



The Present and Future of ID as a Specialty:

Challenges and Opportunities

Conflicts of Interest

- None

Artificial Intelligence was not used in any way to construct this presentation.

Agenda and Learning Objectives

- The current and prior state of recruitment into ID
 - *Understand the current state of the ID/HIV workforce*
- How can we increase interest in ID?
 - *Propose strategies to enhance interest in ID*
- What is IDSA doing now?
 - *Summarize current advocacy efforts and how individuals can help*

What is the future of ID?

Is it this?

“It’s time to close the books on infectious diseases, declare the war on pestilence won, and shift national resources to such chronic problems as cancer and heart disease.”

---William Stewart, US Surgeon General, 1967

Or this?

309, the infectious-disease examination. Even with my great personal loyalties to infectious disease, I cannot conceive a need for 309 more infectious-disease experts unless they spend their time culturing each other. Moreover, these figures do not include cardiol-

---Robert Petersdorf, 1978

The Infectious Diseases Specialist, At Risk of Extinction

The Journal of Infectious Diseases

May, 2023

PUBLIC HEALTH



Newest doctors shun infectious diseases specialty

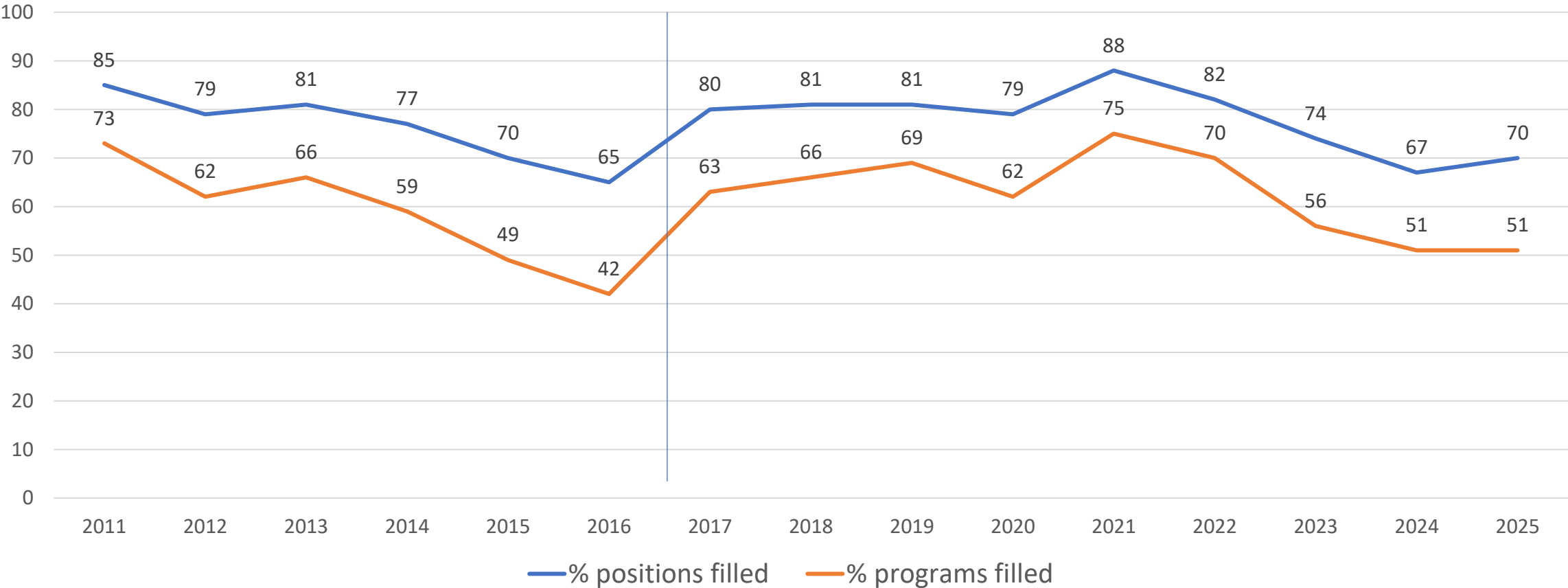
Infectious Diseases Subspecialty:
Declining Demand

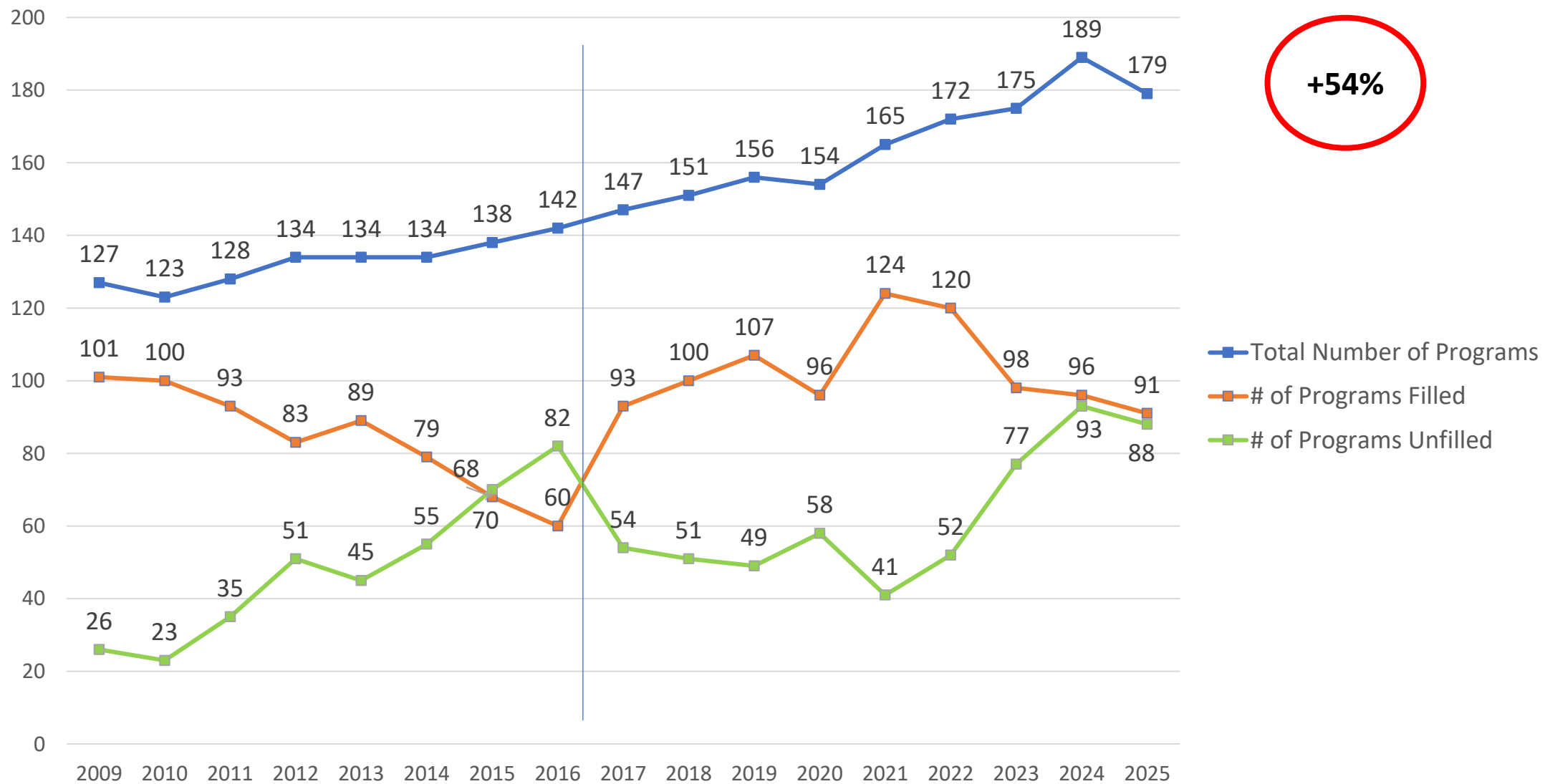
The real risk is that statements like this can become a self-fulfilling prophecy, leading the specialty to become less and less popular



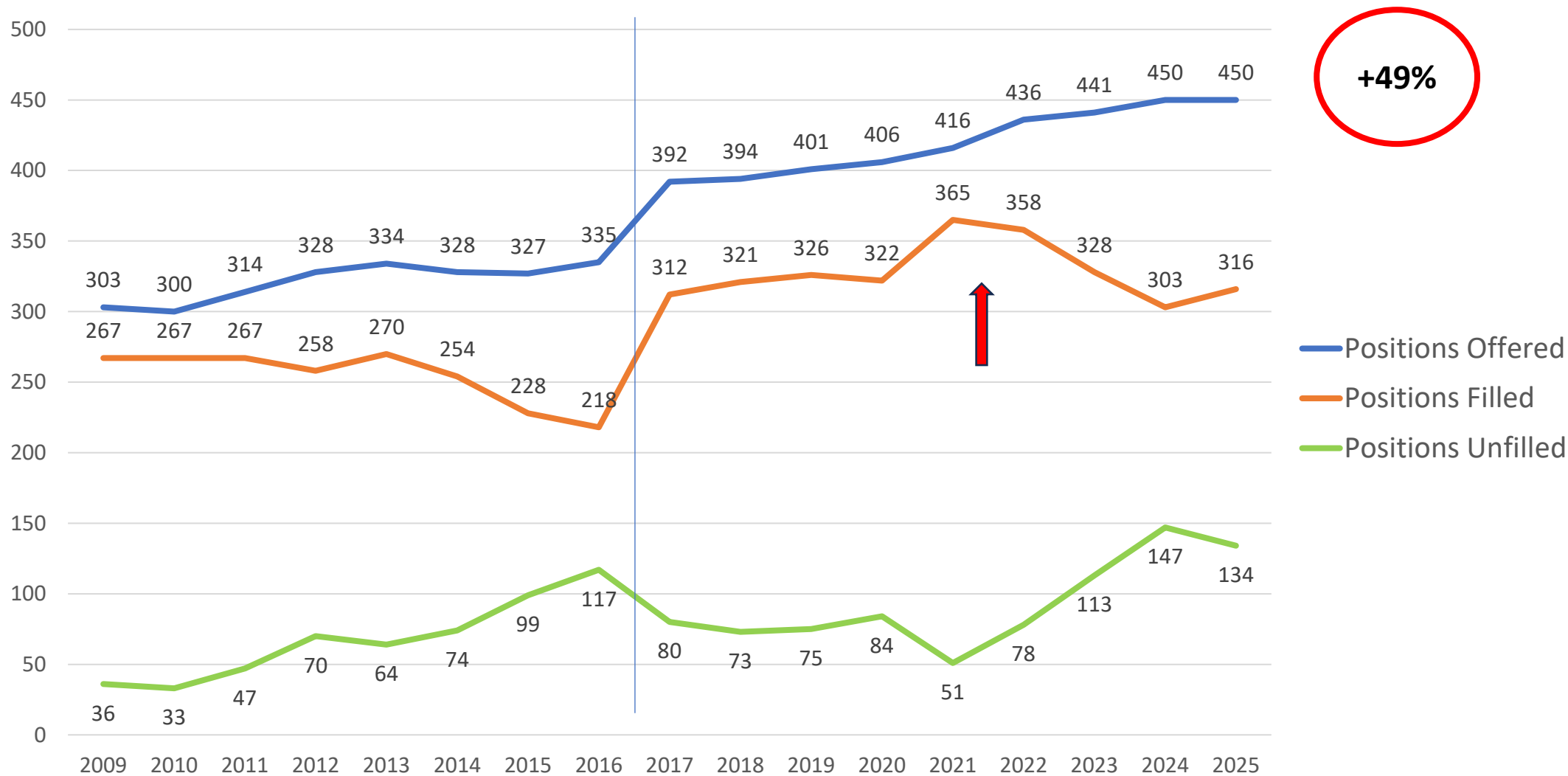
Looking Back:
The Fellowship Match -
What is the truth?

