

Trends in Demand for New Physicians, 2017-2022

A Summary of Demand Indicators for 31 Physician Specialties



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September 2023



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PREFACE

Physician workforce shortages, especially in primary care, are projected through the next decade and beyond. Understanding trends in demand for physicians by specialty can help policy makers anticipate and address current and future shortages. This report presents demand indicator profiles for 31 specialties. Each specialty profile summarizes trends in 5 key areas related to physician supply and demand: starting income, job offers, having to change plans due to limited practice opportunities, relative demand, and numbers of graduates. Data on starting income, job offers, having to change plans, and relative demand are based on responses to the Resident Exit Survey in New York (for the years 2017 to 2022).

This report was prepared by the Center for Health Workforce Studies (CHWS) staff, Jinman Pang and David Armstrong. Funding for this report was provided by the New York State Department of Health.

Established in 1996, CHWS is an academic research organization, based at the School of Public Health, University at Albany, State University of New York (SUNY). The mission of CHWS is to provide timely, accurate data and conduct policy relevant research about the health workforce. The research conducted by CHWS supports and promotes health workforce planning and policy making at local, regional, state, and national levels. Today, CHWS has established itself as a national leader in the field of health workforce studies.

The views expressed in this report are those of CHWS and do not necessarily represent positions or policies of the School of Public Health, University at Albany, SUNY, or the New York State Department of Health.

September 2023

ACKNOWLEDGMENT

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EXECUTIVE SUMMARY

BACKGROUND

The Center for Health Workforce Studies (CHWS) conducts an annual survey of all physicians in New York completing a residency or fellowship training program (the Exit Survey). The goal is to provide the medical education community with useful information about the outcomes of training and the demand for new physicians. The survey instrument was developed by CHWS in consultation with the state's teaching hospitals and other key stakeholders. To view the survey questions, see Appendix B of the 2022 Exit Survey report available at: <https://www.chwsny.org/our-work/reports-briefs/2022-new-york-residency-training-outcomes-a-summary-of-responses-to-the-2022-new-york-resident-exit-survey/>.

Each year in the spring, CHWS distributes information about the Exit Survey to Graduate Medical Education (GME) administrators at teaching hospitals in New York. The information is then forwarded to individual programs where graduating residents and fellows are asked to complete the online questionnaire in the weeks prior to finishing their program. In 2022, with the excellent participation of teaching hospitals, a total of 2,301 of the estimated 5,421 physicians finishing a residency or fellowship training program completed the Exit Survey (42% response rate). Over the 22 years the survey has been conducted (1998-2003, 2005, 2007-2019, 2021-2022), 65,367 of 110,387 graduates have completed the survey (59% cumulative response rate).

This report presents profiles for 31 specialties. Each specialty profile summarizes trends in 5 key areas related to physician supply and demand: starting income, job offers, having to change plans due to limited practice opportunities, relative demand, and numbers of graduates. Data on starting income, job offers, having to change plans, and relative demand are based on responses to the Resident Exit Survey in New York (for the years 2017 to 2022). Data on GME graduates are from the annual medical education issues of the Journal of the American Medical Association (JAMA), and summarize the numbers of residents (or fellows) completing allopathic GME training programs in the specialty in the US from 2012 to 2021.

Definitions of the 5 areas are as follows:

- **Starting income:** The median starting income of survey respondents with confirmed plans to enter patient care/clinical practice in the US following completion of their training program. Starting incomes included respondents' base salaries plus their expected incentive/bonus income. Starting incomes in years 2017-2022 were adjusted for inflation to reflect 2022 dollars and are reported in \$1,000s.
- **Job offers:** The mean number of job offers for employment/practice positions of survey respondents who had actively searched for a practice position, excluding international medical graduates (IMGs) on temporary visas. Respondents with temporary citizenship status were excluded from this analysis because they were much more likely to experience difficulty in finding practice positions due to visa restrictions.

- **Having to change plans due to limited practice opportunities:** The percentage of respondents who had actively searched for a job (excluding IMGs on temporary visas) and who had to change their plans due to limited practice opportunities.
- **Relative demand:** Using several questions pertaining to the job market experiences and perceptions of survey respondents who had actively searched for a practice position (excluding IMGs on temporary visas), a composite score was computed to assign an overall rank (or relative demand score) for each specialty in each year that the survey conducted. The percentages presented are the percentile rank of the specialty amongst all specialties in a given year. A percentile rank of 100% identifies the specialty highest in demand, and the lowest percentile rank would correspond to the specialty with the lowest relative demand score. Appendix A provides a detailed explanation of the methodology used to assess relative demand.
- **Numbers of graduates of GME training programs in the US:** The number of residents completing training was compiled to observe how the number of new entrants to the physician marketplace has changed over time.

Important Note:

For each specialty, the number of responses by year is listed at the bottom of the page in the report. Care should be taken when interpreting outcomes based on small samples because the measures may fluctuate greatly from year to year.

KEY FINDINGS

Demand for new physicians continues to be strong.

In 2022, more than 90% of physicians completing training and having searched for a job had received at least 1 job offer at the time they completed the Exit Survey and only 13% reported that they had to change plans due to limited practice opportunities. The median starting income of physicians was \$282,900, a 2% increase from 2021. Finally, new physicians' perceptions of both the regional and national job markets were positive in recent years, except for 2021, which was impacted by the pandemic.

There are important differences in the job market experiences of physicians in different specialties.

Although the overall marketplace appears relatively strong for new graduates, there exist important differences in demand for individual specialties. In New York, specialties experiencing the strongest and weakest relative demand were as follows:

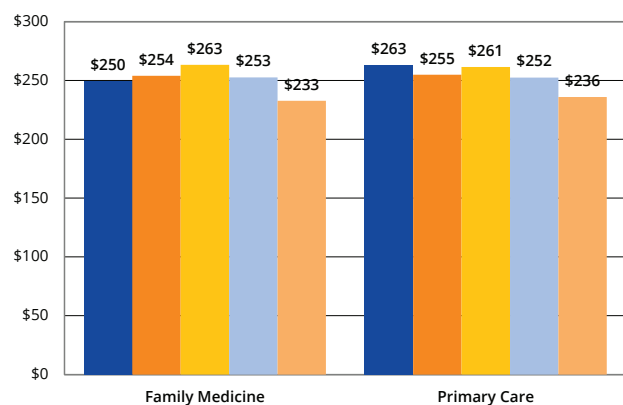
- **Strongest relative demand:** urology, adult psychiatry, child and adolescent psychiatry, anesthesiology, and family medicine
 - **Greatest change in income over last 5 years:** nephrology, general pediatrics, ophthalmology, urology, and pathology
 - **Most job offers:** nephrology, gastroenterology, dermatology, urology, and family medicine
 - **Lowest percentage of having to change plans:** neurosurgery, adult psychiatry, urology, ophthalmology, and anesthesiology
- **Weakest relative demand:** general surgery, emergency medicine, allergy and immunology, pathology, and pediatric subspecialties
 - **Lowest change in income over last 5 years:** emergency medicine, critical care medicine, adult psychiatry, general internal medicine, and hematology/oncology
 - **Fewest job offers:** pathology, general surgery, pediatric subspecialties, emergency medicine, and radiology
 - **Highest percentage of having to change plans:** allergy and immunology, physical medicine and rehabilitation, pulmonary disease, nephrology, and pathology



