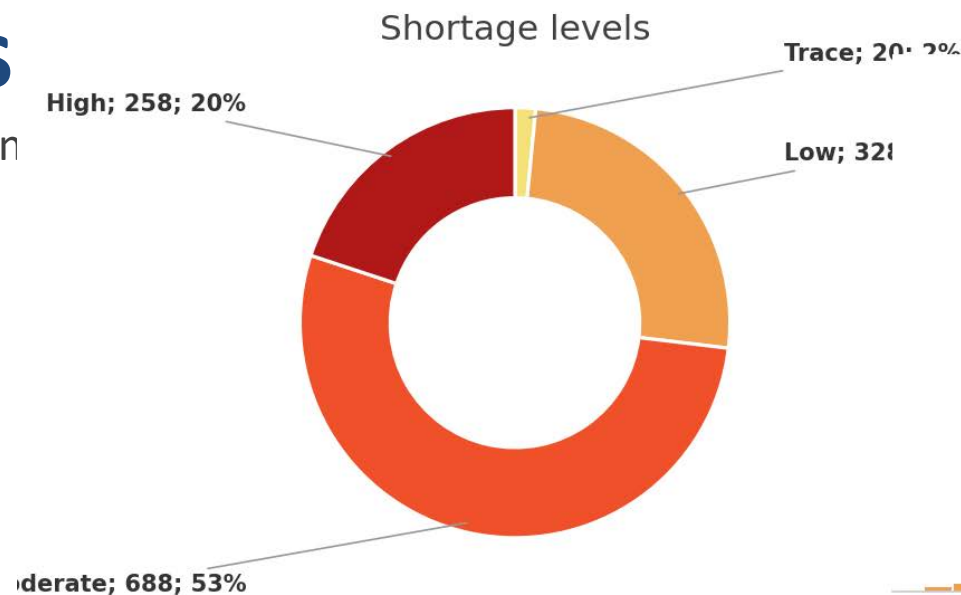
Even so, the primary care physician shortage persists (June 2024)

1,294 municipalities

(23.2% of 5,570) with a primary care physician shortage.

The shortage index combines four dimensions:

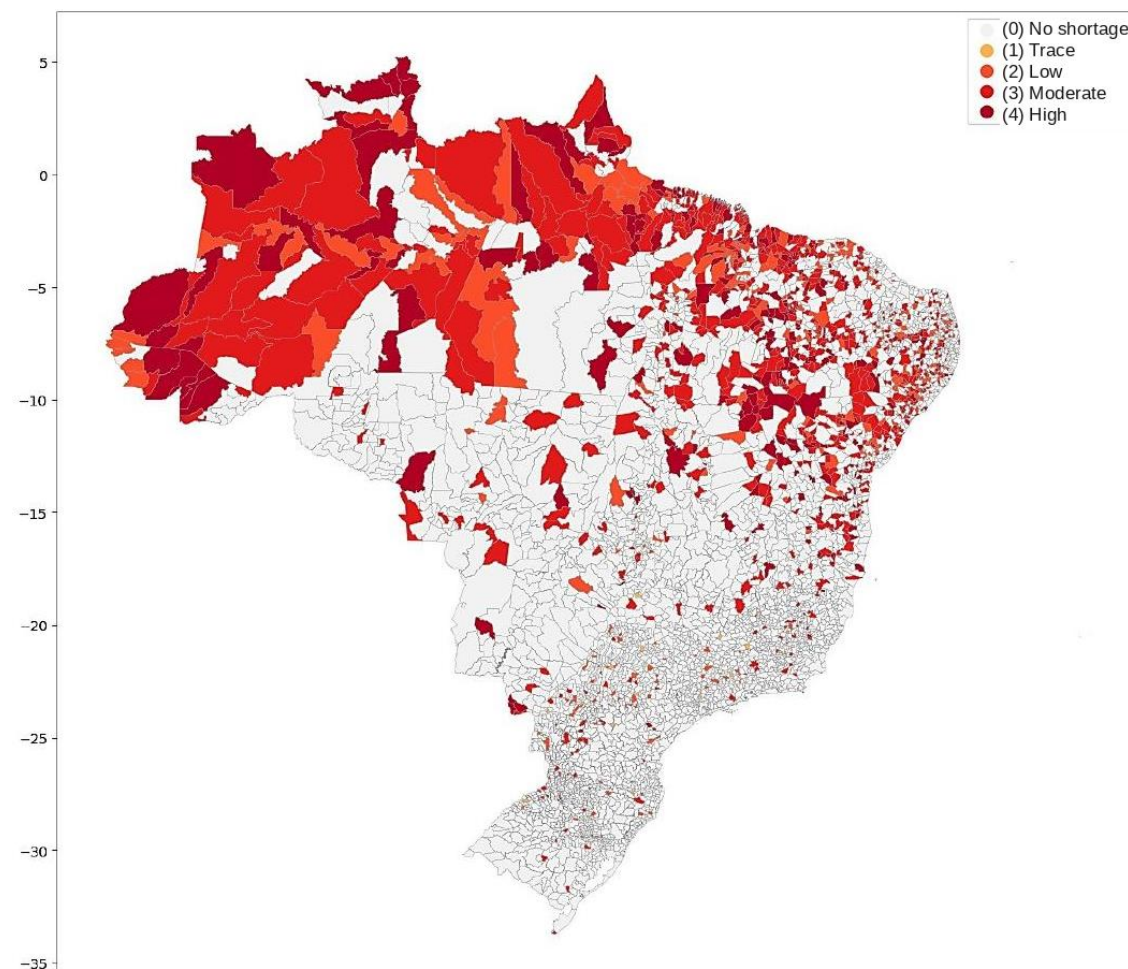
- physician supply per capita (40 h FTE)
- health need (infant mortality)
- socioeconomic deprivation (poverty / PBF)
- access barriers (distance in minutes)



Territorial inequities and challenges

The primary care physician shortage is concentrated in the Legal Amazon and the interior of the Northeast.

The highest levels (Moderate to High) fall precisely in the regions with the lowest supply, the highest poverty, and the greatest access barriers — the territorial challenge that expanding education alone does not solve.

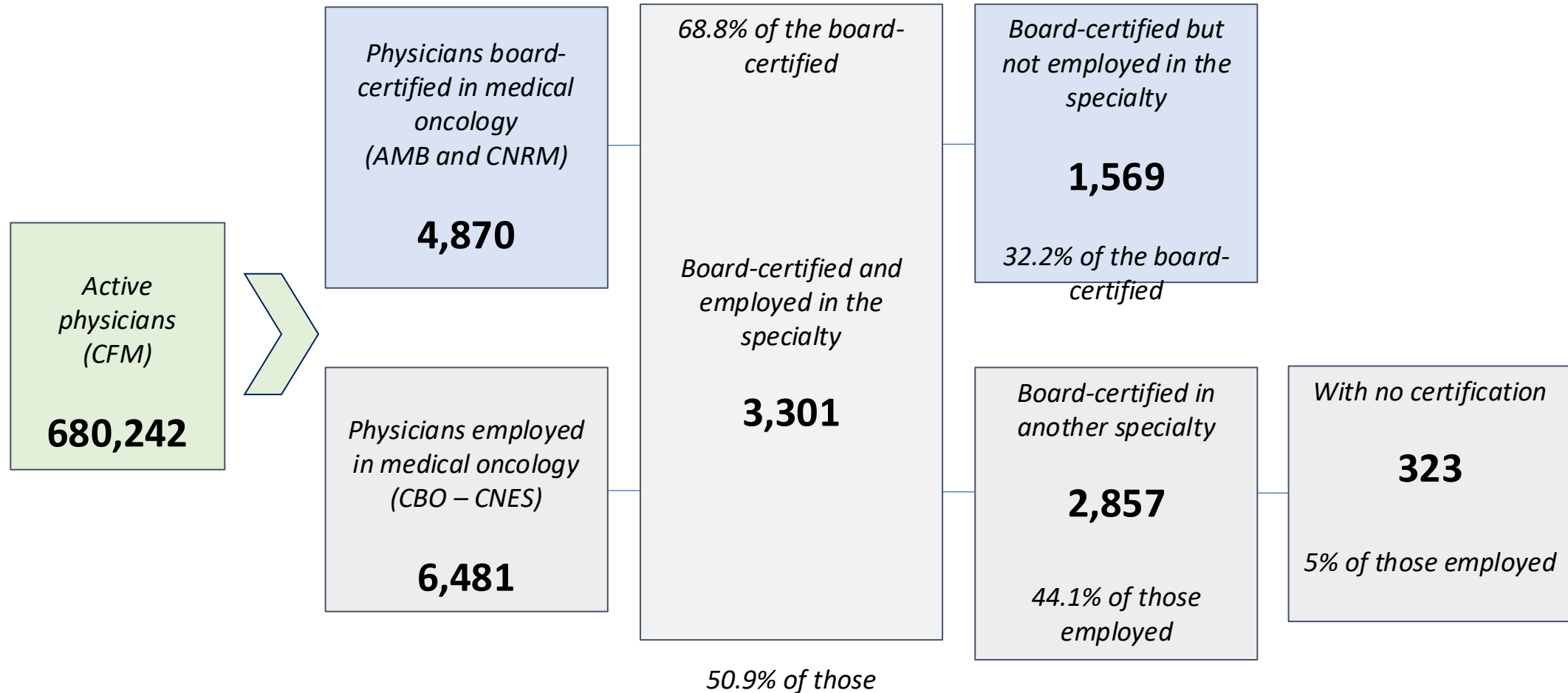


4

Mais Especialistas (PMME): planning the specialist physician workforce

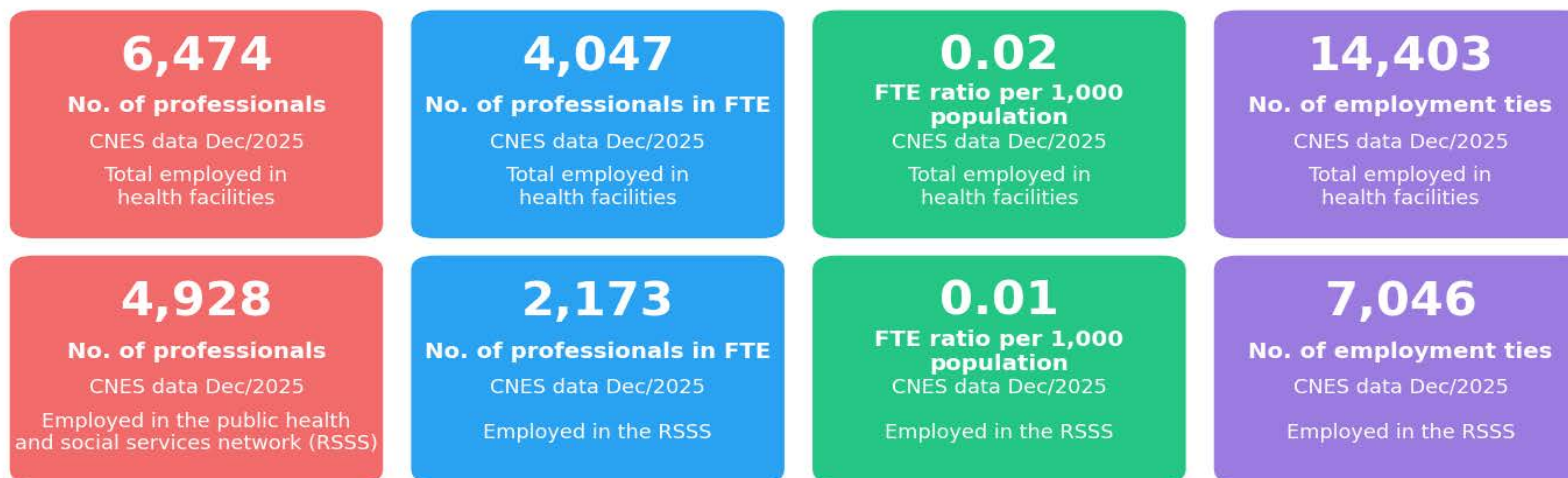
Workforce planning example

MEDICAL SPECIALTY: MEDICAL ONCOLOGY (2025)

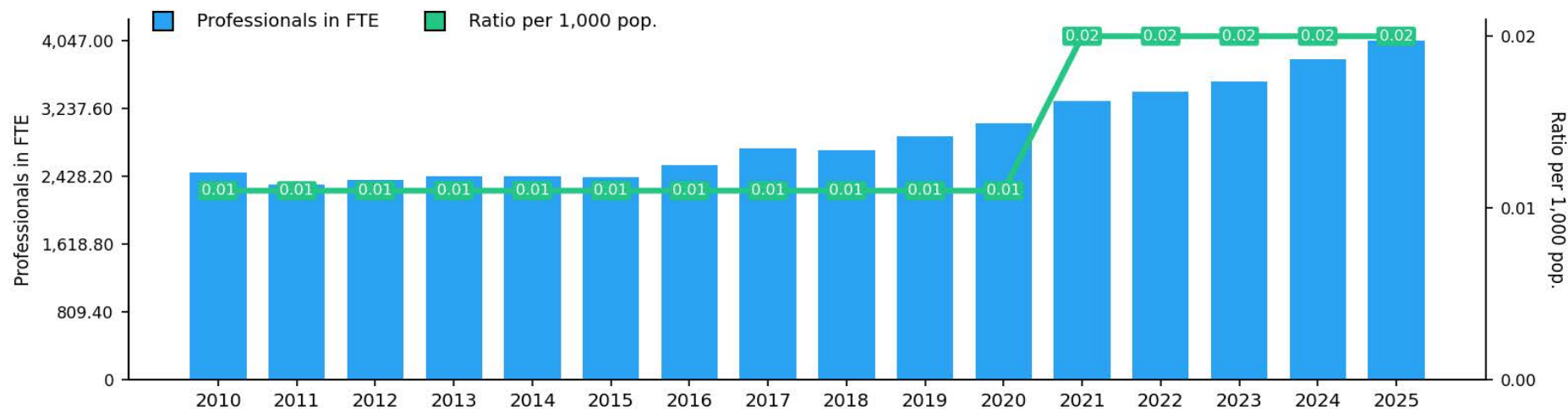


Source: EPSM-ObservaRH/NESCON/FM/UFGM based on the National Registry of Specialists (February 2026) and Medical Demography 2025.

Medical oncology in the health care sector (CNES, Dec. 2025).



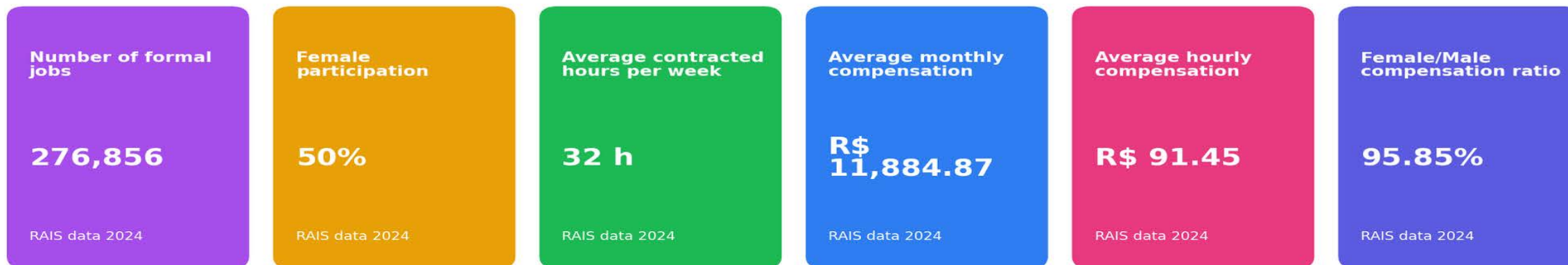
No. of professionals in FTE and ratio per 1,000 pop. by year



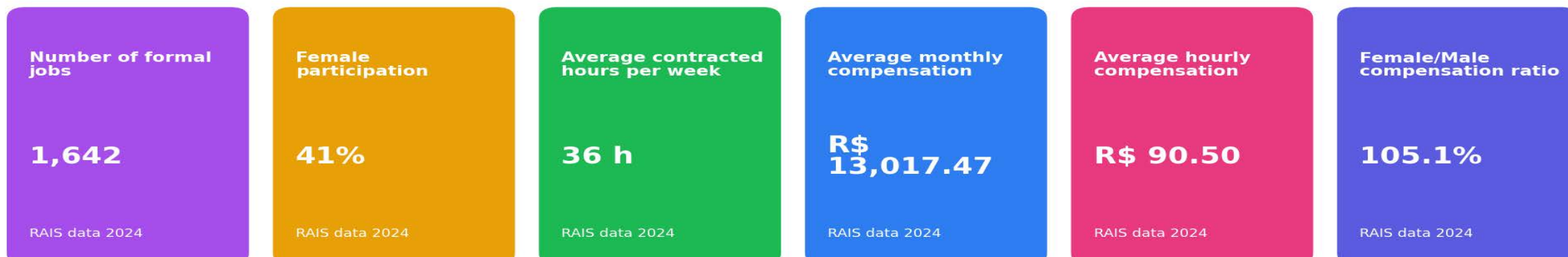
Source: EPSM-ObservaRH/NESCON/FM/UFGM. Health Workforce Dashboard.

Medical oncology in the formal labor market (RAIS, 2024).