% Positions and Program filled, 2011-present

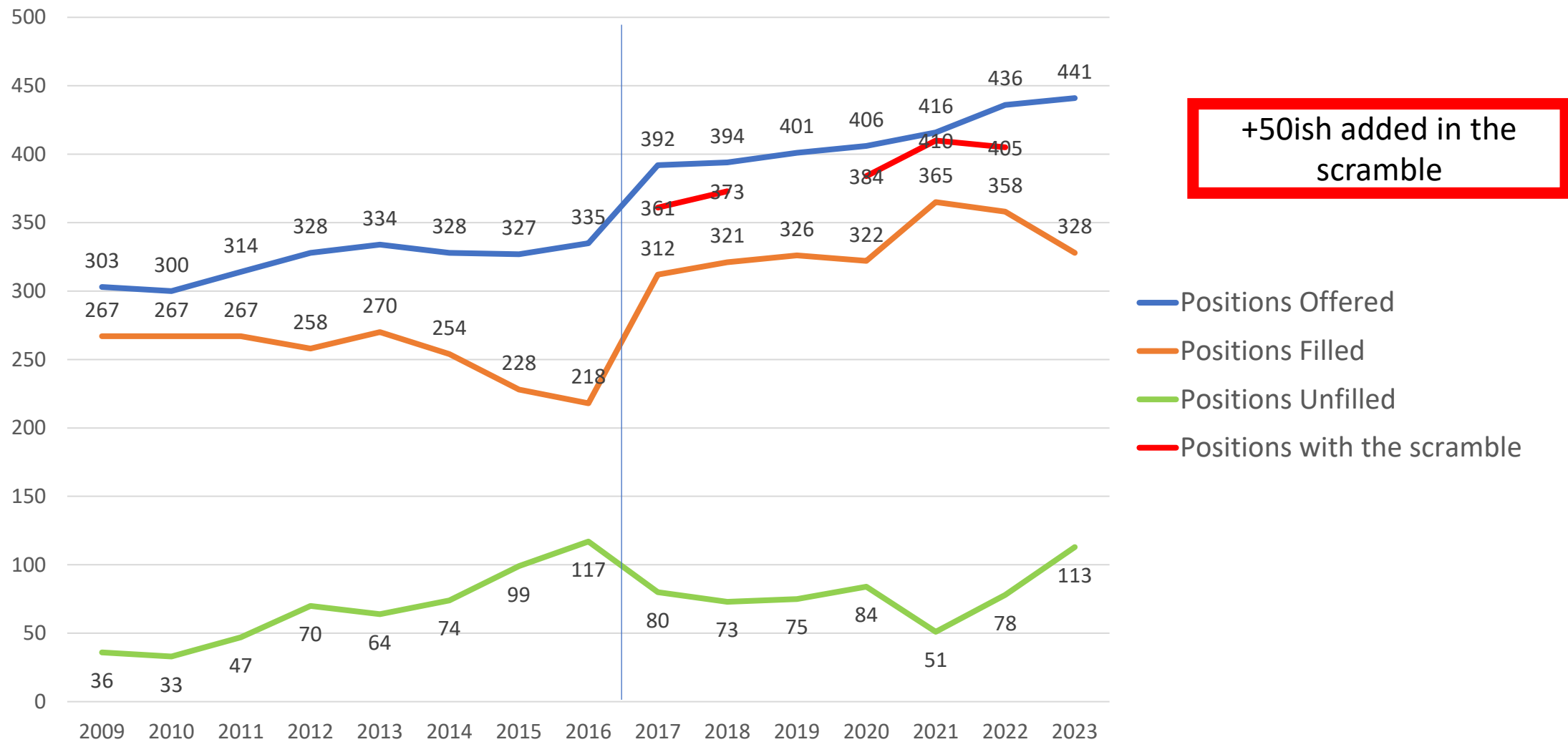




Trends in US National Residency Match Program Specialties Matching Service, Infectious Disease Programs Filled and Unfilled from AY 2009-2025



Trends in US National Residency Match Program Specialties Matching Service,
Infectious Disease Positions Filled and Unfilled from AY 2009-2025

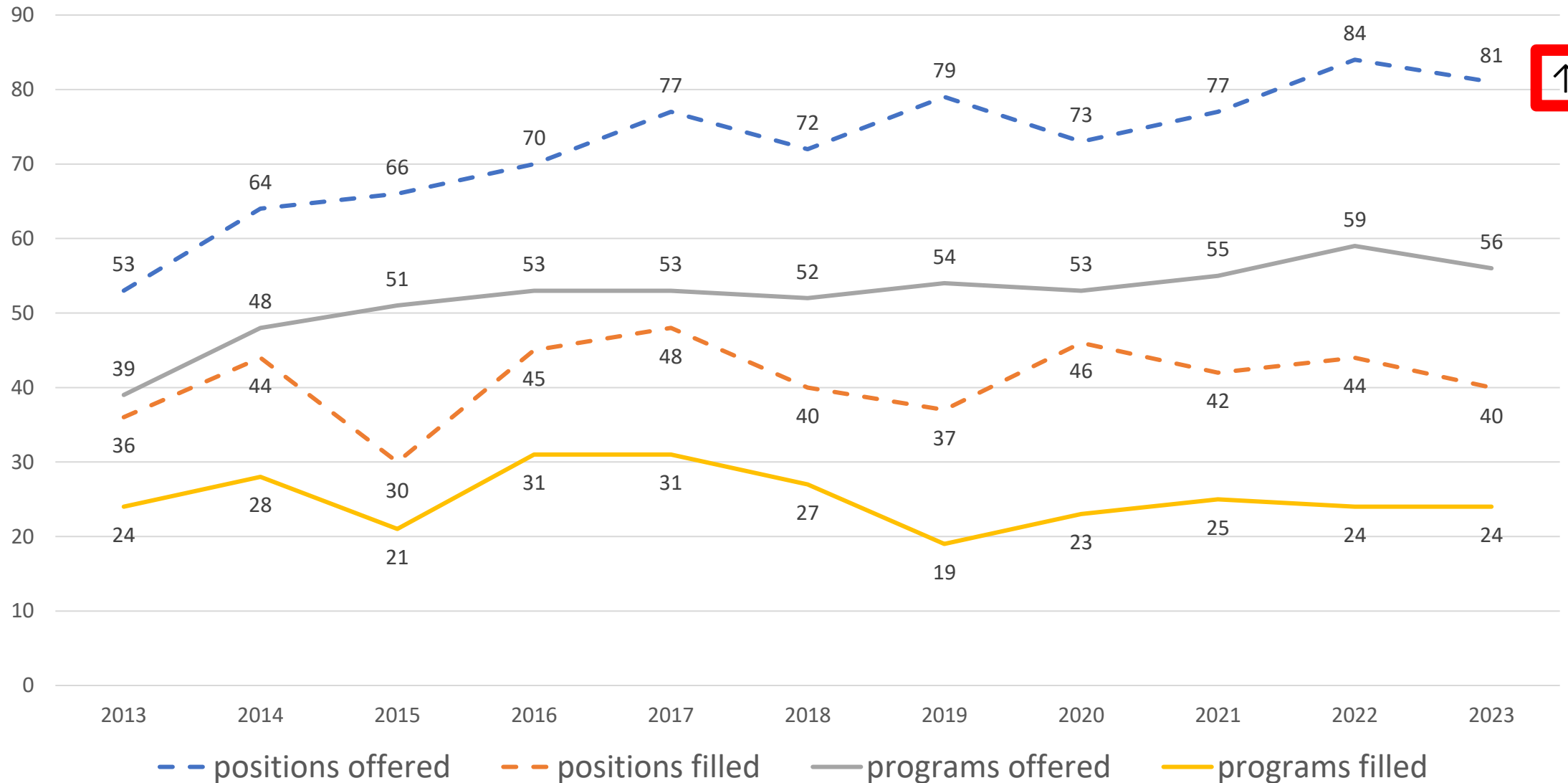


Trends in US National Residency Match Program Specialties Matching Service,
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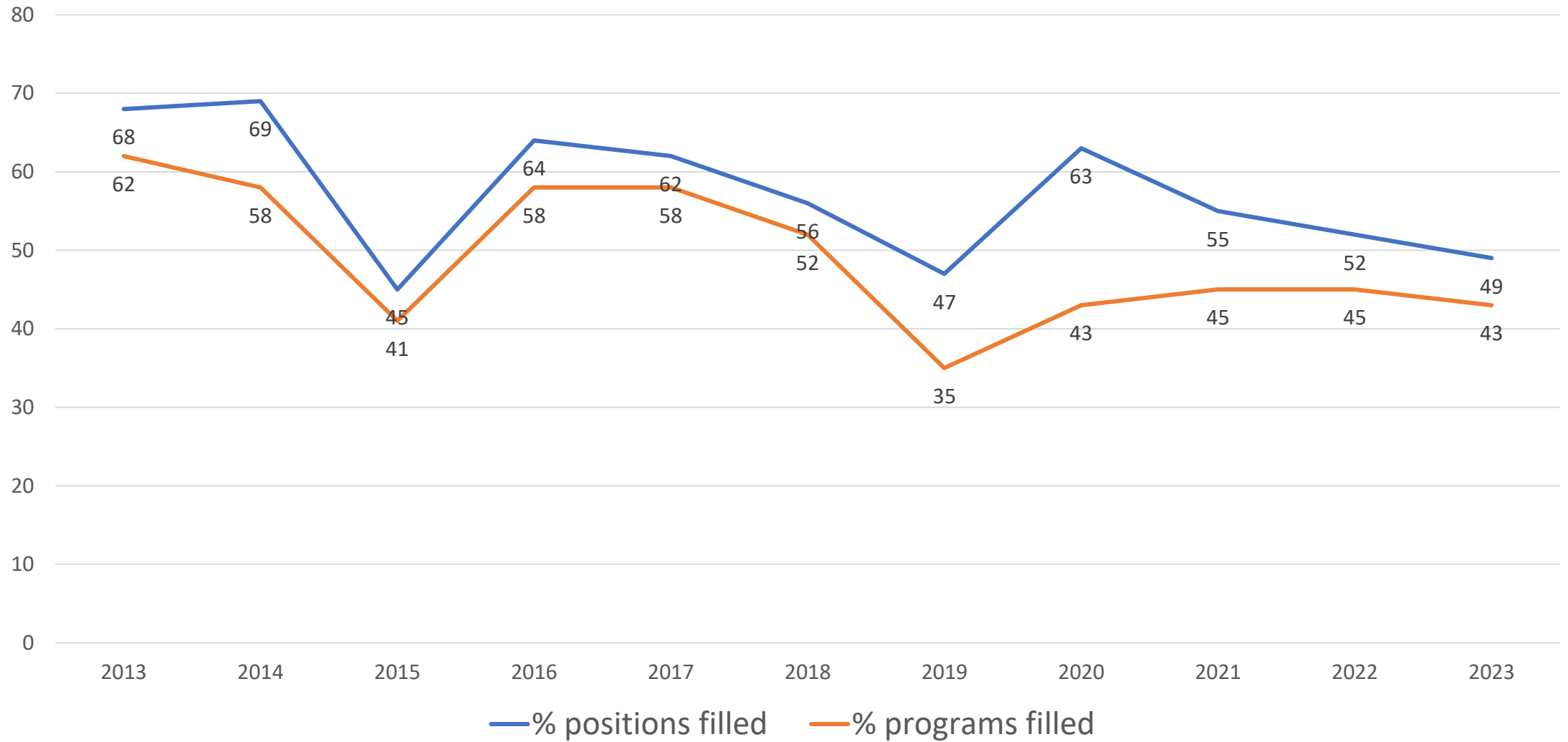
How does this
compare with
other Medical
Subspecialties?

	Appt Year 2023: Positions filled % (#)
Cardiology	100 (1152)
Pulm/CC	98 (730)
Heme/Onc	100 (706)
Rheum	98 (265)
GI	100 (656)
Endocrine	95 (341)
ID	74 (328)
Pall Care	85 (390)
Nephrology	73 (359)
Geriatrics	45 (153)