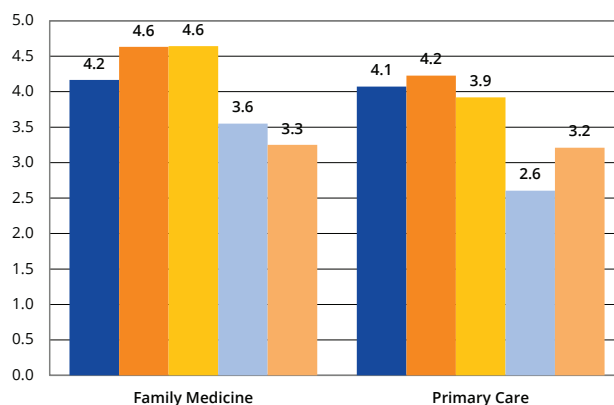
SPECIALTIES

Family Medicine

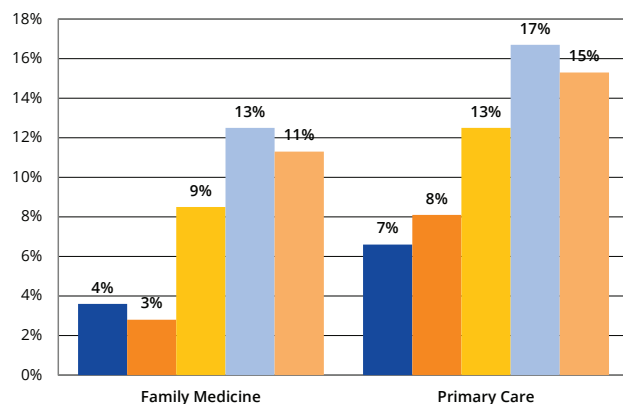
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



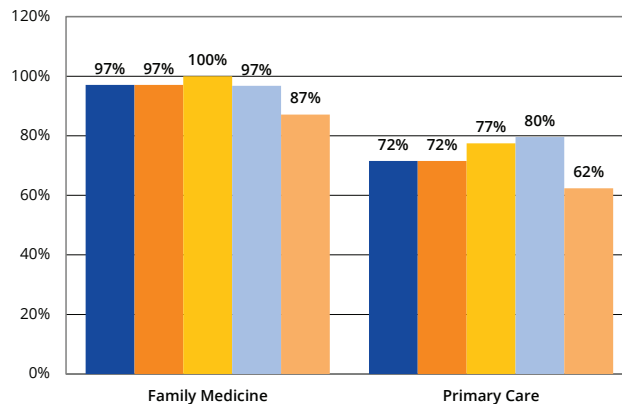
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



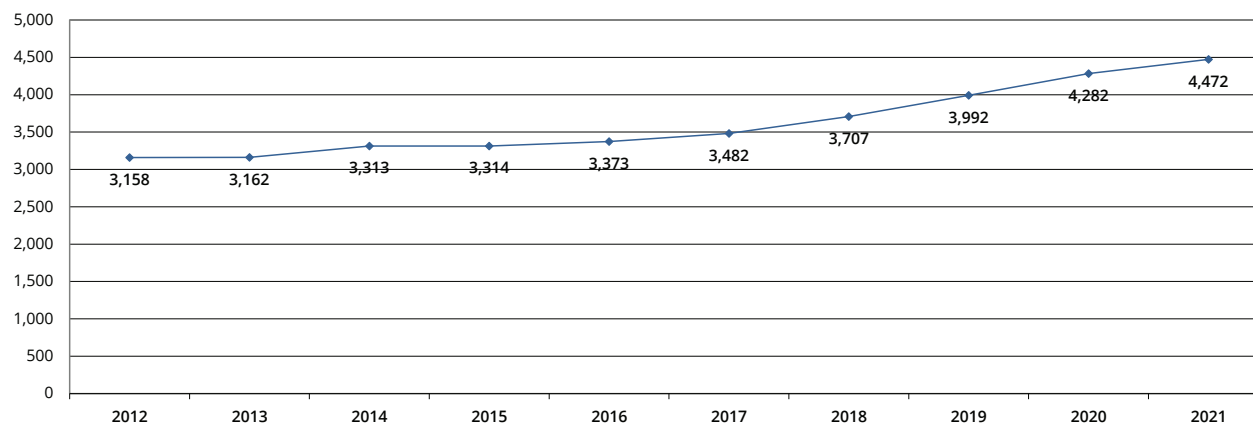
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Family Medicine, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Family Medicine GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

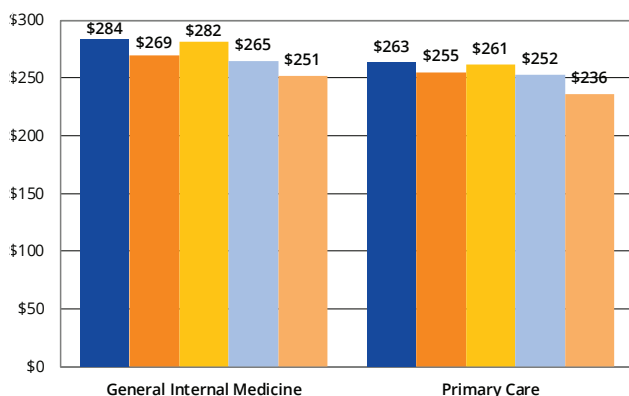
Number of responses: 2017: n = 117, 2018: n = 125, 2019: n = 112, 2021: n = 53, 2022: n = 58.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

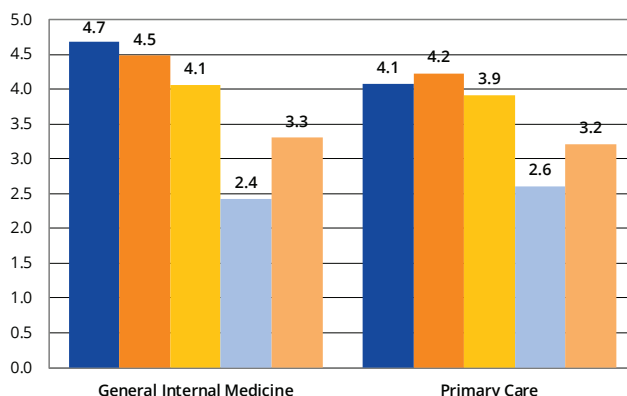
^b JAMA Medical Education Issues, 2012-2021.

General Internal Medicine

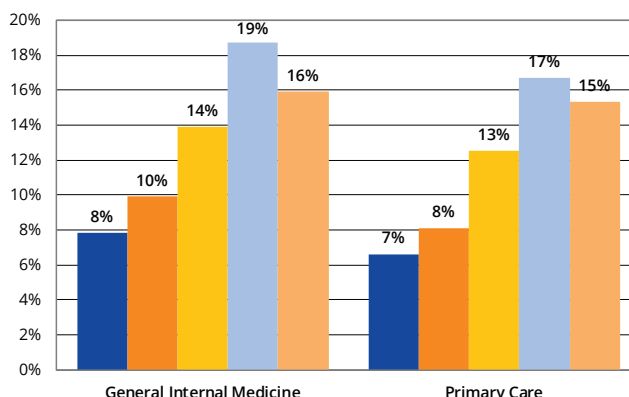
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



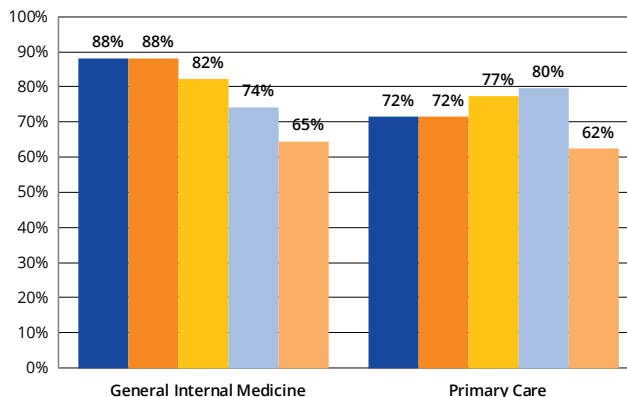
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



