



Workforce: Statistics and Analysis

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Disclosures

- I have no financial disclosures relevant to this presentation.
- Investor and Advisor: RomTech, Inc.
- Investor: Focused Cryo, Inc.





Survey: 2023 Review of Physician and Advanced Practitioner Recruiting Incentives



Radiology is the third most sought-after specialty among healthcare employers

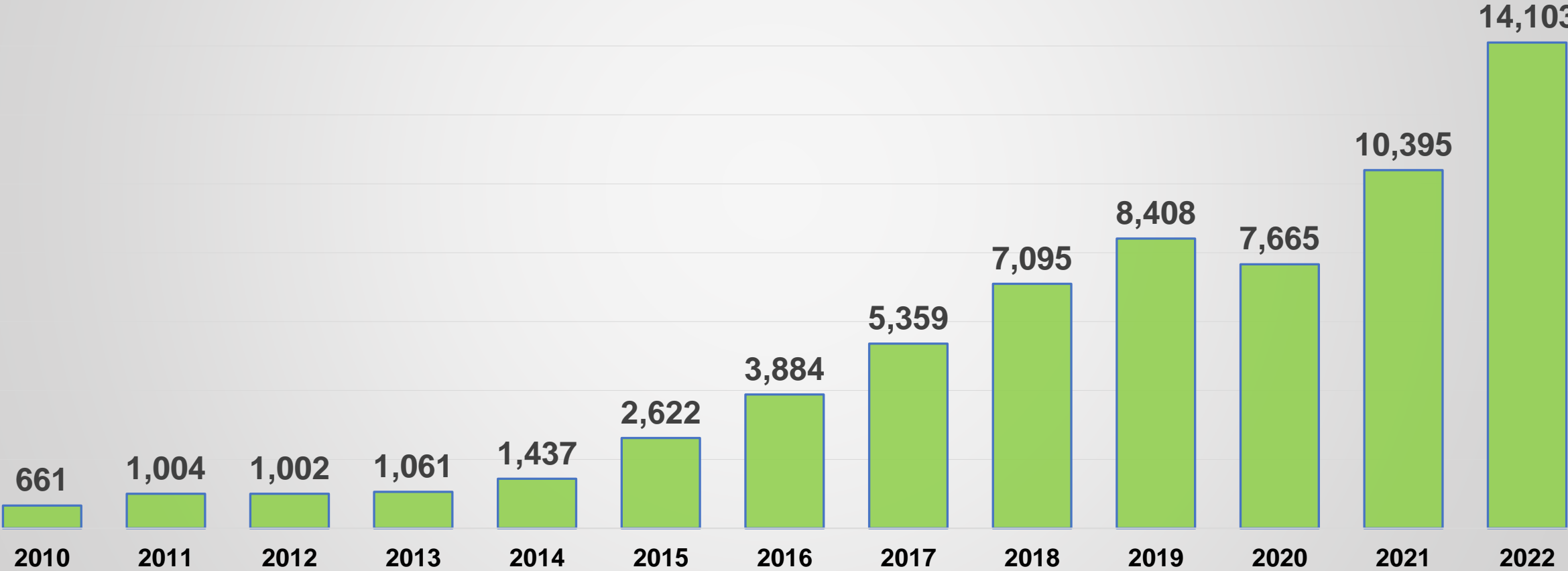


Radiologists represented the No. 2 most requested search among AMCs, behind only anesthesiologists.

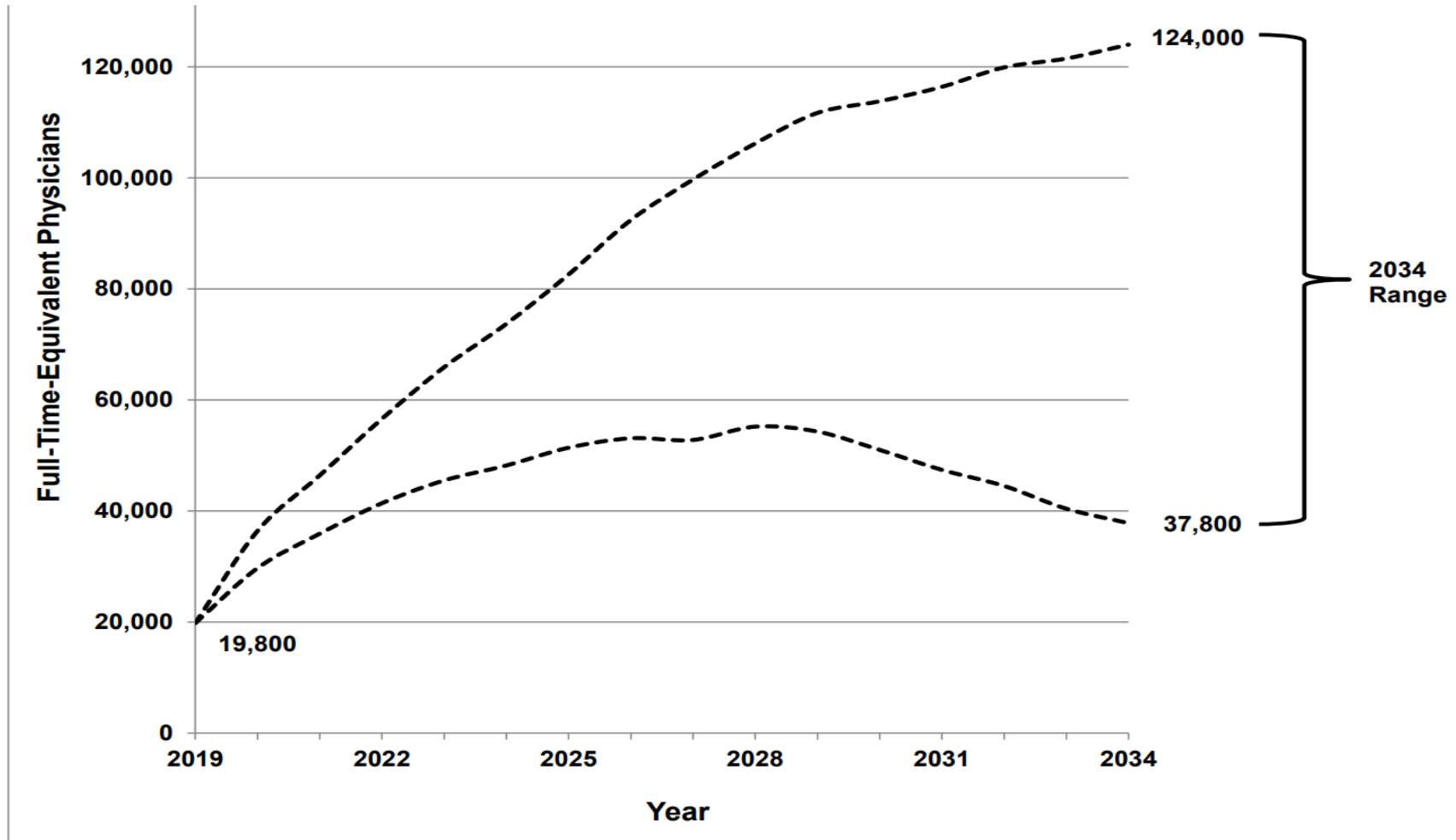


The average starting radiologist salary of \$472,000—represents a more than 27% increase from AMN's 2017/2018 report.

Trend in ACR Career Center Job Postings

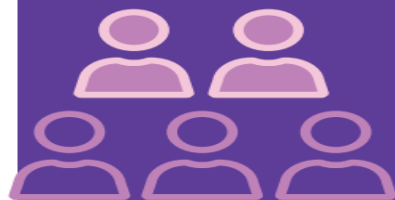


Physician Supply and Demand: Projections From 2019 to 2034



The clinical radiology UK workforce census 2018

More consultant clinical radiologists are essential
for patients to receive high-quality care

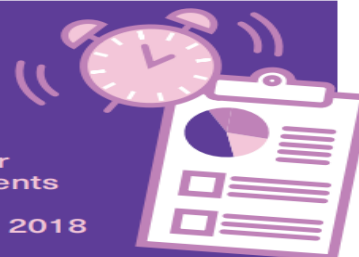


3 in 5

consultant
clinical radiologist
vacancies have
remained unfilled
for a year or more

98%

of trusts and
health boards were
unable to meet their
reporting requirements
within radiologists'
contracted hours in 2018



The current shortfall
of **1,104** radiologists
is forecast to rise to

1,867 by
2023



3/4

of clinical directors
of radiology
departments
feel there are
insufficient
clinical
radiologists
to deliver safe
and effective
patient care

Estimated
expenditure on
outsourcing and
insourcing has
trebled to

**£165
million**

since 2014.
This expenditure
could fund
1,887 full-time
consultant
radiologists



Demand for
complex imaging
scans such as
CT and MRI has
increased by

10%

per year for the
past five years



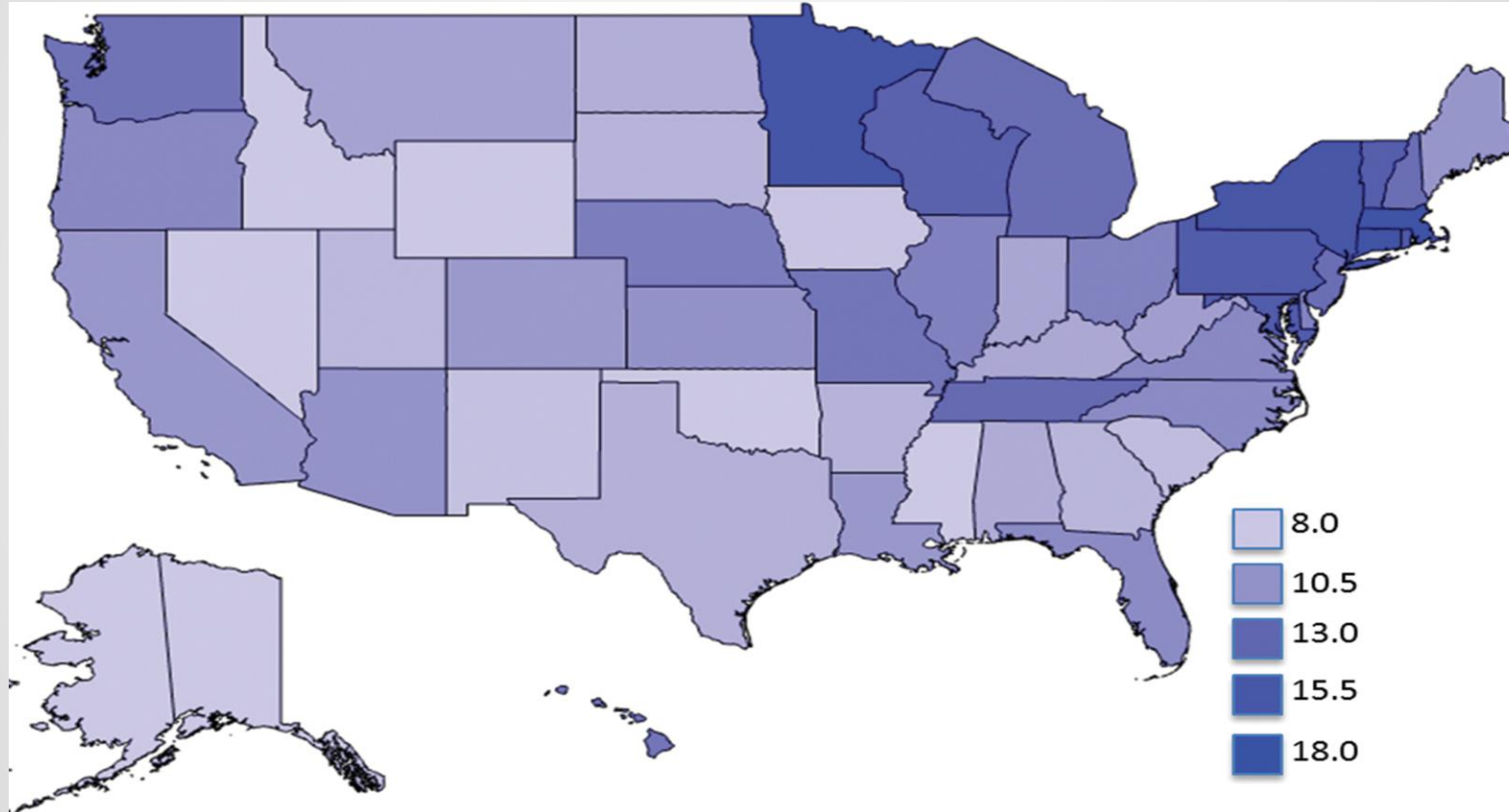
In 2019, around 154 radiology
trainees will enter the UK
consultant workforce –
insufficient to fill even