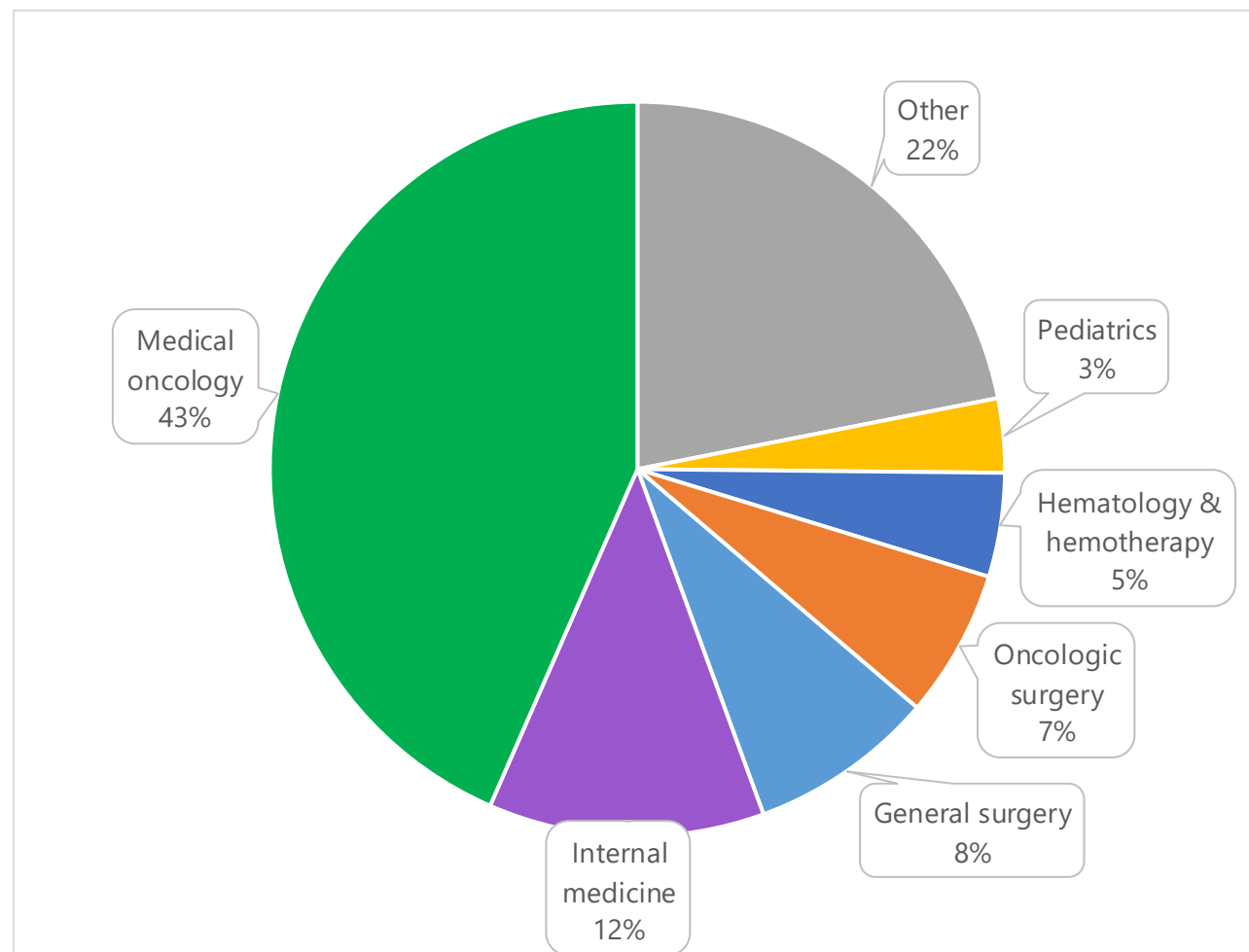
Physicians



Medical oncologists

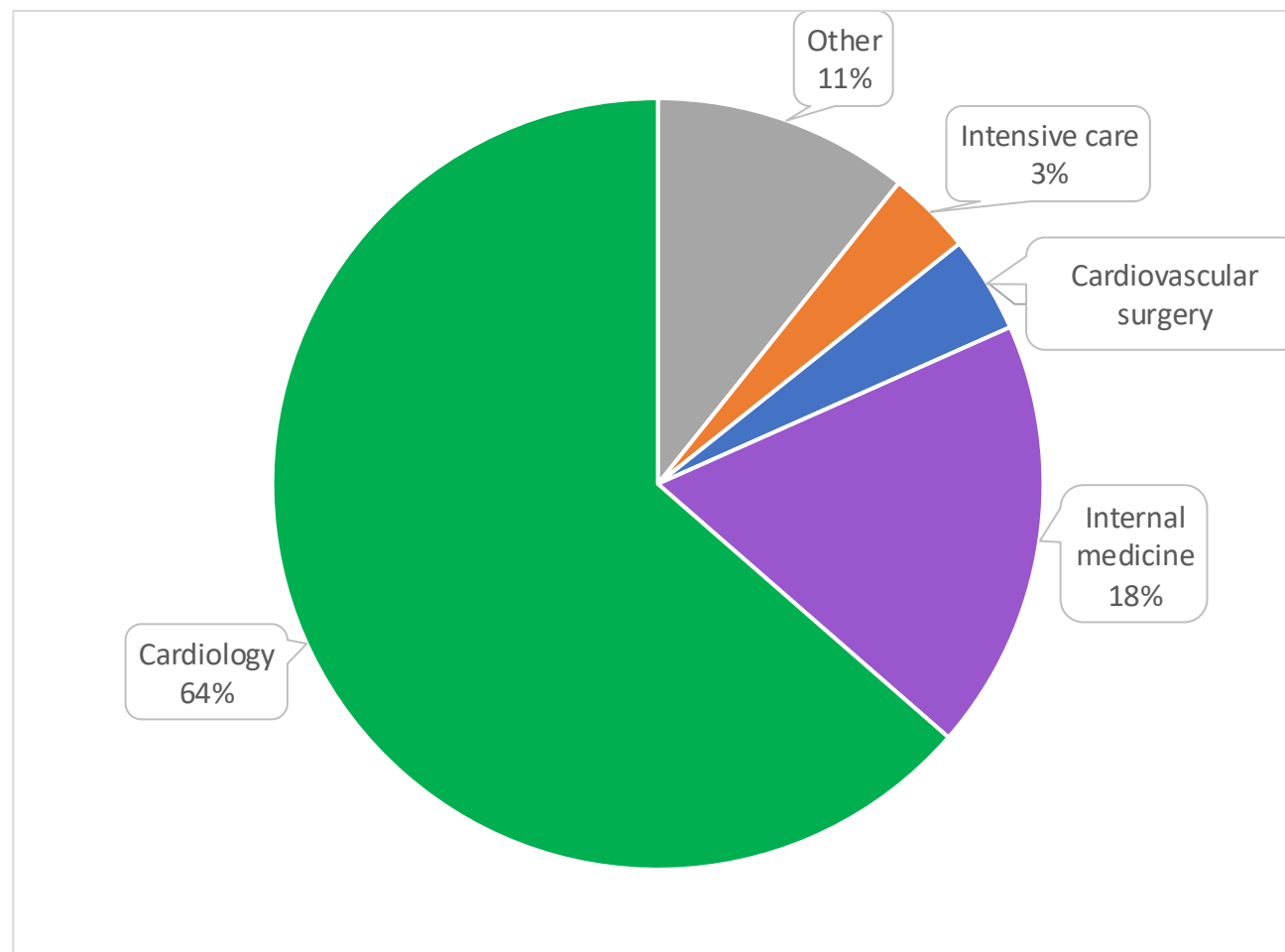


Composition of practice fields of professionals employed in MEDICAL ONCOLOGY (FTE)



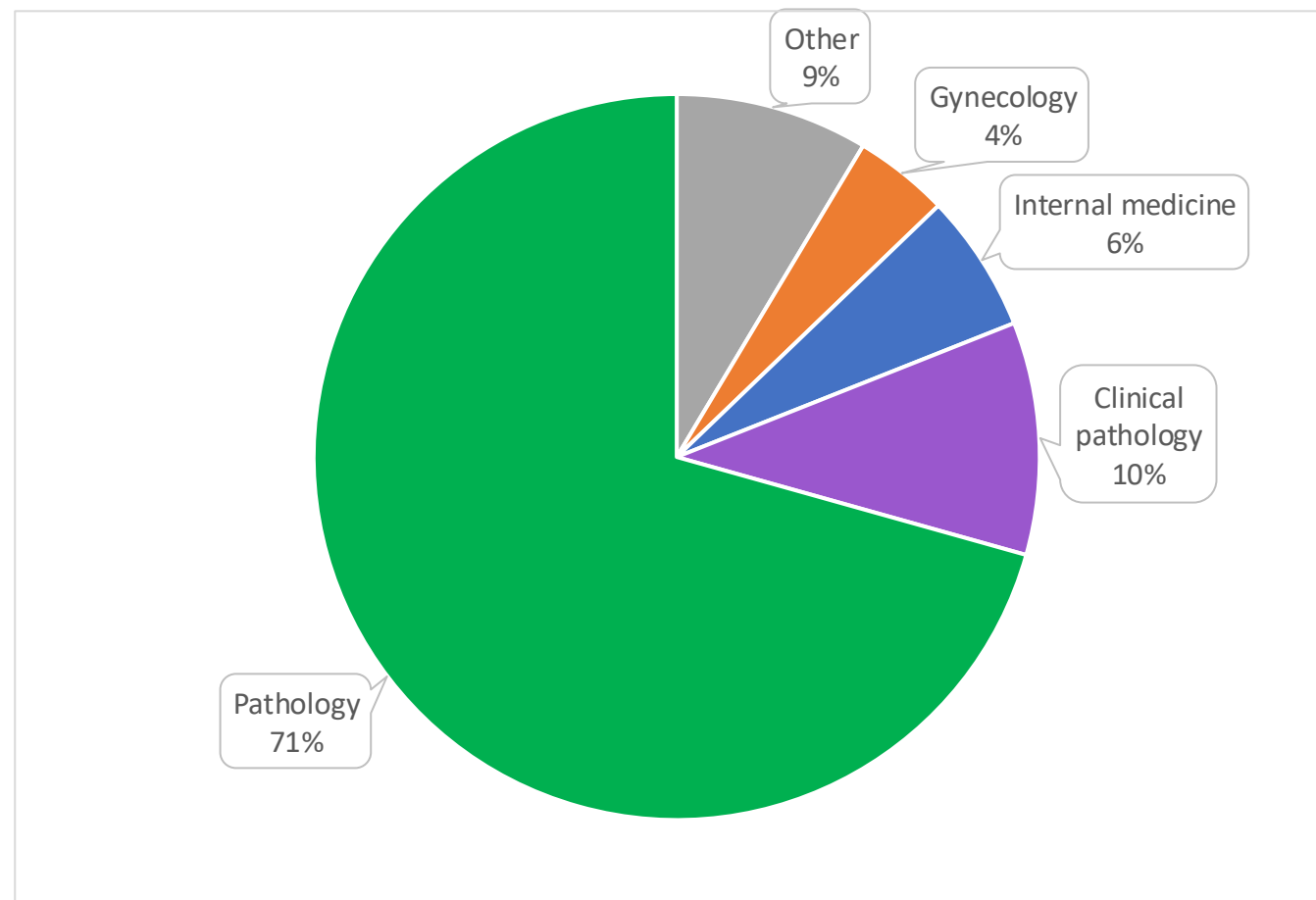
Source: EPSM-ObservaRH/NESCON/FM/UFGM based on CNES data.

Composition of practice fields of professionals employed in CARDIOLOGY (FTE)



Source: EPSM-ObservaRH/NESCON/FM/UFMG based on
CNES data.

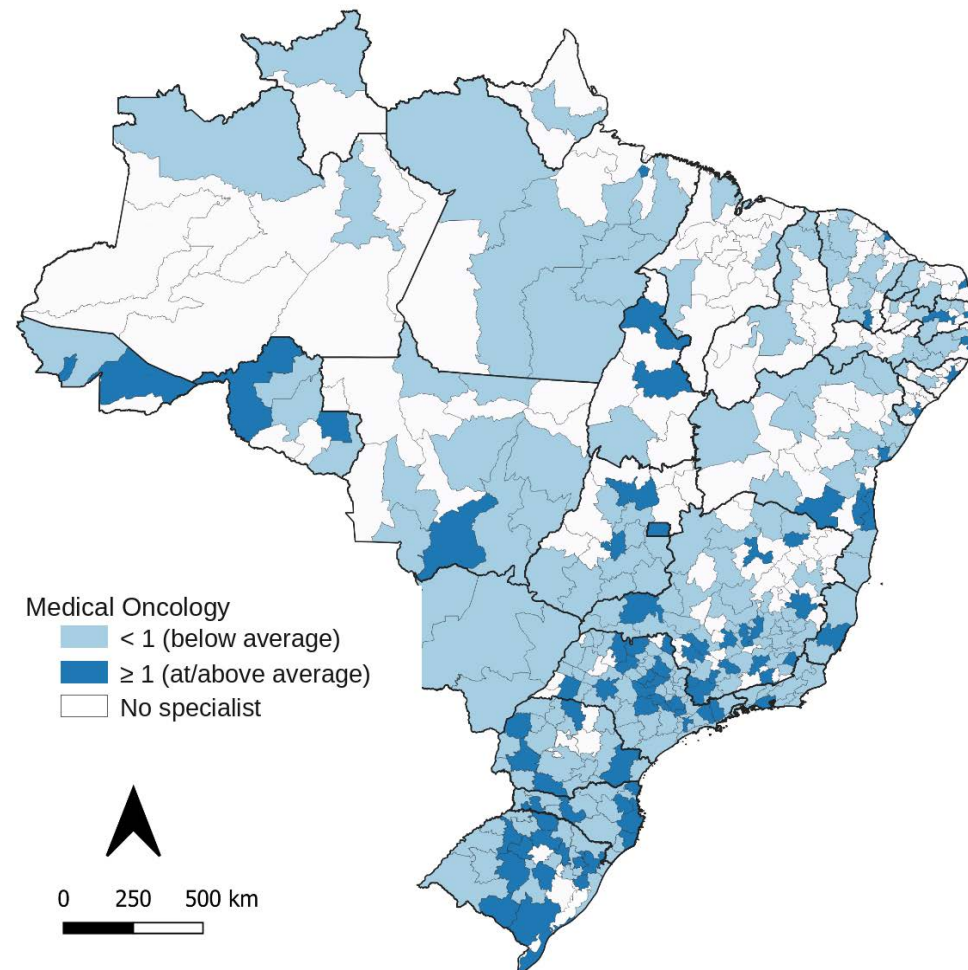
Composition of practice fields of professionals employed in PATHOLOGY (FTE)



Source: EPSM-ObservaRH/NESCON/FM/UFMG based on
CNES data.

Geographic concentration of full-time equivalents in MEDICAL ONCOLOGY (LQ).

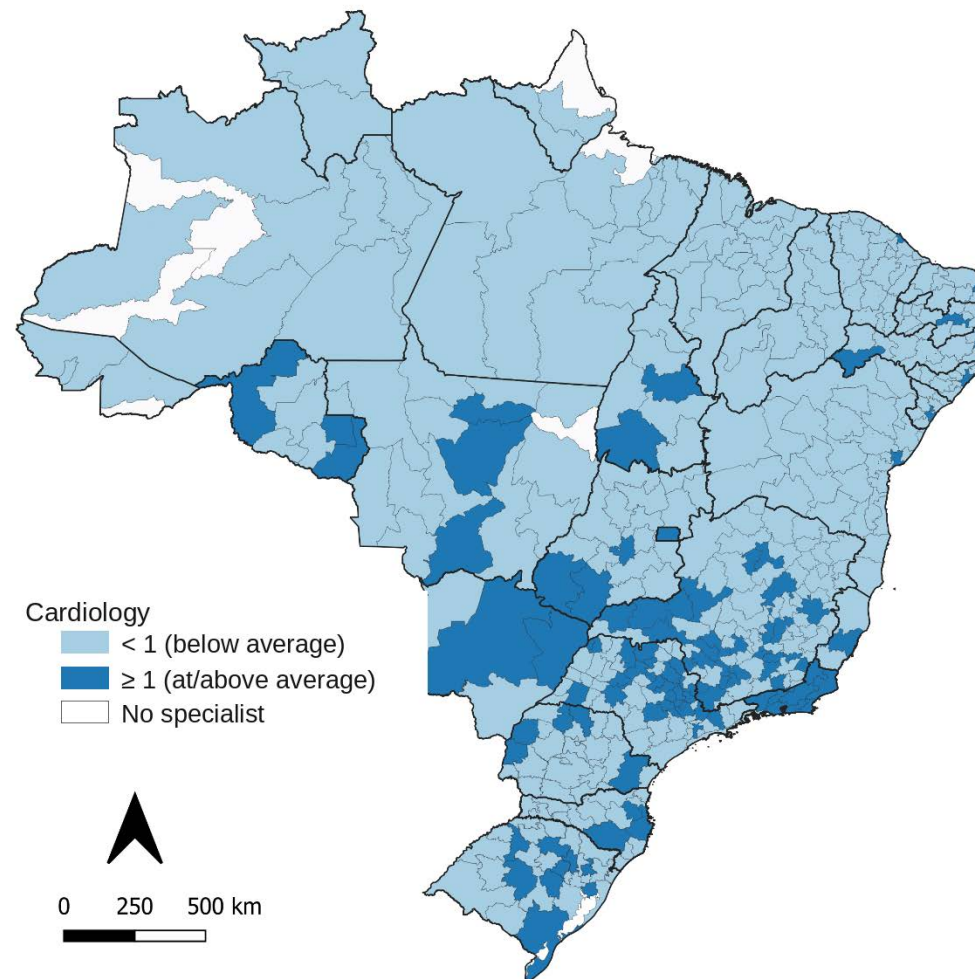
Geographic level: health microregion (CIR).



Source: EPSM-ObservaRH/NESCON/FM/UFMG based on CNES data.

Geographic concentration of full-time equivalents in CARDIOLOGY (LQ).

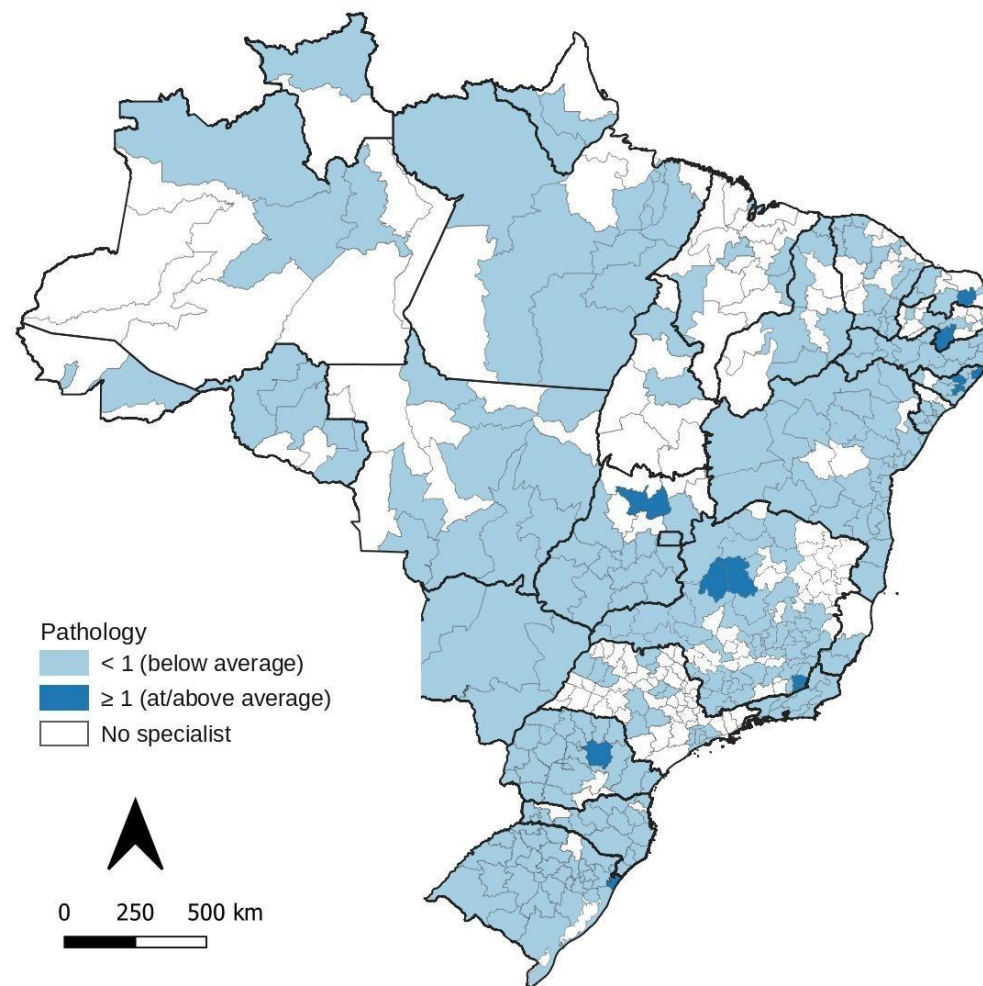
Geographic level: health microregion (CIR).



Source: EPSM-ObservaRH/NESCON/FM/UFMG based on CNES data.

Geographic concentration of full-time equivalents in PATHOLOGY (LQ).

Geographic level: health microregion (CIR).



Source: EPSM-ObservaRH/NESCON/FM/UFMG based on CNES data.

Challenges:

Average time to fill vacant positions	Time in months
Mastology	2.2
General surgery	2.3
Cardiology	2.7
Anesthesiology	3.0
Nephrology	3.1
Orthopedics and traumatology	3.1
Radiology and medical imaging	3.1
Cardiovascular surgery	3.2
Angiology	3.6
Vascular surgery	3.6
Ophthalmology	3.6
Radiation therapy	3.6
Hematology and hemotherapy	3.8
Oncologic surgery	4.0
Endocrinology and metabolism	4.0
Medical oncology	4.0
Psychiatry	4.4
Neurosurgery	4.7

Source: authors' own analysis based on the 2019 survey "Difficulties in recruiting specialist physicians."