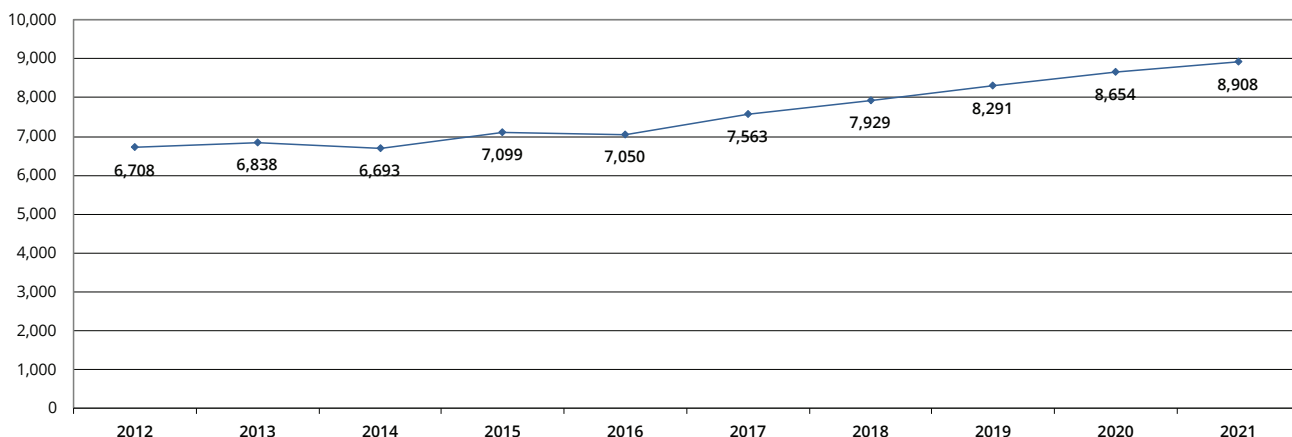
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of General Internal Medicine, 2017-2019, 2021-2022^a



Trends in Number of Graduates of General Internal Medicine GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

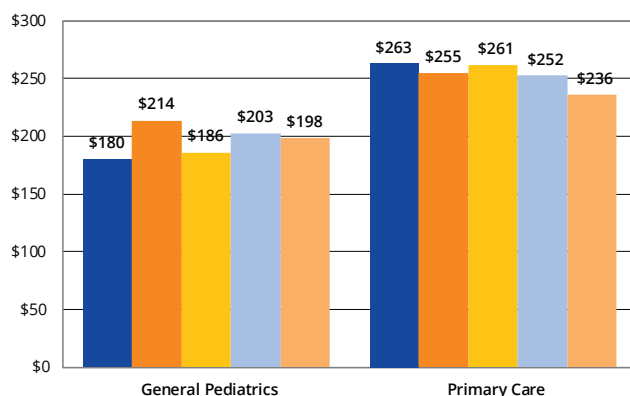
Number of responses: 2017: n = 254, 2018: n = 239, 2019: n = 238, 2021: n = 118, 2022: n = 147.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

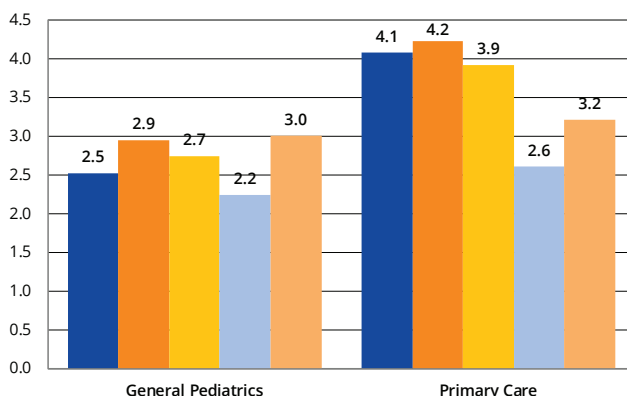
^b JAMA Medical Education Issues, 2012-2021.

General Pediatrics

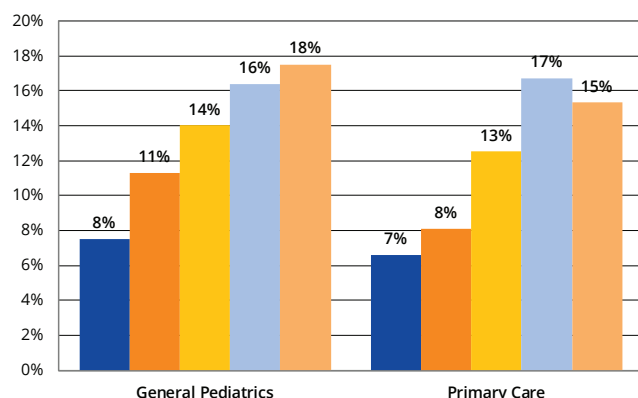
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



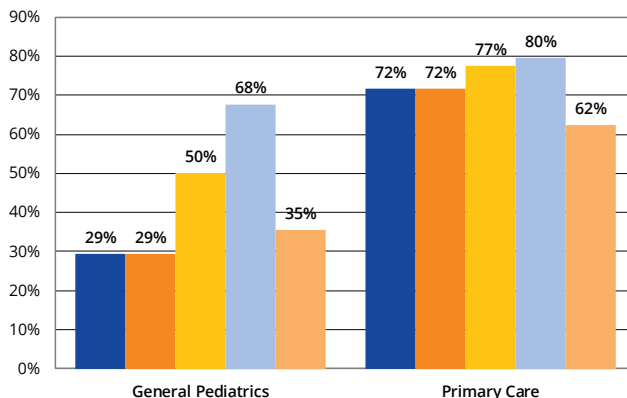
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



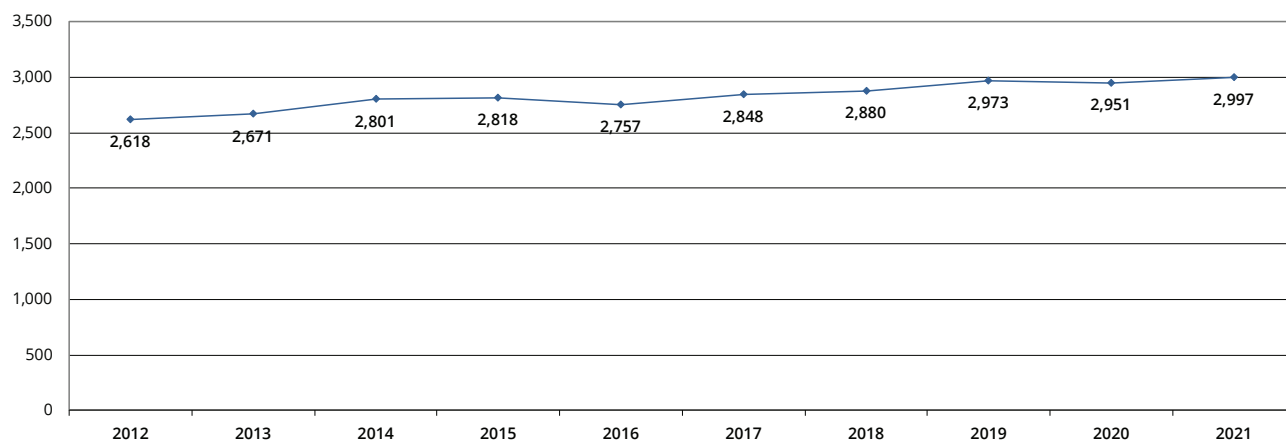
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of General Pediatrics, 2017-2019, 2021-2022^a



Trends in Number of Graduates of General Pediatrics GME Programs in the US, 2012-2021^b