50%

of the
vacancies
reported in 2018



State-wide distribution of Radiologists per 100k



Rosenkrantz AB. Published Online: October 28, 2015

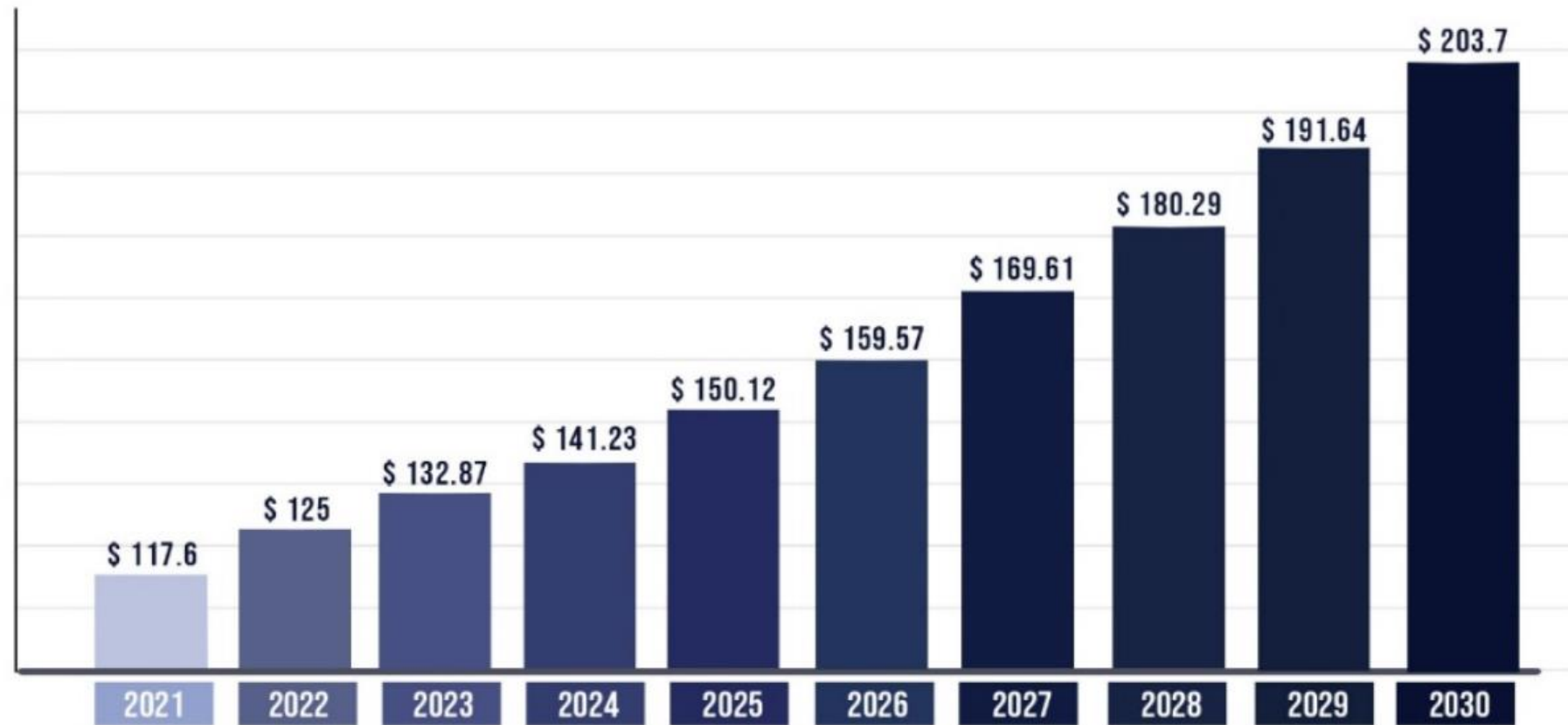
<https://doi.org/10.1148/radiol.2015150921>

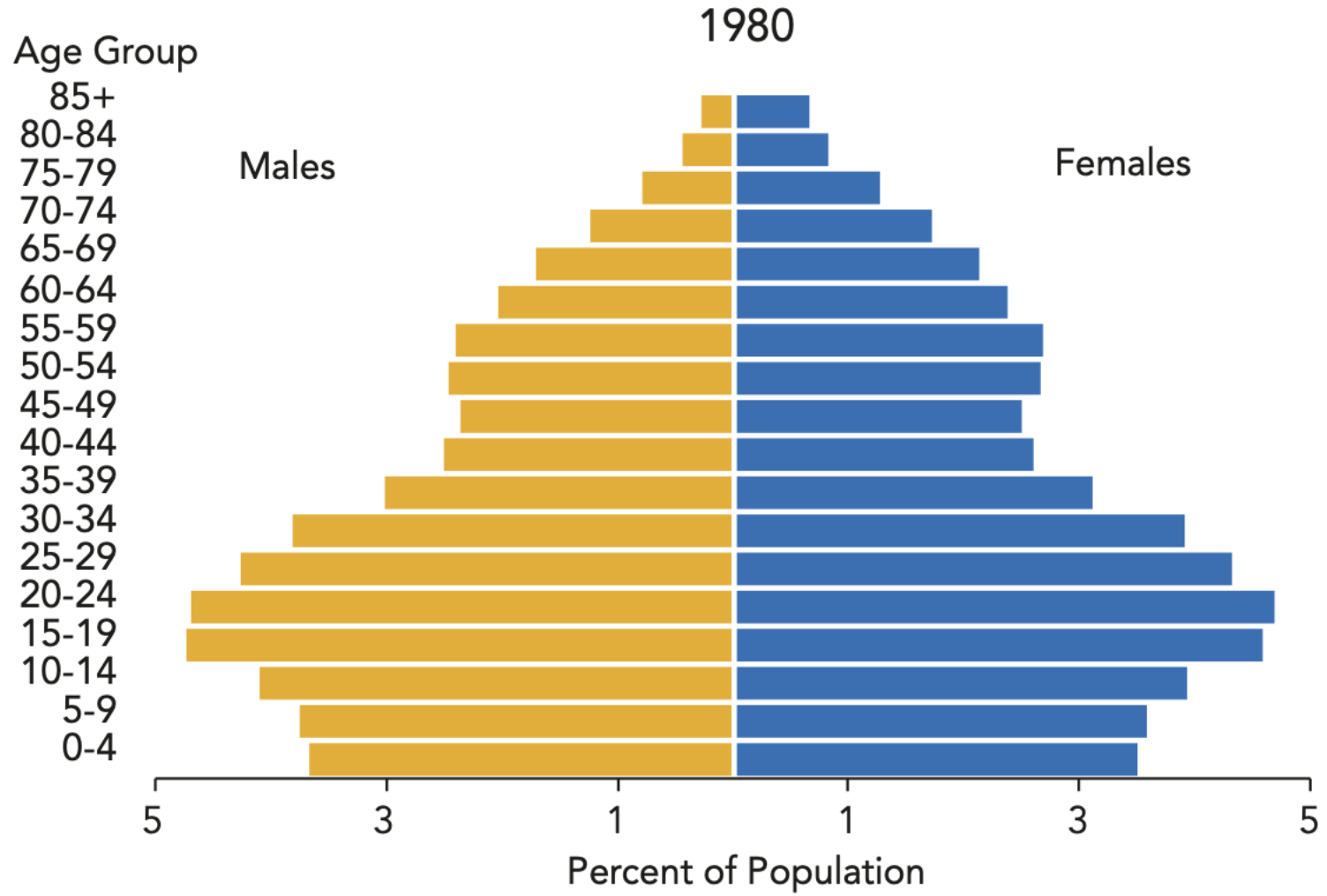
Drivers for Growth of Imaging Volumes

- Aging population
- The rising prevalence of cancer and cardiovascular diseases.
- Growing impact of imaging on disease detection and therapies.
- Increasing consumer awareness regarding preventive diagnostic screening.
- Advancements in technology and applications.
- Growing demand for imaging in an outpatient setting.



U.S. IMAGING SERVICES MARKET SIZE, 2021 TO 2030 (USD BILLION)





2020

Age Group

85+

80-84

75-79

70-74

65-69

60-64

55-59

50-54

45-49

40-44

35-39

30-34

25-29

20-24

15-19

10-14

5-9

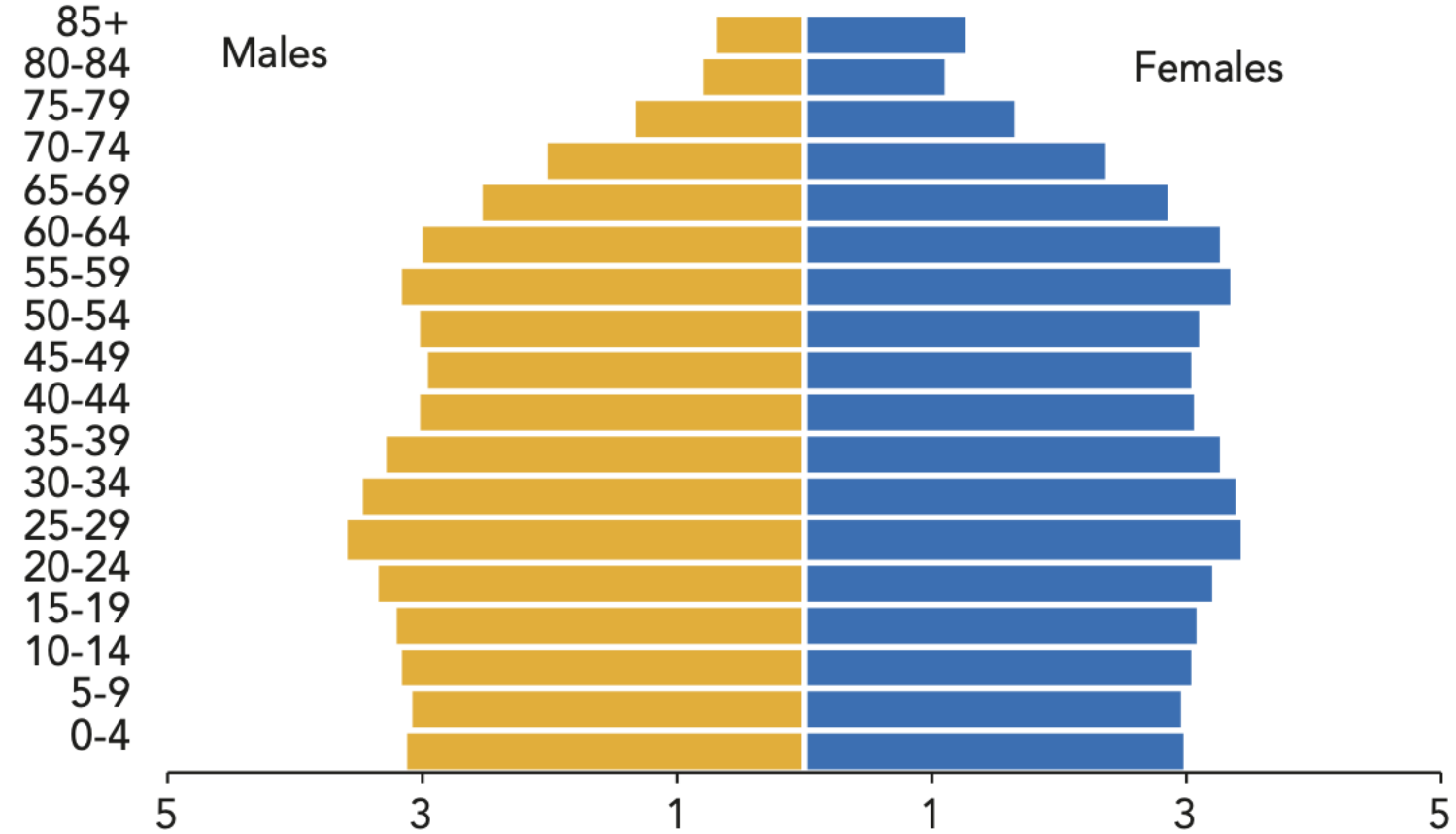
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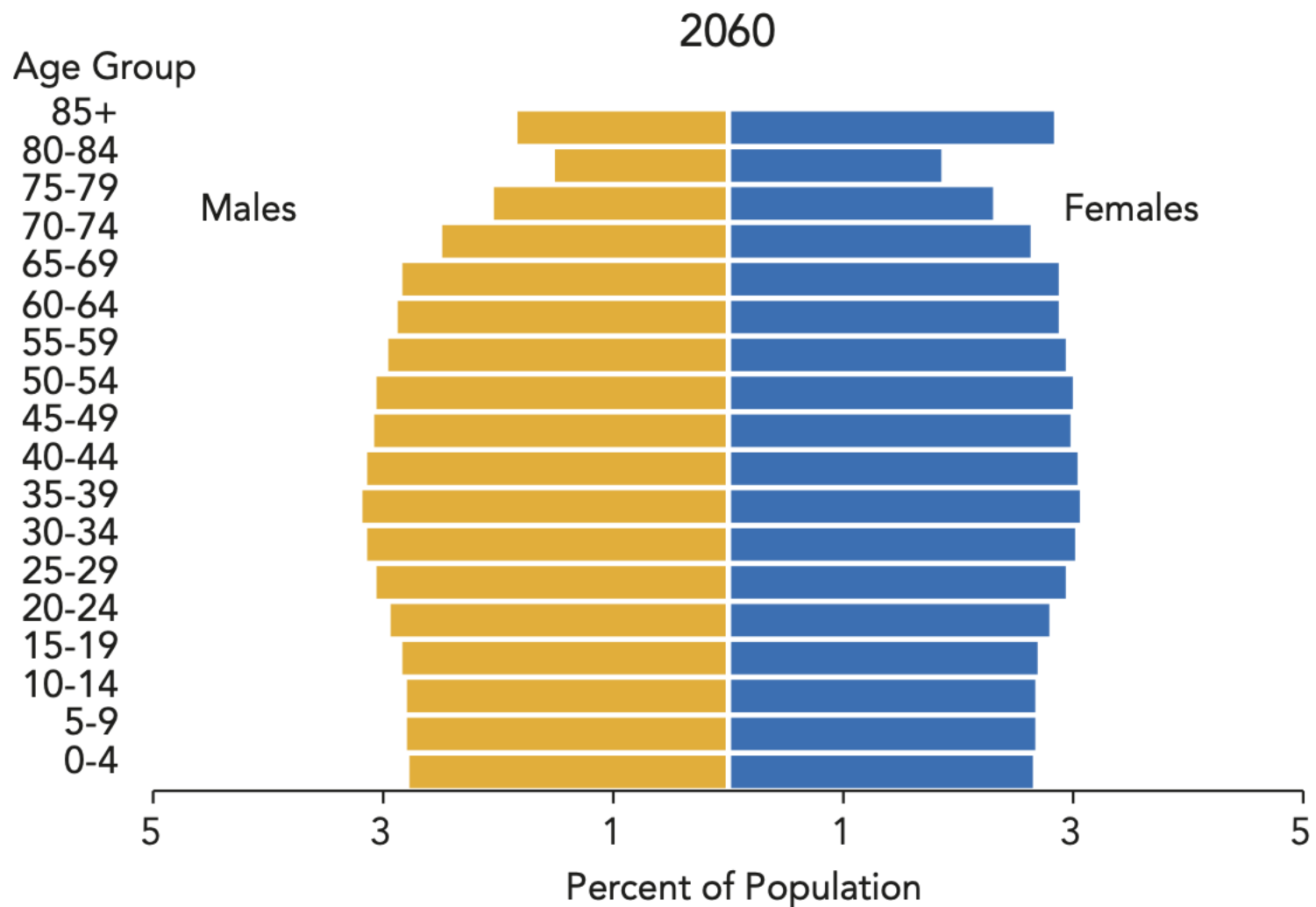
Males

Females

5 3 1 1 3 5

Percent of Population





Source: U.S. Census Bureau, 1980 Decennial Census and vintage 2017 population projections (2020 and 2060).



[Home](#) > [American Journal of Roentgenology](#) > [Volume 178, Issue 5](#) > [Too Few Radiologists?](#)



May 2002, Volume 178, Number 5

The Practice of Radiology

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Too Few Radiologists?