Pediatric ID Match Data



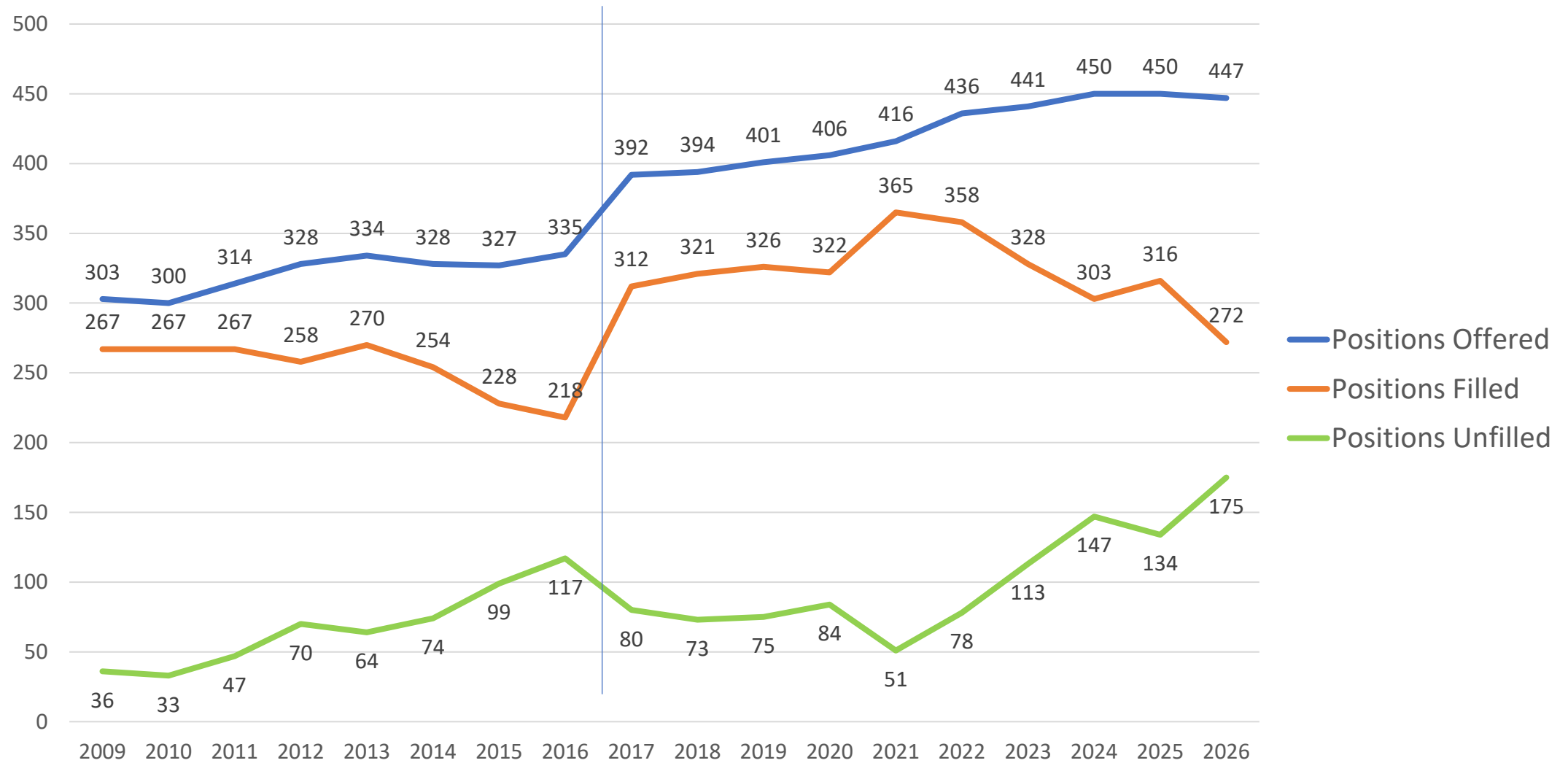
Pediatric ID % positions and programs filled



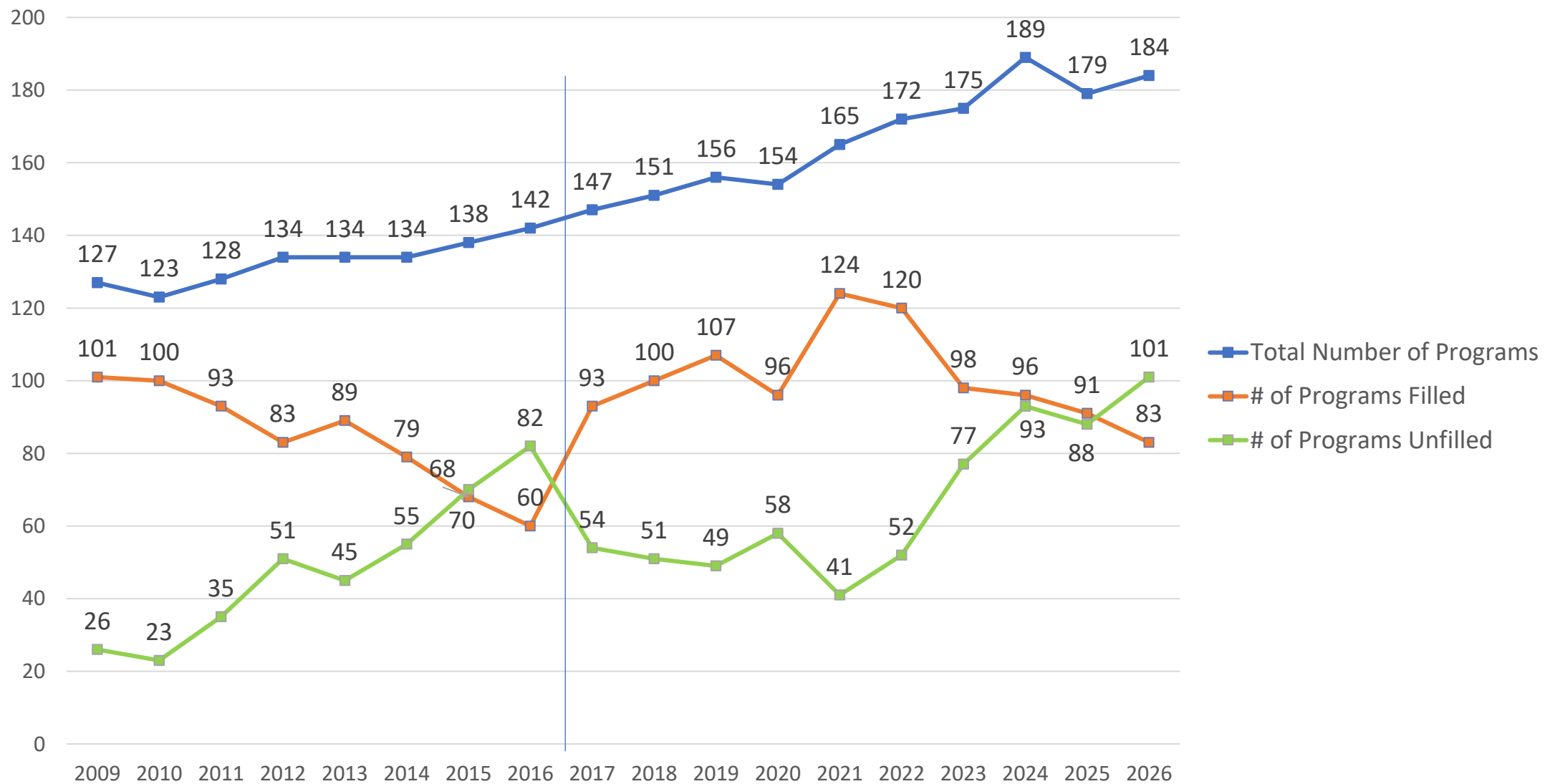
ID Match data 2014-2025



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Positions offered	328	327	335	392	394	401	406	416	436	441	450	450	447
Filled/%	254/77	228/70	218/65	312/80	321/81	326/81	322/79	365/88	358/82	328/74	303/67%	316/70%	272/61%
Prog off	134	138	142	147	151	156	154	165	172	175	189	193	184
Prog filled/%	79/59	68/49	60/42	93/63	100/66	107/69	96/62	124/75	120/70	98/56	96/51	91/51	83/45
US MD				162	158	169	160	185	165	151	165	134	124
DO				30	41	42	40	35	50	56	41	57	36
IMG				66	77	74	84	94	94	78	64	65	78
US For				54	45	40	36	50	49	42	33	58	34

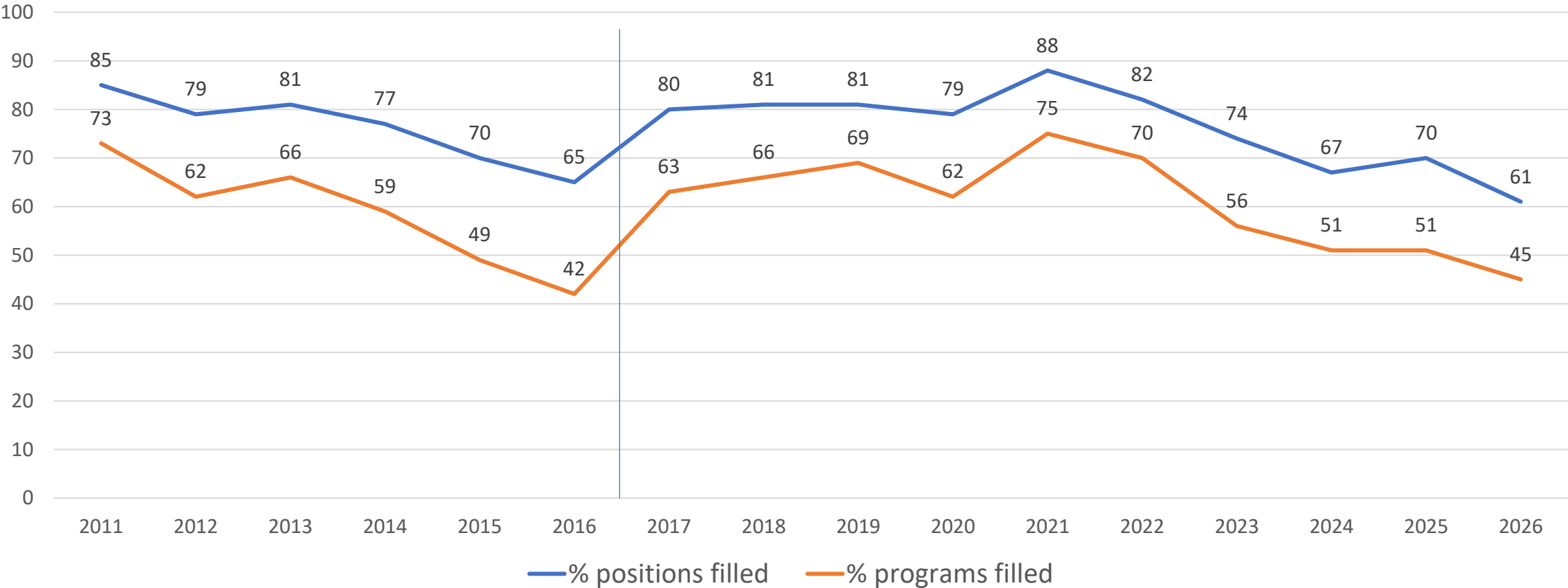


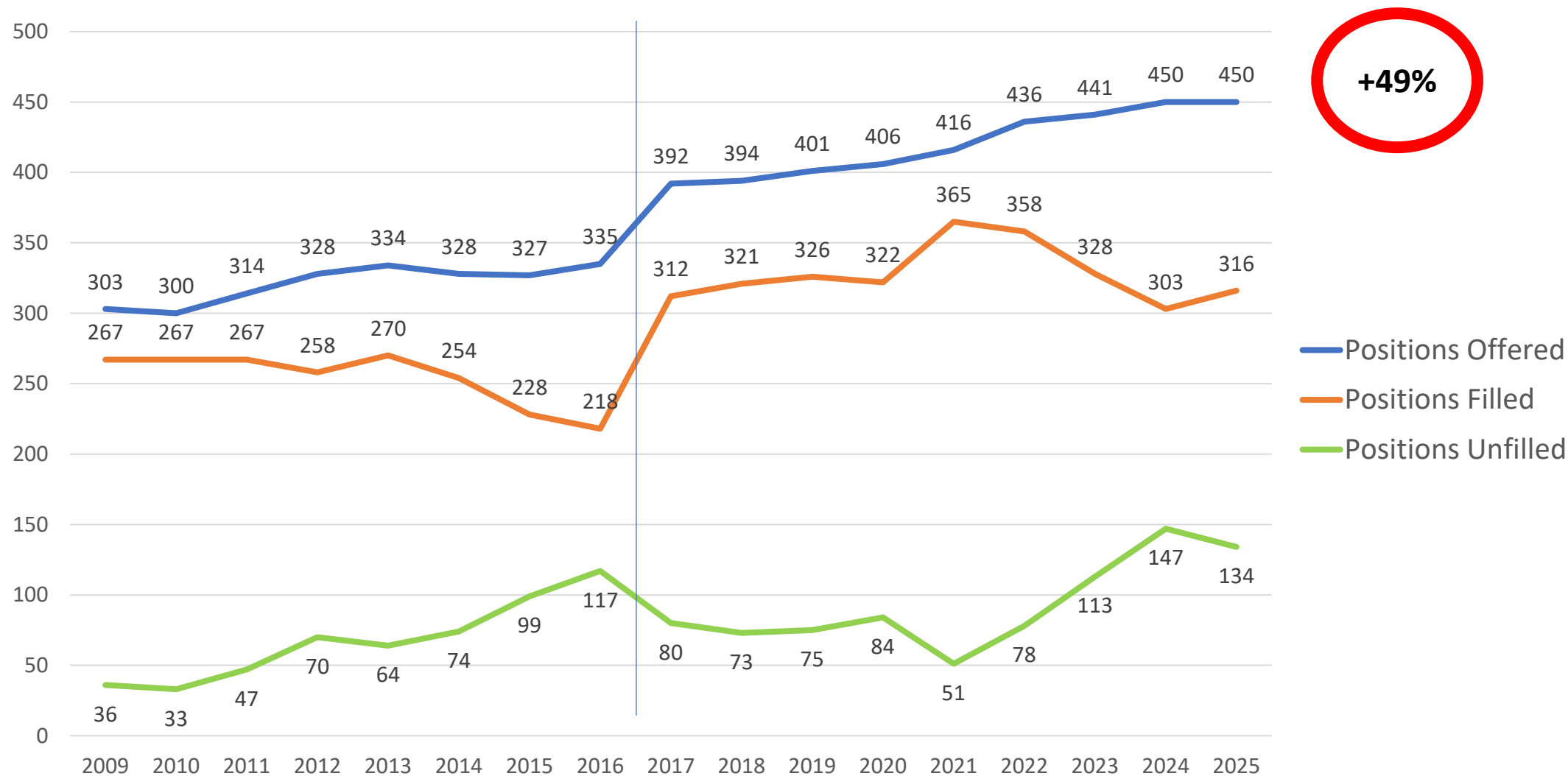
Trends in US National Residency Match Program Specialties Matching Service,
Infectious Disease Positions Filled and Unfilled from AY 2009-2025