Legend: 2017 2018 2019 2021 2022

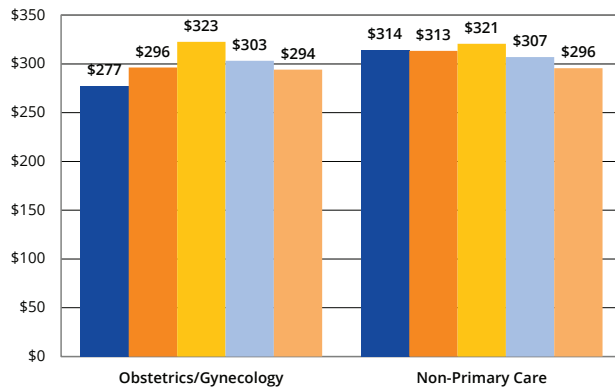
Number of responses: 2017: n = 115, 2018: n = 92, 2019: n = 111, 2021: n = 70, 2022: n = 78.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

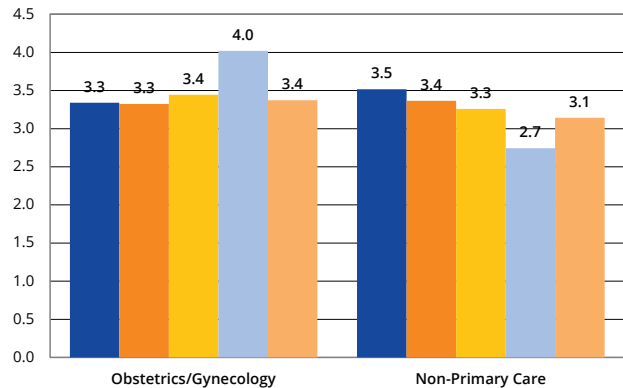
^b JAMA Medical Education Issues, 2012-2021.

Obstetrics/Gynecology

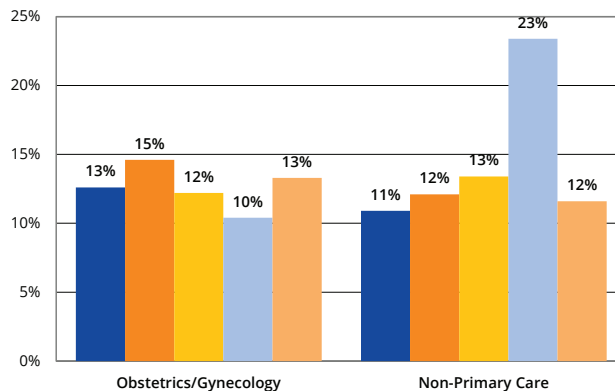
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



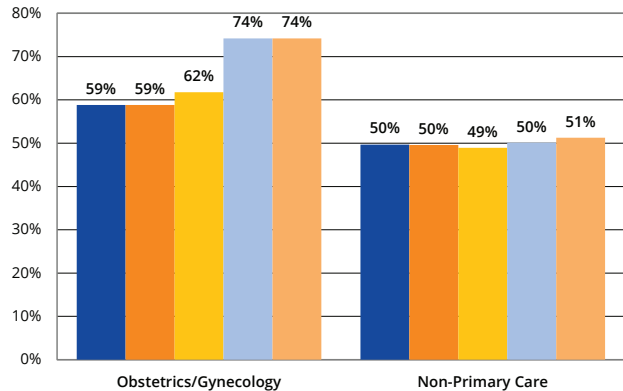
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



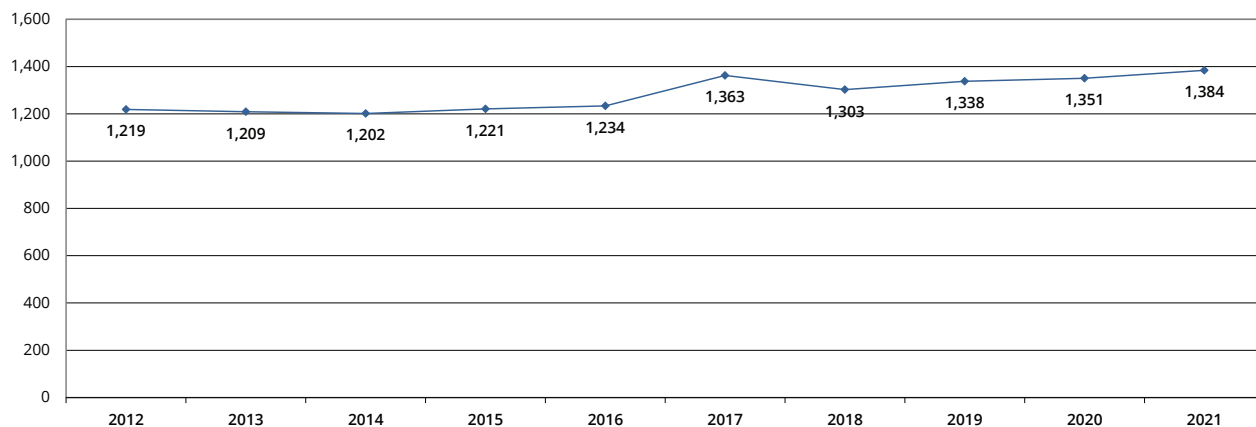
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Obstetrics/Gynecology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Obstetrics/Gynecology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

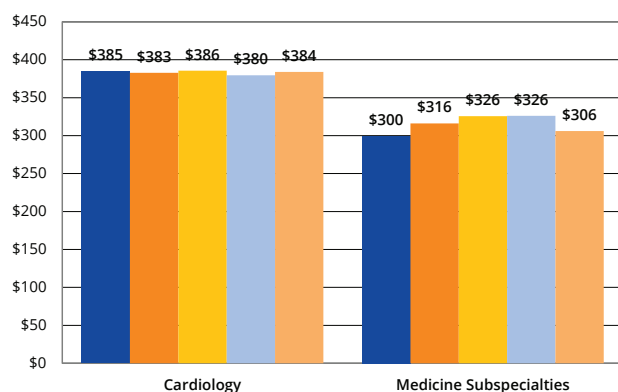
Number of responses: 2017: n = 99, 2018: n = 89, 2019: n = 96, 2021: n = 57, 2022: n = 67.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

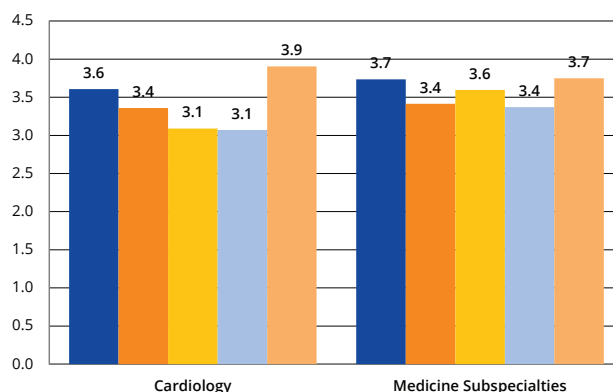
^b JAMA Medical Education Issues, 2012-2021.