Mythreyi Bhargavan¹, Jonathan H. Sunshine¹ and Barbara Schepps^{2 3 4}

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+ Affiliations:

Citation: American Journal of Roentgenology. 2002;178: 1075-1082. 10.2214/ajr.178.5.1781075



ACR/RBMA Workforce Survey

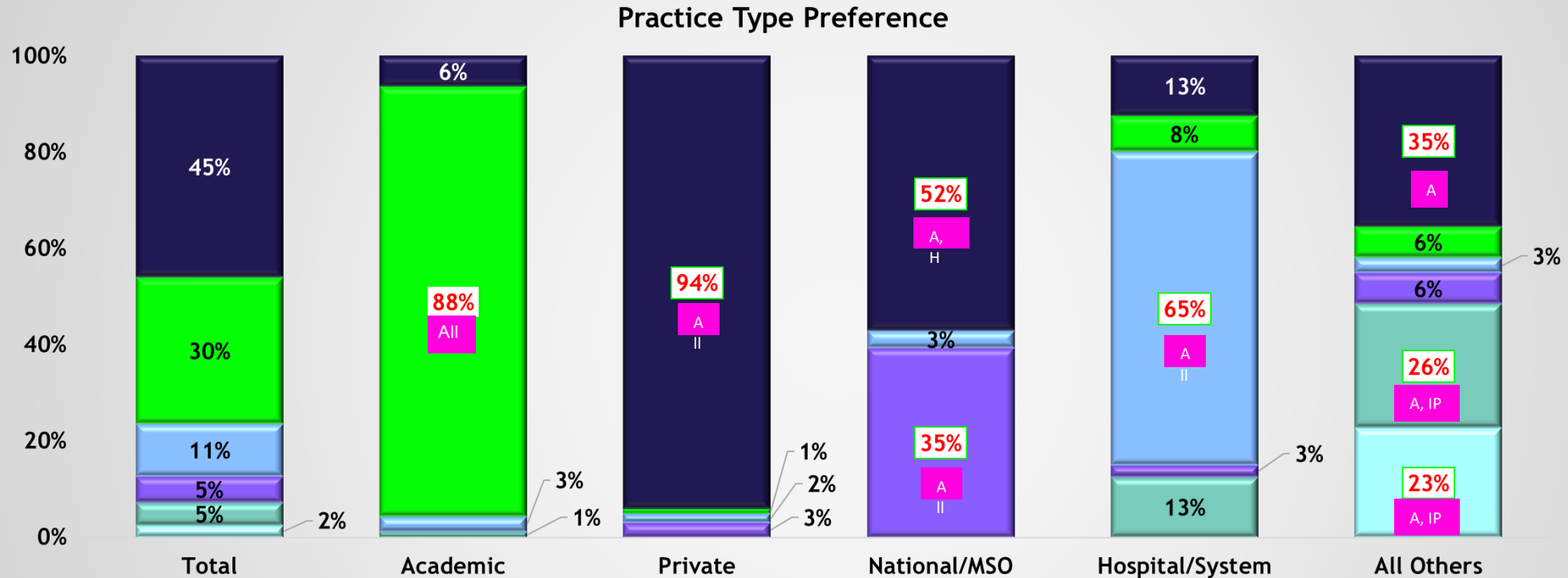
Topline Insights

Environmental Intelligence



Nearly Half of Radiologists Prefer Independent Private Practice

- Academic and Private Practice Radiologists likely to prefer to stay in current practice type
- National/MSO Practice Radiologists more likely than not to prefer switch to Private Practice in 5 years



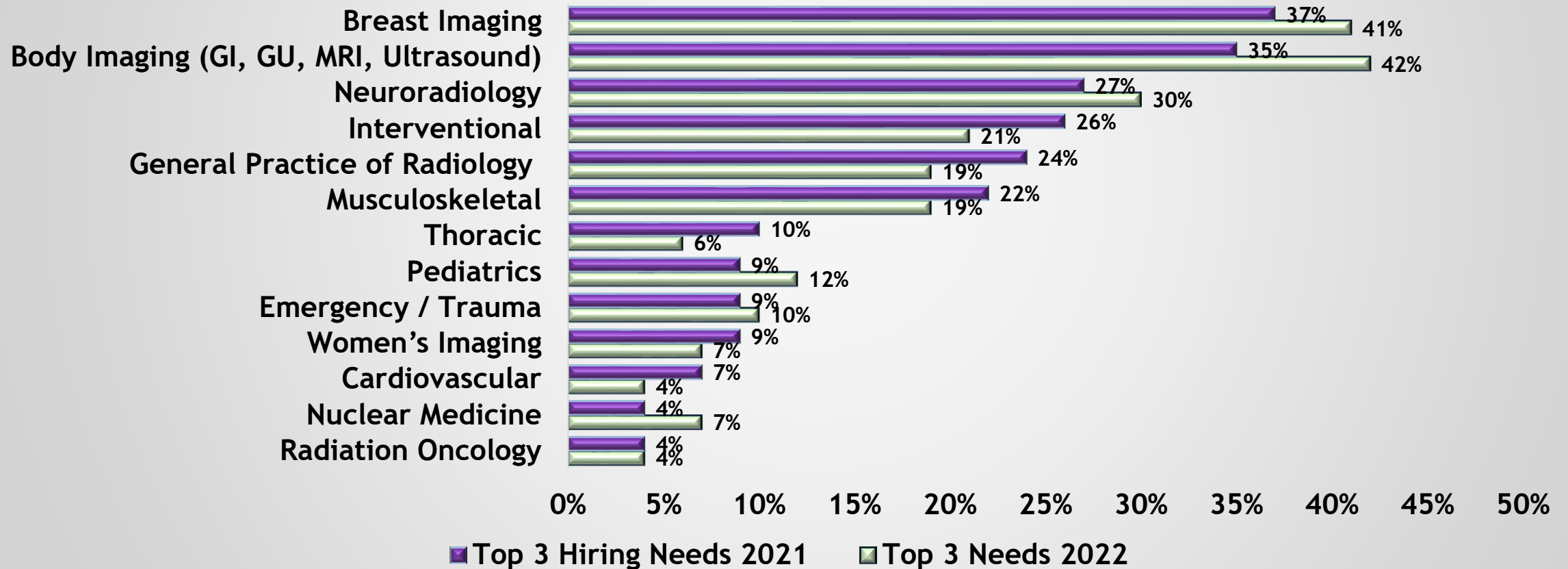
- Independent private practice radiology group
- Academic practice (university, medical center, municipality, state, or medical school)
- Hospital, hospital system, or hospital-affiliated physician practice group
- National radiology practice, entity, or cooperative, which is partially or wholly supported by private equity or venture capital
- Teleradiology
- Uniform/VA

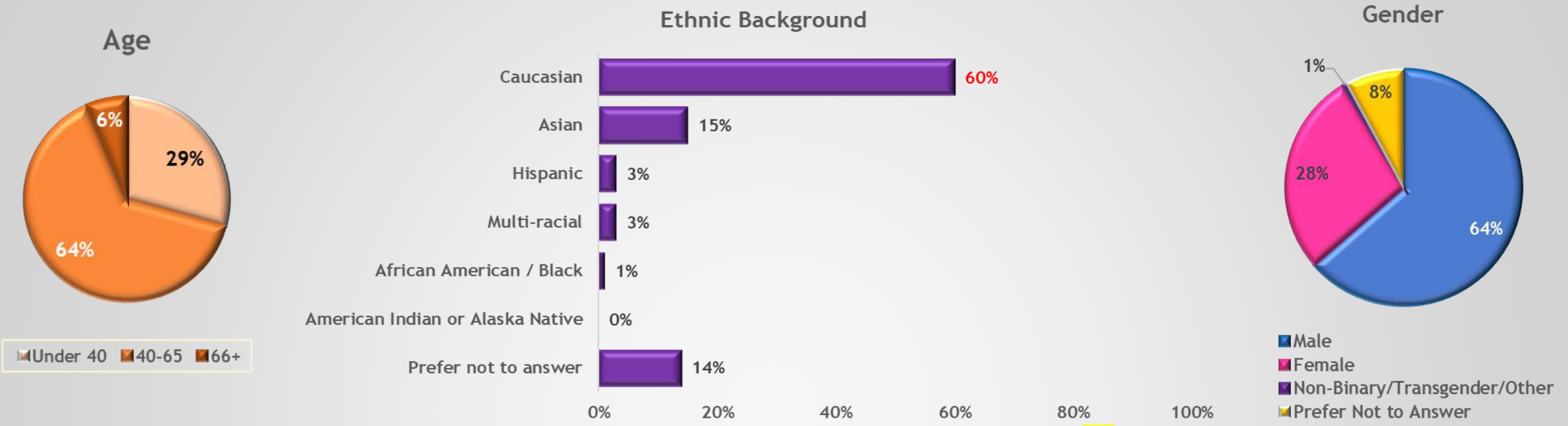
Abbreviations for Practice Type Comparisons: A (Academic), IP (Independent Practice), N (National/MSO), H (Hospital), O (Other Practice Types) All (all other Response Options)

Hiring needs remain consistent year over year

- Breast and Body Imaging remain priority hiring need for nearly half of respondents
- General Radiology, Interventional, MSK and Thoracic Imaging dip

Top 3 Hiring Needs 2021-2022



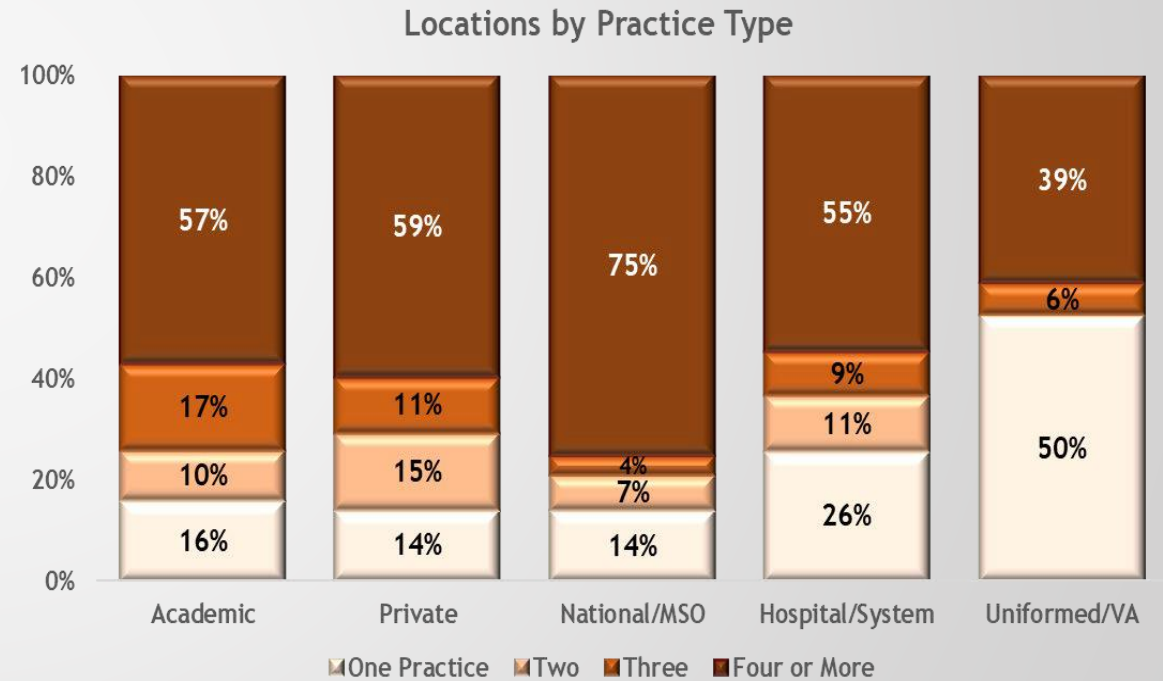
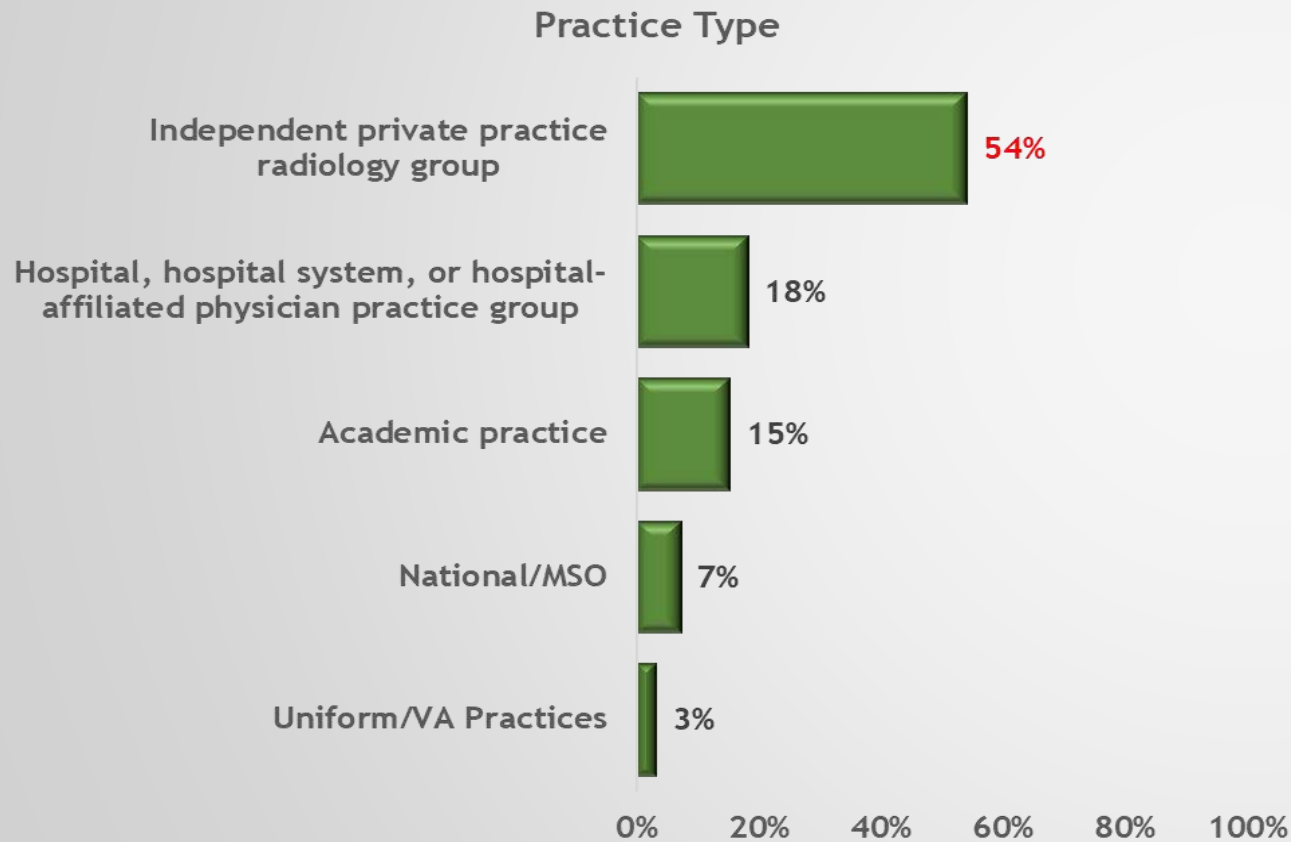