Trends in US National Residency Match Program Specialties Matching Service,
Infectious Disease Programs Filled and Unfilled from AY 2009-2025

% Positions and Program filled, 2011-present





Trends in US National Residency Match Program Specialties Matching Service,
Infectious Disease Positions Filled and Unfilled from AY 2009-2025

Nephrology adopts all-in match

Improving the Nephrology Match: the Path Forward

Chi-yuan Hsu,^{*} Mark G. Parker,[†] Michael J. Ross,[‡] Rebecca J. Schmidt,[§] and Raymond C. Harris^{||} on behalf of the ASN Nephrology Match Task Force

^{*}University of California, San Francisco School of Medicine, San Francisco, California; [†]Tufts University School of Medicine and Maine Medical Center, Portland, Maine; [‡]Icahn School of Medicine at Mount Sinai, New York City, New York; [§]West Virginia University School of Medicine, Morgantown, West Virginia; and ^{||}Vanderbilt University School of Medicine, Nashville, Tennessee

Attempts to “Right-Size” the Slots

Table 4. Questions for Nephrology Training Program self-assessment

-
1. Is the size of the fellowship program justified more by clinical service workload or by the educational opportunities provided by the program?
 2. Does the fellowship support local, regional or national efforts to enhance nephrology workforce diversity and/or reduce health care disparities?
 3. Does the fellowship serve local or regional needs for access to care, and/or participate in unique offerings such as Urban Service or Rural Service tracks with the parent specialty program or the school?
 4. Are the physician investigator graduates of the program successful in obtaining independent research funding and do they sustain careers in investigation?
 5. Are most graduating fellows from the program able to find jobs that are consistent with their career and personal objectives?
 6. Does the program have adequate diversity and quantity of clinical experiences (including kidney transplantation, peritoneal and home hemodialysis, and opportunity for invasive and non-invasive procedures) to provide optimal training for all fellows?
 7. Does the program have adequate institutional support and sufficient numbers of quality clinical and research faculty to provide optimal training for all fellows?
 8. What percentage of the program matriculates in the last five years passed their Internal Medicine boards on the first attempt, and subsequently passed Nephrology boards on the first attempt?
 9. Has your program filled all of its positions that were allocated in the Match for each of the last three years?
-

SPECIAL ARTICLE

THE DOCTORS' DILEMMA

ROBERT G. PETERSDORF, M.D.

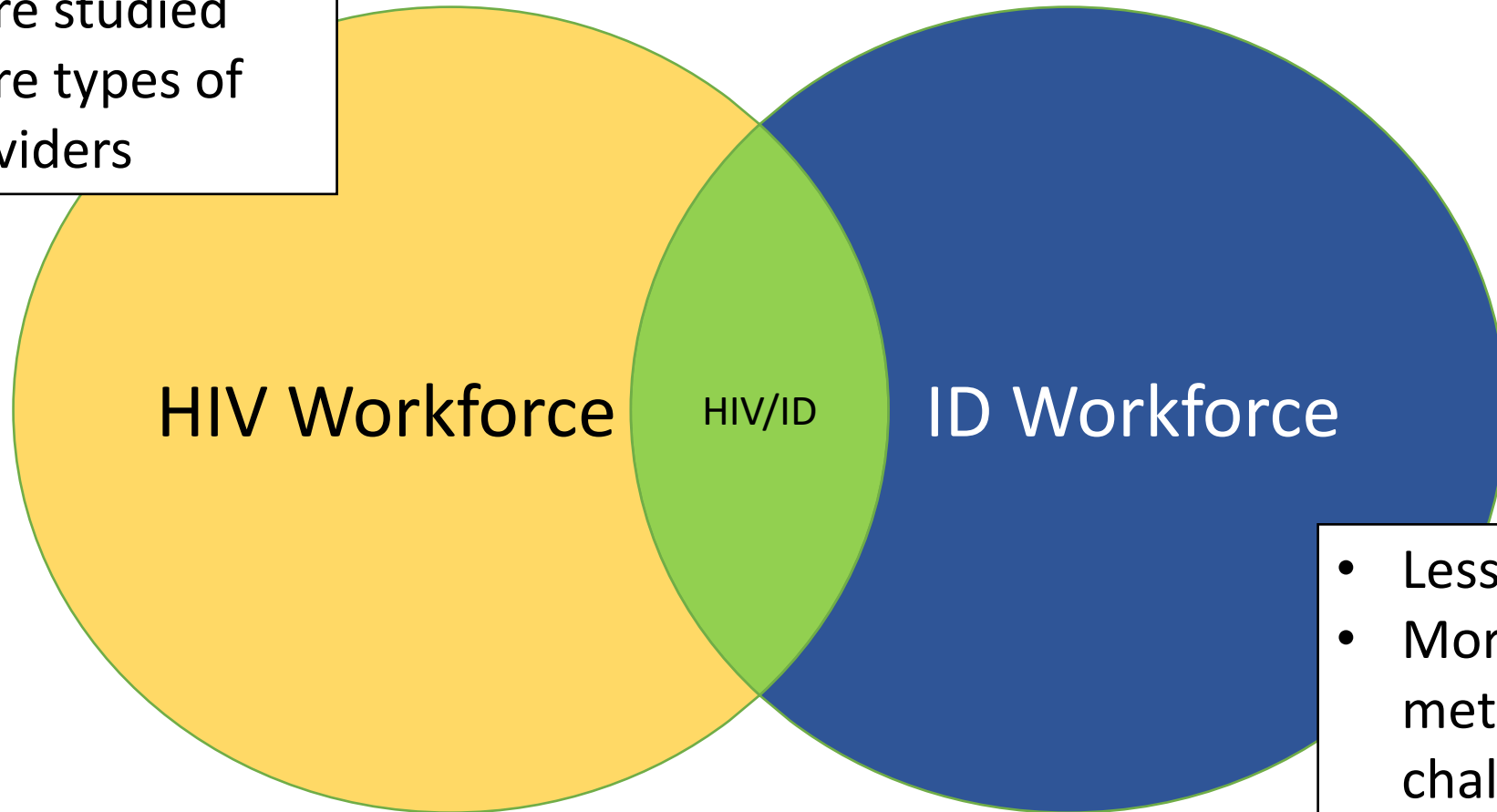
IN the preface to the *Doctor's Dilemma*, George Bernard Shaw says:

Make up your mind how many doctors the community needs to keep it well. Do not register more or less than this number; and let registration constitute the doctor a civil servant with a dignified living wage paid out of public funds.

Although this statement was made in 1911, it has a remarkably contemporary ring and could as easily be made in 1978 by a consumer advocate or by a government official. It also constitutes the major dilemma of American medicine today — that is, how to deploy the burgeoning physician manpower pool in a way that is acceptable to society, to the medical profession and, above all, to the patients whom it serves.

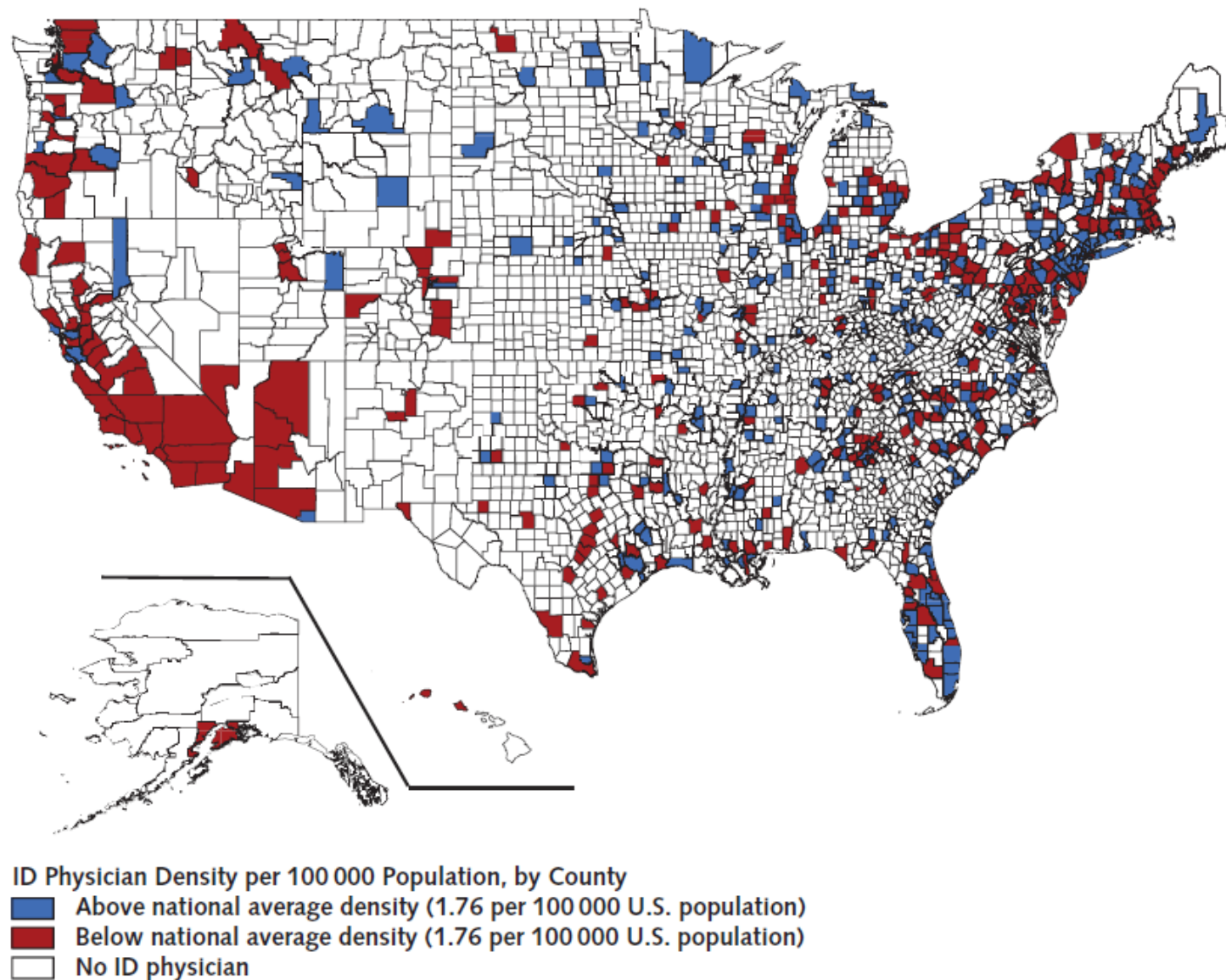
ID Workforce Studies

- More studied
- More types of providers



- Less studied
- More methodological challenges

Figure 1. County-level ID physician density for the United States.



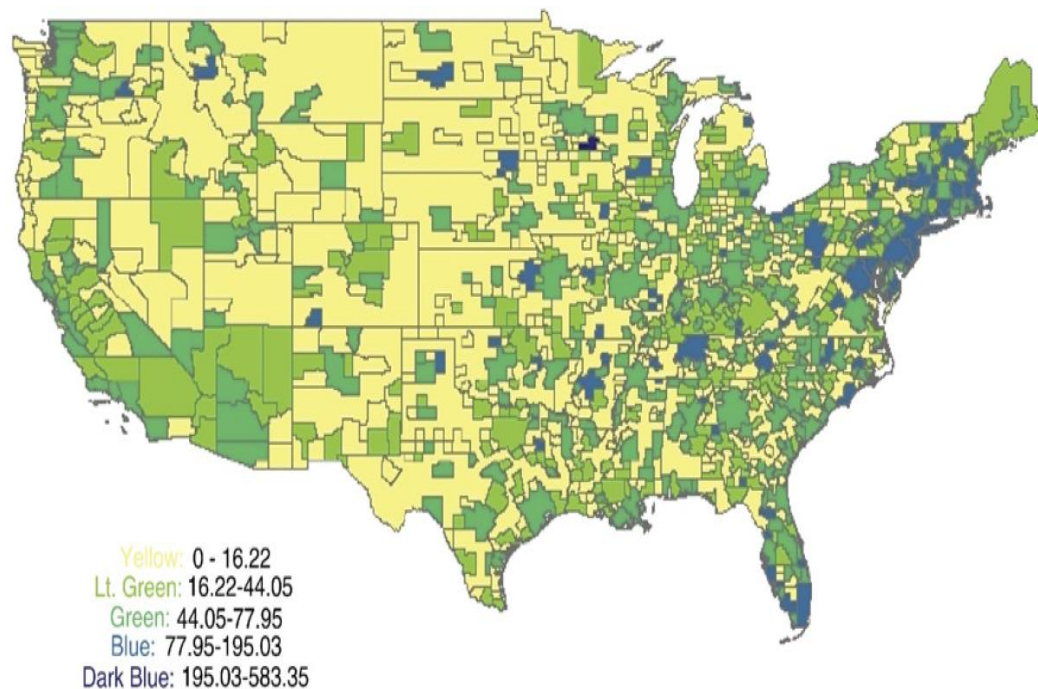
The average ID physician density in the United States is 1.76 per 100 000 persons. Counties with ID physicians above this national average density are shown in blue, those with below national average density are shown in red, and those with no ID physicians are shown in white.