Cardiology

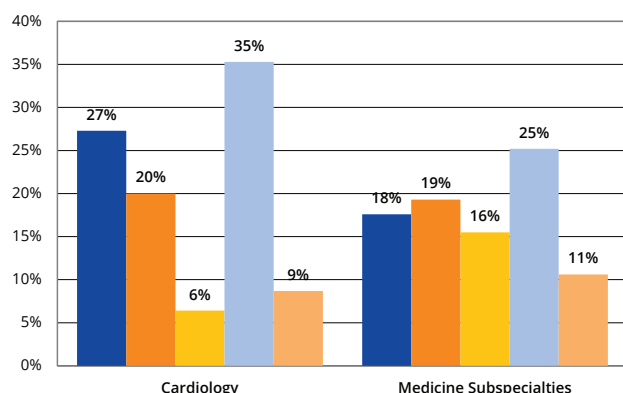
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



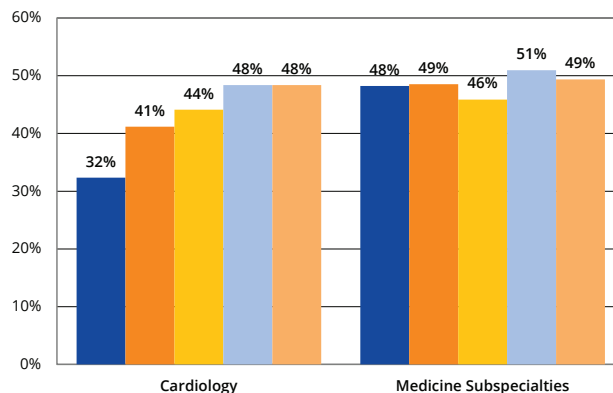
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



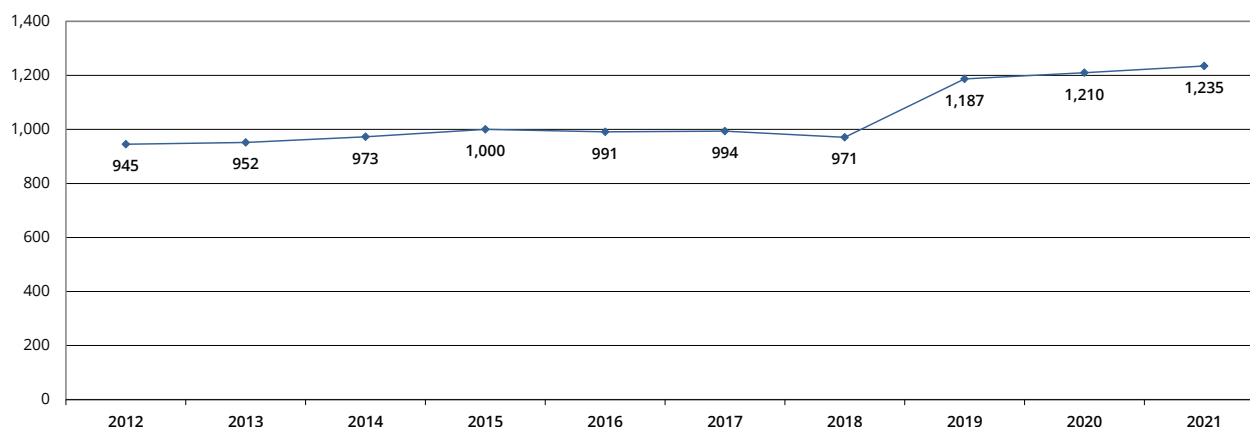
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Cardiology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Cardiology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

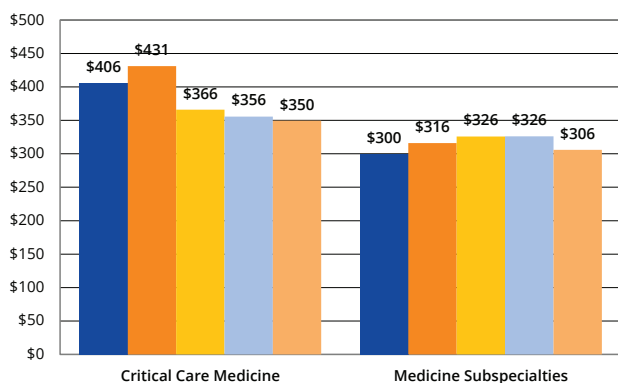
Number of responses: 2017: n = 36, 2018: n = 44, 2019: n = 52, 2021: n = 21, 2022: n = 26.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

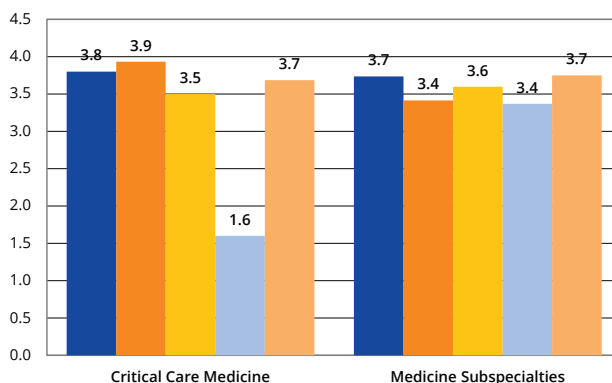
^b JAMA Medical Education Issues, 2012-2021.

Critical Care Medicine

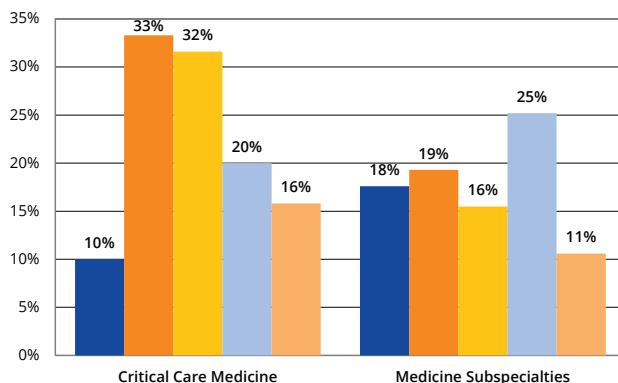
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



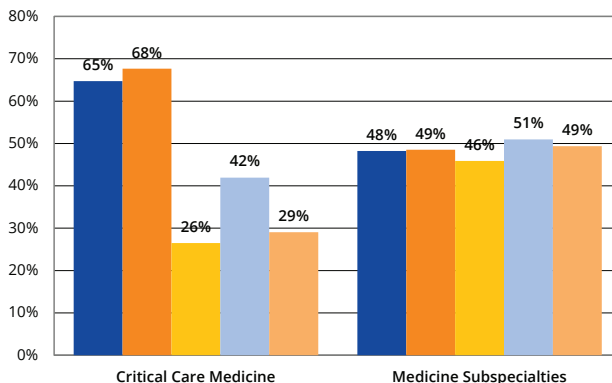
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



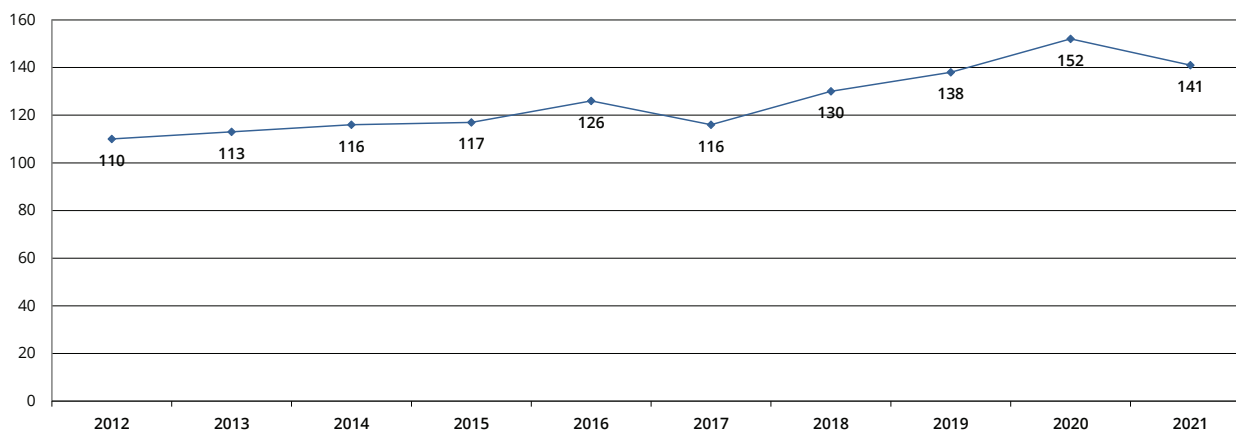
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Critical Care Medicine, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Critical Care Medicine GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