Concluding remarks

- The physician shortage in Brazil is above all a distribution problem: the strong expansion of education (2010–2023) has not eliminated the gaps in services.
- Territorial inequities are concentrated in the most vulnerable regions — the Legal Amazon and the interior of the Northeast.
- Attraction (the Mais Médicos Program) and education help reduce the primary care physician shortage. Retention remains a challenge.
- The new challenge is access to specialist physicians (Mais Especialistas/PMME): workforce planning reveals a deficit and a misdistribution, as in medical oncology.
- Plan the workforce, not just count it: match supply against need by specialty, type of service, and territory.
- Tackling inequities requires linking education, attraction, retention, and regulation, grounded in sound evidence and continuous monitoring.

Thank you!

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Health Workforce Challenges and Scope of Practice in Brazilian Primary Health Care

Ana Cristina de Sousa van Stralen

Market Signals Research Station – Observatory of Human Resources for Health

Center for Public Health and Education - NESCON – School of Medicine – Federal University of Minas Gerais (UFMG)

Health Workforce Summit · Albany, New York · September 2026

The challenge extends beyond workforce supply to distribution and retention

- Brazil has a universal public health system (SUS), in which primary health care (PHC) serves as a principal point of entry to the health system.
- More Doctor Program – *Programa Mais Médicos*

Unequal distribution

Health professionals are unevenly distributed across regions and territories.

Persistent shortages

Rural, remote, and socioeconomically vulnerable areas face persistent recruitment challenges.

High turnover

Successful recruitment does not necessarily ensure continuity of care over time.

This is a long-standing health workforce planning problem, and it differs by profession and territory.

How can qualified PHC professionals be attracted to and retained in underserved territories, while enabling teams to use their competencies effectively?

Attraction & retention

Which job attributes and territorial conditions shape attraction and retention?

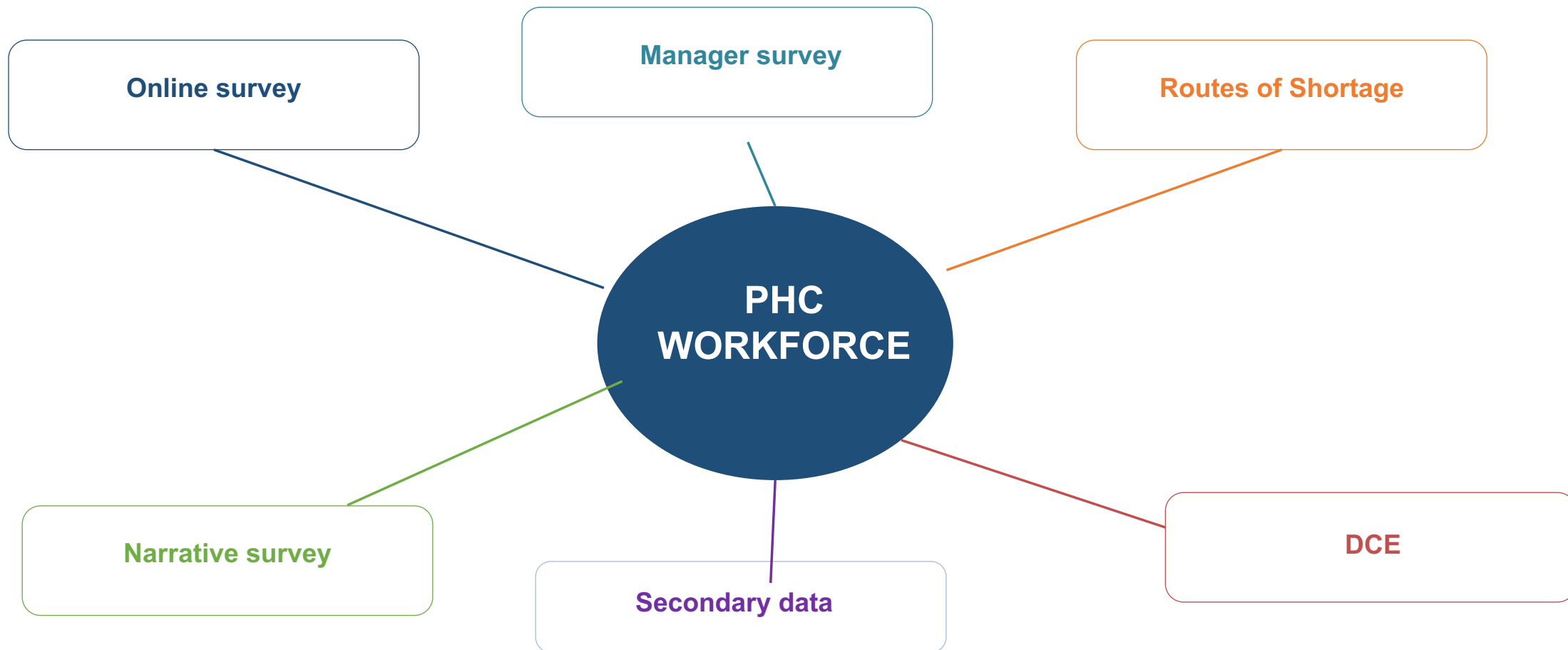
Territorial variation

Why do similar workforce policies produce different outcomes across territories?

Scope of practice

Can access and PHC capacity be strengthened through broader and better-supported scopes of practice?

One project, multiple complementary components

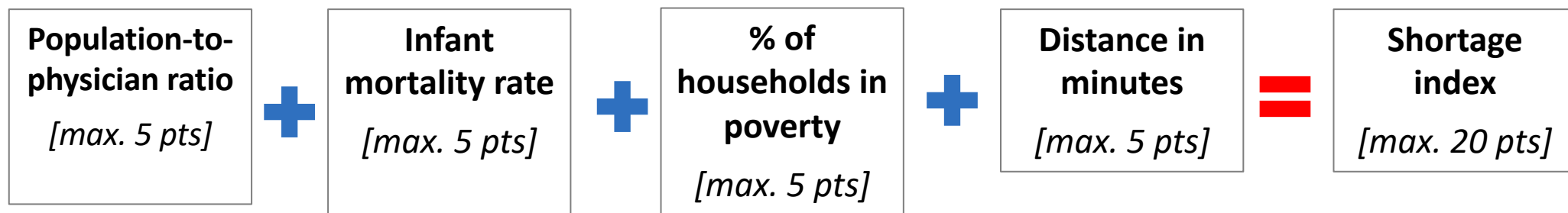


We conceptualize workforce shortage as a multidimensional territorial condition



Workforce shortage therefore extends beyond provider headcounts, reflecting the interaction of supply, population health needs, socioeconomic deprivation, and geographic access.

CALCULATING THE PRIMARY CARE PHYSICIAN SHORTAGE INDEX

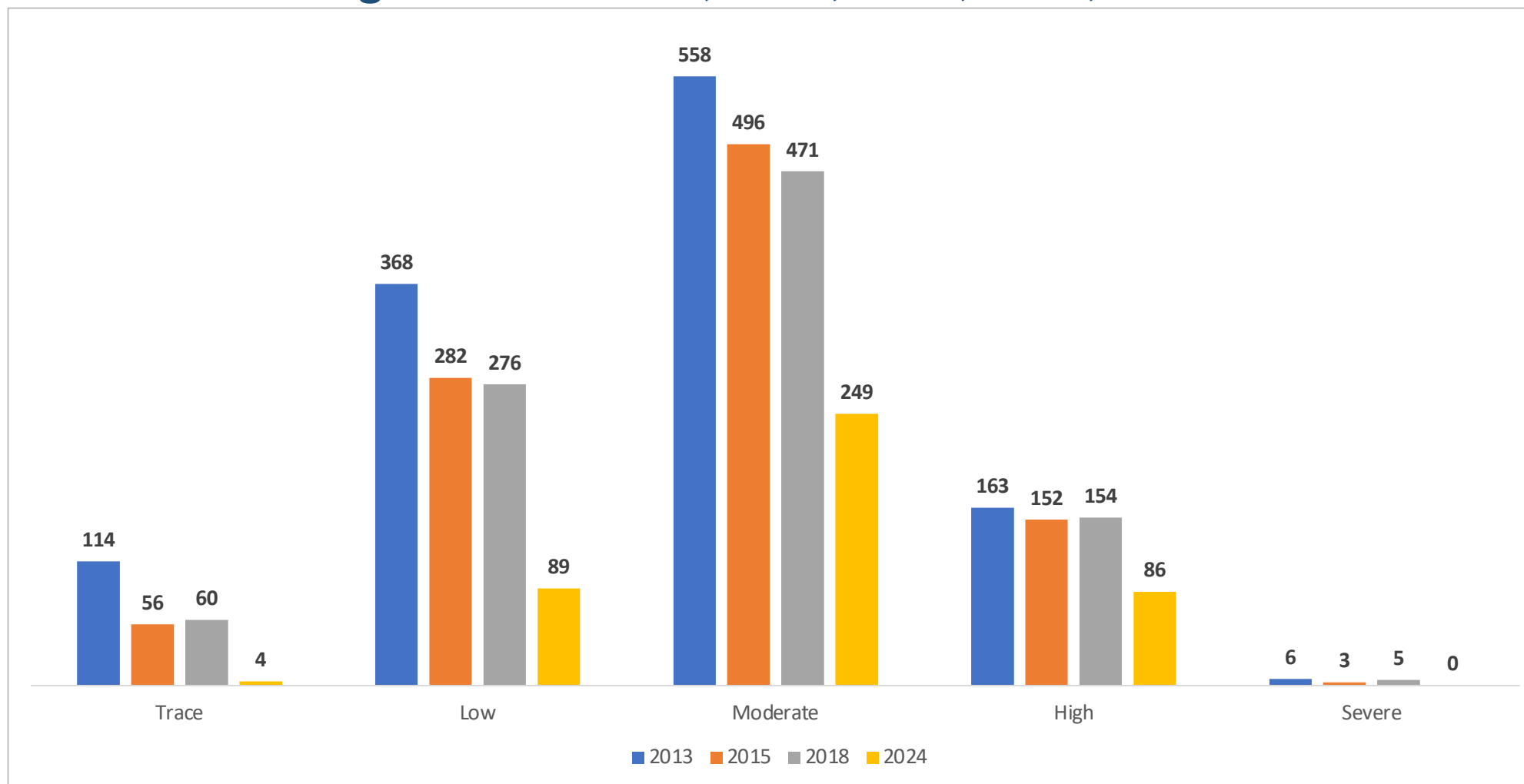


Defining shortage levels

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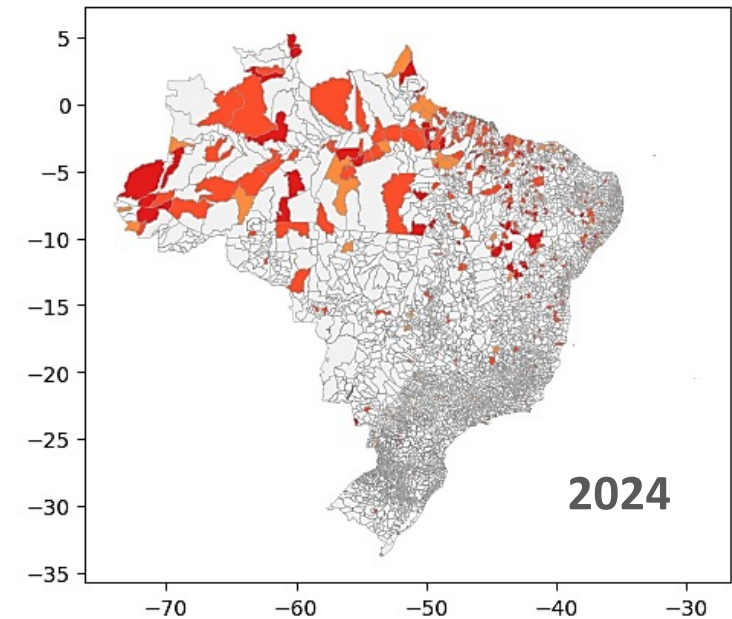
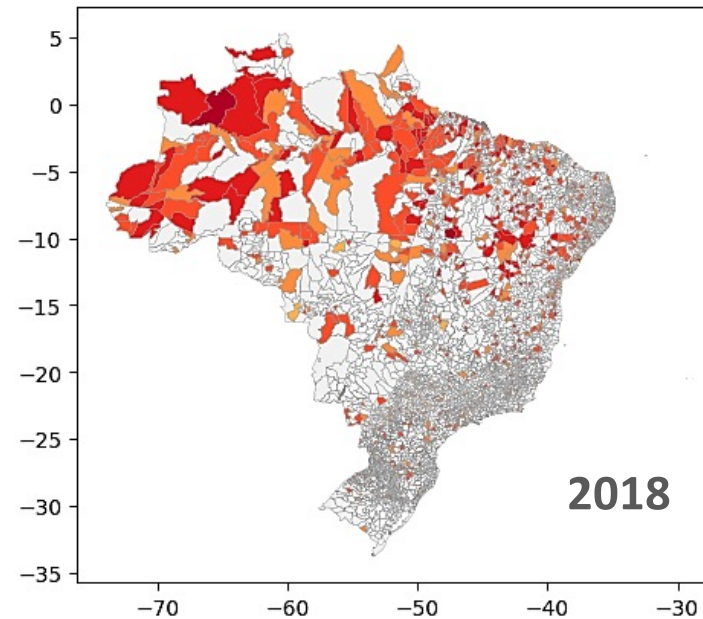
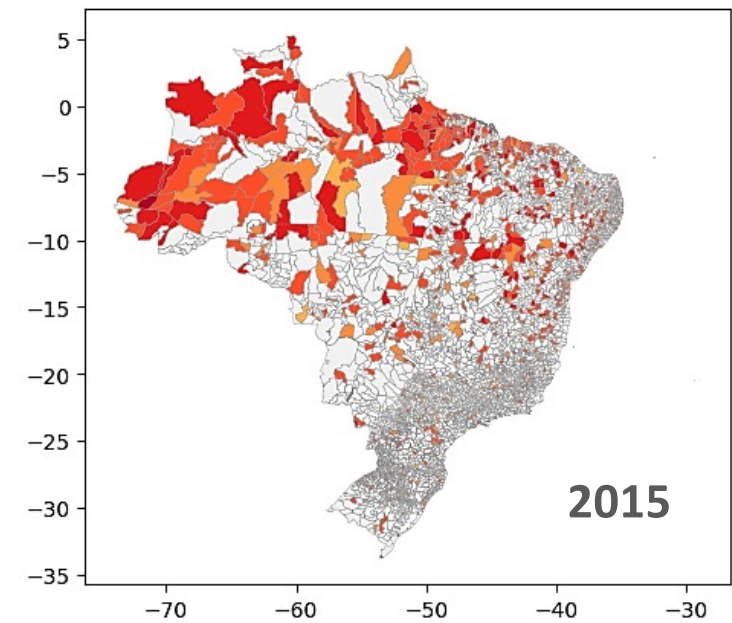
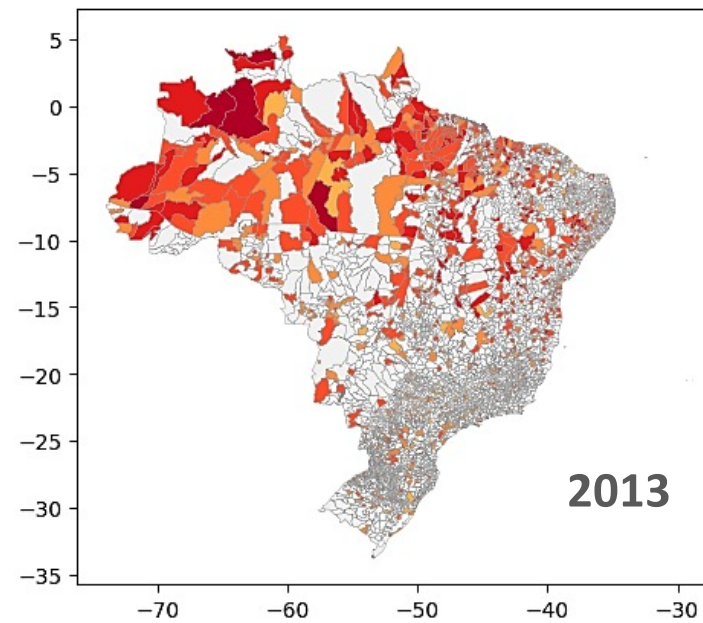
Trace				Low				Moderate				High				Severe			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Brazilian municipalities with a primary care physician shortage by shortage level – Brazil, 2013, 2015, 2018, and 2024.

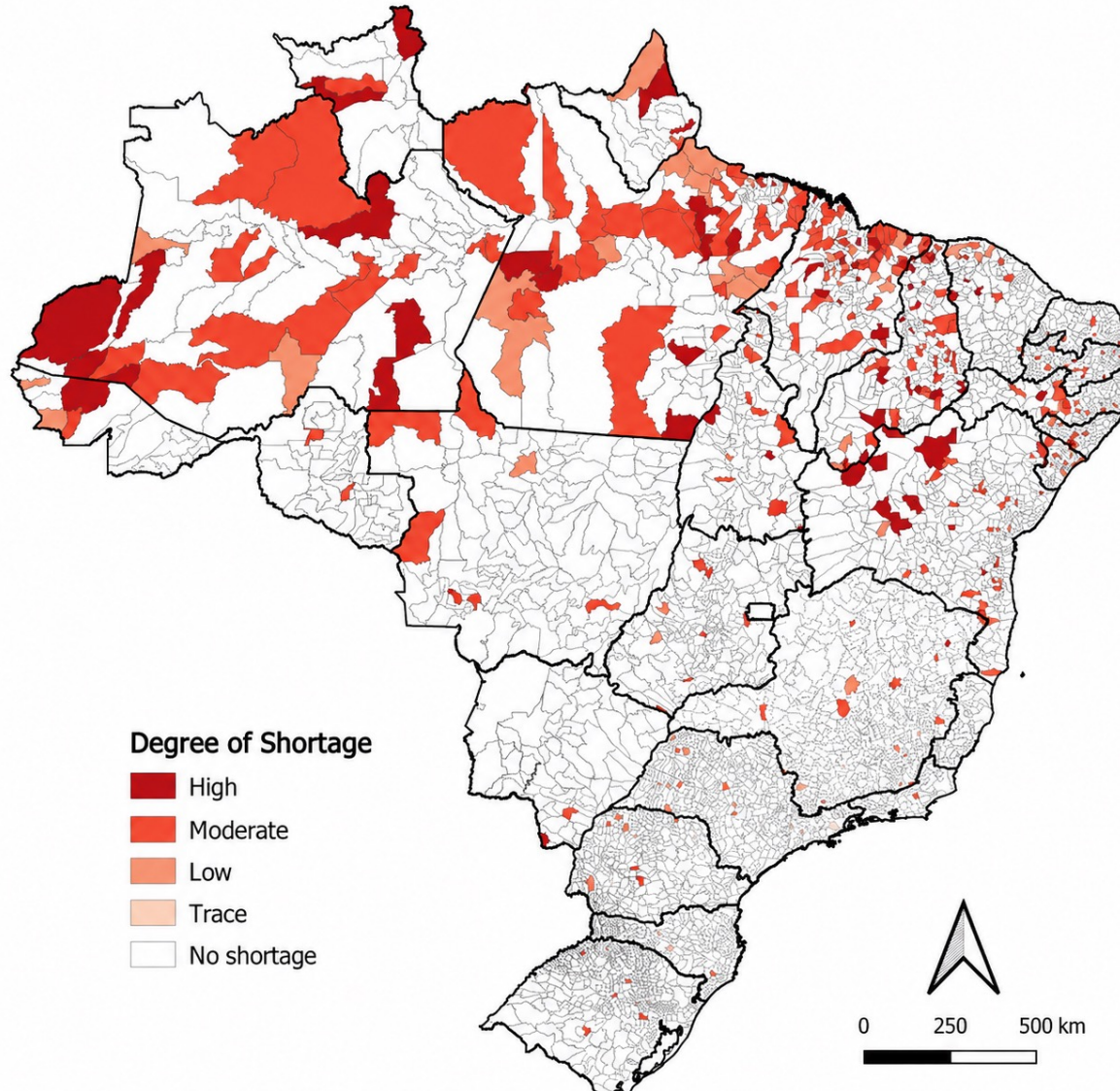


Source: EPSM-ObservaRH/NESCON/FM/UFMG based on CNES/MoH, SIM, and SINASC/DATASUS data, the Population Census, IBGE population estimates, and OpenStreetMap.