Table 2. Number of Counties and Median County-level Human Immunodeficiency Virus (HIV) Clinician-to-Population Ratios (Clinicians per 1000 Diagnosed HIV Cases)

	Counties With at Least 5 Diagnosed HIV Cases (Frequency)			All HIV Clinicians, Median (IQR)				>10 Medicaid PLH HIV-Experienced Clinicians, Median (IQR)			
State	All	Rural	Urban	All Counties	Rural Counties	Urban Counties	PValue ^a	All Counties	Rural Counties	Urban Counties	PValue ^a
All 14 states	926	531	395	13.3 (38.0)	7.4 (43.5)	16.0 (32.3)	.13	0.0 (0.0)	0.0 (0.0)	0.0 (4.9)	< .01
Alabama	67	38	29	11.0 (27.8)	17.0 (38.5)	4.3 (14.4)	.05	0.0 (0.0)	0.0 (0.0)	0.0 (3.2)	< .01
Arkansas	71	51	20	0.0 (45.5)	0.0 (52.6)	15.9 (24.8)	.47	0.0 (0.0)	0.0 (0.0)	0.0 (5.6)	< .01
DC	1	0	1	6.2 (–)	...	6.2 (–)		2.8 (–)	...	2.8 (–)	
Delaware	3	0	3	34.5 (14.5)	...	34.5 (14.5)		8.6 (2.2)	...	8.6 (2.2)	
Florida	67	23	44	19.3 (20.5)	27.3 (32.3)	19.0 (14.6)	.69	4.0 (6.7)	0.0 (6.8)	5.0 (6.7)	.04
Georgia	156	83	73	7.6 (28.4)	0.0 (30.3)	10.7 (23.7)	.63	0.0 (0.0)	0.0 (0.0)	0.0 (1.8)	< .01
Kentucky	99	67	32	0.0 (53.4)	0.0 (76.9)	4.4 (37.9)	.62	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	< .01
Louisiana	62	28	34	13.5 (28.6)	11.7 (32.8)	14.5 (21.4)	.71	0.0 (0.0)	0.0 (0.0)	0.0 (5.2)	< .01
Maryland	24	5	19	6.9 (12.0)	0.0 (16.7)	7.1 (9.4)	.48	0.0 (0.4)	0.0 (0.0)	0.0 (1.0)	.16
Mississippi	80	63	17	29.2 (48.0)	27.3 (56.3)	33.9 (31.1)	.39	0.0 (0.0)	0.0 (0.0)	0.0 (3.5)	< .01
North Carolina	98	52	46	20.0 (41.7)	17.1 (39.1)	24.4 (32.5)	.28	0.0 (4.1)	0.0 (0.0)	0.0 (9.3)	< .01
Oklahoma	61	44	17	26.3 (47.1)	26.3 (59.7)	27.4 (22.4)	.91	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	< .01
Tennessee	89	48	41	27.0 (56.3)	30.4 (64.6)	24.4 (51.3)	.69	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	< .01
West Virginia	48	29	19	0.0 (48.0)	0.0 (0.0)	32.3 (83.3)	< .01	0.0 (0.0)	0.0 (0.0)	0.0 (14.9)	< .01

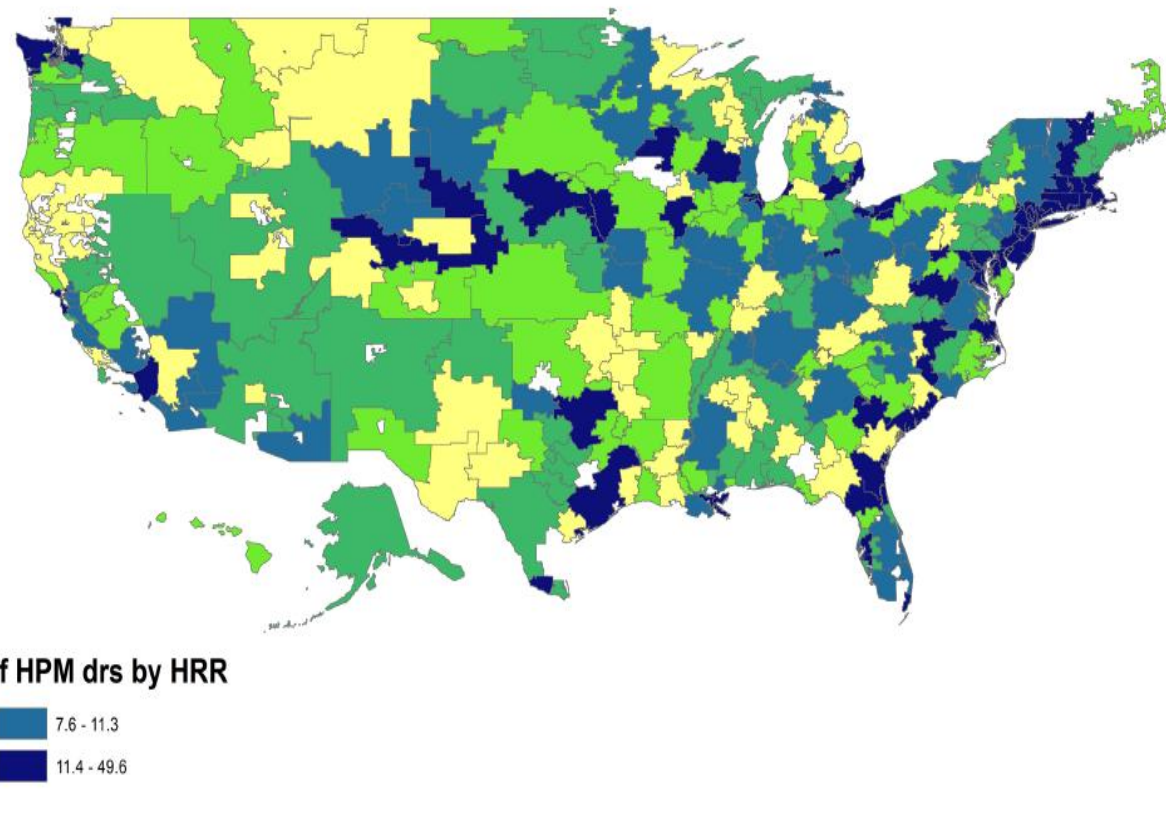
>10 Medicaid PLH

Two maps



General Cardiologists, 2008

Infectious Disease Doctors (in both NPPES and 2014 PUF)
per100,000 population by Hospital Referral Region (HRR)



Jobs are not where people want to practice

Exhibit 3: Views of the Local and National Job Market, Adult ID

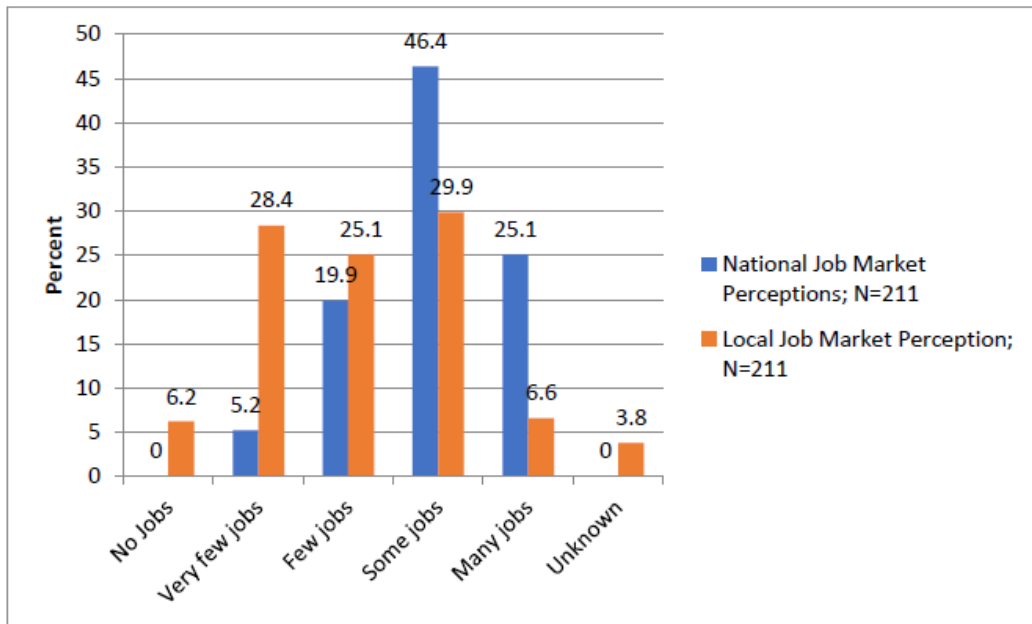


Exhibit 4: Income by Practice Location: 2016 Fellows

Practice Location	'Average' Income
Inner city	\$166,000
Other area within major city	\$183,000
Suburban	\$191,000
Small city (population less than 50,000)	\$211,000
Rural	\$222,000



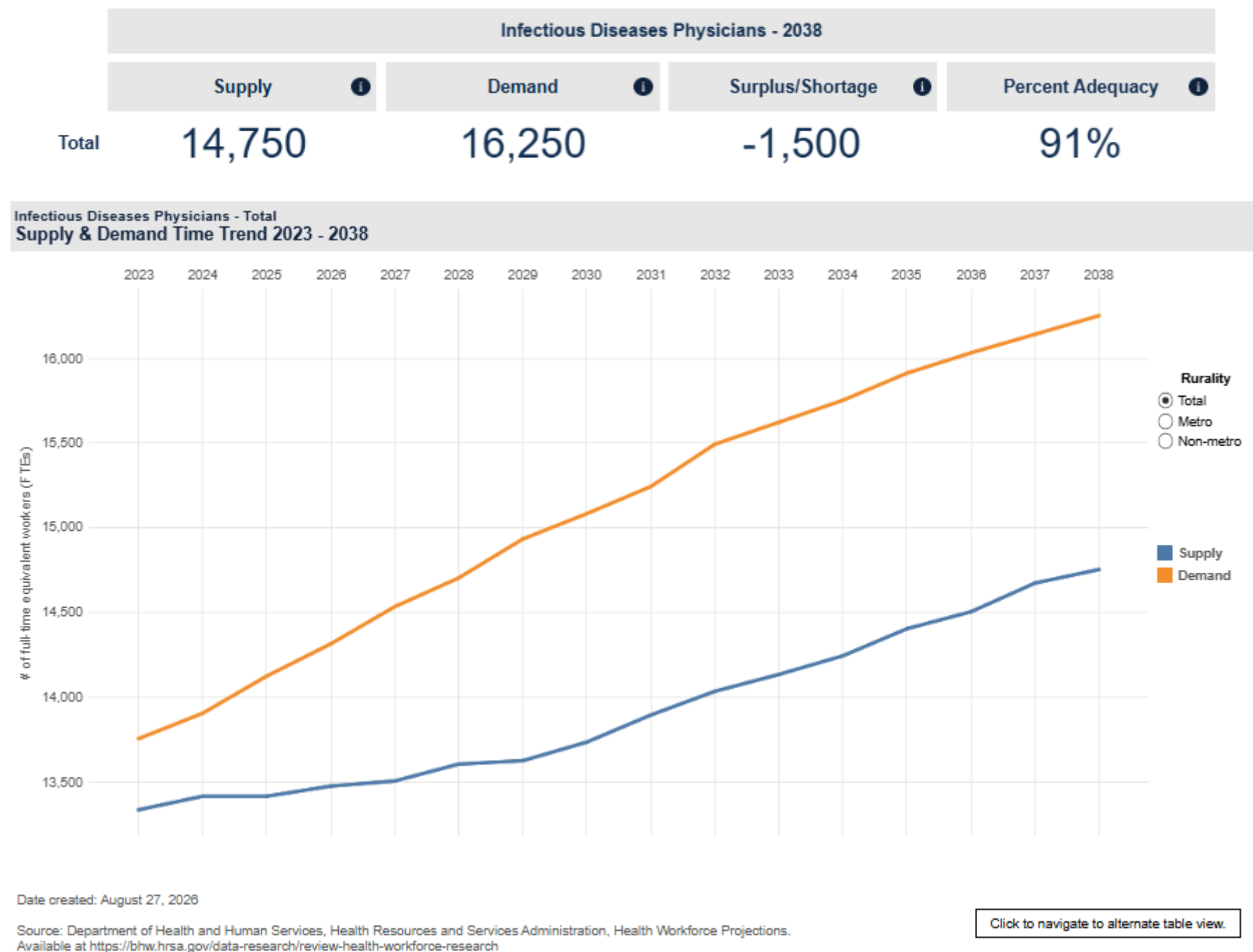
Health Resources & Services Administration