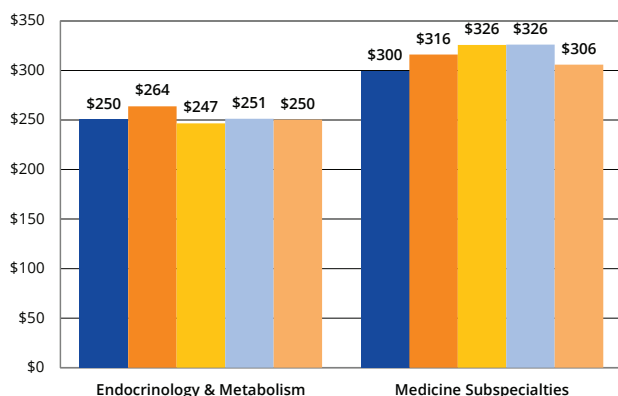
Number of responses: 2017: n = 11, 2018: n = 16, 2019: n = 21, 2021: n = 5, 2022: n = 21.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

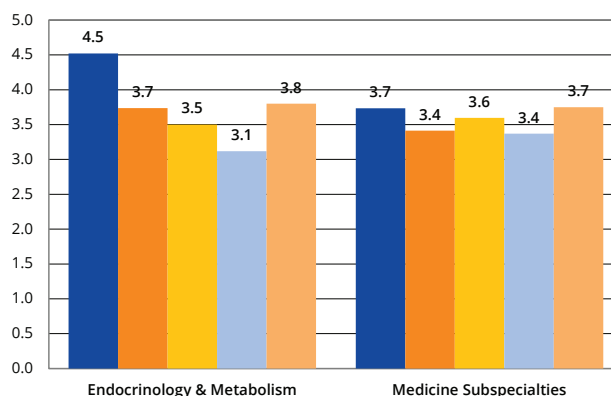
^b JAMA Medical Education Issues, 2012-2021.

Endocrinology and Metabolism

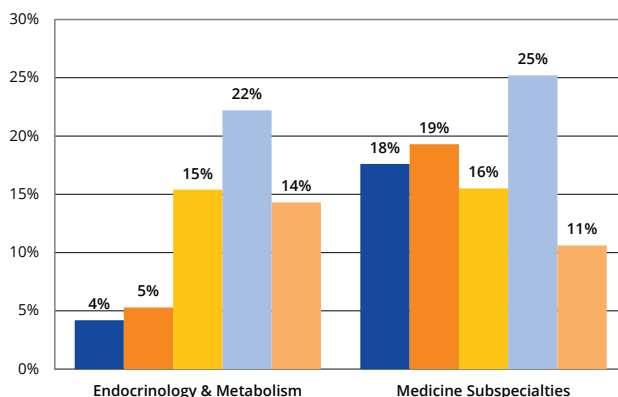
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



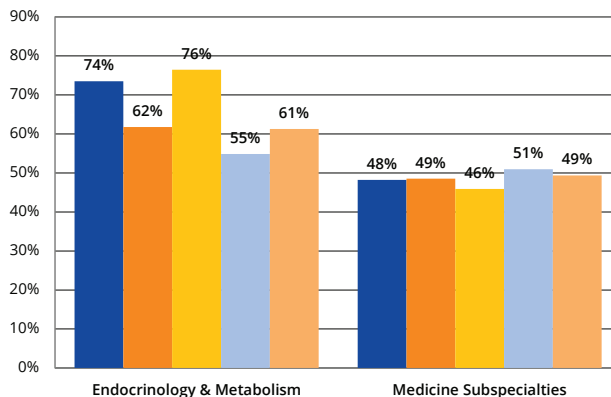
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



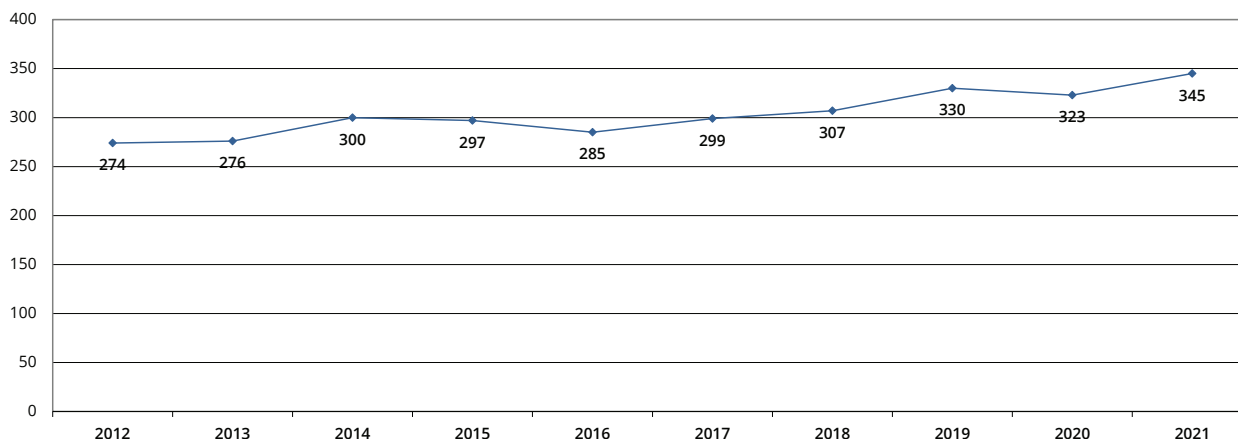
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Endocrinology & Metabolism, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Endocrinology & Metabolism GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

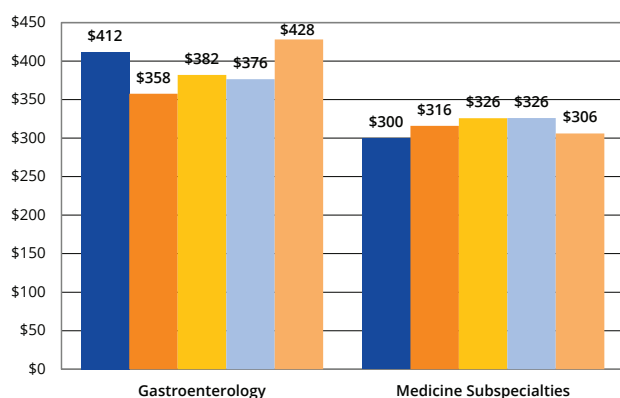
Number of responses: 2017: n = 25, 2018: n = 21, 2019: n = 27, 2021: n = 19, 2022: n = 18.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

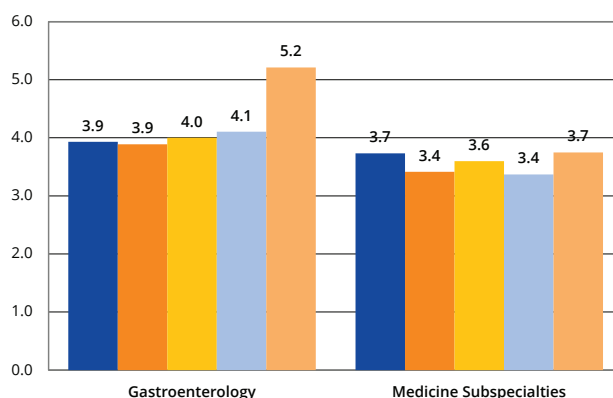
^b JAMA Medical Education Issues, 2012-2021.