Brazilian municipalities with a primary care physician shortage by shortage level – Brazil, 2013, 2015, 2018, and 2024.



Workforce shortages are strongly shaped by territory



The map illustrates the geographic dispersion of workforce shortages while also highlighting the heterogeneity of affected territories.

- Large distances and remote access
- Regional inequalities in workforce supply
- Different local labor markets
- Different capacity for referral and specialist support

The “Routes of Shortage”: exploring workforce dynamics across diverse territories

We conducted fieldwork in physician shortage areas to examine contextual dynamics that national indicators alone cannot capture.

HOW WERE FIELD SITES SELECTED?

- 01 Five Brazilian macro-regions
- 02 Priority to municipalities with moderate or high PHC physician shortages
- 03 Inclusion of territories previously studied in the 2011–2012 Routes of Shortage
- 04 Regional hubs and surrounding municipalities with workforce shortages

BRAZIL’S TERRITORIAL DIVERSITY MATTERS

- Remote and geographically isolated areas
- Amazonian and river-dependent communities
- Semi-arid and rural hinterland territories
- Border regions
- Remote rural areas within more developed regions
- Regional hubs serving widely dispersed populations

In-depth interviews + narrative interviews + on-site observation with professionals, health managers and other local actors.

Financial incentives support recruitment — but do not necessarily ensure retention



Attraction

Financial incentives can facilitate recruitment to hard-to-staff areas, particularly among professionals early in their careers.

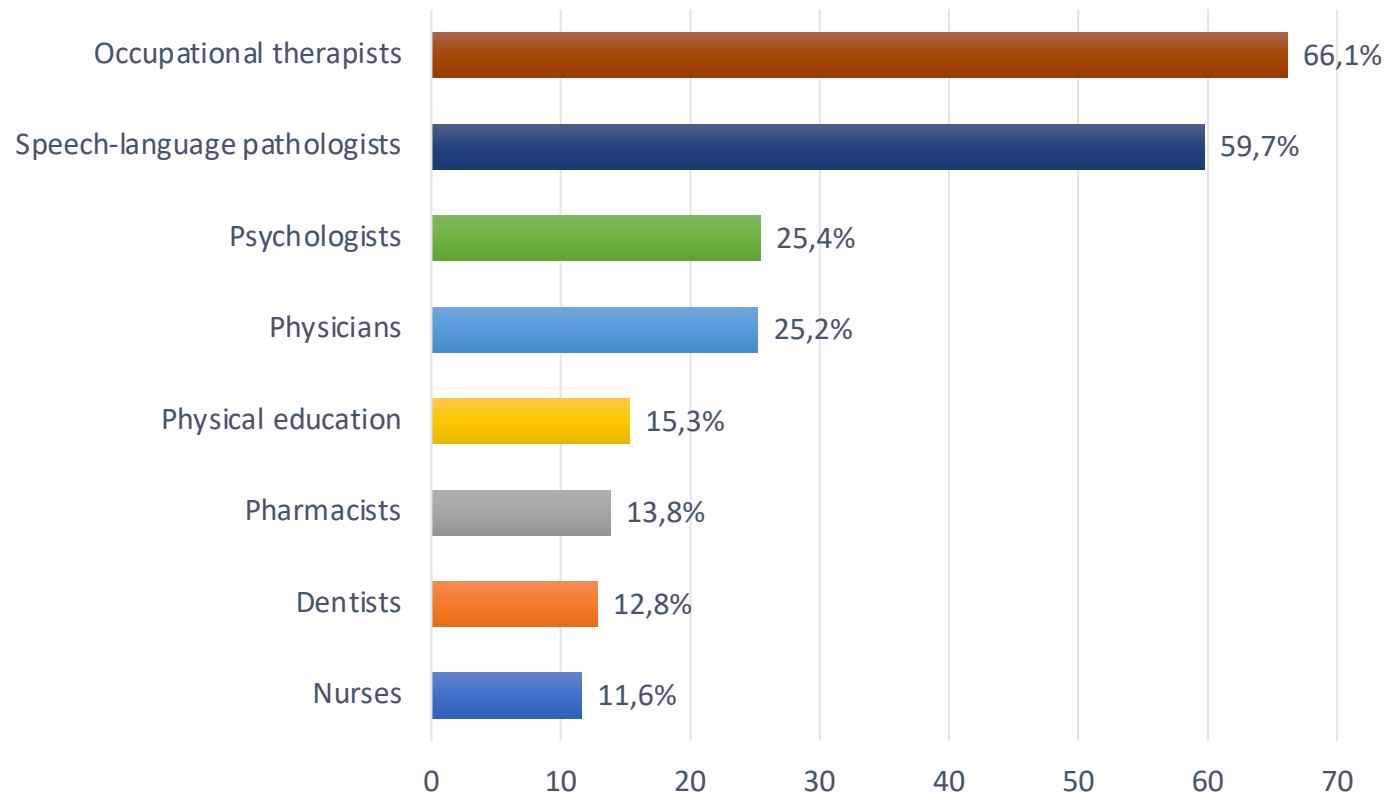
Retention

Longer-term retention is also shaped by employment stability, opportunities for professional development, working conditions, and ties to place.

Recruitment and retention are related — but they are not the same policy problem.

Workforce shortages extend beyond physicians

Municipalities reporting difficulty (%)



Different professions, different mechanisms

Some professions face constraints in overall supply, whereas others face more pronounced retention challenges.

Nursing stands out

Nursing services are available in virtually all responding municipalities, although nurses' scope of practice and professional autonomy vary across settings.

Scope of practice



Standardized clinical vignettes were followed by open-ended questions addressing current practice, feasibility, barriers, perceived risks and benefits, and appropriateness for PHC.

The interviews capture routine practice and local conditions, extending beyond formal professional regulations.

Six clinical scenarios

NURSES

- Diagnosis and prescribing for low-complexity acute conditions
- Pap smear and IUD insertion
- Expanded follow-up of stable hypertension and diabetes

PHYSICIANS

- Ophthalmological assessment: visual acuity and fundoscopy
- Cardiovascular management
- Minor outpatient procedures: sutures, infiltrations, biopsies

Nursing scope of practice varies along a continuum



Actual practice varies across municipalities according to training, clinical protocols, employment arrangements, physician availability, and local service organization.

Nursing stability can support continuity of care in settings with high physician turnover.

“I stay in the unit while physicians change.”

Nurse interviewed in the narrative survey

Continuity

Longitudinal knowledge of patients and communities.

Stability

Nurses may provide greater workforce continuity where physician turnover is high.

Capacity

Scope of practice influences the extent to which workforce continuity can translate into improved access.

For physicians, a different pattern emerges

The principal constraint is often not professional authorization, but the capacity to deliver care effectively.

Ophthalmology

Visual acuity assessment is common, whereas fundoscopy is constrained by training, equipment, and access to specialist referral pathways.

Cardiovascular care

Hypertension management is routine; access to ECG, diagnostic tests, medicines, and clinical backup determines effective service capacity.

Minor procedures

Suturing and drainage may be routinely performed, whereas joint injections and biopsies depend on training, supplies, and available clinical time.

For physicians, expanding effective scope often requires strengthening the resources and system support surrounding existing clinical competencies.

Scope expansion may shift — rather than resolve — system bottlenecks



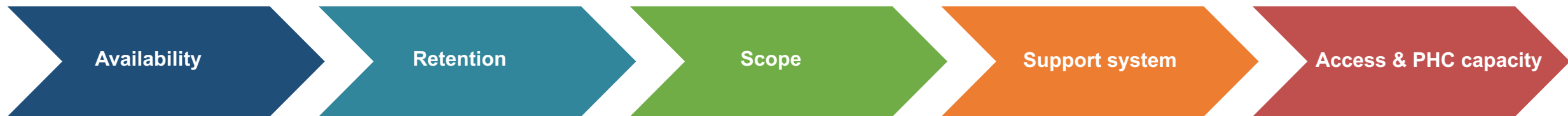
Interview findings suggest that expanded screening may improve case detection, but without effective referral pathways, patients may still face barriers to accessing specialized care

What our preliminary findings suggest

Recruitment alone is insufficient.

Retention alone is insufficient.

Effective workforce capacity also depends on how care and professional roles are organized.



Questions we would like to discuss with you

1

How does scope of practice vary across underserved areas in New York State?

2

How are nurses and advanced practice registered nurses (APRNs) deployed to address workforce shortages?

3

Which workforce policies have been effective for professions other than physicians?

4

How do rural health systems balance professional autonomy with access to specialist and system-level support?

Thank you!

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SOCIODEMOGRAPHICS AND THE DENTAL LABOR MARKET IN BRAZIL

Cristiana Leite Carvalho

UF *m* G

SUS
35ANOS

MINISTÉRIO DA
SAÚDE

GOVERNO DO
BRASIL
DO LADO DO POVO BRASILEIRO

Primary Care - SUS

**General
Health**

Family Health Team

**Oral
Health**

Oral Health Team

eMULTI

Multidisciplinary
healthcare Team



Oral Health Care Network



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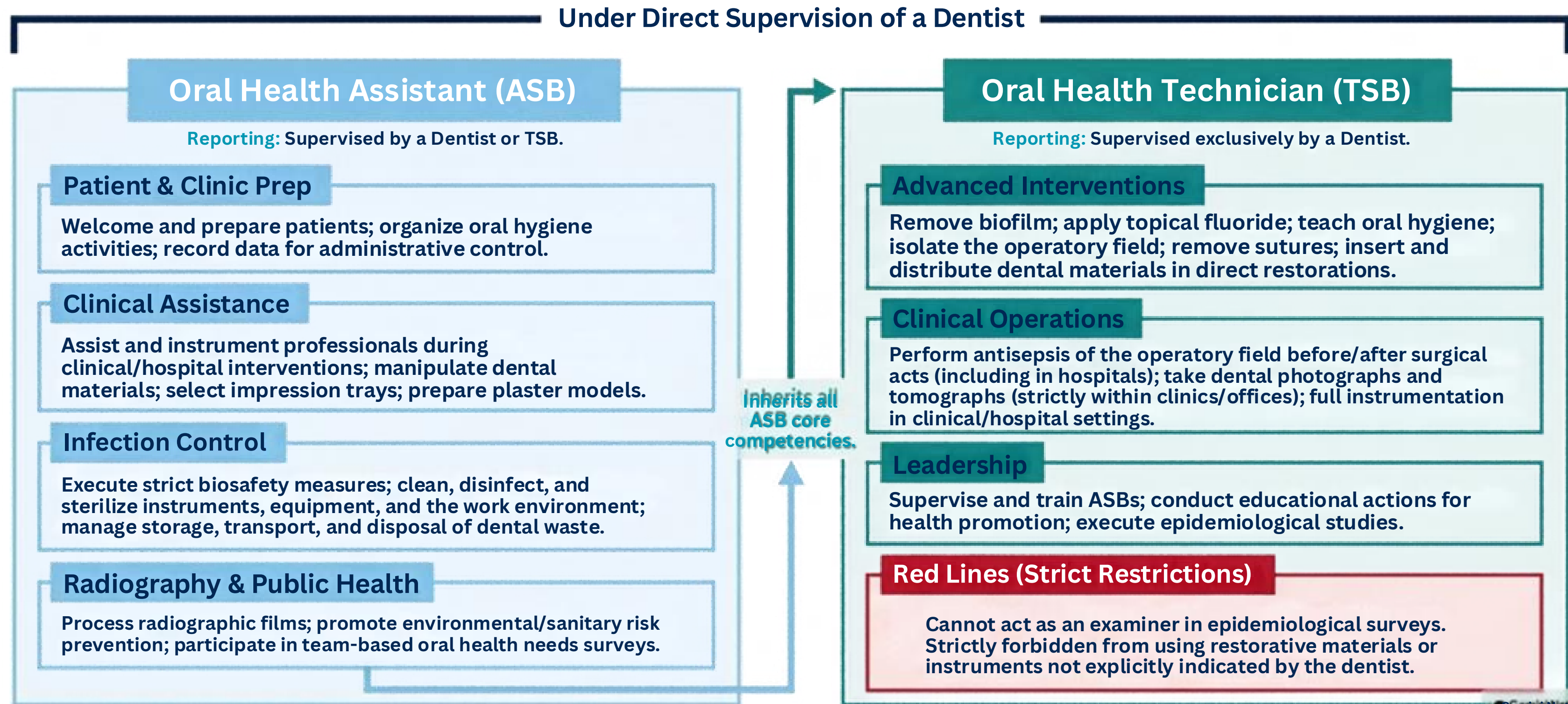
**Portaria
GM/MS
6.213/24**

A decorative vertical bar on the left side of the slide, featuring a dark red background with a series of overlapping circles and a triangle at the top, creating a stylized, abstract pattern.

Brazilian oral health framework

Scope of practice and regulatory
boundaries for dental support
professionals

Roles legally authorized to operate within clinical and hospital environments:



Dental laboratory professionals:

Absolute legal boundaries for Dental Prosthesis Technicians (TPD) and Assistants (APD).

The Authorized Domain (Dental Prosthesis Lab)

Operational Scope

Must operate exclusively within dedicated Dental Prosthesis Laboratories.

Chain of Command

All work is strictly executed upon the direct demand and formal prescription of a supervising Dentist.

The Restricted Zone (Dental Clinic)



1. Zero Direct Patient Contact

It is absolutely forbidden to provide direct clinical assistance to clients or patients in any form whatsoever.



2. No Clinical Equipment

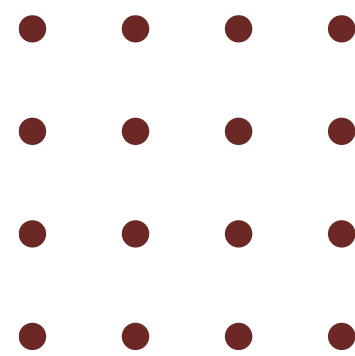
It is illegal to maintain, store, or operate specific dental office equipment and clinical instruments within the prosthesis laboratory or workshop.



3. No Public Advertising

Strictly forbidden from marketing or advertising services to the general public (operations must remain strictly business-to-dentist).

Dental Workforce Planning and Sizing



Demographics

To Quantify

Quantity alone is insufficient to resolve the complexity of oral health demands.



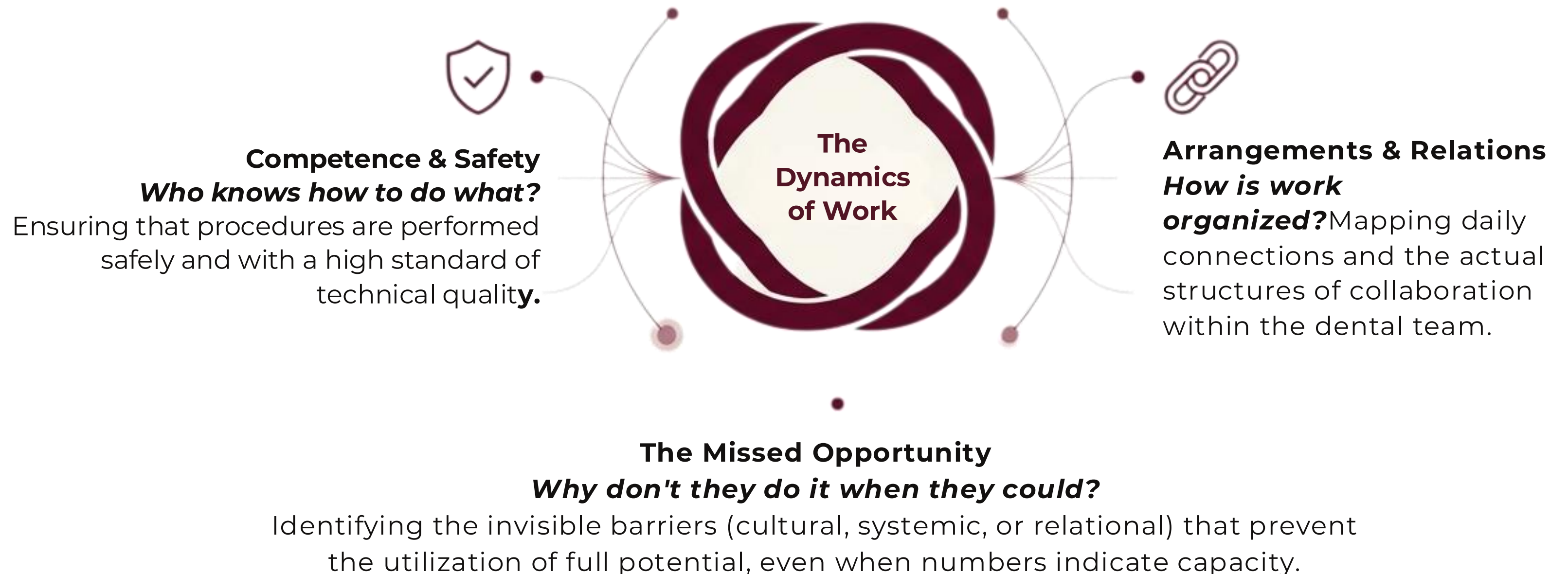
Sociodemographics

To Qualify

Understand arrangements, interprofessional relations, and competencies. Go beyond quantification to map system behavior and the capacity to respond to oral health demands.

The value of Sociodemographics: understanding the workforce.

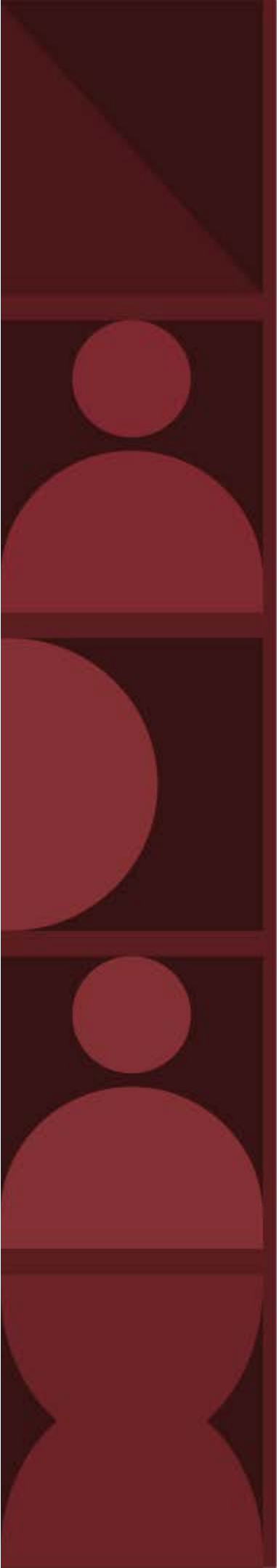
To qualify means to uncover the hidden dynamics of health work.



Demographics tell us the team exists. Sociodemographics ensures it works.