Projecting Health Workforce Supply and Demand

Assumptions

- **Estimated 435 ACGME graduates** entering the specialty/year
- Demand:
 - Population file for each county in the US
 - Prediction equations of demand for each service
 - Physician staffing ratios
 - ***** 2020 demand is assumed equal to national supply for most specialties except FM, GIM, Psych and their shortage was determined by the # needed to remove the HPSA designation**



Metro

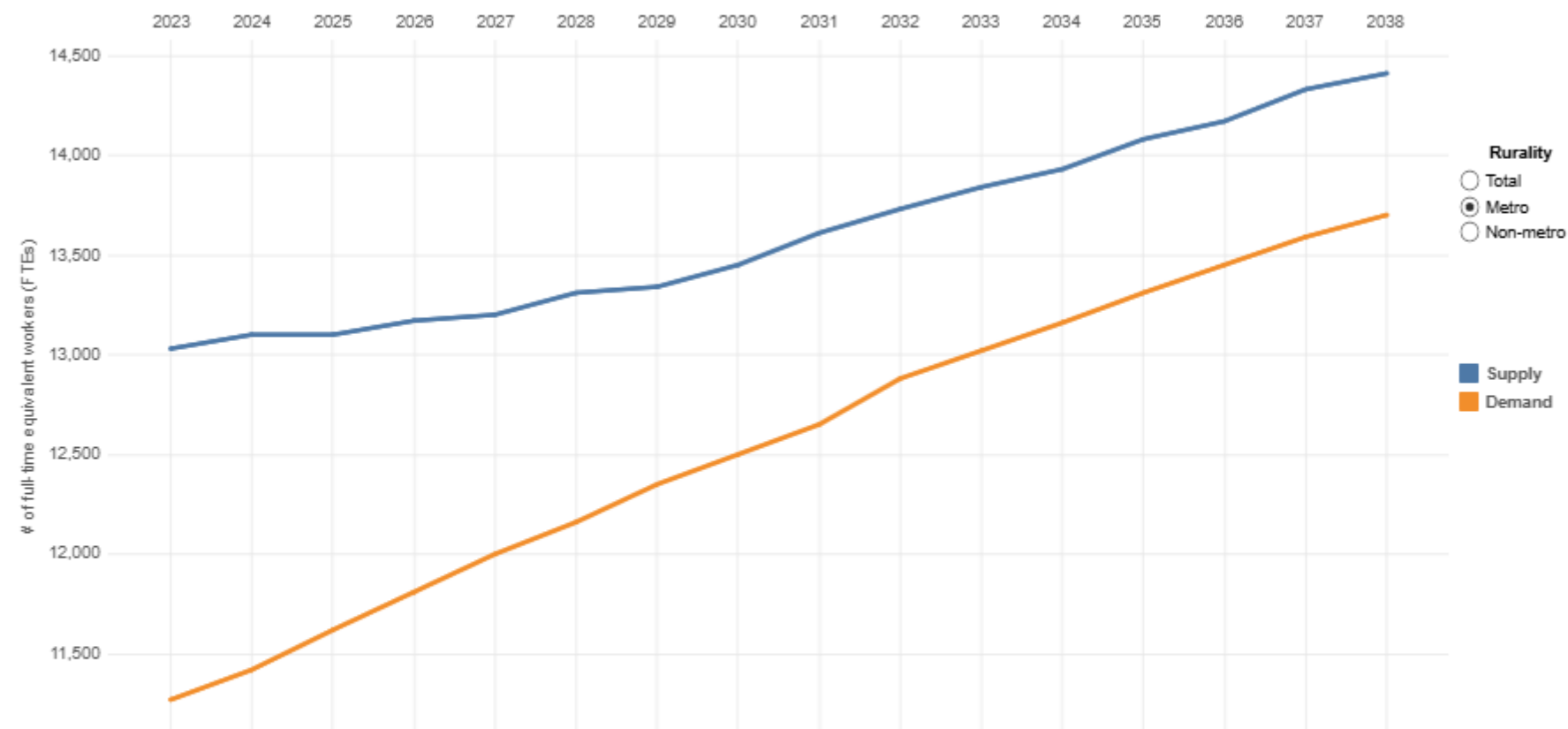
14,410

13,700

710

105%

Infectious Diseases Physicians - Metro
Supply & Demand Time Trend 2023 - 2038



Date created: August 27, 2026

Source: Department of Health and Human Services, Health Resources and Services Administration, Health Workforce Projections.
Available at <https://bhwh.hrsa.gov/data-research/review-health-workforce-research>

[Click to navigate to alternate table view.](#)

Non-metro

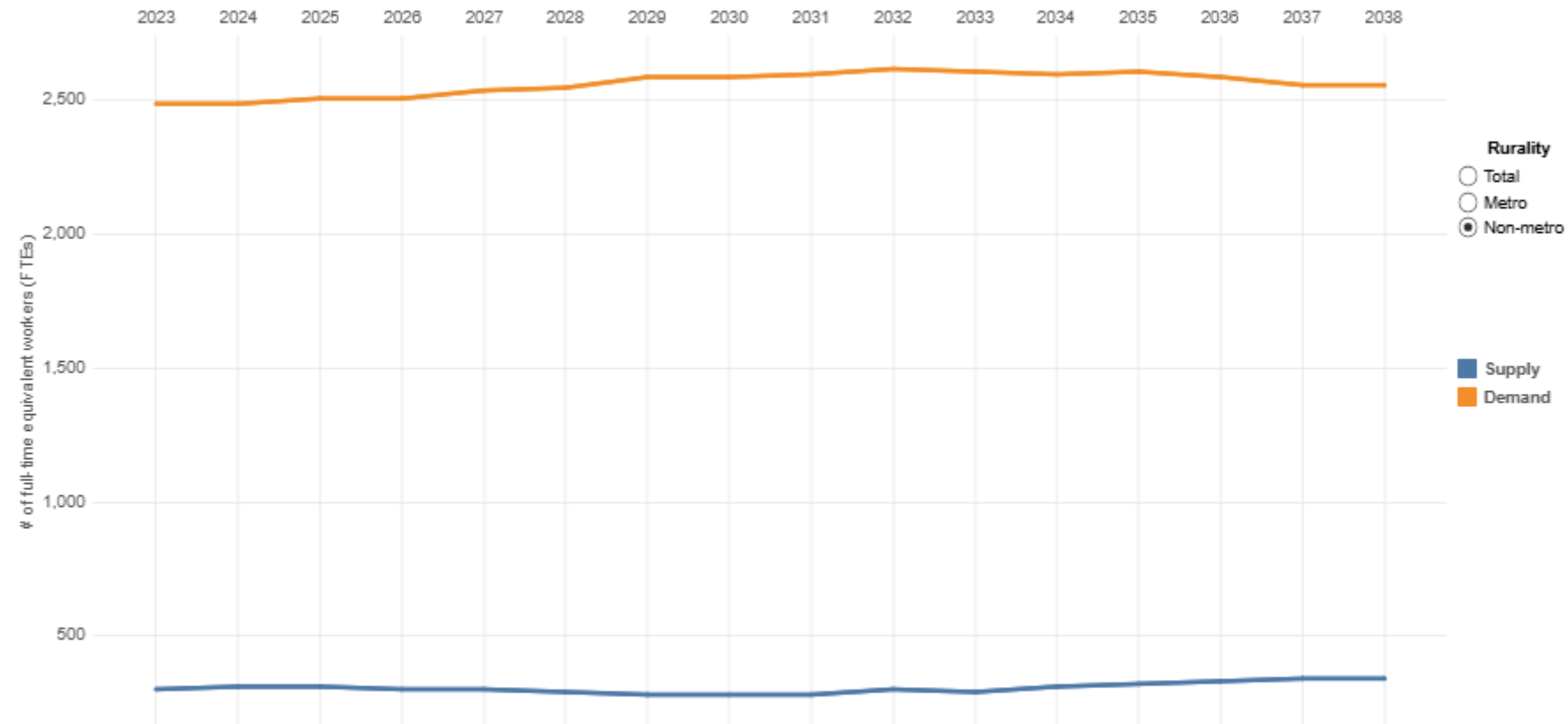
340

2,550

-2,210

13%

Infectious Diseases Physicians - Non-metro
Supply & Demand Time Trend 2023 - 2038



Date created: August 27, 2026

Source: Department of Health and Human Services, Health Resources and Services Administration, Health Workforce Projections.
Available at <https://bhwh.hrsa.gov/data-research/review-health-workforce-research>

[Click to navigate to alternate table view.](#)

Infectious Diseases Physicians
National Data

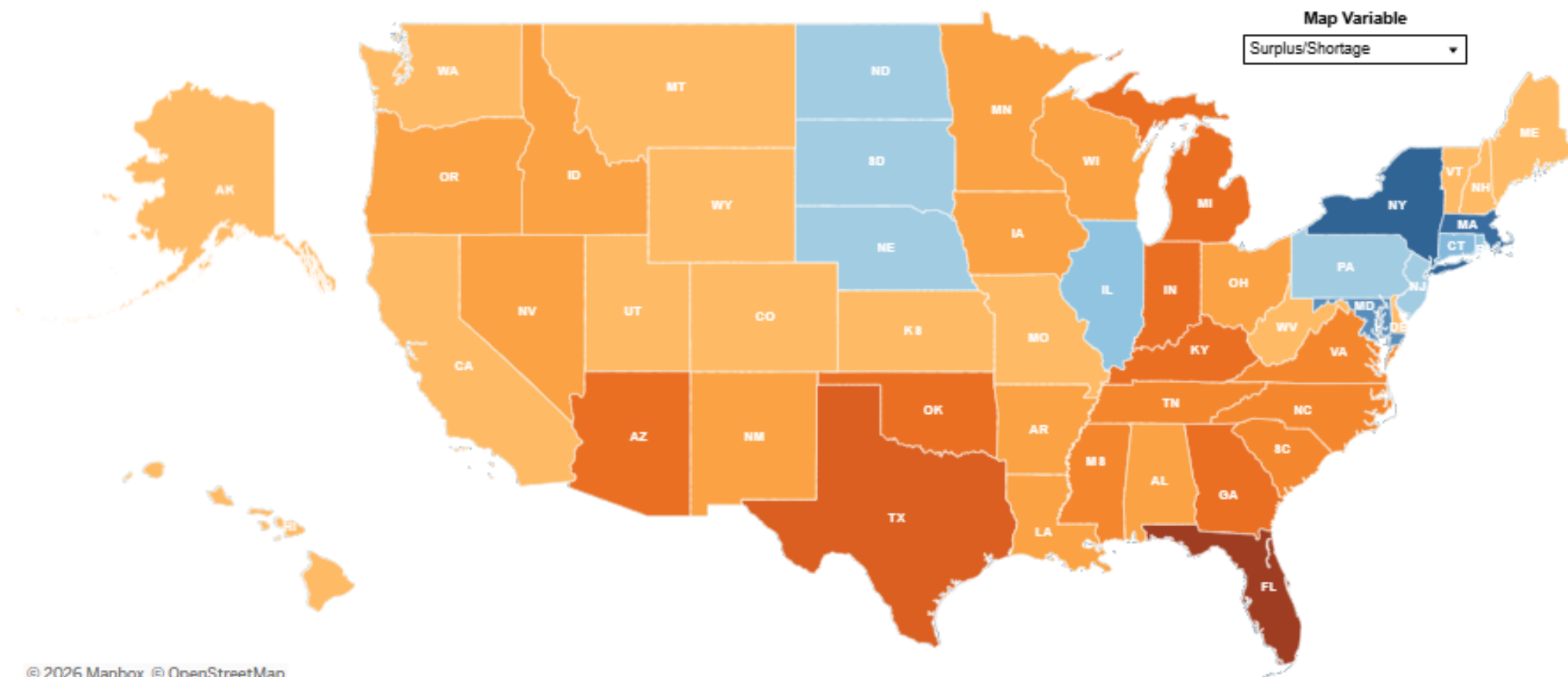
Surplus/Shortage 2038

-1,500

Percent Adequacy 2038

91%

Infectious Diseases Physicians
Surplus/Shortage By State, 2038



Value Range -380

570

Take home messages

Many specialties, including adult HIV/ID, have (perceived) shortages, especially in rural care

We have NO idea how to determine the “right” number of people to train



What are the solutions?