Gastroenterology

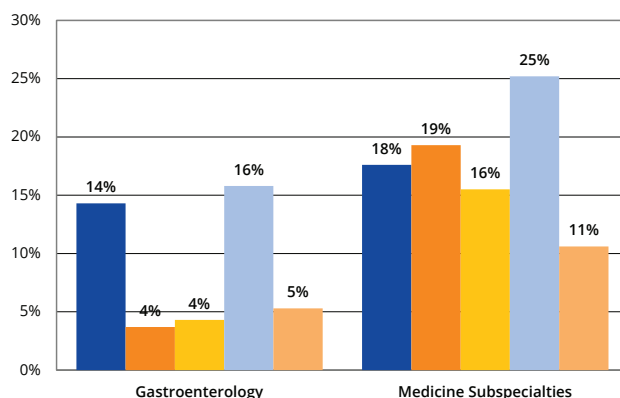
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



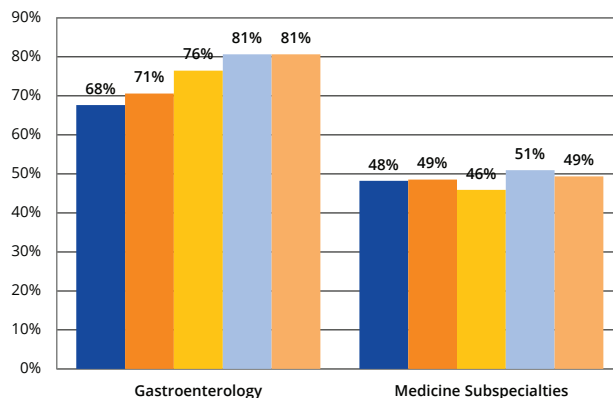
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



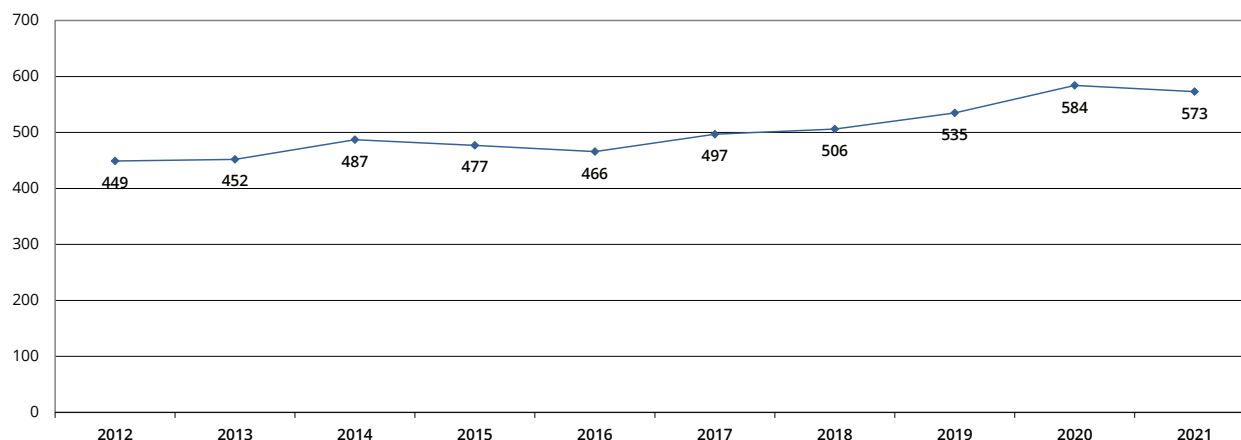
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Gastroenterology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Gastroenterology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

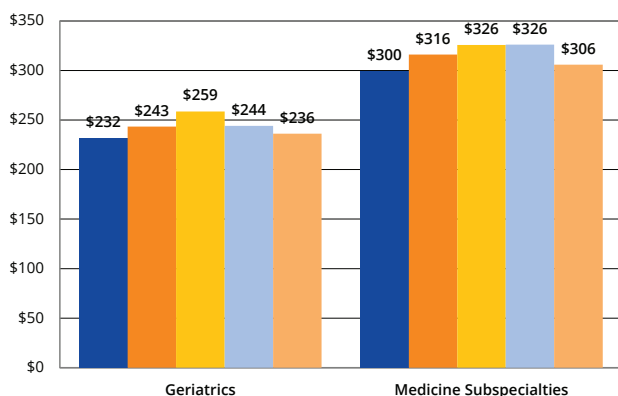
Number of responses: 2017: n = 29, 2018: n = 28, 2019: n = 24, 2021: n = 23, 2022: n = 21.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

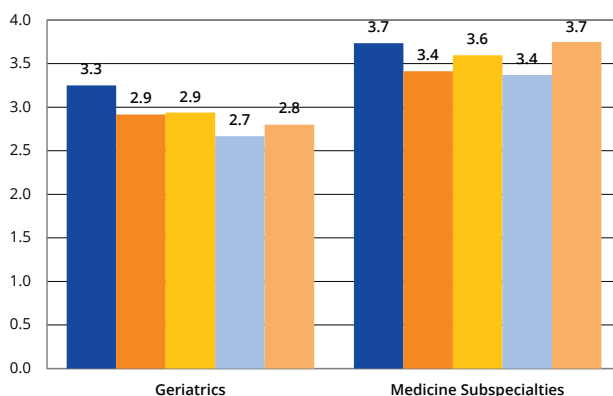
^b JAMA Medical Education Issues, 2012-2021.

Geriatrics

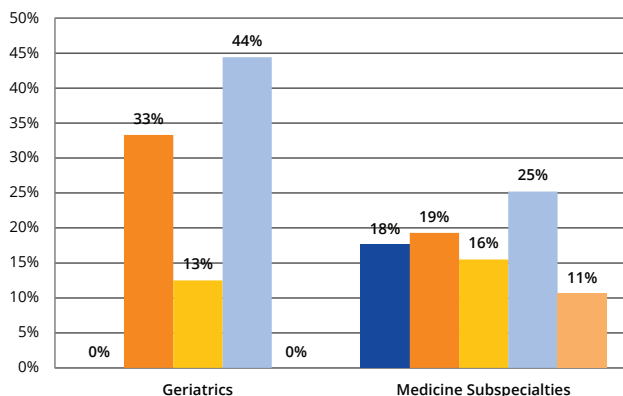
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



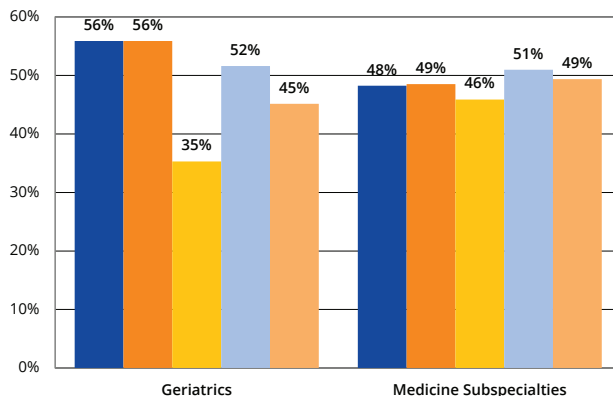
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