*Measures in Red are significantly higher at a 95% confidence level

Across the workforce, radiologists likely to be Caucasian men between the ages of 40 and 65

- The average age is about 51 years, mirroring that of the average licensed physician in the US (Young et al., 2021) and reflective of prior ACR research among radiologists
- Radiologists of *retirement age* (65+) represent the smallest proportion of practicing radiologists (6%)
- *Female* radiologists represent fewer than 3 in 10 radiologists in practice, regardless of age grouping, and which is a lower rate than the estimated averages for licensed physicians in the US (Young et al., 2021)
- Six in ten radiologists (60%) are *Caucasian*, and most radiologists are *men* (64%), slightly higher than national physician averages on both counts (AAMC, 2018)

Independent private practice radiology groups comprise more than half of radiology practices

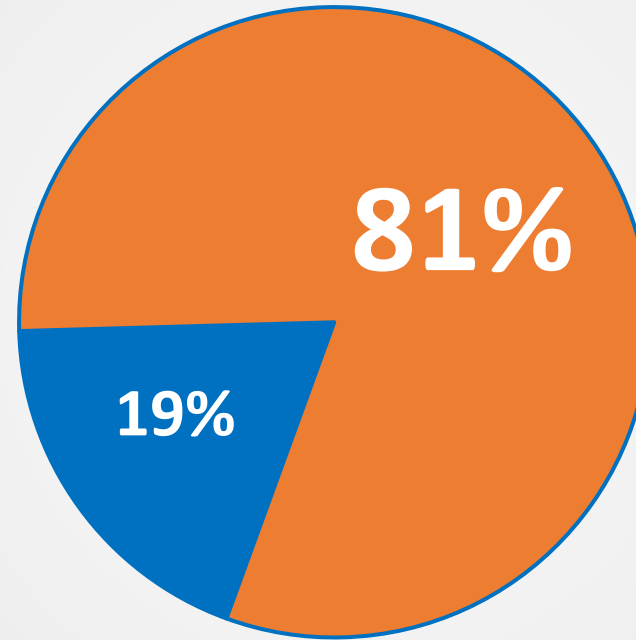


ACRTM

**CAREER
CENTER**

Most Employers Are Seeking Fellowship-Trained New Hires

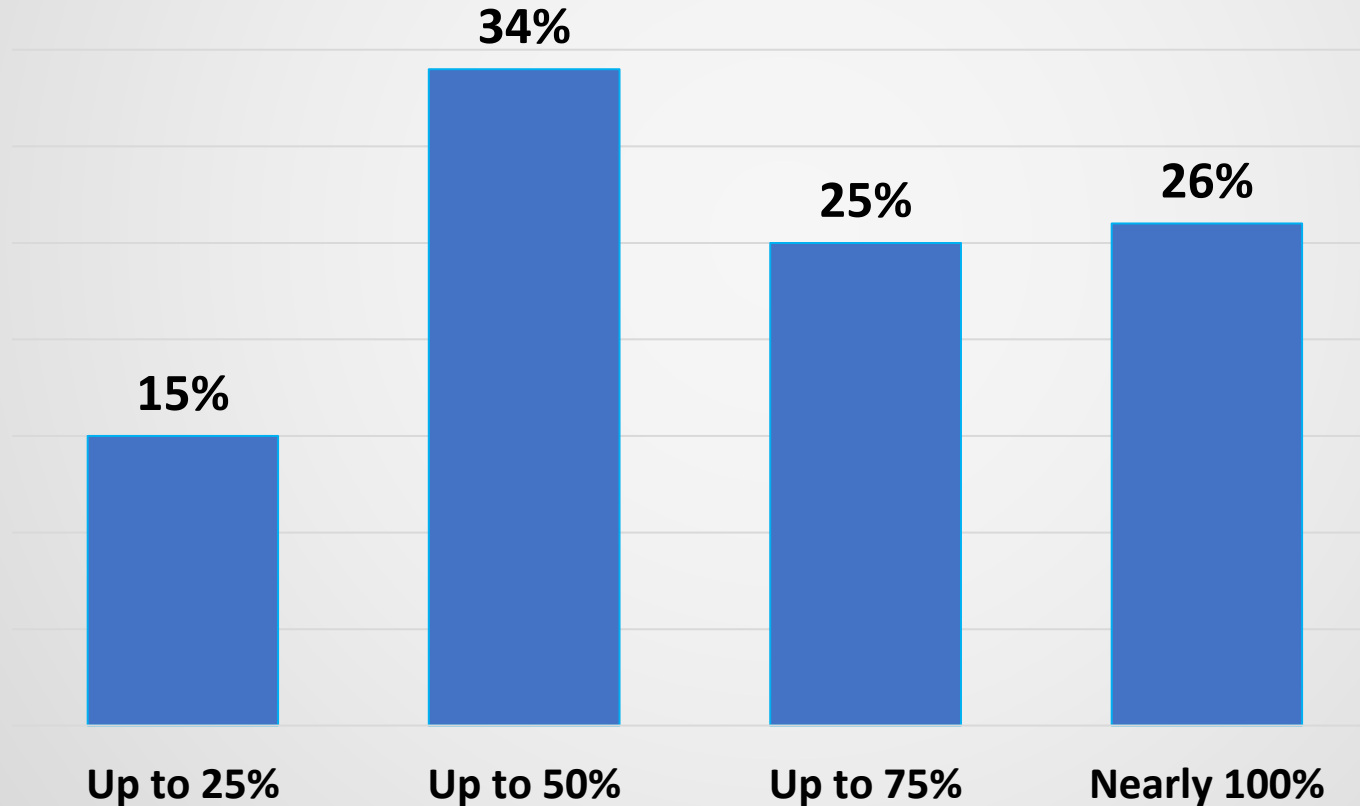
Required or Preferred Subspecialty



■ No ■ Yes

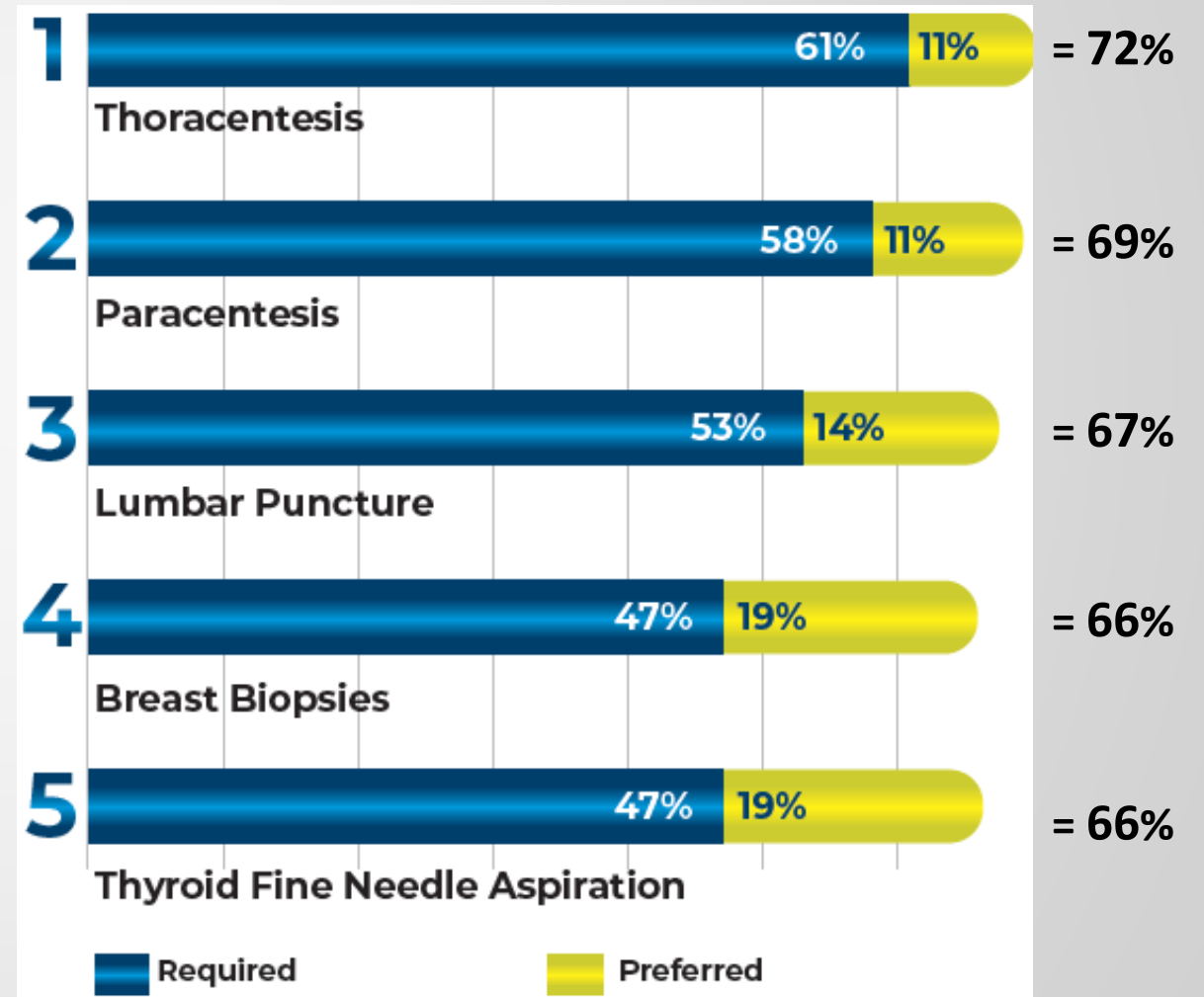
Fellowship Training Used Once Hired

Percentage of Work Day Utilizing the Subspecialty Training



Top Five Procedure Skills that Employers Are Seeking

The ACR Career Center survey connected with employers with recent job postings regarding the required and/or preferred procedures that a new hire would need to perform.