Secondary data analysis

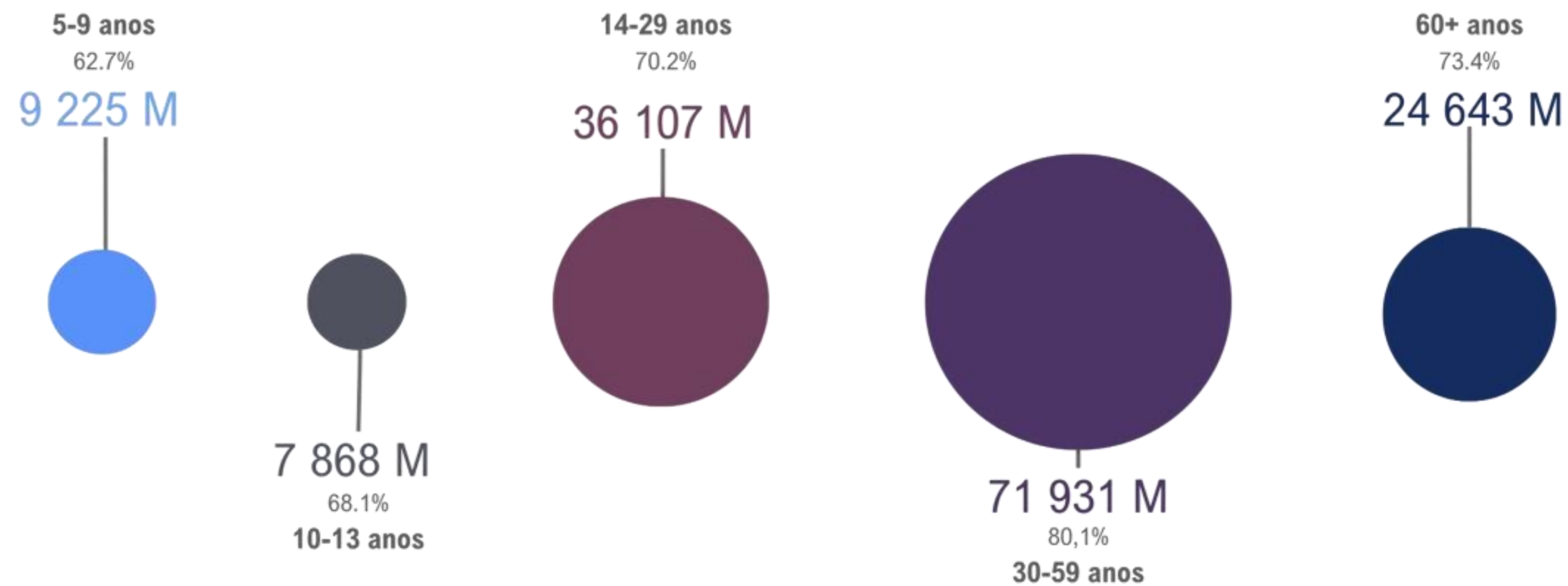
Base de dados	CD	TSB	ASB	TPD	APD	Especialidades odontológicas
Cadastro CFO	✓	✓	✓	✓	✓	✓
Censo Demográfico/IBGE	✓	! Ocupação "Dentistas auxiliares e ajudantes de odontologia"		! Ocupação "Técnicos de próteses médicas e dentárias"		×
PNADC/IBGE	✓					×
CES/Inep	✓	×	×	×	×	×
CEEB/Inep	×	! Cursos de "Saúde Bucal"		! Cursos de "Prótese Dentária"		×
Sinar/CNRMS	×	×	×	×	×	✓
e-MEC	✓	×	×	×	×	! Cursos com nomenclatura aproximada
CNES/MS	✓	✓	✓	✓	✓	✓
RAIS/MTE	✓	✓	✓	✓	✓	✓
CAGED/MTE	✓	✓	✓	✓	✓	✓
Grandes números do IRPF/PFB	! Profissão "Odontólogo"	×	×	×	×	×



Context

High epidemiological
demand, scarcity of oral
health services, and the
right to citizenship

Oral health epidemiological demand in Brazil



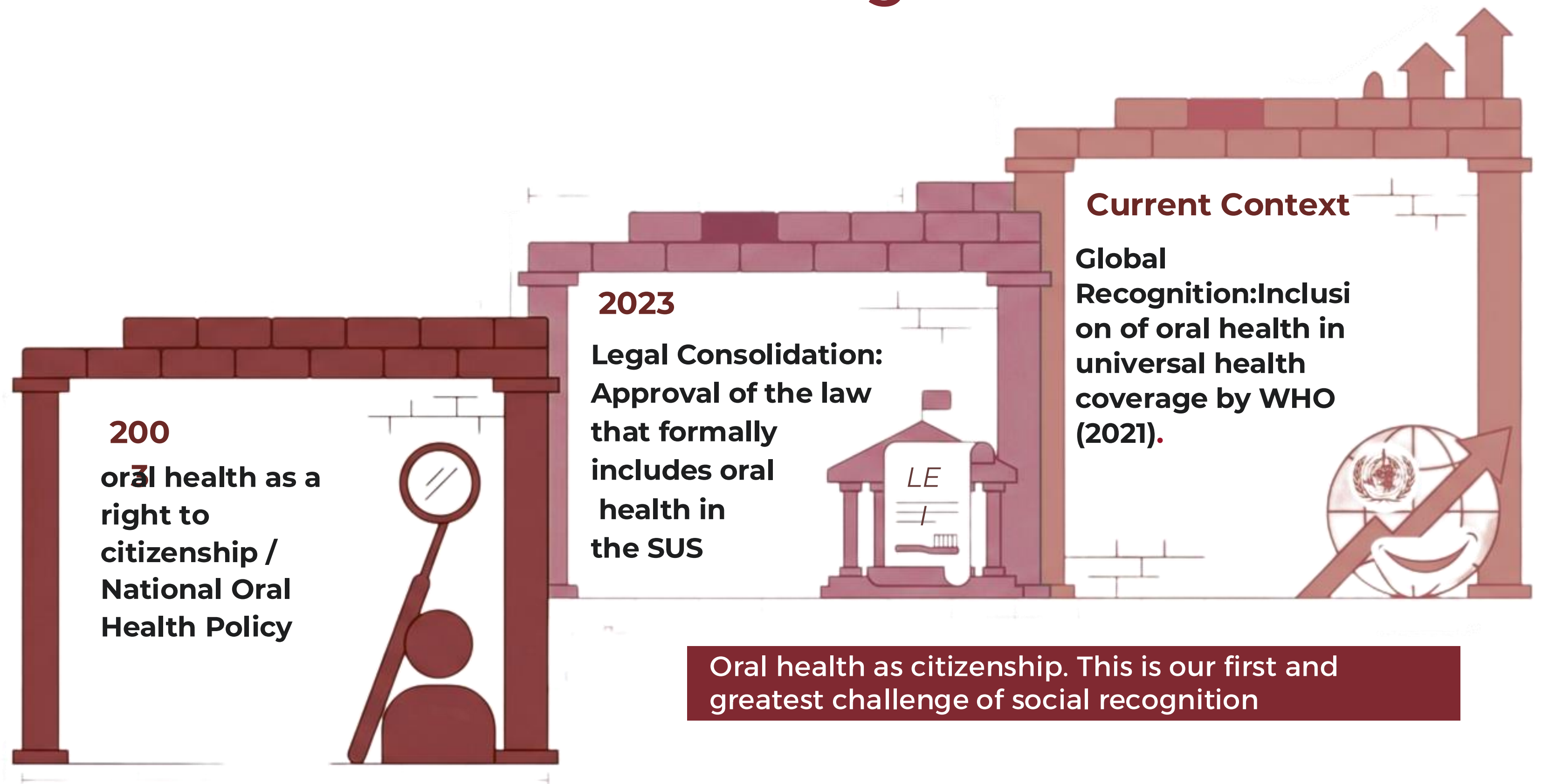
Population with dental treatment needs in Brazil

149 775 M (74,4%)

Population with toothache in Brazil

40 236 M (20%)

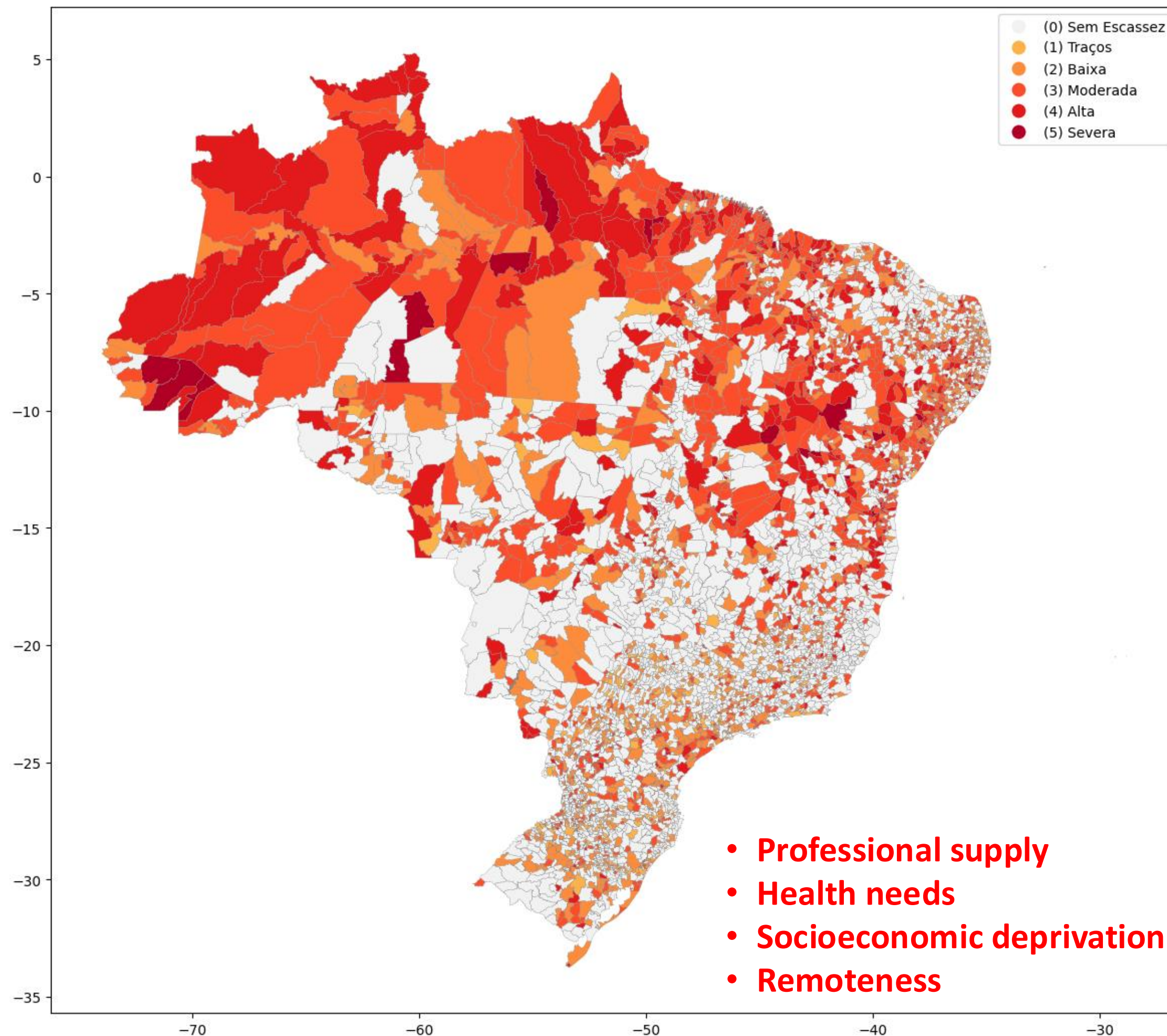
The Construction of a Right:

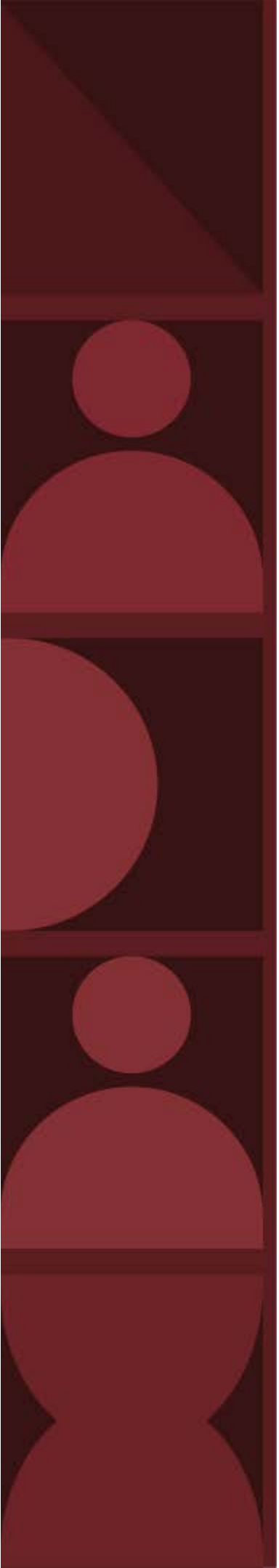


Dentist Shortage Index in Primary Health Care

Brazilian municipalities experiencing a shortage of dental surgeons in primary health care, by degree of shortage — Brazil, June 2024.

2,754 municipalities with shortages (49.4%)



A decorative vertical bar on the left side of the slide, featuring a dark red background with a series of light red geometric shapes: a triangle at the top, followed by a circle, a semi-circle, a circle, a semi-circle, a circle, and a semi-circle at the bottom.

Dynamics Structure and Composition of the Workforce

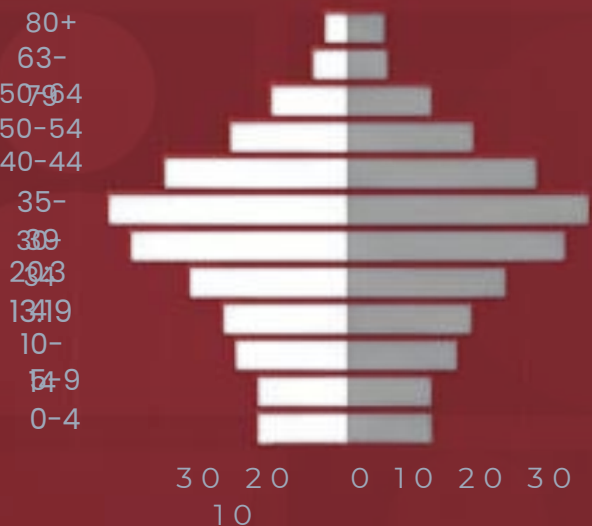
The Transformation of the Workforce (2010–2024)

Fonte: IBGE (Censo 2010 vs. PNADC 2024)

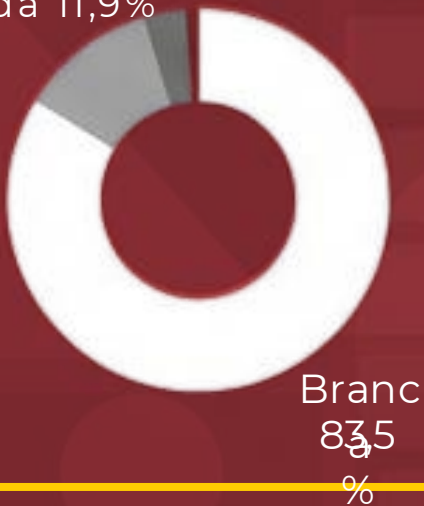
2010



*More White,
More
Female*



Preta 1,0%
Amarela 3,6%
Parda 11,9%



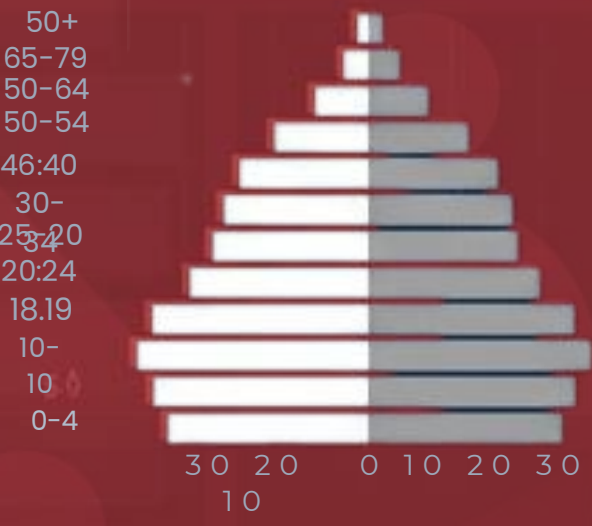
Yearly Growth of Women
Dentists: +3,9%
Technicians and Assistants +15,3%

Yearly Growth of Black and Mixed-Race :
Dentists: +9,1%
Technicians and Assistants :+16,3%

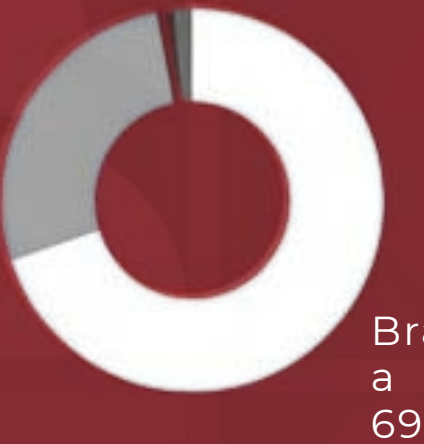
2024



*More Female, More Afro-Brazilian
(Black and Mixed-Race)*

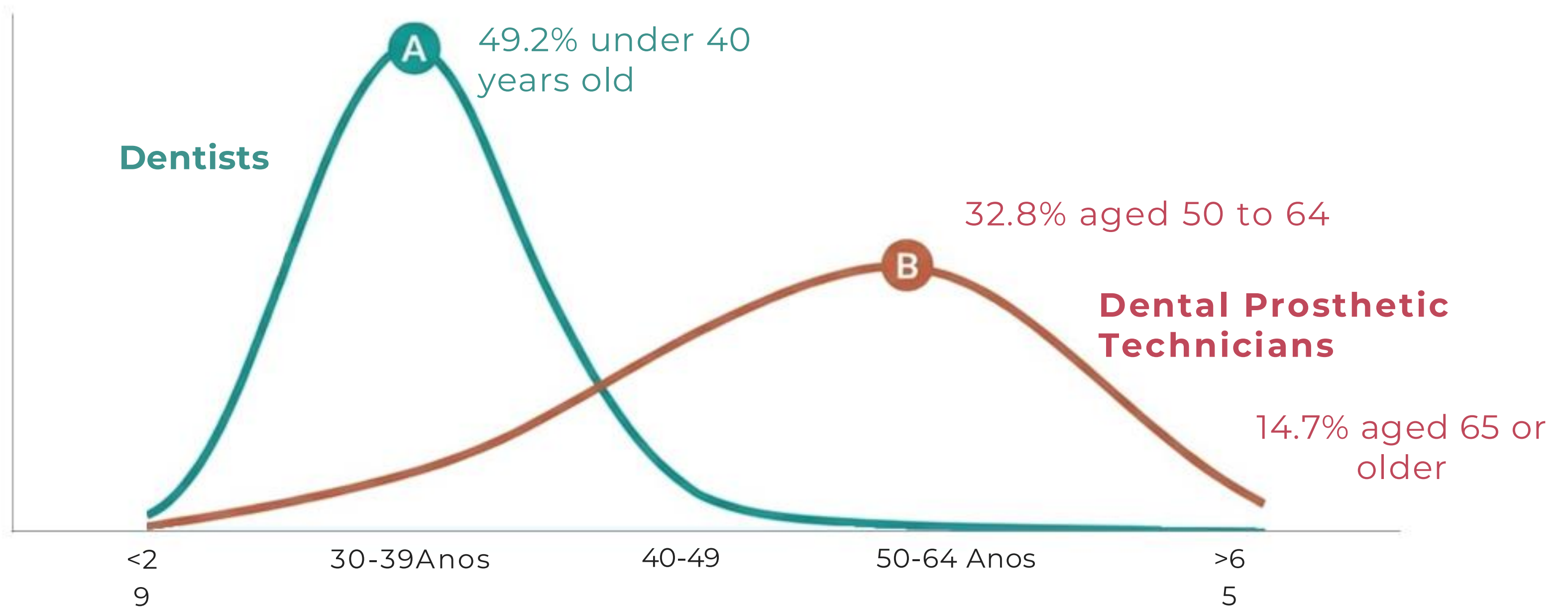


Amarela 1,9%
Preta 2,0%
Parda 27,2%



Growth is higher among technicians and assistants (14,9% p.a.), outpacing dental surgeons (3,1% p.a.).