You have to ask yourself.....

What is the problem you want to solve?

Is the problem.....

We want to train more ID/HIV specialists – our services are getting busier, patients are getting more immunocompromised, public health needs us, etc

“MORE PEOPLE”

We need to be able to provide expert ID/HIV care all the time, everywhere

“MORE REACH”

Is the problem.....

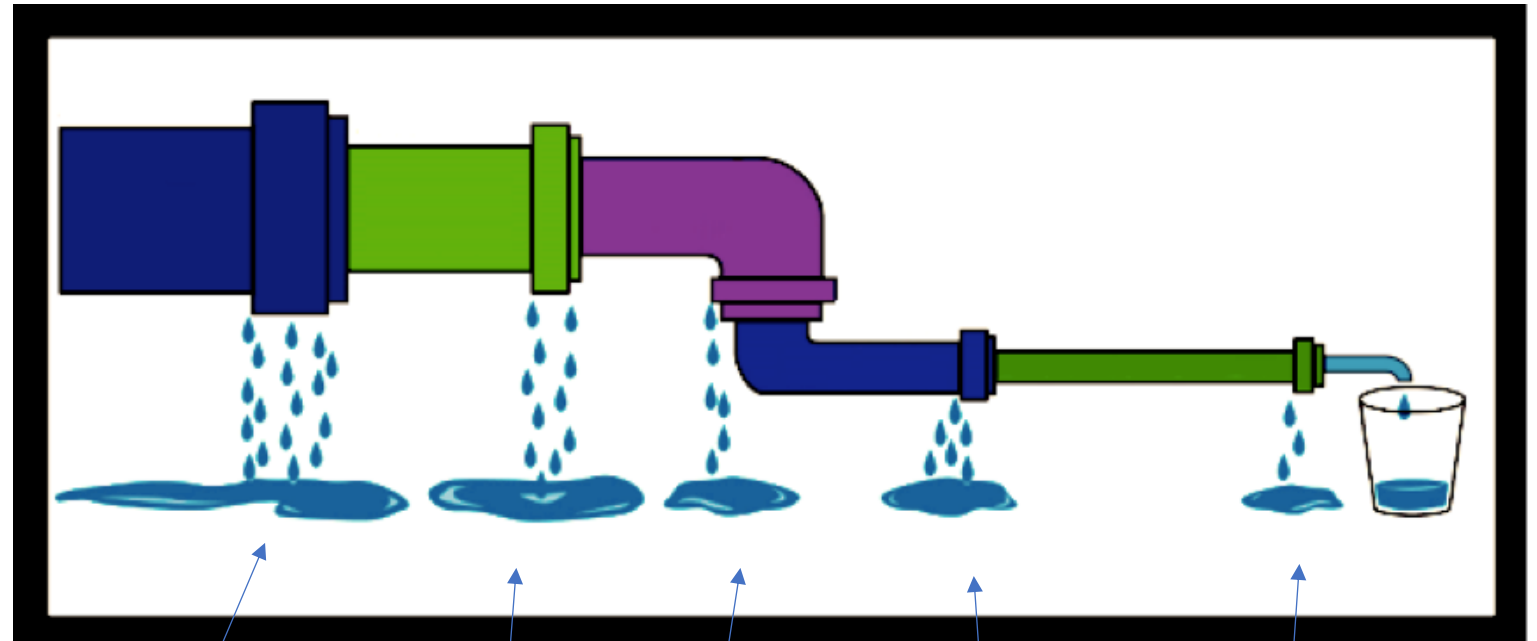
We want to train more (clinically active) ID/HIV specialists – our services are getting busier, patients are getting more immunocompromised, public health needs us, etc

“MORE PEOPLE”

We need to be able to provide expert ID/HIV care all the time, everywhere

“MORE REACH”

The ID Pipeline: Where are the leaks?



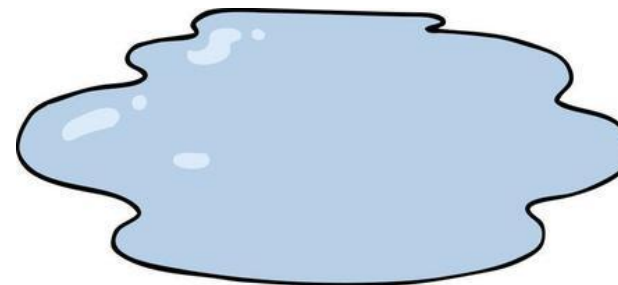
Preclinical
medical
school

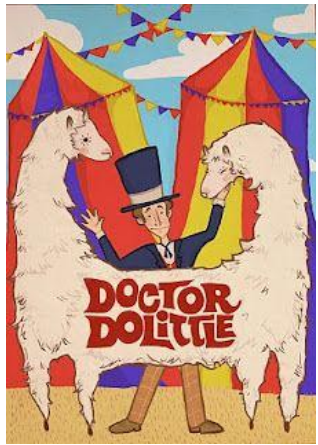
Clinical
rotations

Intern
Year

PGY2-3

Post-
fellowship





The Push – Pull Approach

UME:
Interest
students in
the field

GME: Retain interest
through residency
until fellowship
application



55% of residents change career plans at least once in residency
70% make their ultimate career choice during residency

What drives decisions about ID as a specialty?

Quality of Education (Preclinical, Clinical)



```
graph TD; A[Quality of Education (Preclinical, Clinical)] --> B[Exposure (Rotations, mentorship, meetings)]; B --> C[Perception of the Field]; C --> D[Compensation and work-life balance]; D --> E[Intangibles];
```

Exposure (Rotations, mentorship, meetings)

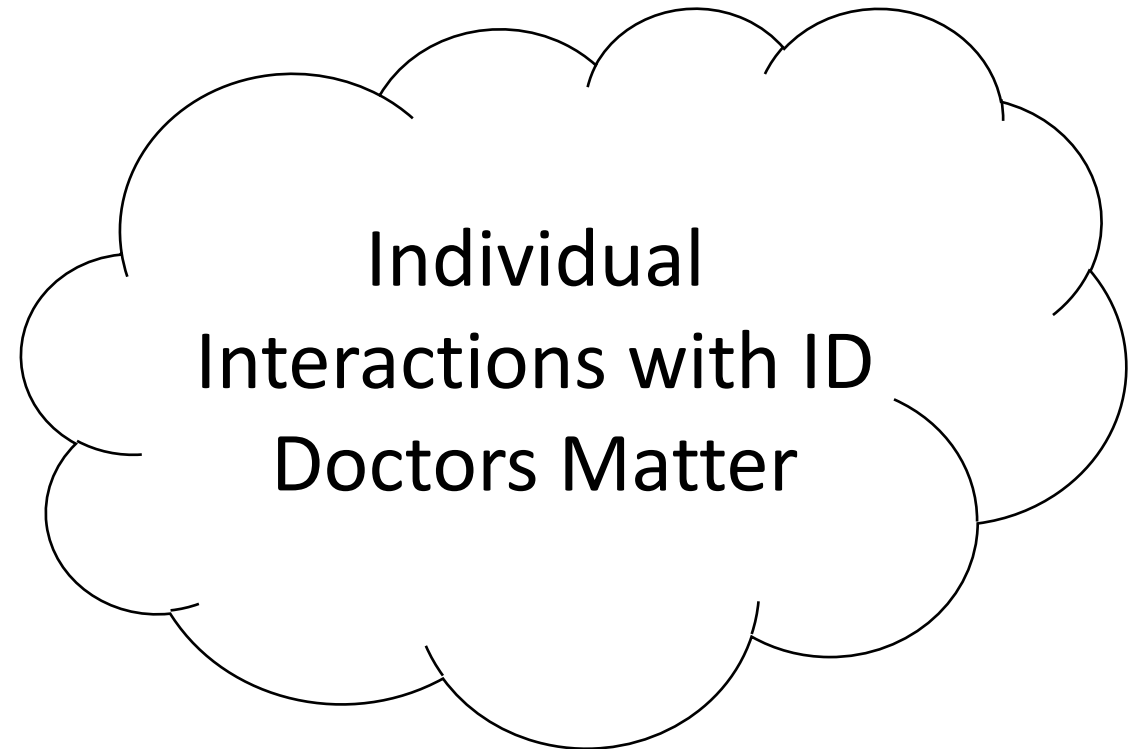
Perception of the Field

Compensation and work-life balance

Intangibles

Exposure and visibility

*You can't be
what you
can't see**



*And in time to make your career decision

Perception of the field matters....

What does an
ID specialist
do?



someone's day



what we see



what we assume

A tale of two residents both interested in but not applying to ID: A cautionary tale

My interest in ID comes from a love of the clinical medicine and the great exposure we had in med school and residency

Resident 1:



I can be happy as an academic hospitalist so why do more training? Plus, “publish or perish” seems more true for ID than general/hospital medicine, I’m not interested in grants

Resident 2:



I also think I can be happy as an academic hospitalist. And I really don’t want to do outpatient medicine and I worry that will be a big part of my life in ID.

Other Myths: ID as a lonely existence, no opportunity for med ed careers in ID unlike GIM or HM

Thanks to Eli Wilber, the mole who had these convos

Proactive Inclusion

01

Allow for
Interprofessional
Teams

- Create the culture and standards we value
- PharmDs, APPs

02

Support different job
pathways and advertise
them

- Combined training like ID/CC, ID/Addiction Medicine
- MedEd careers, private practice, Public Health, Industry, etc.

03

Support International
Medical Graduates

Be Indispensable and Be Everywhere

01

Be Available in All Locations

- Rural Training
- Tele-health or Asynchronous Clinical Support

02

Be Available in All Subspecialties

- Immunocompromised Host
- Wound Care
- Ortho ID
- Other Needs

03

Optimize use of Interprofessional Teams

Adapt Messaging to Attract Current Learners

01

Teaching
Innovations
using Active
Learning

02

Clinical and
Diagnostic
Reasoning

03

Address health
disparities

04

New
Developments,
New Frontiers

Take Care of Our Own

01

Job Satisfaction

02

Work-Life Balance
+ Compensation

03

Community

There is a lot we don't know

How do we enhance enthusiasm for and interest in ID/HIV?

- What is the perception, what are the barriers?

What is the pipeline to practice and where are the leaks?

What is the best way to reach students?
Residents?

How can we make more space for those interested in combined training pathways?

How do we support our workforce (who are the role models)?

What innovative models of practice can help right size responsibilities and how do we leverage those to demonstrate value?

How do we partner with APPs and PharmD's so all practice at the top of their license, and we all play our unique roles?

How do we create more community and support?

How do we better support IMGs?

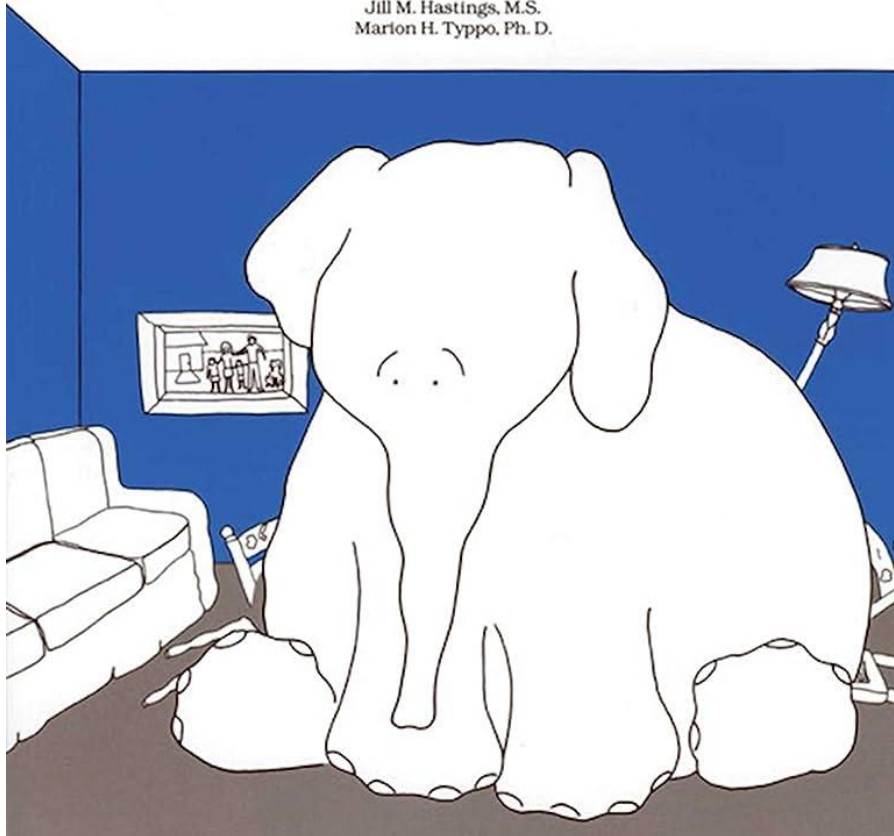
How do we match workforce needs geographically and in specialty areas?