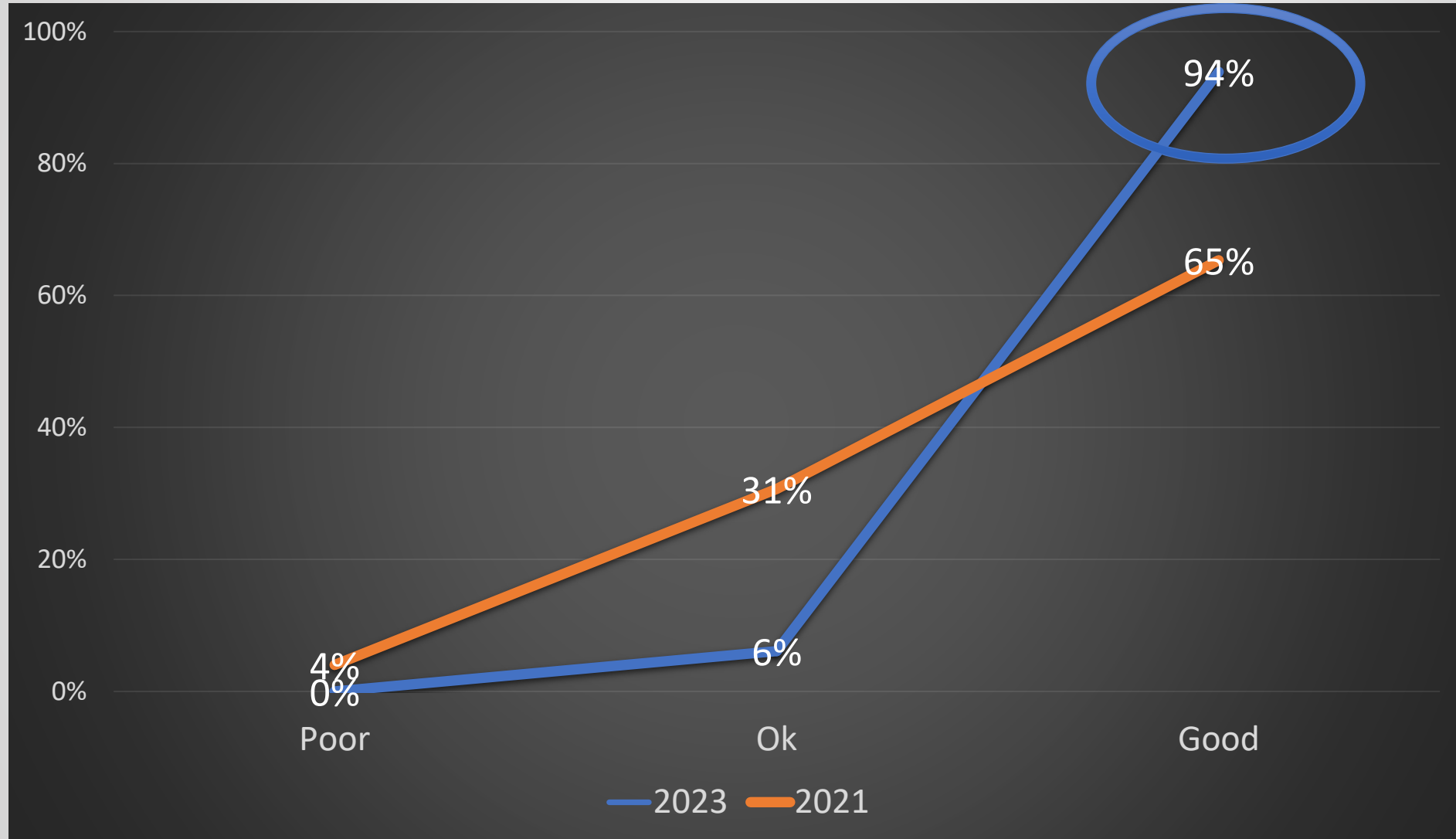


Annual Chief Resident Survey 2022-2023 A³CR²

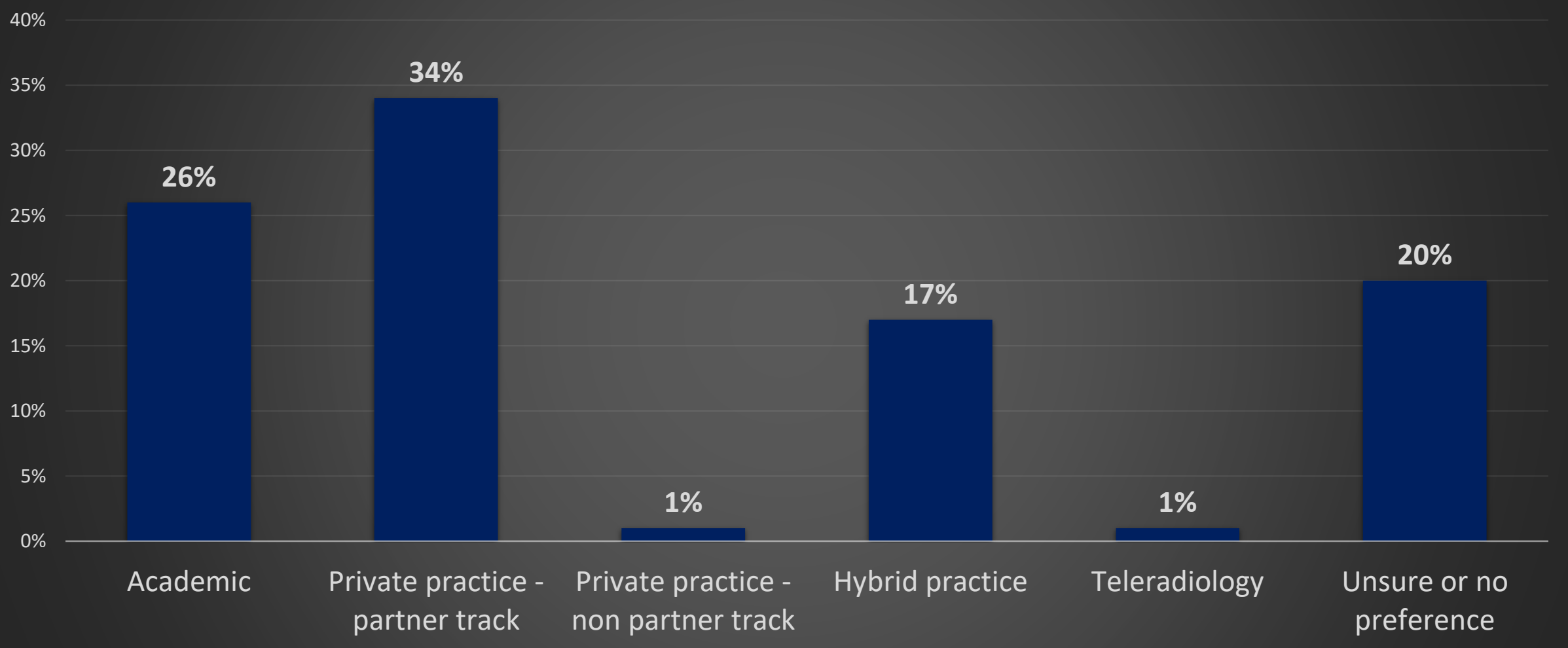


American Alliance
of Academic
Chief Residents
in Radiology • A³CR²

What is your perception of the current job market for radiologists?



What type of practice do you prefer to work in?



If you prefer to work in academics- what is your top reason?

(free response question)

Reason	# of chiefs (n=46)
Teaching/working with trainees	34
Research	12
Lifestyle	8
Sub specialization	6
Case complexity	5

Other reasons (1-2 chiefs each): public service loan forgiveness, benefits package, global health work, learning during early career

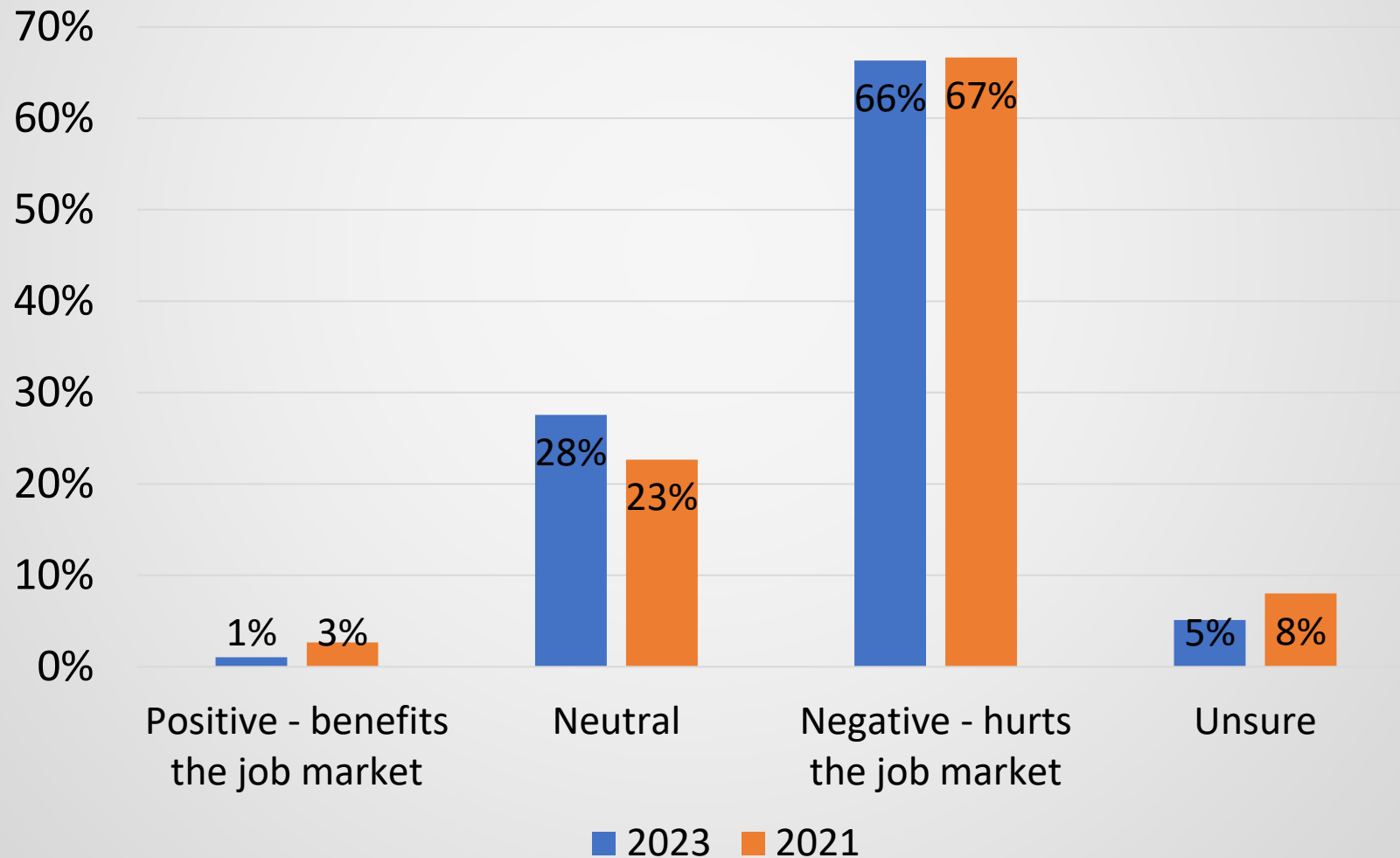
If you prefer to work in private practice- what is your top reason?

(free response question)

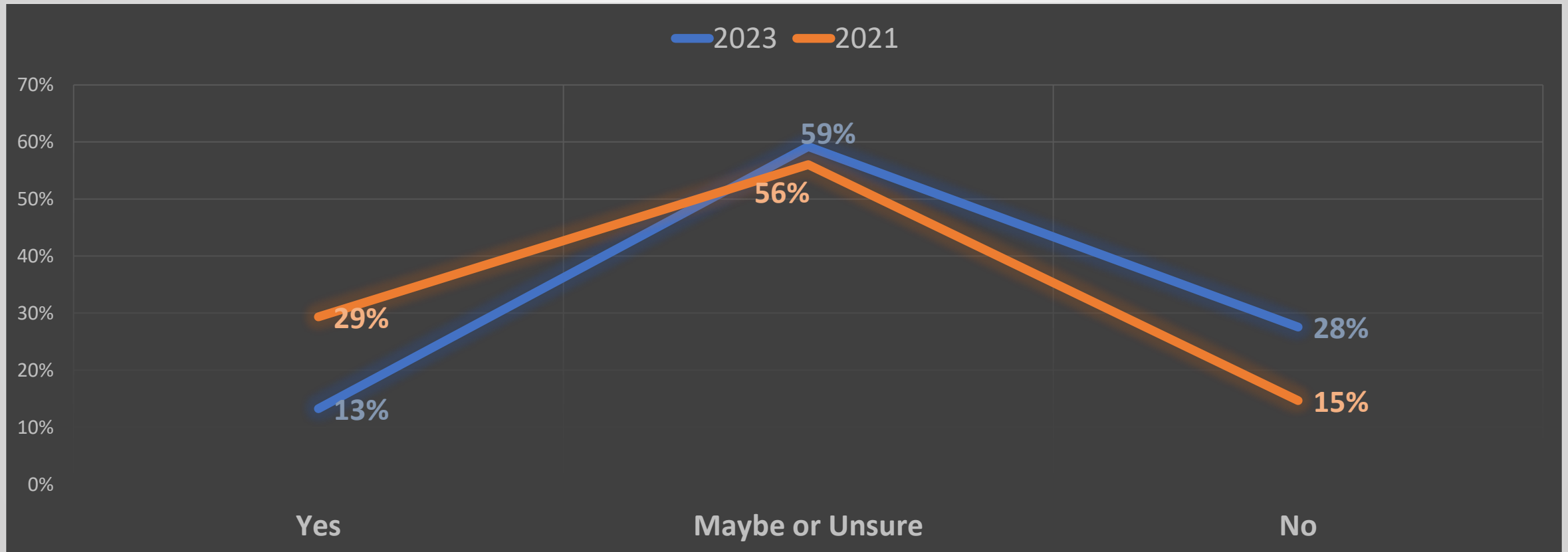
Reason	# of chiefs (n=52)
Money	31
Vacation	21
Flexibility/Lifestyle	13
Business management	10
Focus on clinical work	12
General radiology practice	9
Location	5

Other reasons (1-2 chiefs each): benefits package, remote work

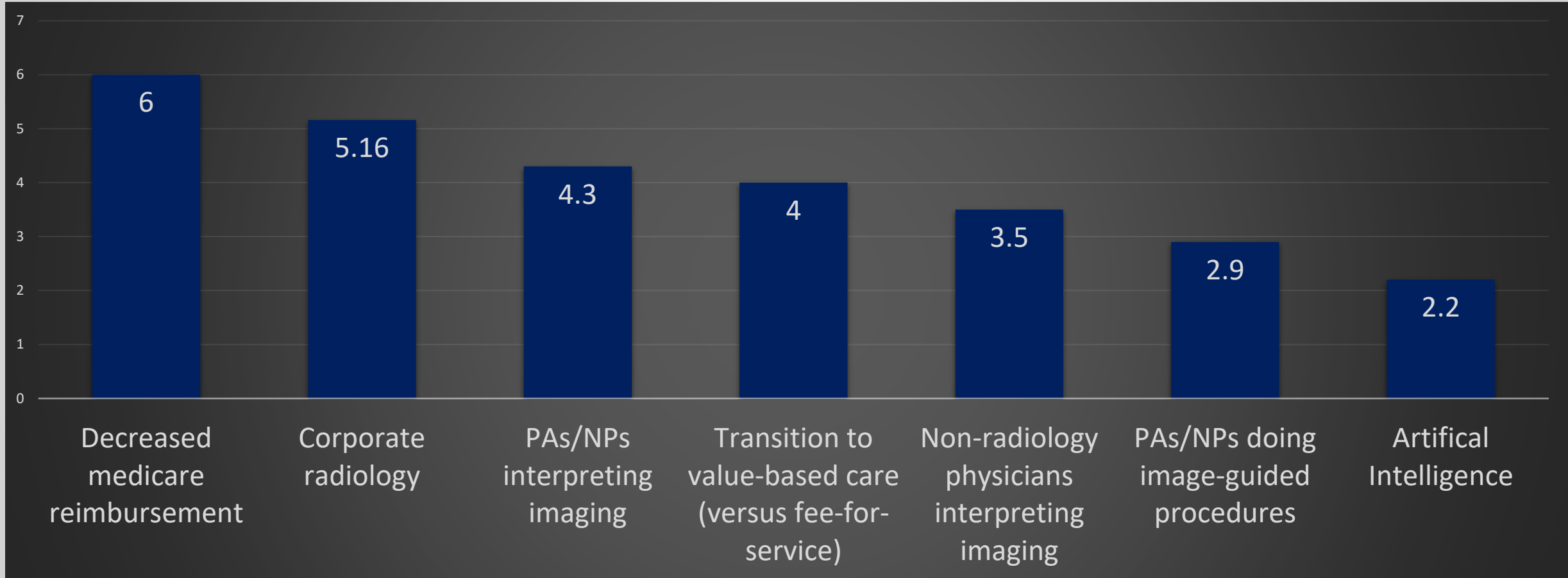
What is your perception of corporate radiology/private equity ownership (example: RadPartners) relative to the radiology job market?



Would you consider working for a corporate radiology/private equity-owned practice (example: RadPartners)?



Rank these potential risks to radiology future job market from greatest threat to smallest threat



2023 Gen Z and Millennial Survey

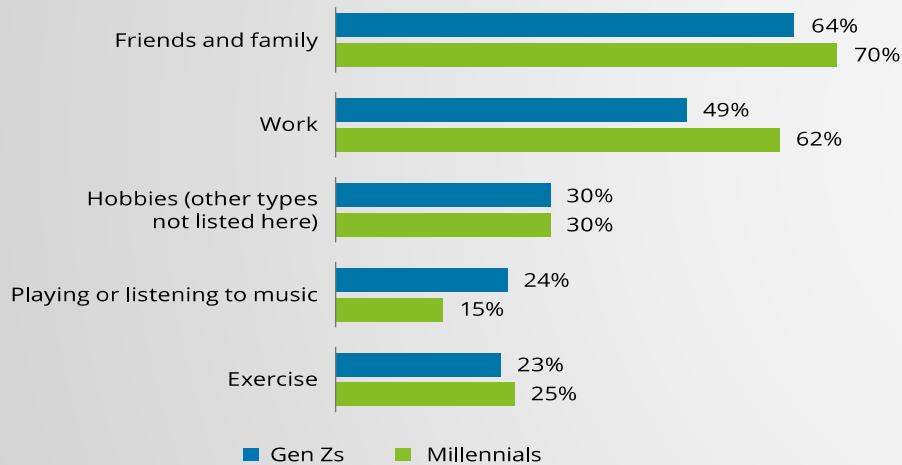
The 12th edition of Deloitte's Gen Z and Millennial Survey looks back to see how the last three years have impacted these generations and finds that while they acknowledge some positive change, they remain deeply concerned about their futures.