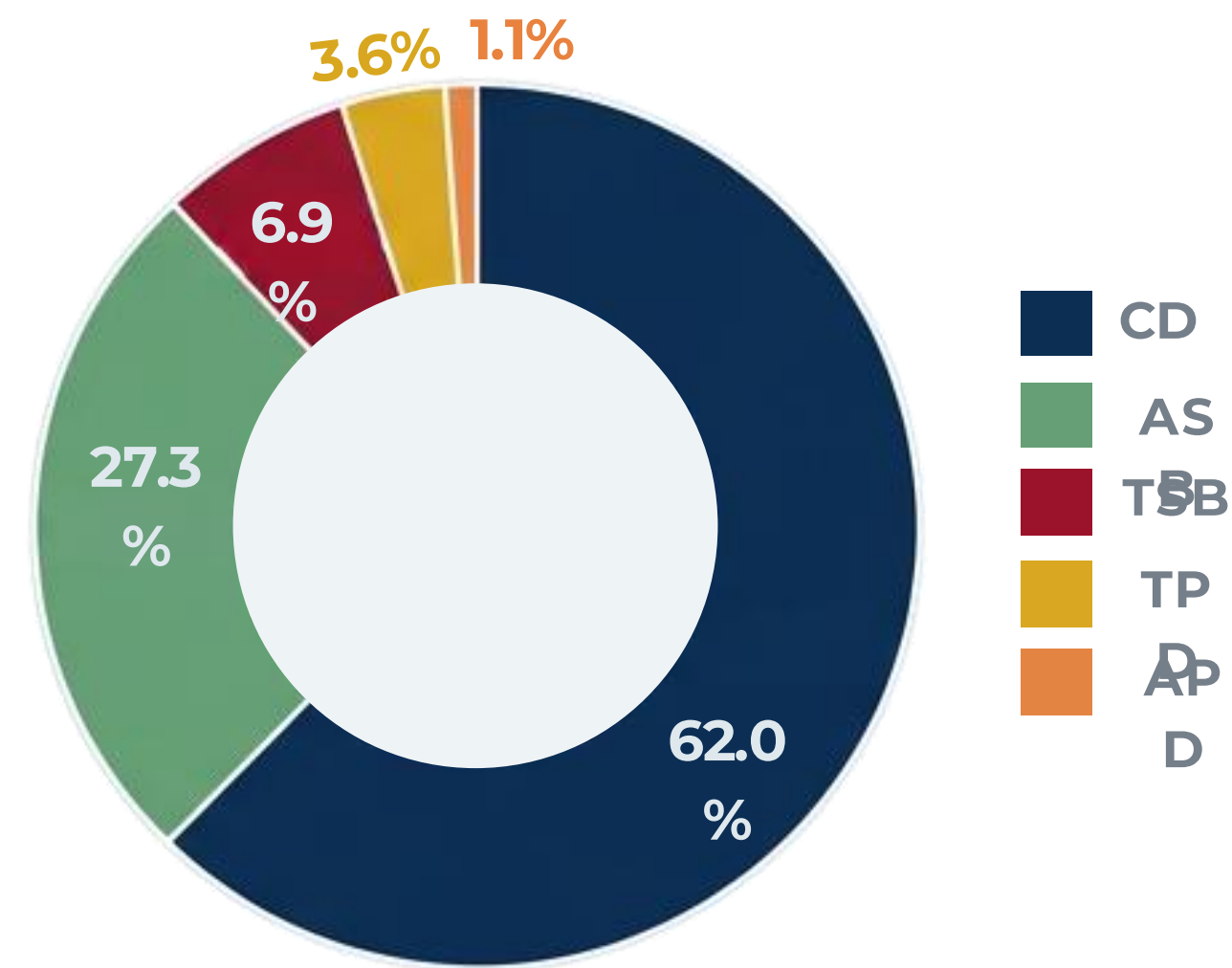
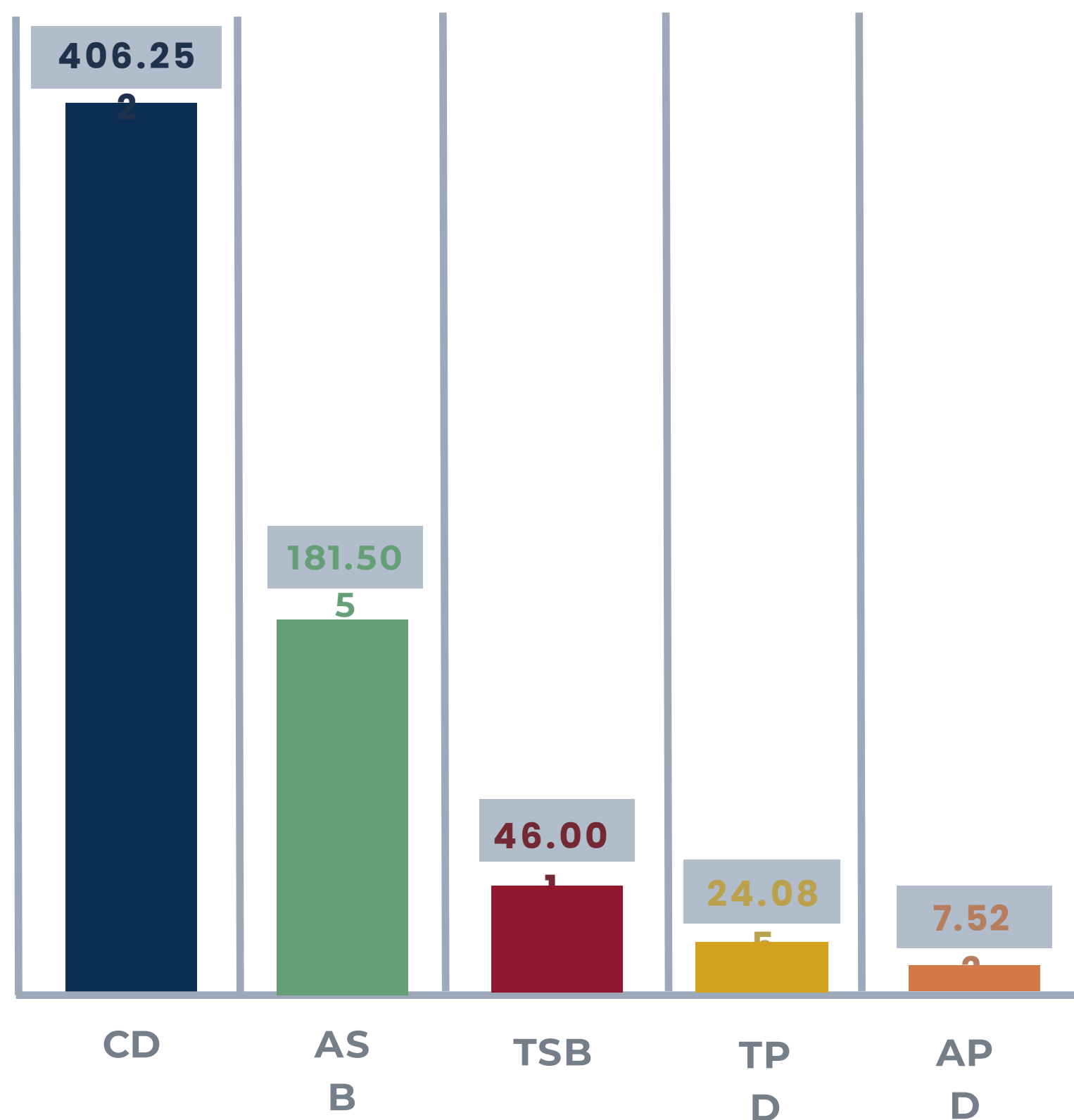
Renewal vs. Aging



D/DH: Continuous flow of renewal. DPT Risk of 'workforce shortage'. Only 4.4% of technicians are under 29 years old.

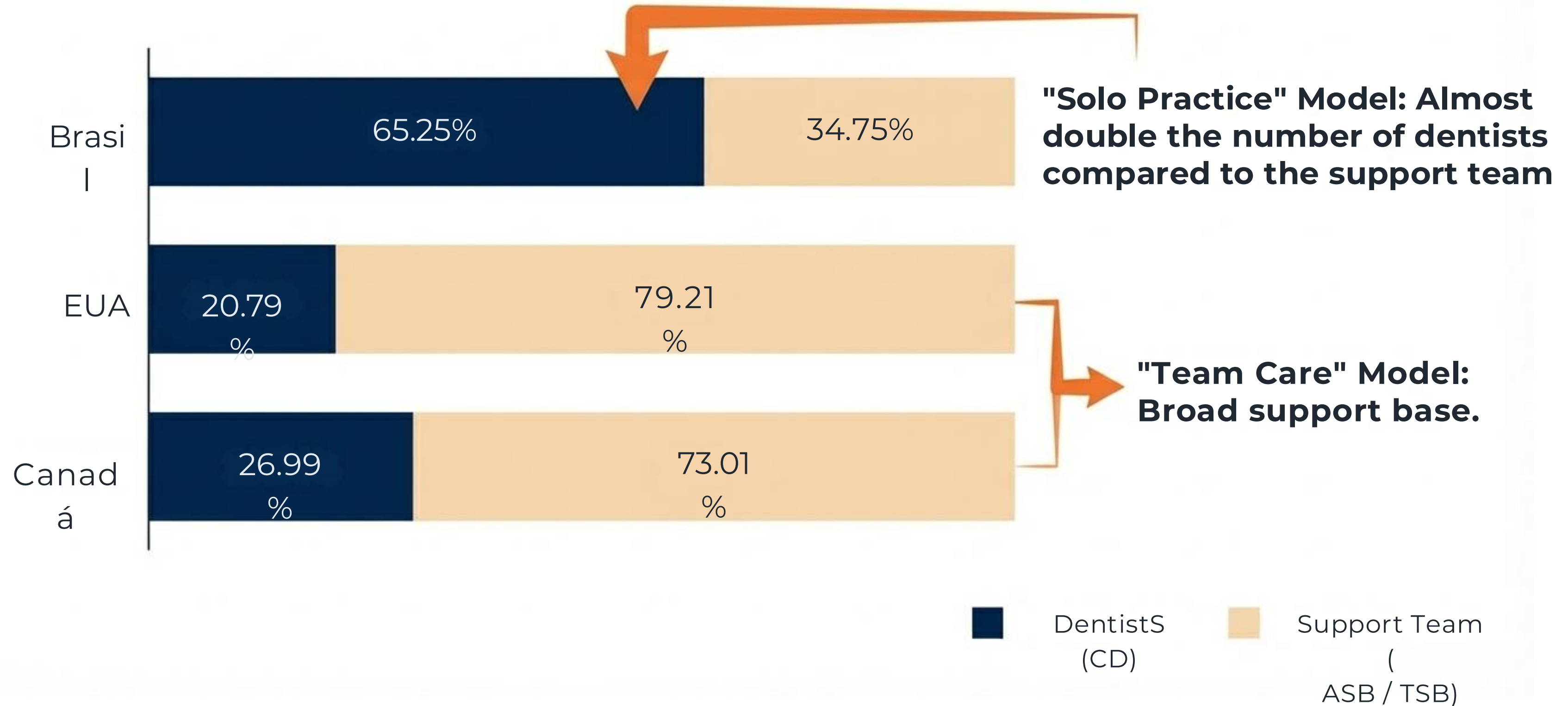
Current Supply: Professionals Active

Fonte: Conselho Federal de Odontologia (CFO), Julho 2025



Brazil has a high number of dentists (CD); the low ratio of dental assistants/technicians (TSB/ASB) suggests a care model still centered on the higher-level professional, rather than the team

The Inverted Pyramid: The Brazilian Case

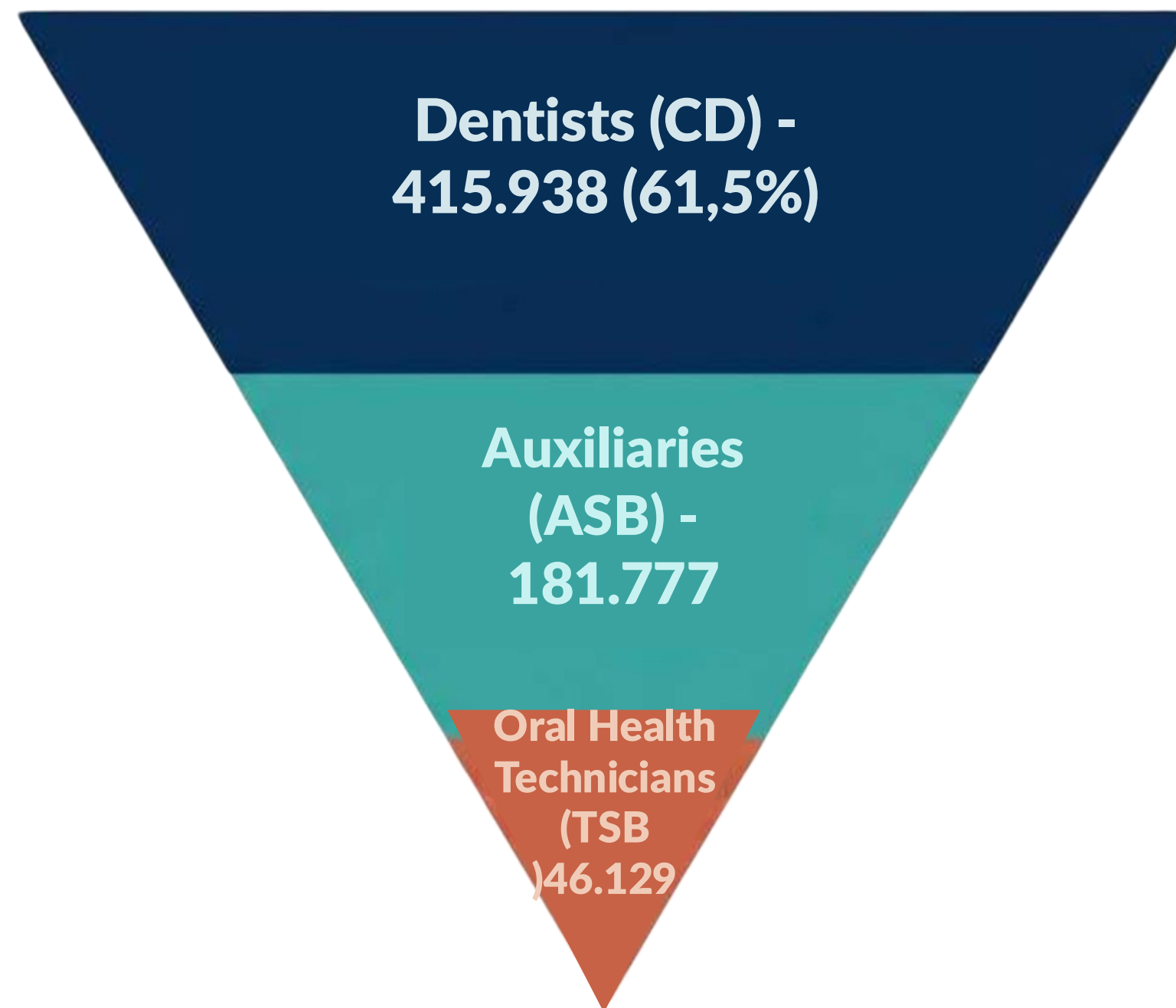


Oral health care supply pyramid



Pirâmide de oferta de atenção à saúde bucal (Adaptado da “WHO Service Organization Pyramid for an Optimal Mix of Services for Mental Health”). Gallagher, J. et al. Health workforce for oral health inequity: Opportunity for action. PLOS ONE | <https://doi.org/10.1371/journal.pone.0292549> June 13, 2024

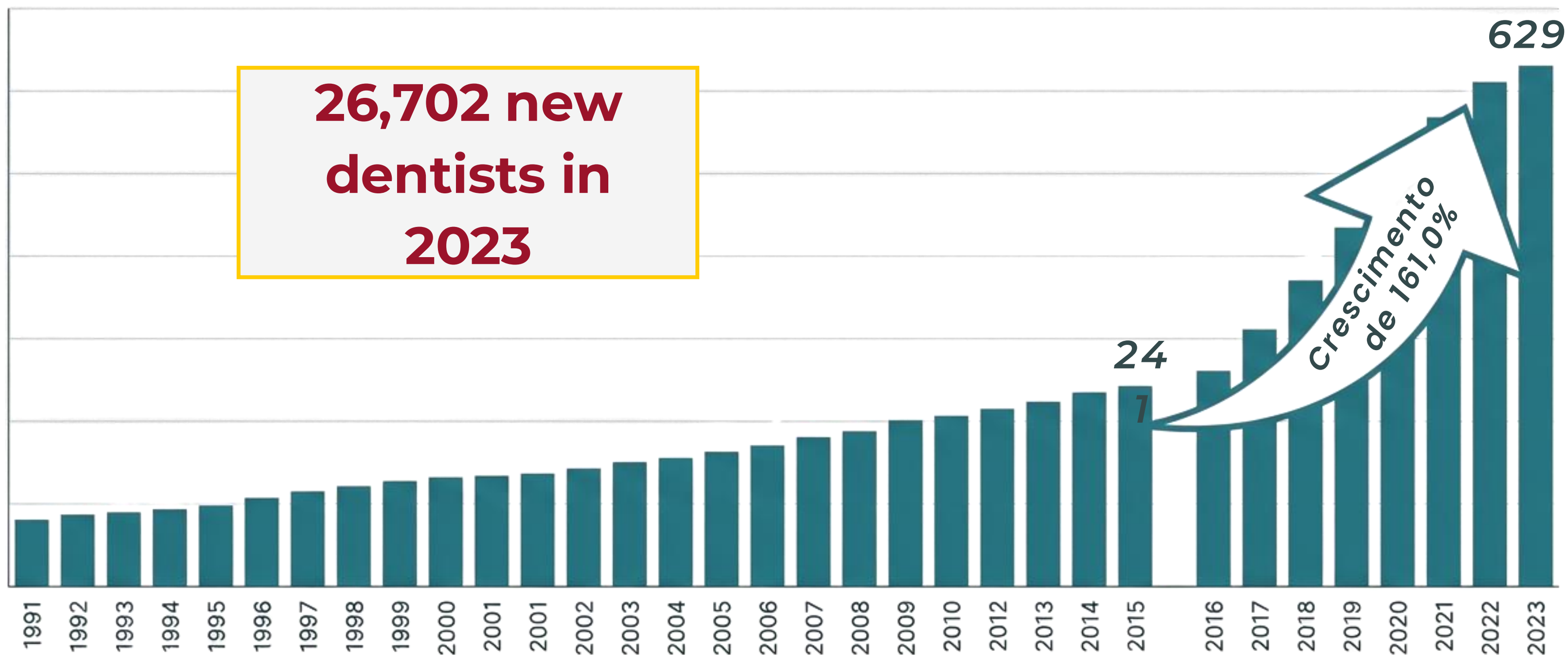
The Inverted Pyramid: A Workforce without a support base



**1 OHT for
every 9
Dentist**

The low ratio of Oral Health Technicians (TSB) limits service coverage and forces the dentist (CD) to work in isolation, contrary to ideal models of four-handed dentistry and the adoption of skill mix

The explosive growth of dental schools and active dentists between 2015 and 2023.