How do we change the national narrative?

The Elephants in the Living Room

The Children's Book

Jill M. Hastings, M.S.
Marion H. Typpo, Ph. D.



1

Compensation and work-life balance



2

The Politicization of
Infectious Disease and Public Health



The Current Environment for Infectious Diseases



Federal policy and funding uncertainty affecting research and public health



Increasing misinformation and erosion of trust in science



Growing demand for infectious disease expertise across healthcare systems



Jeanne Marrazzo, MD, MPH, FIDSA
CEO of IDSA

Two petri dishes, one above the other, containing a light purple liquid. Inside each dish is a faint, light-colored map of the world, showing the continents. The dishes are tilted slightly to the right.

A New Era At IDSA

Meeting the moment and the evolving needs
of our community

IDSAs Strategic Priorities: 2025-2030

Workforce/Value of ID

Trusted Source of
Information

Preparing for and
Responding to ID Threats



Strategic Priority 1: Build and sustain a broad, diverse and valued ID workforce to improve patient care, advance science and promote public health



1

Foster thriving careers for ID professionals

2

Attract and inspire medical students, residents and fellows to pursue a rewarding career in ID

3

Ensure the ID workforce is accessible to, and reflects the diversity of, the communities it serves

IDSA: Compensation and Work-life Balance

- Efforts to define/right-size a 1.0 clinical FTE
- Guidance for support for HE/IP and AS and other non-billable services
- Transplant ID survey
- Successful advocacy for two new modifiers
 - G2211 – outpatient longitudinal care
 - G0545 – inpatient consultation and follow-up

Strategic Priority 2: Promote IDSA as the leader and trusted source for timely, evidence-based infectious diseases content and expertise

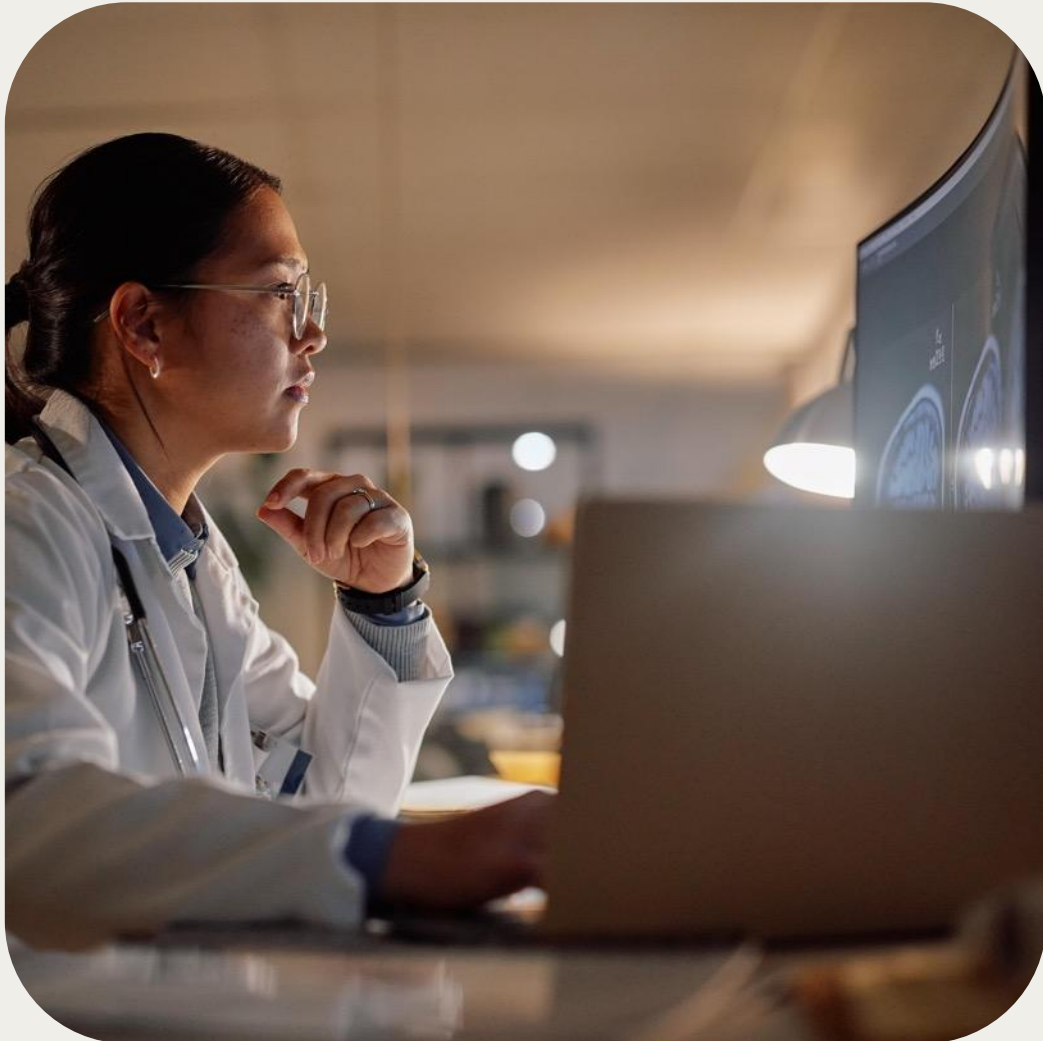
1

Increase recognition of IDSA and the IDSA brand

2

Expand the reach and impact of IDSA's products and services

Harnessing Artificial Intelligence to Strengthen ID Expertise



Exploring AI tools to expand access to IDSA guidelines and clinical knowledge

Supporting clinicians with faster access to evidence-based information

Ensuring AI tools reflect trusted infectious diseases expertise

Evaluating opportunities to support education, research and clinical practice



Strategic Priority 3: Expand IDSA’s leadership in preventing, preparing for and responding to infectious diseases threats to protect our communities

1

Reduce the impact of antimicrobial resistance

2

Position the ID workforce for effective outbreak and pandemic preparedness and response

Why affiliates like Nebraska matter



State and regional societies bring IDSA's national priorities into local health systems, public health departments and policymaking

Affiliates help recruit and mentor the next generation of infectious diseases clinicians

Local societies often lead advocacy on reimbursement, workforce and public health policy at the state level

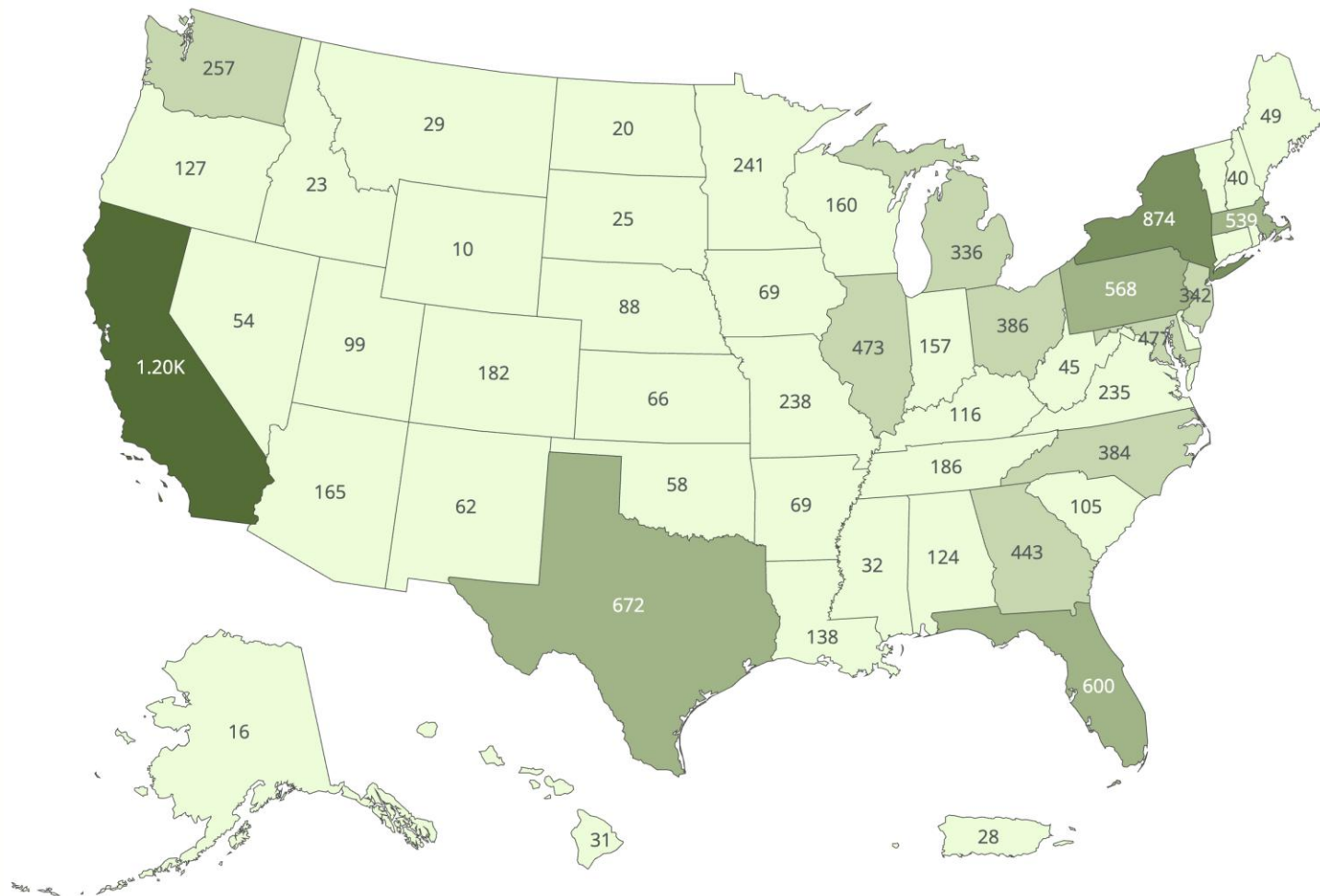
Regional networks strengthen coordination during outbreaks and emerging infectious disease threats

Strong affiliate partnerships make IDSA's national voice more credible and effective

- Strengthening partnerships with affiliates is a priority for IDSA



The community of IDSA



Bringing together the curiosity, compassion and knowledge of our members to strengthen the field of infectious diseases, advance science and advocate for health equity.

Join Today!

Investing in Infectious Diseases

- ⊗ Advocacy protects the field today
- ⊗ Workforce development strengthens the field for the future
- ⊗ The IDSA Foundation helps support the next generation of clinicians and scientists

What is the future of ID?

I think we are in for some tough times with recruitment into ID and eventually will need to rebuild the public health workforce and the next generation of researchers...but we will always be needed.

“It’s time to close the books on infectious diseases, declare the war on pestilence won, and shift national resources to such chronic problems as cancer and heart disease.”

---William Stewart, US Surgeon General, 1967

Fake news. He really said this:

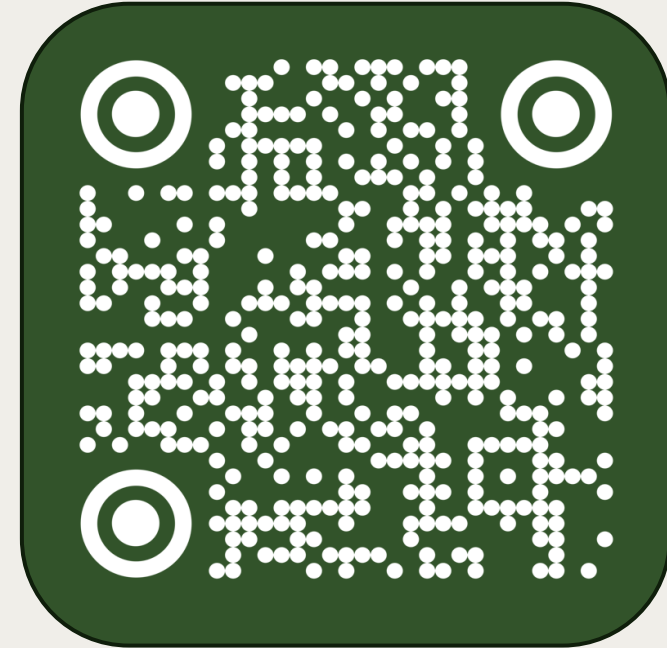
“Warning flags are still flying in the communicable disease field...While we are engaged in taking on new duties,...we cannot and must not lose sight of our traditional program responsibilities.”

How you can make a difference



Become an advocate today!

-  Advocacy is most effective when national and local voices work together
-  ID clinicians bring real-world experience to policy discussions
-  There are several ways members can engage with IDSA and policymakers



Give to the IDSA Foundation!

-  Invest in the next generation of clinicians and scientists
-  Open the door for underrepresented talent through scholarships and mentorship
-  Do your part in supporting the next generation of ID

Questions?