Work is central to Gen Zs and millennials' identity, but achieving balance is paramount






While much has been written about [quiet quitting](#), nearly half of Gen Zs, and the majority of millennials, say their job is still central to their sense of identity, second only to their family and friends.

Percentage who say the following are most important to their sense of identity:



However, there is a strong desire among these generations to achieve better work/life balance. In fact, more than any other trait among their peers, Gen Zs and millennials admire the ability to balance work and life priorities (26% for Gen Zs and 28% for millennials). What's at the bottom of the list of admirable traits? More traditional social status symbols like a person's job, level of seniority at work, and material possessions such as their house or car.

When thinking about their peers who they most admire, these are the top five things that impress them most:

-  Ability to maintain a positive work/life balance
-  Ability to live their life on their own terms, and not necessarily to live up to societal expectations
-  Ambition to continue learning new skills
-  Willingness to continuously reinvent themselves/make big changes in their lives (e.g., change jobs, go back to school, etc.)
-  Passion for their work

Many Gen Zs and millennials make career decisions based on their values and want to be empowered to drive change within their organizations

While the majority of respondents don't believe business is having a positive societal impact, they continue to believe that business should take a leading role in addressing social issues ranging from inequality to environmental sustainability. They rank business leaders third among groups with the most significant role to play in addressing these issues, just after politicians and social justice and sustainability advocates. **And one-third of respondents say that seeing business leaders speak out on sustainability has influenced their own thinking and behavior.**



Top groups considered to have an important/leading role in highlighting social issues

Politicians Social justice/sustainability advocates Business leaders



Groups considered to have a less important role in highlighting social issues

Social media influencers Entertainers Sport stars

As this survey has repeatedly found, many Gen Zs and millennials make career decisions based on their values.

Nearly four in 10 (44% of Gen Zs/37% of millennials) say they have rejected assignments due to ethical concerns, while 39%/34% have turned down employers that do not align with their values.

They want to be empowered to drive change within their organizations. Over half of respondents (58% of Gen Zs/55% of millennials) say their organization currently **seeks input from employees and incorporates their feedback**, but roughly a third (32% of Gen Zs/35% of millennials) **say decisions are still made from the top down and employee feedback is not often acted upon.**

Respondents tend to feel they can positively influence their organizations in areas related to the products and services offered to clients, DEI, development and training, and workload management. Fewer feel able to influence areas like social impact and sustainability efforts.

In which ways/areas do they feel they have an opportunity to positively influence their organization?







Persistent stress and burnout continue to strain Gen Zs and millennials

46% of Gen Zs and 39% of millennials feel stressed or anxious all or most of the time



Those who are more likely to feel anxious or stressed all or most of the time:

	 Women	 LGBT+	 Ethnic Minorities	 People with disabilities
Gen Zs	54%	56%	52%	62%
Millennials	43%	49%	51%	63%

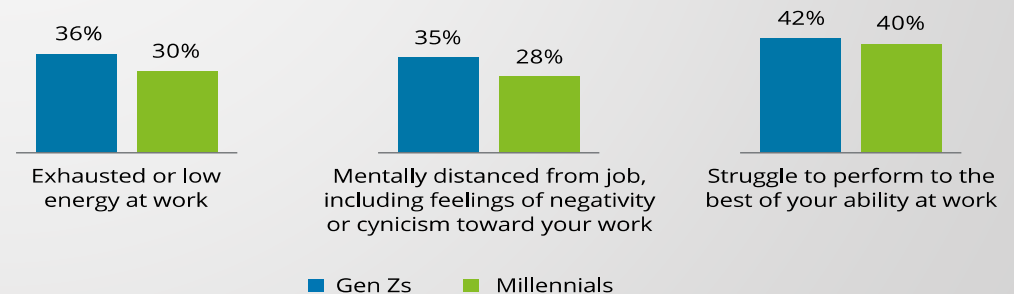
We began asking Gen Zs and millennials about mental health in the 2020 edition of this survey, which was fielded before the onset of the pandemic. **Our data showed that stress and anxiety levels were high, even before the pandemic brought the issue of mental health to the forefront.** Levels of stress and anxiety have remained relatively unchanged for Gen Zs since the start of the pandemic and only dropped slightly for millennials (48% of Gen Zs felt stressed all or most of the time in 2020 compared to 46% in 2023, while 43% of millennials felt stressed in 2020 compared to 39% in 2023).

As the pandemic slowly recedes from being a day-to-day concern for many people, Gen Zs and millennials are facing both new challenges and heightened existing challenges—the cost-of-living crisis, geopolitical tensions, climate change, and concerns about unemployment. Mental health also weighs heavily on their minds, particularly for Gen Zs who rank the mental health of their generation fourth on their list of top societal concerns (compared to ninth for millennials).

Outside of these broader societal concerns, Gen Zs and millennials cite their finances and the welfare of friends and family as their top stress drivers. Workplace issues such as heavy workloads, poor work/life balance, and unhealthy team cultures are also at play.

Work pressures are driving high levels of burnout among these generations. Roughly half of Gen Zs (52%) and millennials (49%) feel burned out, up from 46% and 45% respectively in 2022. Using the [World Health Organization's criteria](#) for burnout, the survey asked respondents about specific feelings they experience while working. It found that 36% of Gen Zs feel exhausted all or most of the time, 35% feel mentally distanced from their work, and 42% often struggle to perform to the best of their ability. The numbers are nearly as high among millennials.

Percentage of respondents who all/most of the time are...



Harassment and microaggressions are becoming a widespread concern, particularly among Gen Zs

Similar to concerns about mental health, harassment is a matter which seems especially prevalent and concerning to Gen Zs. The **survey data shows that many Gen Zs are experiencing high levels of inappropriate behaviors at work, ranging from microaggressions to harassment**, which may explain why they cite sexual harassment among their top societal concerns. Millennials are also experiencing these behaviors, although to a slightly lesser extent. **While most harassment and microaggressions are taking place in-person in the workplace, about a quarter of both generations say they are facing these behaviors while working remotely**, indicating that organizations should create an environment that builds trust, recognizes, and promotes inclusive and ethical behaviors, and encourages reporting in both in-person and virtual work settings.

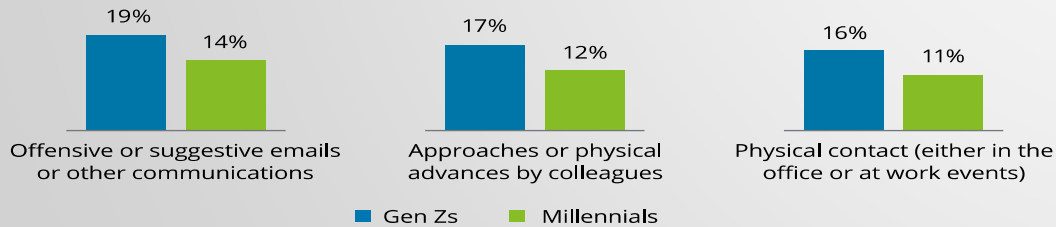
Over six in 10 Gen Zs (61%) and half of millennials (49%) have experienced harassment or microaggressions at work in the past 12 months.



Percentage who experienced harassment at work in last 12 months



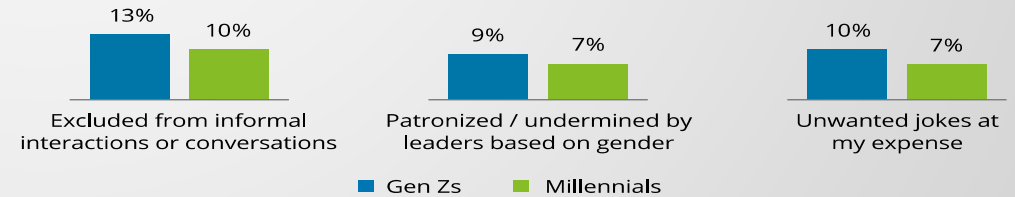
Top harassment behaviors experienced



Percentage who experienced microaggressions at work in last 12 months



Top microaggressions experienced

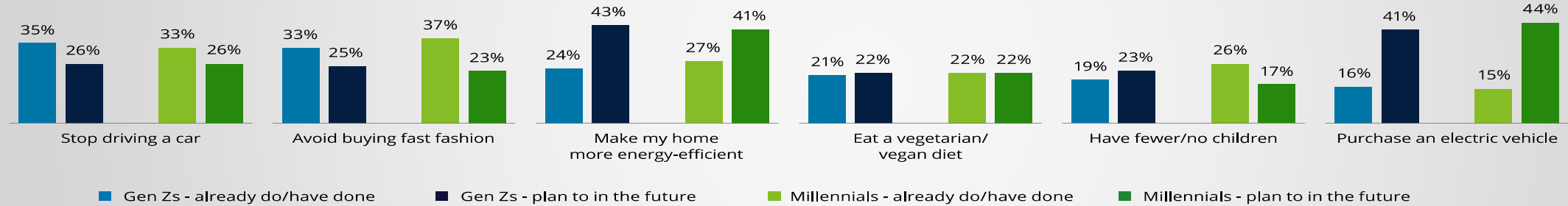


Climate change anxiety is impacting decisions from family planning, to diet, fashion, jobs and more

Climate change is a major stressor for Gen Zs and millennials. Six in 10 (60% of Gen Zs/57% of millennials) say they have felt anxious about the environment in the past month. Roughly the same percentage cite extreme weather events and wildfires as a stress driver. The majority are taking action, with 69% of Gen Zs and 73% of millennials actively trying to minimize their impact on the environment. **This has a major impact on their lifestyle choices.**



Actions taken or intended in the future to reduce environmental impact

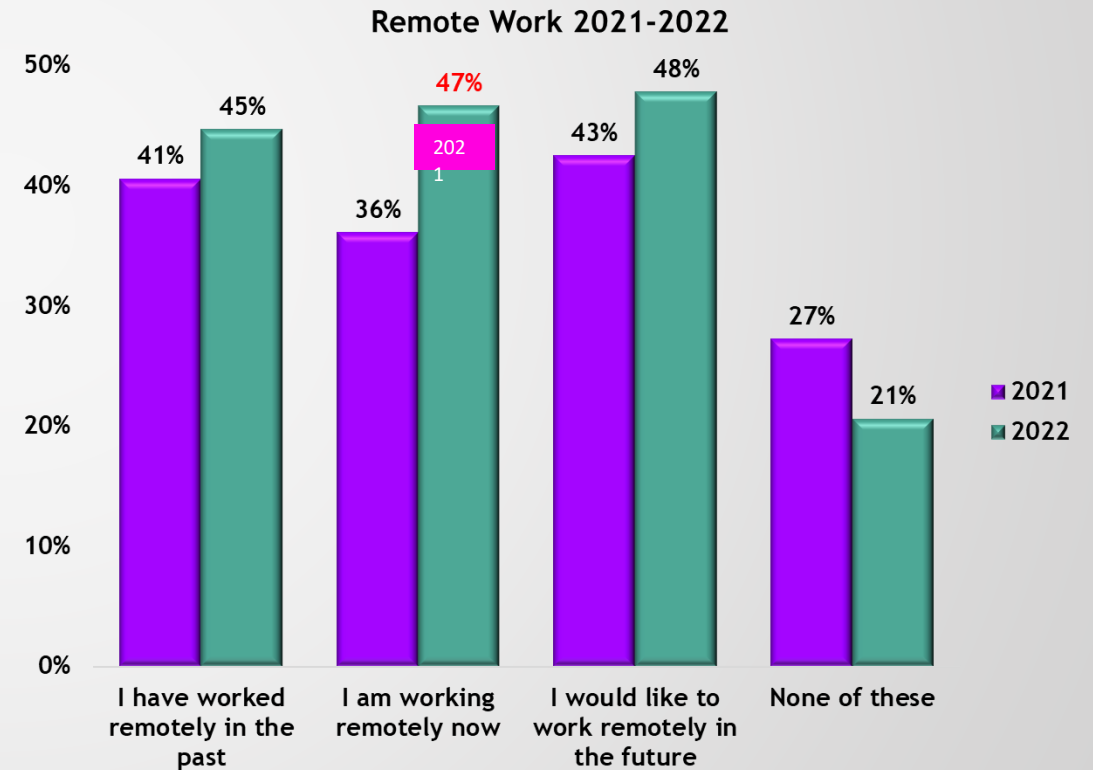
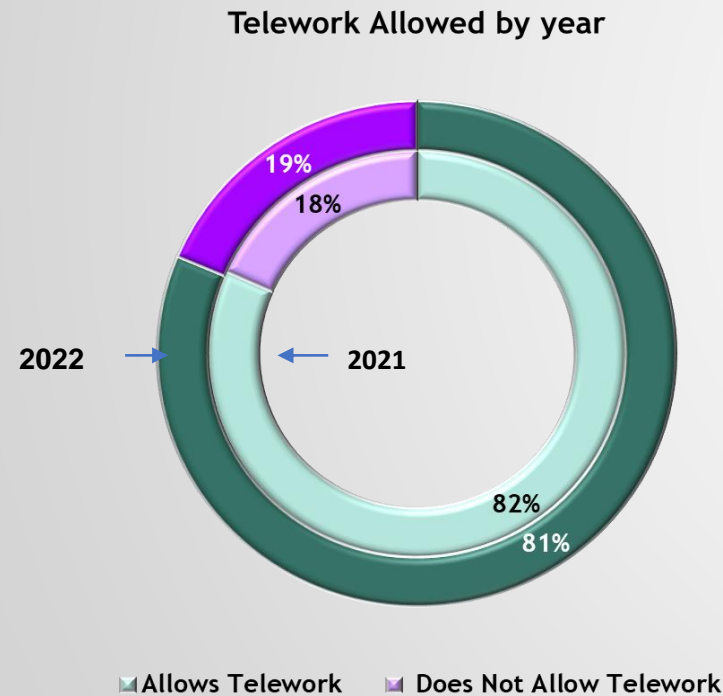


Climate concerns also play an important part in career decisions. Over half of Gen Zs (55%) and millennials (54%) say they research a brand's environmental impact and policies before accepting a job from them. One in six Gen Zs (17%) and millennials (16%) say they have already changed job or sector due to climate concerns, with a further 25% of Gen Zs and 23% of millennials saying they plan to do this in future.