Training of Dental Technicians

5.019 new TSB
13.414 new
ASB
2025



1.336 new
TPD
502 new APD
2025

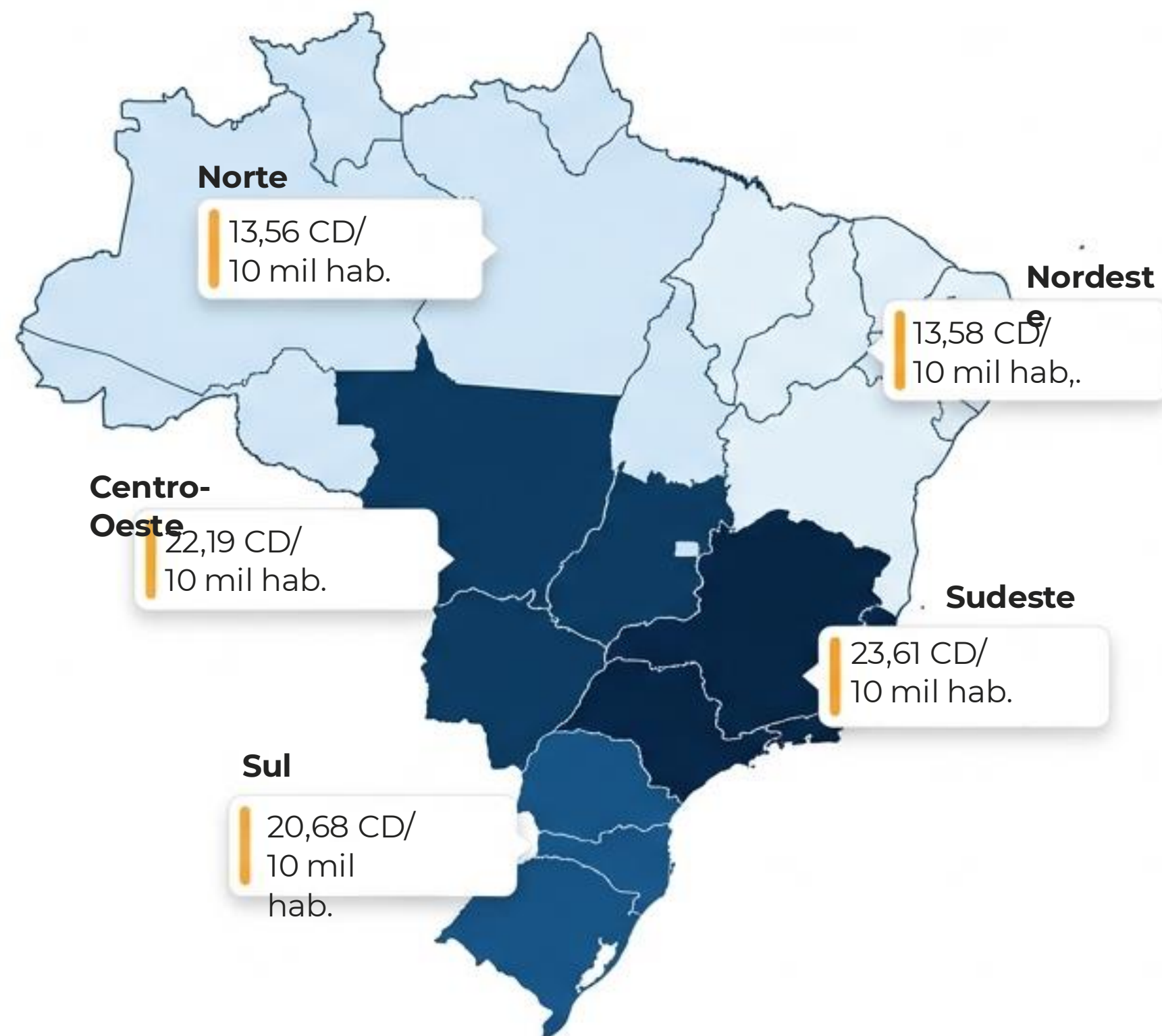
Critical supply
of training



A decorative vertical bar on the left side of the slide, featuring a dark red background with white geometric shapes: a triangle at the top, followed by a circle, a semi-circle, a full circle, another semi-circle, another circle, and a final semi-circle at the bottom.

Distributive inequities:
geographical, functional,
institutional, intersectional

Geographical inequities: dentists per inhabitant (CFO 2025)

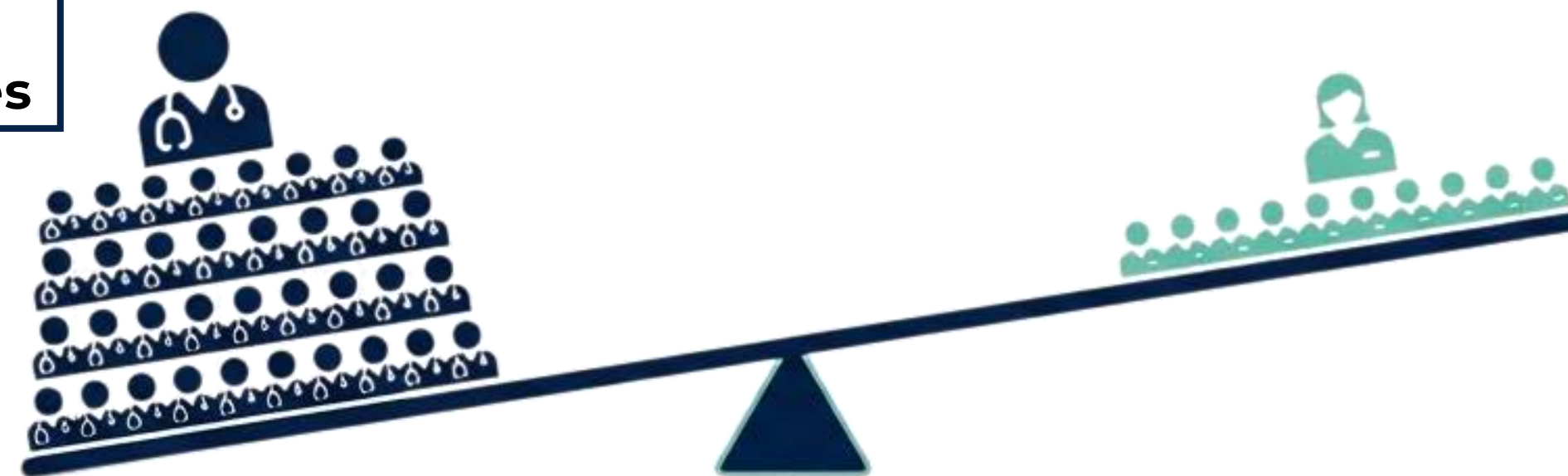


The ratio of professionals per inhabitant in the South/Southeast is almost twice that observed in the North/Northeast

Functional team imbalance in healthcare facilities

The volume of dentists (CD) is not matched by the number of oral health assistants and technicians, compromising the efficiency of care.

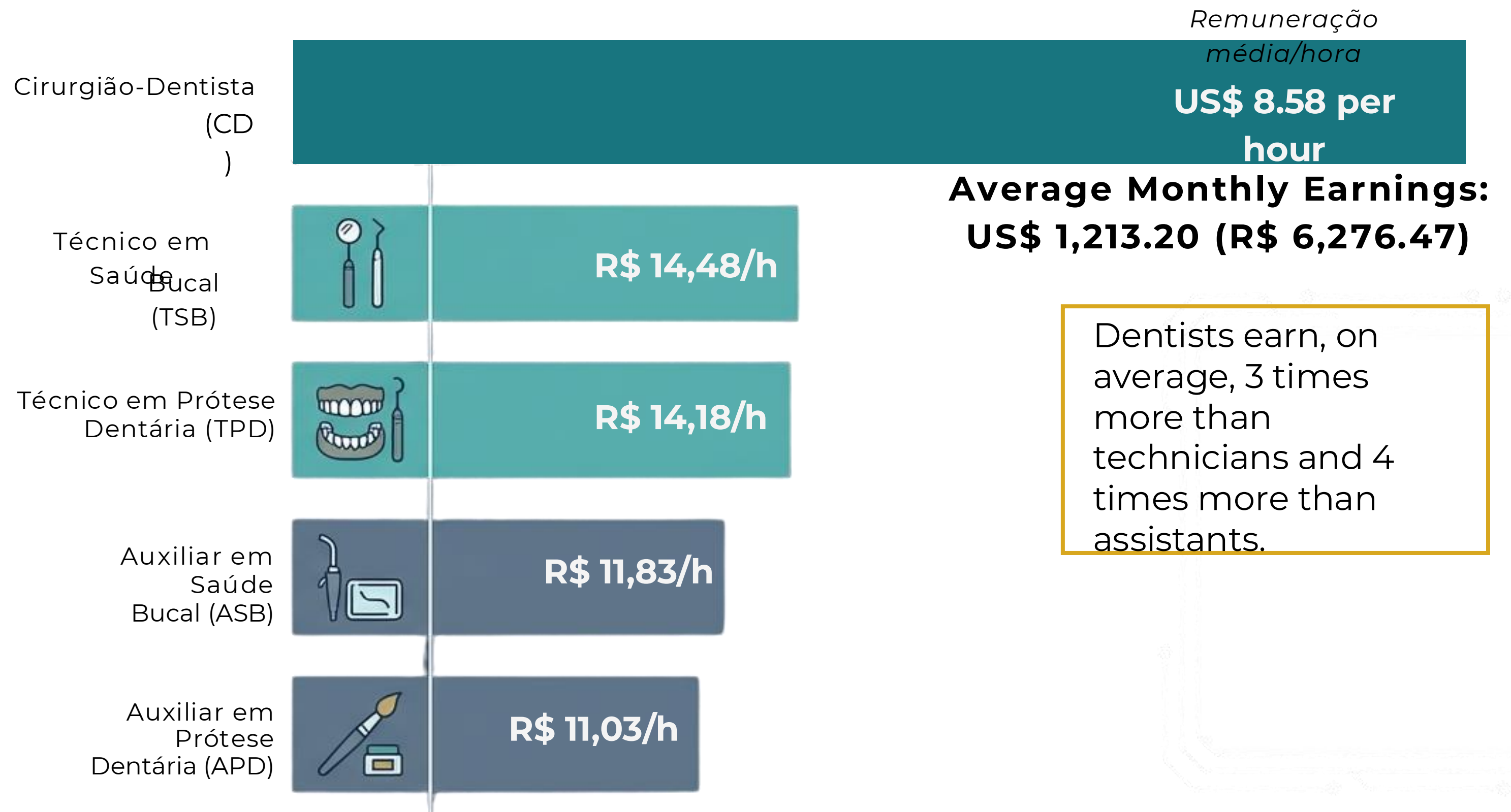
**166,644 dentists
(146,900 in FTE)
registered in
healthcare facilities**



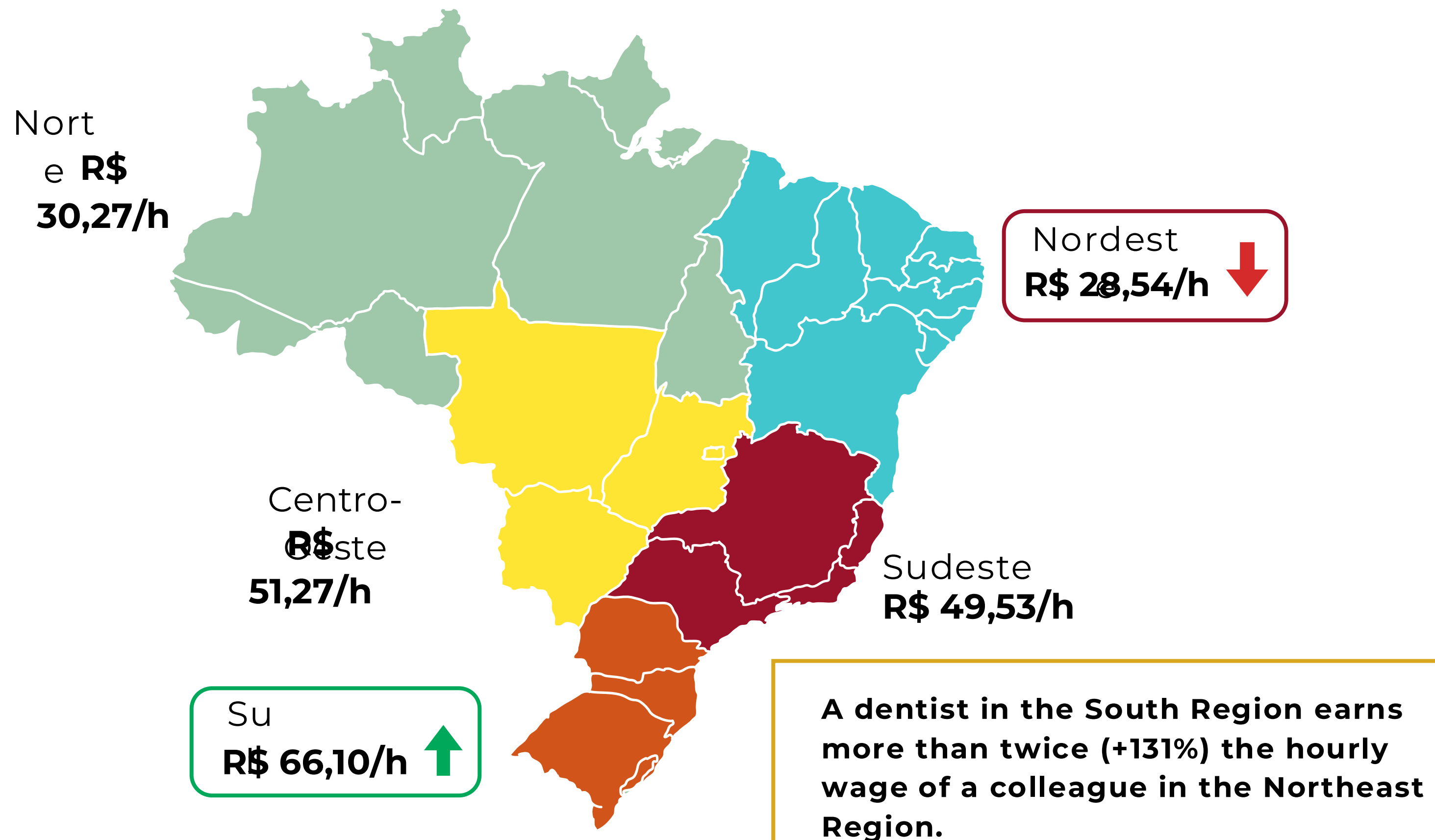
**Only 67.498
(66.511 in FTE)
ASB/TSB**

NORTE	SUDESTE
Amapá has 2.2 dentists (in FTE) for every 1 TSB	São Paulo has 9 dentists (in FTE) for every 1 TSB.

Wage gap within the team: national average hourly earnings (RAIS 2023)



Wage inequality in the country:



Institutional inequities: Public (SUS) vs. Private (non-SUS) dentists (CNES 2024)

406.252

TOTAL DENTISTS (CFO 2025)



SUS

82,625 professionals

20,33%

NON-SUS

99,507 professionals

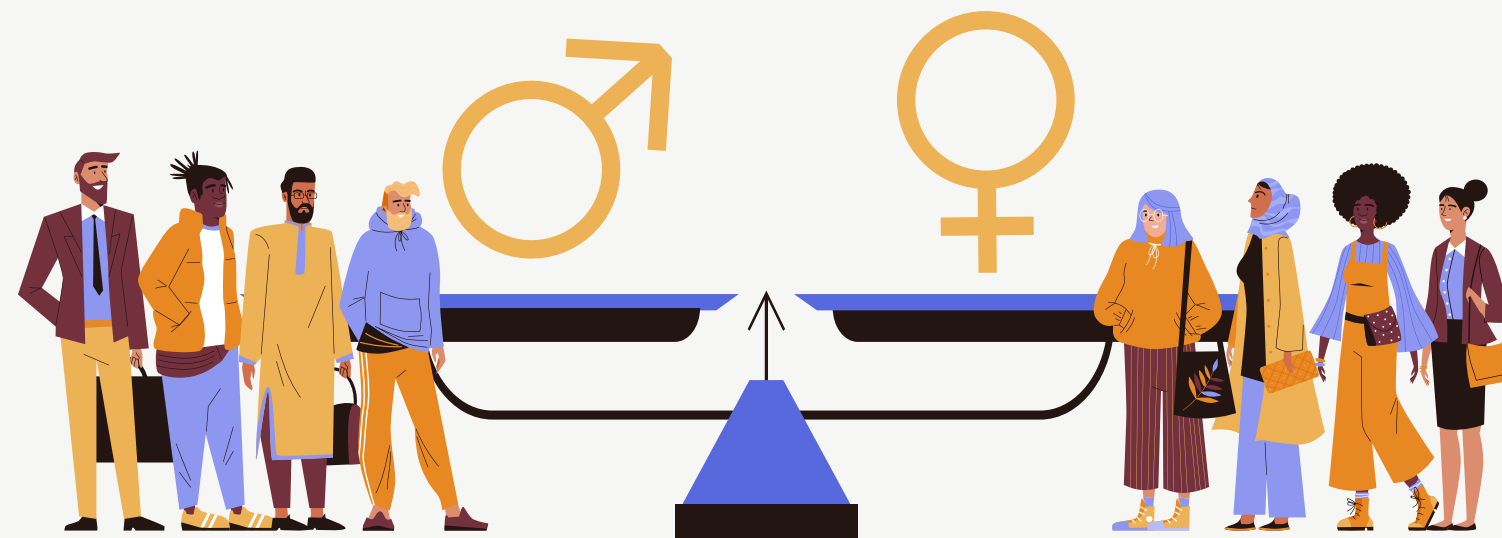
24,49%

UNREGISTERED IN CNES
224,120 PROFESSIONALS

55,16%

Sociodemographic breakdowns: Sex and Race

Sex (Dentists)

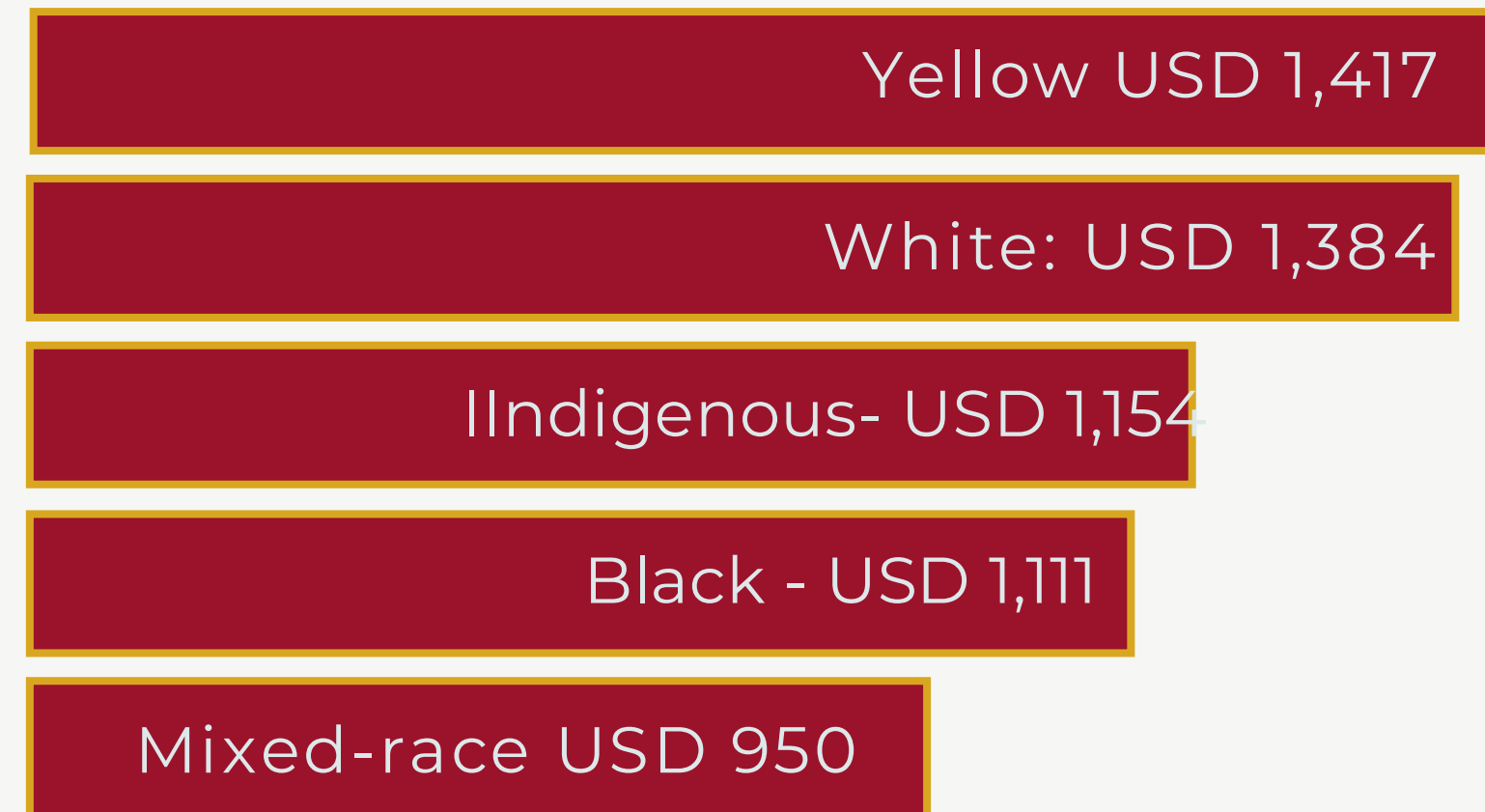


Men
USD 1,248

Women
USD 1,188

Narrowed gap

Race (Dentists)