Teleradiology

Most Practices Allow Some Form of Telework

- While the number of practices indicating that they allow telework decreases slightly, individuals indicating that they are working remotely now show significant growth

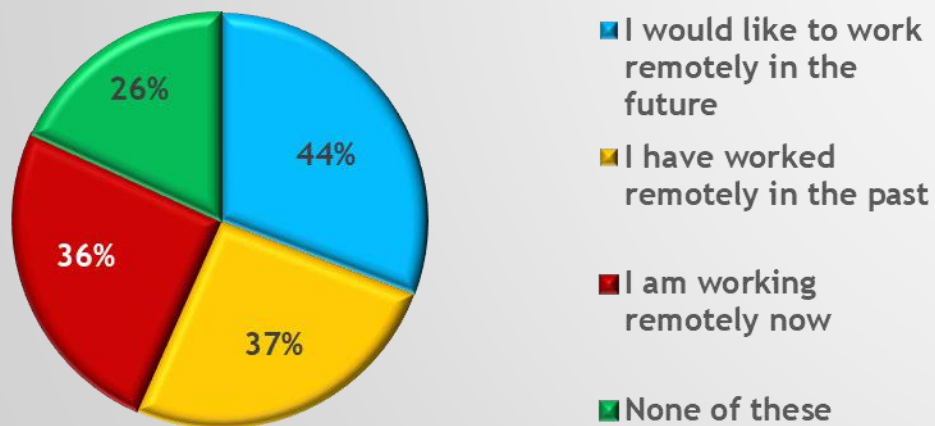


Abbreviations for Remote Work Comparisons: 2021 (2021 ACR/RBMA Workforce Survey), 2022 (2022 ACR/RBMA Workforce Survey)

Nearly half of radiologists would like to work remotely

- *Academic practice*, the practice type most likely to see a greater proportion of women in practice, are also more likely to *allow telework*
- Half of radiologists in *academic practice* hope to work remotely
- Fewer than 2 in every 10 radiologists in non-academic settings *telework currently*

Relationship with Telework



Share of Radiologists Working Remotely by Practice Type

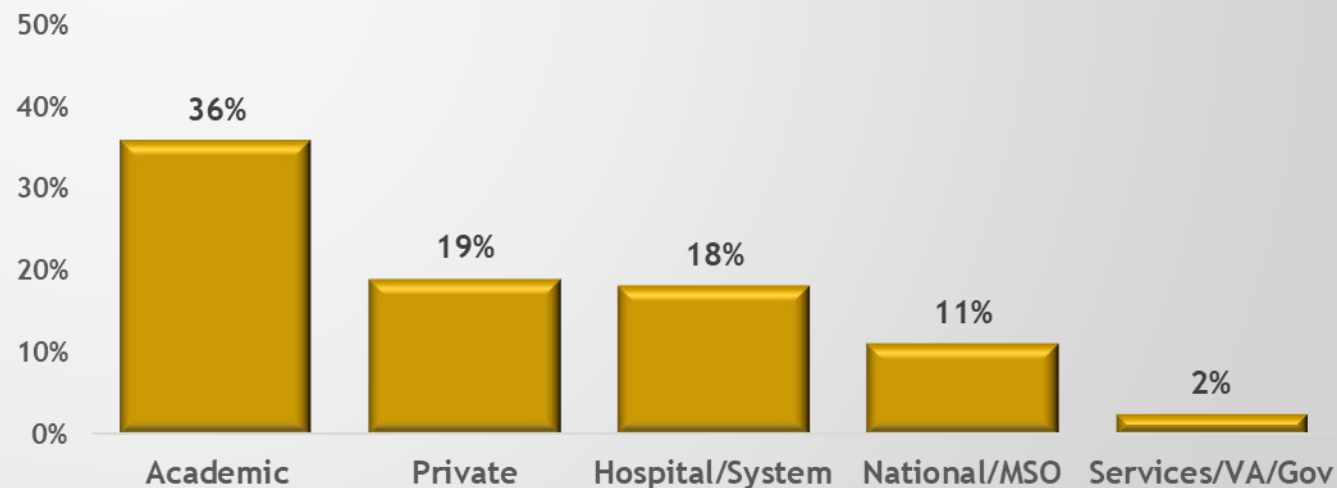


Fig. 1

Perceived Advantages of Remote Reading

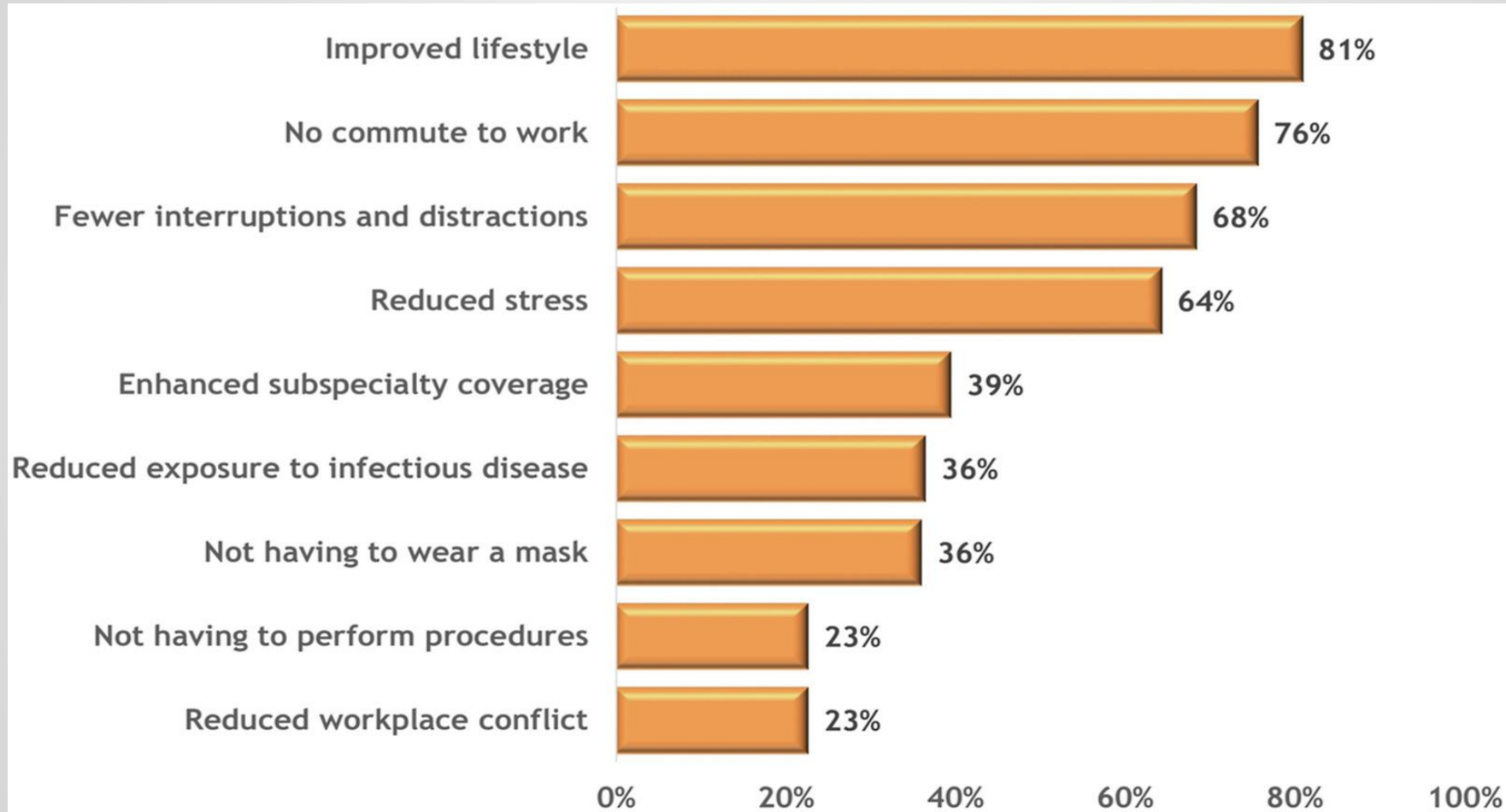
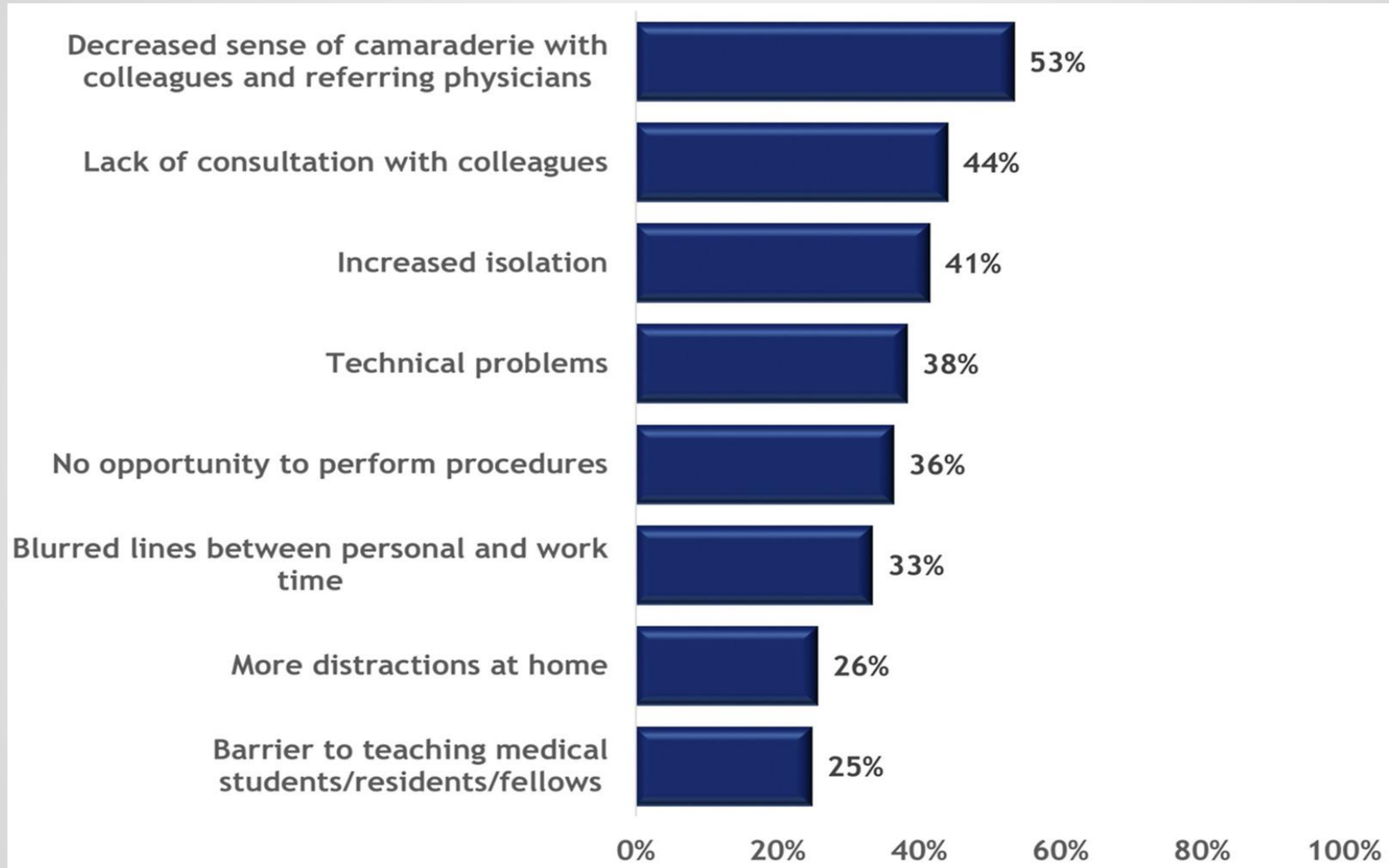


Fig. 2

Perceived Drawbacks of Remote Reading



Potential Workforce Solutions

- Leverage the supply/demand market dynamics
- Increase number of residency slots
- Increase productivity
- Increase number and utilization of Non-physician providers
- Retain/recruit retired radiologists

Pending Residency Slot Legislation

- Resident Physician Shortage Reduction Act
- Lower Costs, More Transparencies Act
- Specialty Physicians Advancing Rural Care (SPARC) Act (S. 705/ H.R. 2761).



Radiology fills all available positions on resident Match Day 2023

By Kate Madden Yee, AuntMinnie.com staff writer

March 17, 2023 -- All available diagnostic and interventional radiology residency positions filled on March 17, Match Day 2023, according to the [National Resident Matching Program \(NRMP\)](#).