Yellow USD 1,417

White: USD 1,384

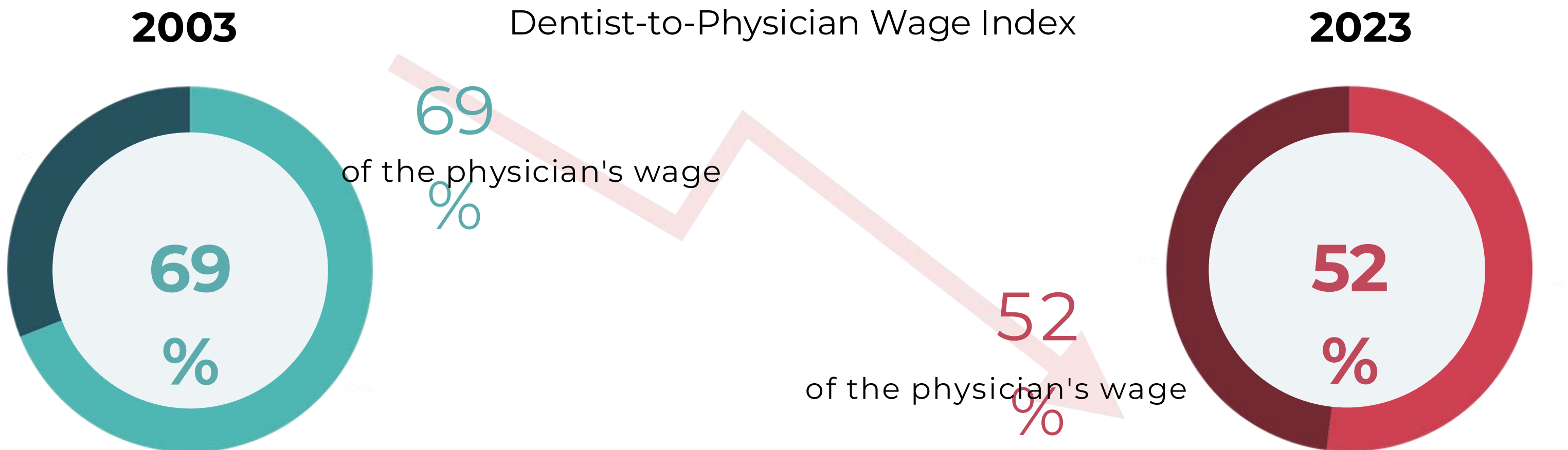
Indigenous- USD 1,154

Black - USD 1,111

Mixed-race USD 950

While gender inequality is small, the racial gap remains: white dentists earn 45% more than mixed-race dentists.

Wage loss: Dentists vs. Physicians

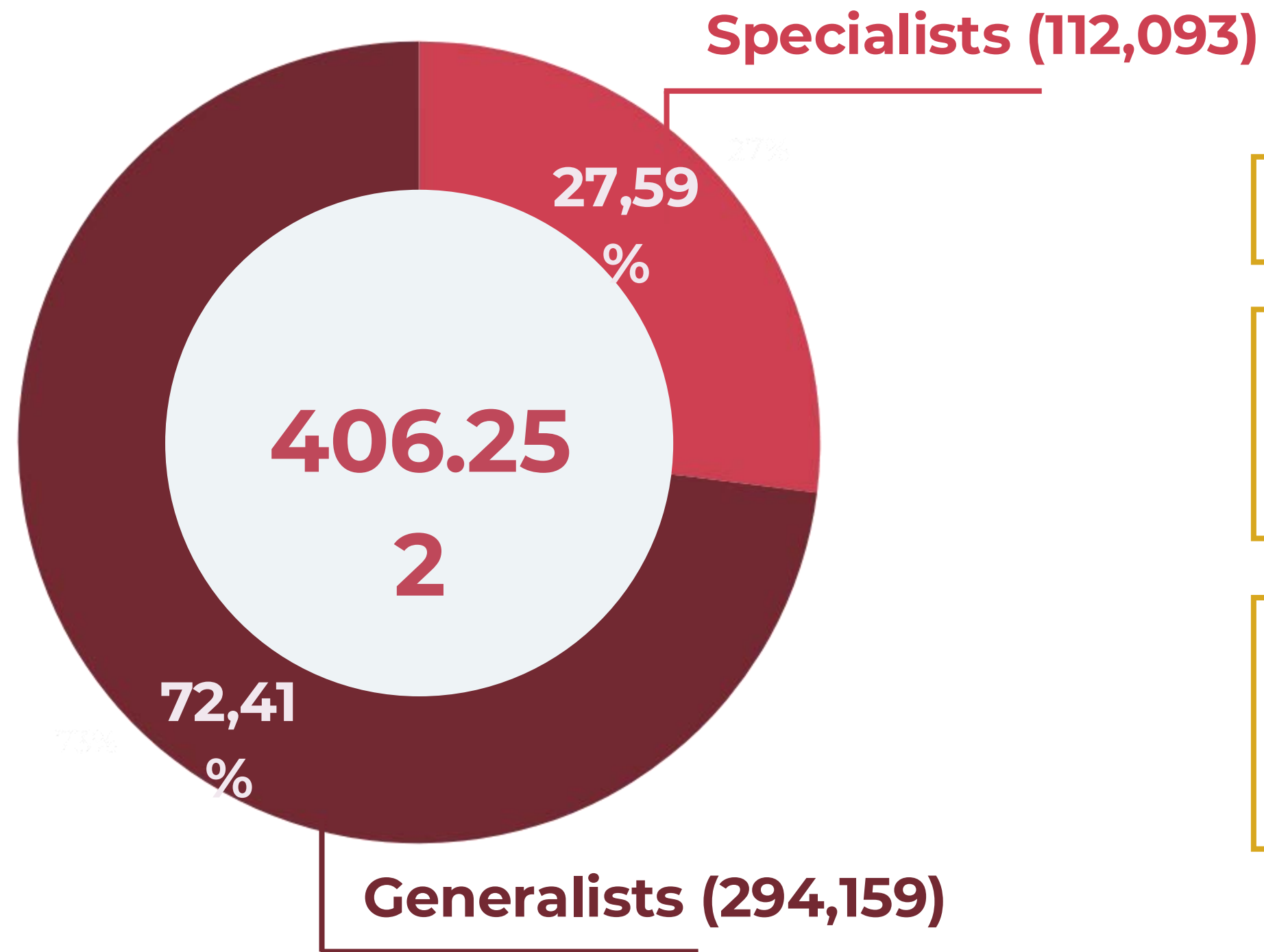


Both categories share the same legal wage floor (Law 3,999/61), but the wage gap has widened dramatically over two decades.

A decorative vertical bar on the left side of the slide, featuring a dark red background with a series of light red geometric shapes: a triangle at the top, followed by a circle, a semi-circle, a full circle, another semi-circle, and a circle at the bottom.

Dental specialties: the specialists' pyramid

Specialists vs. Generalists (CFO 2025)

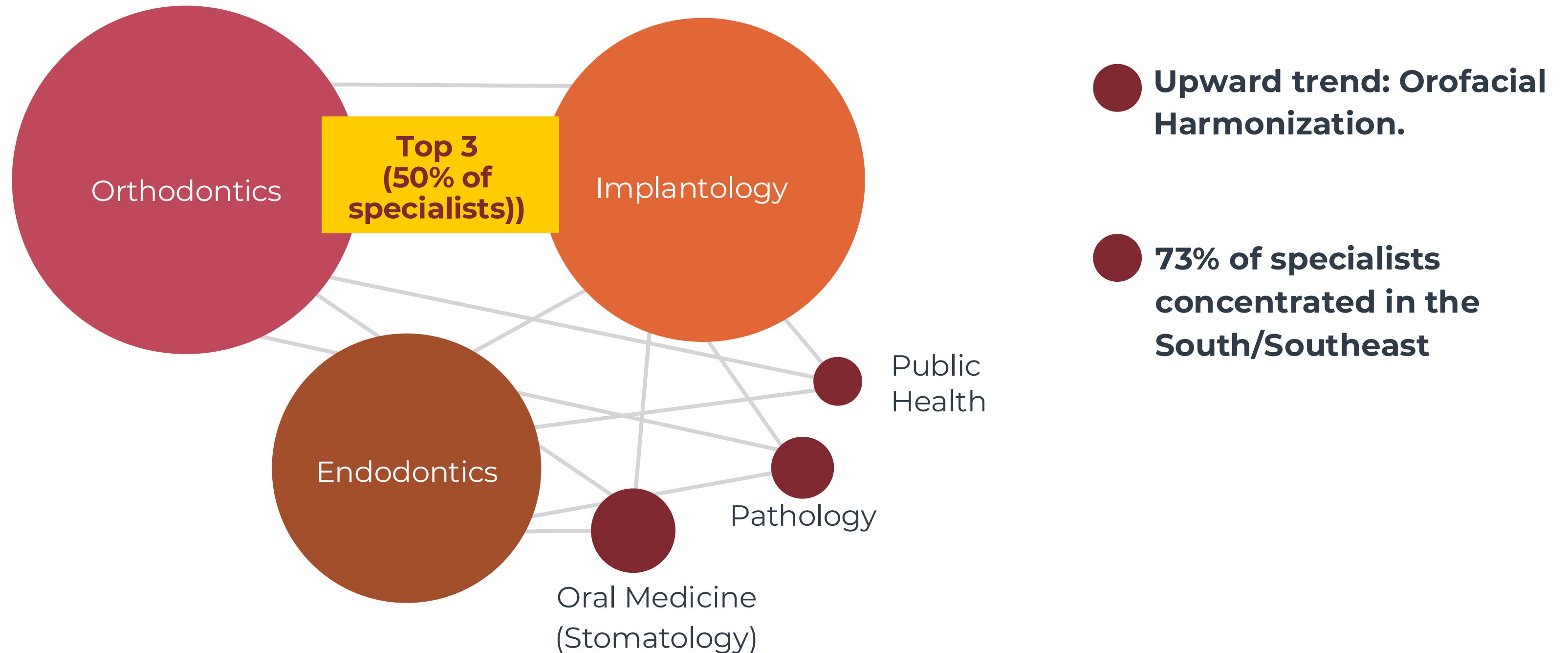


25 specialties.

The density of specialists in Brazil is high by international standards.

It has maintained the same proportion of specialists since 2013.

The Specialties Landscape: Market vs. Need



The Imbalance of Dental Specialties

HIGH MARKET-ATTRACTIVENESS AREAS (Aesthetics):

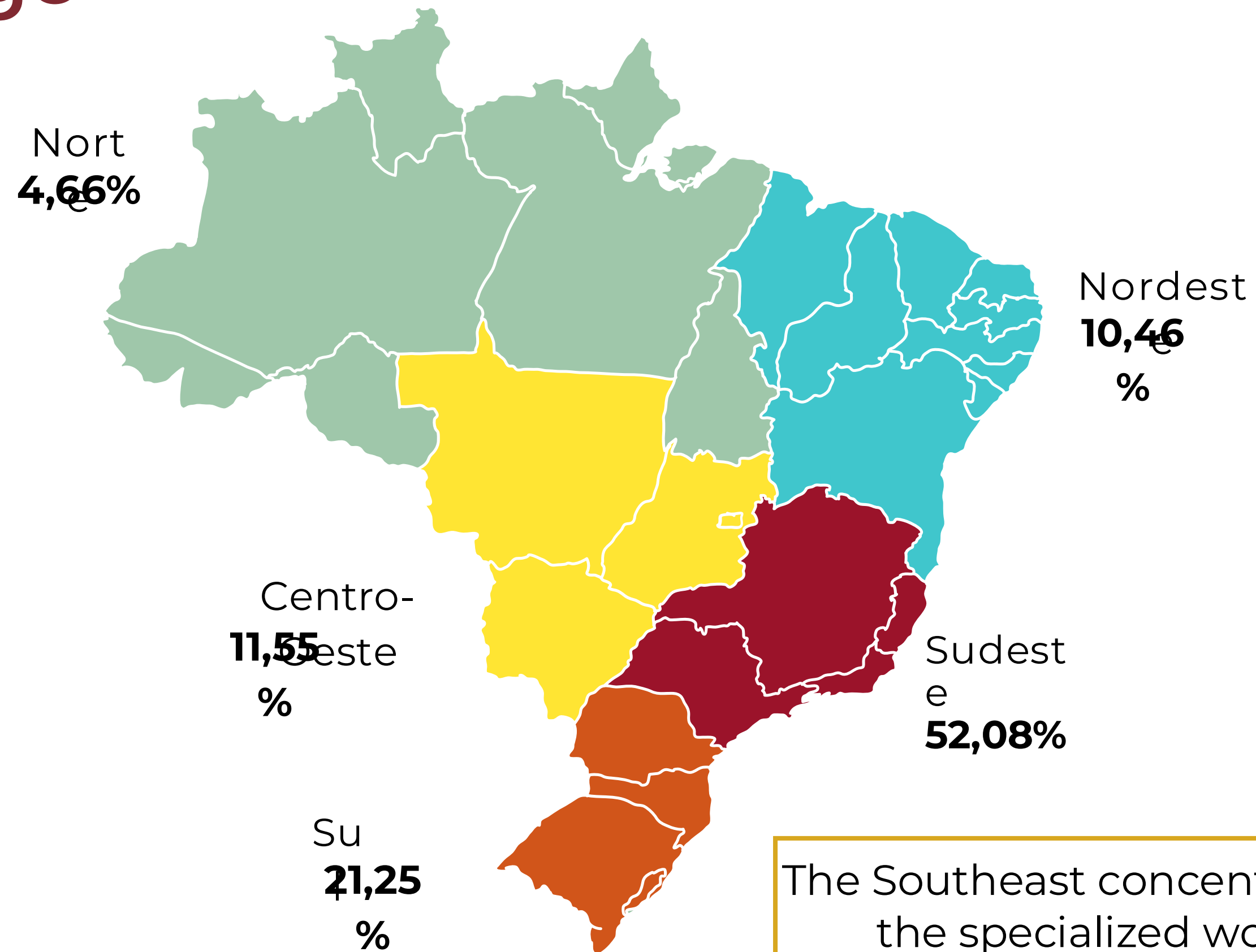
Orthodontics, Implantology,
Orofacial Harmonization

2022-24:
Significant growth
in Orofacial
Harmonization
(+304.7%)

High epidemiological-need areas:

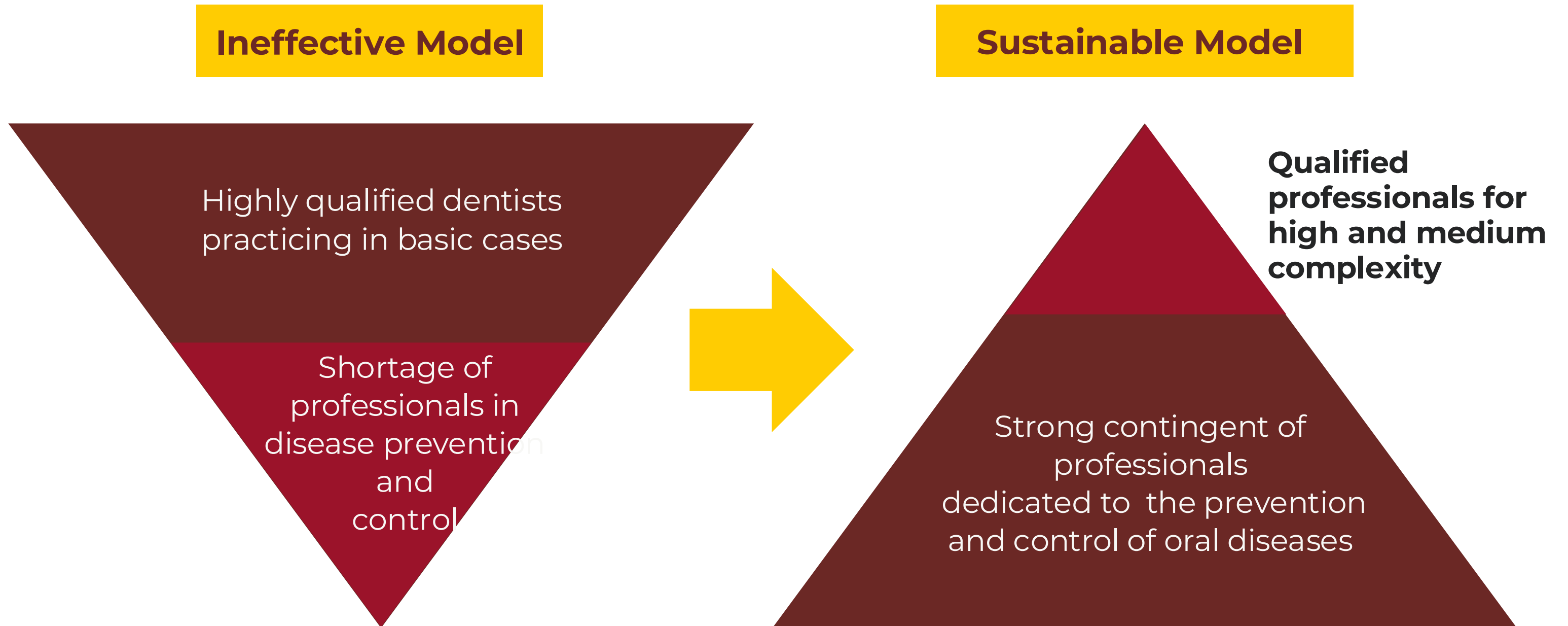
Public Health, Oral Medicine,
Special Needs Patients, Oral
Pathology

Regional Disparity: Concentration vs. Shortage



The Southeast concentrates half of the specialized workforce.

Key Challenge: Resysing the Workforce Pyramid



The current structure is dysfunctional. We need a broad prevention base so that specialists can focus where they are truly needed.

Thank you very much!

Contato:

epsm@nescon.medicina.ufmg.br

cristianalcarvalho@gmail.com



**ESTAÇÃO DE PESQUISA
DE SINAIS DE MERCADO**
ObservaRH NESCON/FM/UFMG

UF *m* G

SUS
35ANOS

MINISTÉRIO DA
SAÚDE

GOVERNO DO
BRASIL
DO LADO DO POVO BRASILEIRO