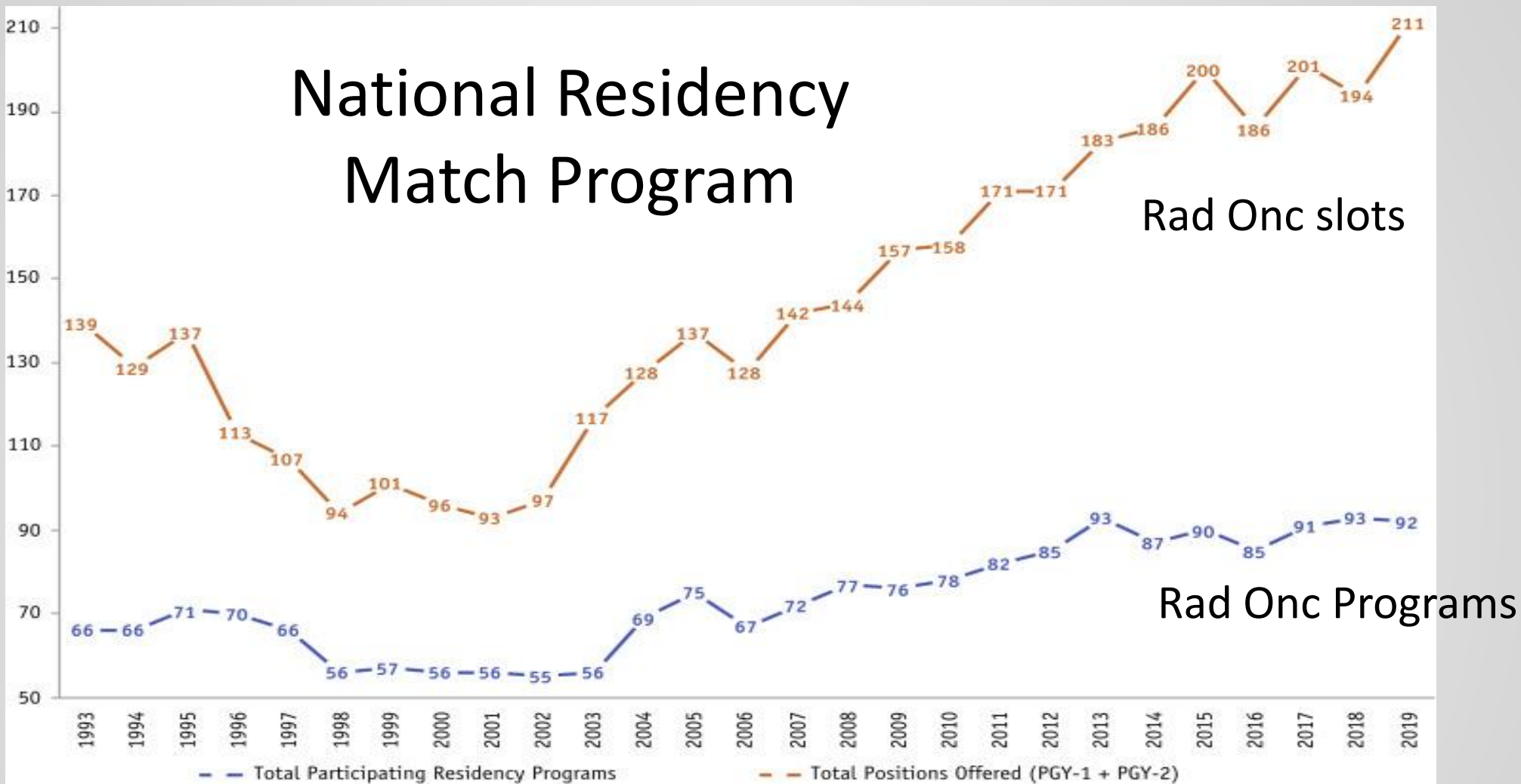
Radiology was one of 11 specialties that saw increases in the number of positions filled by U.S. medical school seniors of more than 10% and ten positions in the last five years (2019 to 2023), the NRMP said. The specialty was also on the list of those with 30 residency positions or more, all of which filled.



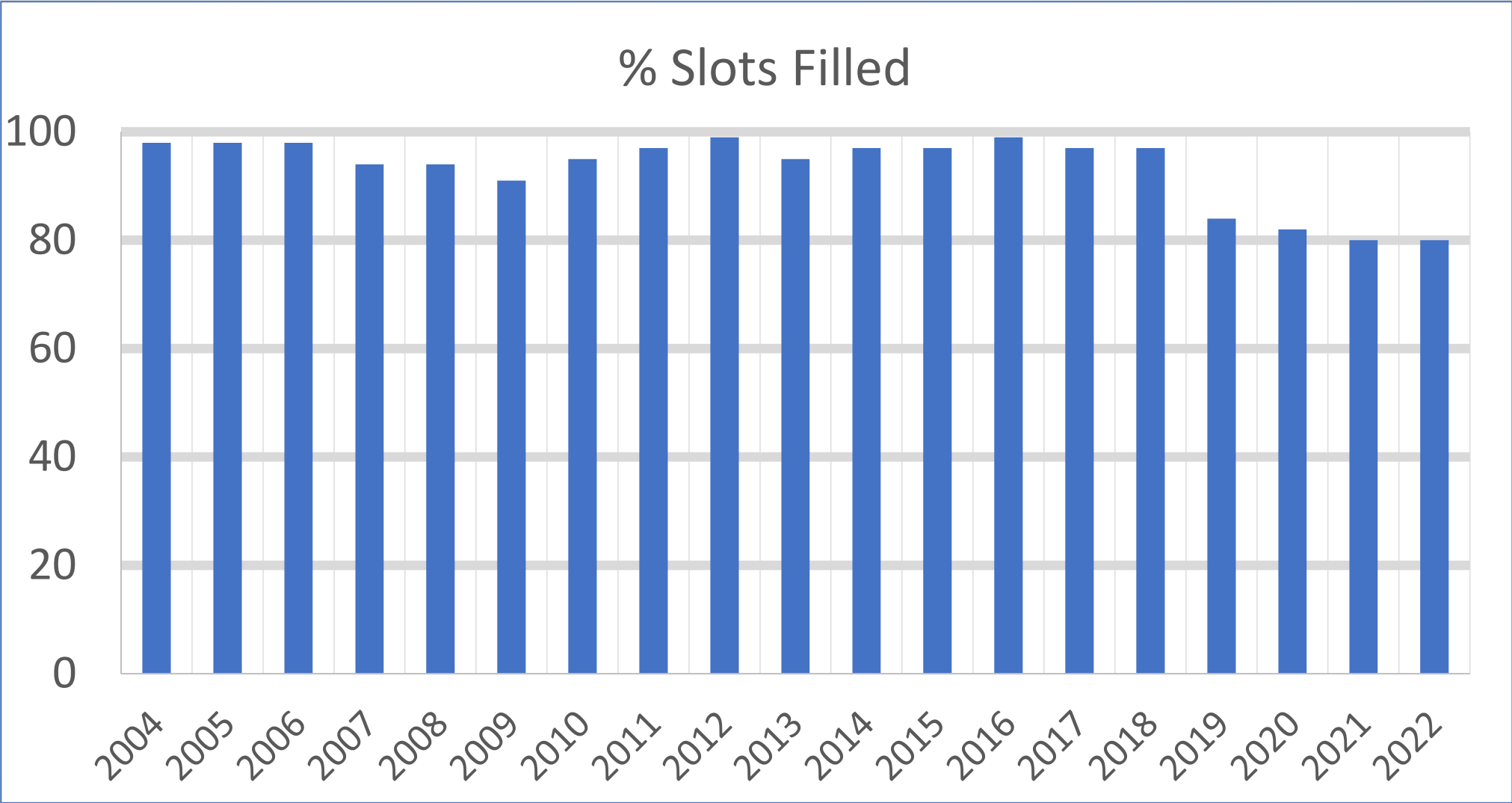
Advance Data Tables 2023 Main Residency Match®

Specialty	# Filled / # Positions
Radiology- diagnostic	1006/1006
Interventional Radiology (integrated)	123/125
Orthopaedic surgery	899/899
Plastic surgery (integrated)	207/207
Dermatology	29/29
Neurosurgery	240/243

National Residency Match Program



R.O. Expansion: National Residency Match Program



Budget Neutrality and Medicare Physician Fee Schedule Reimbursement Trends for Radiologists, 2005 to 2021

- RVUs per beneficiary performed by radiologists increased 13.1% from 2005 to 2021

<https://doi.org/10.1016/j.jacr.2023.07.009>

Medicine without doctors? State laws are changing who treats patients.



By [Shera Avi-Yonah](#)

August 20, 2023 at 7:00 a.m. EDT



- There are more than 350,000 nurse practitioners in the United States.
- Organizations have long pushed for N.P. independence.
- More than half of states no longer require a physician to sign off on the work of a nurse practitioner.
 - 1994: 5
 - 2000: 10
 - 2005: 11
 - 2023: 27 and D.C.
- Institute of Medicine (2010): *“Nurses should be full partners, with physicians and other health care professionals, in redesigning health care in the United States.”*



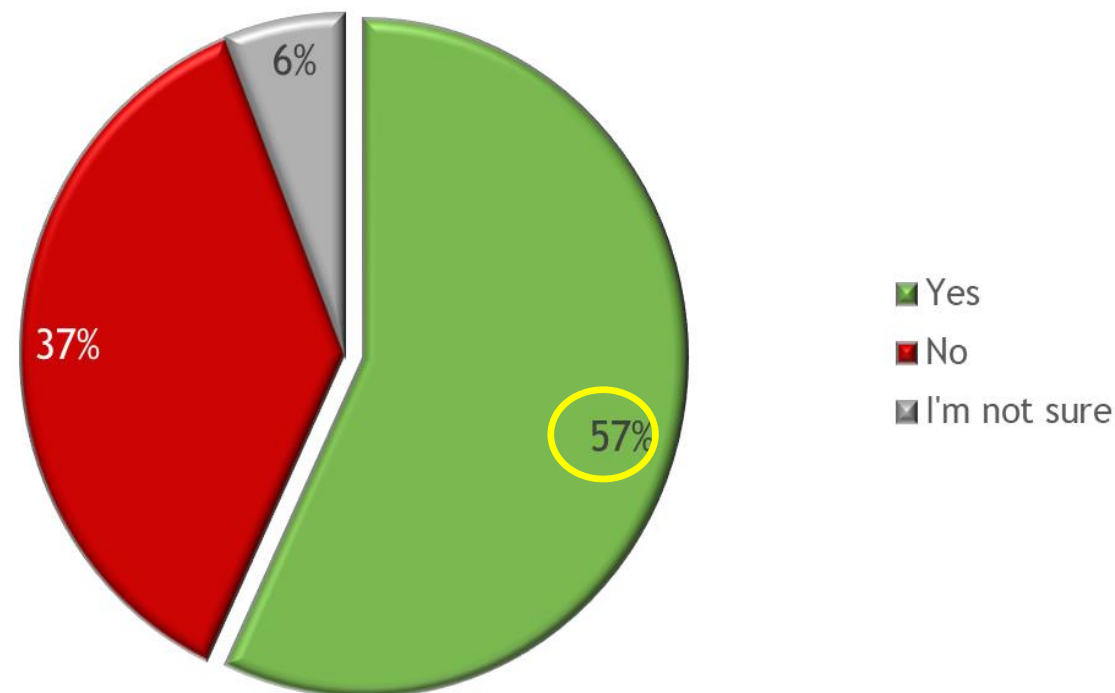
Survey: 2023 Review of Physician and Advanced Practitioner Recruiting Incentives

- Radiology is the third most sought-after specialty among healthcare employers
- Radiologists represented the No. 2 most requested search among AMCs, behind only anesthesiologists.
- The average starting radiologist salary of \$472,000—which includes base salary and guaranteed income only, and not bonus or benefits—represents a more than 27% increase from AMN’s 2017/2018 report. A regional breakdown of the data shows radiologists earned the highest average starting salary in the Midwest (\$495,600) and lowest in the Southeast (\$438,622).
- “The rapid expansion of the NP workforce, which now includes 355,000 professionals, has been critical to ameliorating the physician shortage.”

Over half (57%) utilize NPRPs in their Practice

- Those who are significantly¹ *more likely* than the total sample to utilize NPRPs include:
 - IRs (73%)
 - Academic practice (68%)
 - National practice (64%)
 - Northeast region (63%)
 - Those who are not very concerned about the future scope of RAs (71%)
 - Those extremely/very familiar with MARCA (65%)
 - Those who support or are neutral about MARCA (84% and 69%, respectively)
- Those who are *less likely* than the total to utilize NPRPs include:
 - DRs (55%), Those who are Late career (54%), those in a hospital setting (51%), those in Uniform (18%), and women (54%)

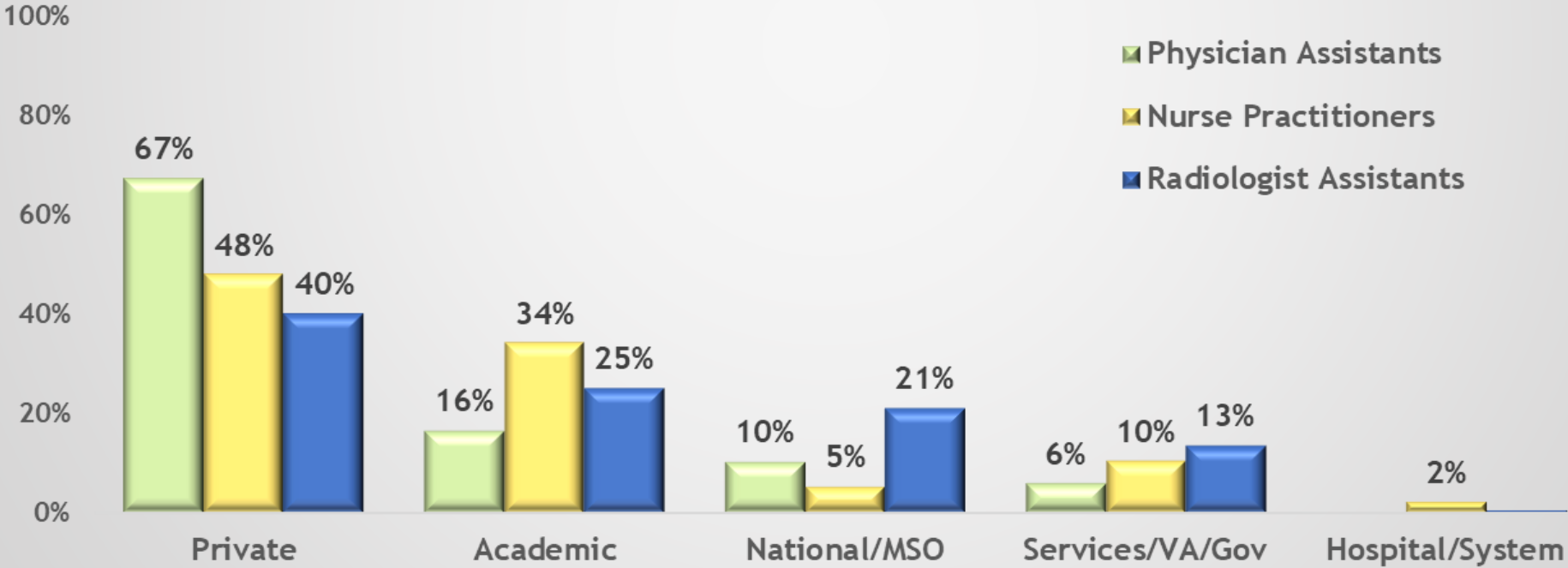
Utilize NPRPs in your Practice?



ACR Survey: Non-Physician Radiology Providers

- *Private practices* employ **40% or more** of the total share of each NPRP type
- *Academic practices* employ more than **one third** of all *nurse practitioners* in radiology practice

Share of NPRP's in the Radiology Workforce by Practice Type



Personal Thoughts



Thank You

hfleishon@outlook.com | [@FleishonMD](https://www.instagram.com/FleishonMD)