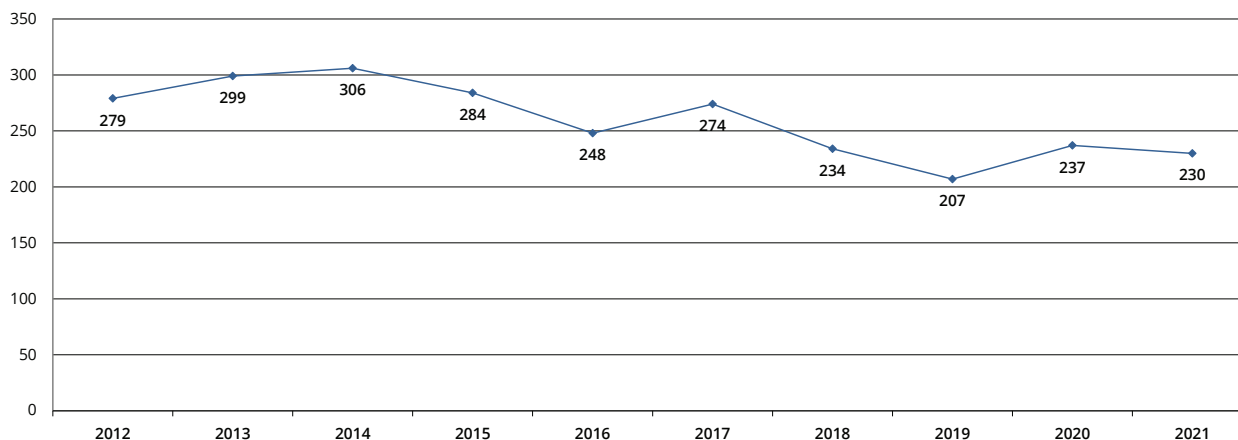
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Geriatrics, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Geriatrics GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

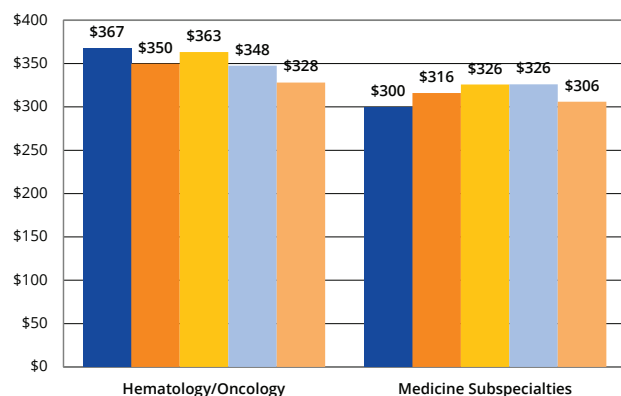
Number of responses: 2017: n = 15, 2018: n = 14, 2019: n = 18, 2021: n = 10, 2022: n = 5.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

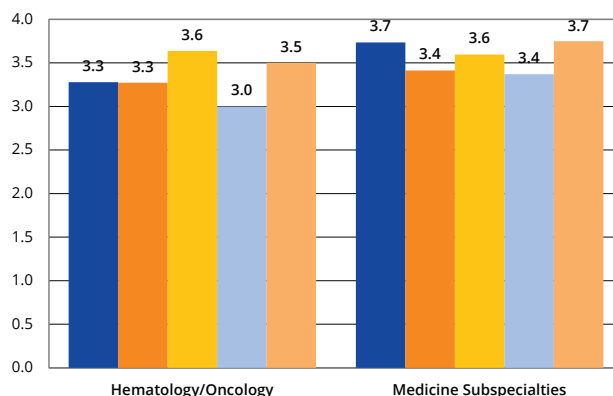
^b JAMA Medical Education Issues, 2012-2021.

Hematology/Oncology

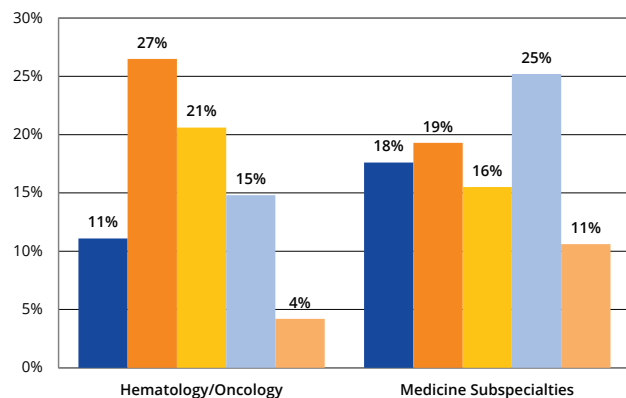
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



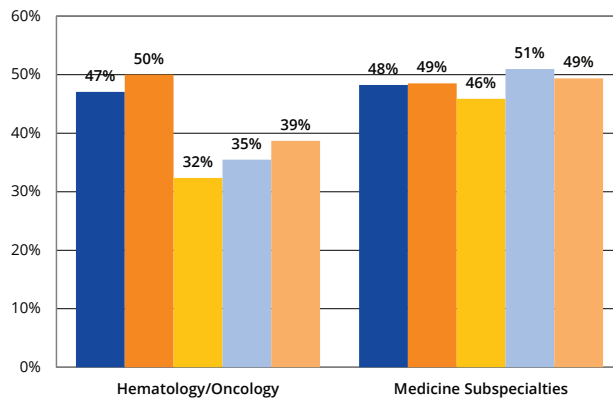
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



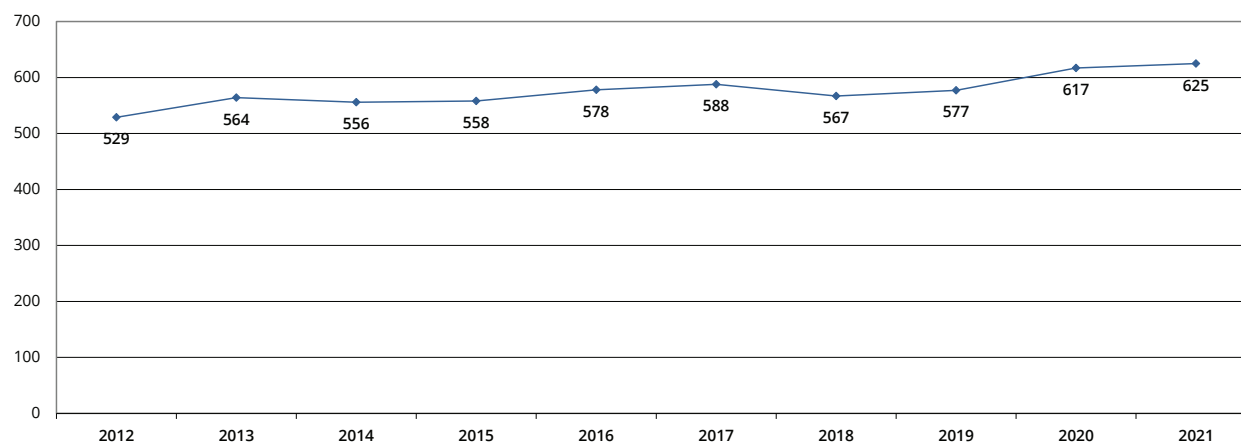
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Hematology/Oncology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Hematology/Oncology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

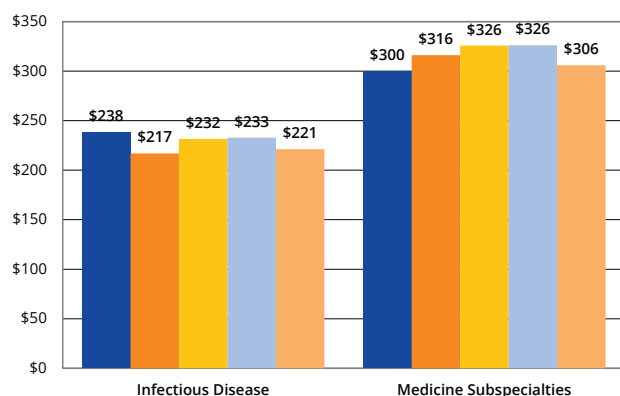
Number of responses: 2017: n = 19, 2018: n = 36, 2019: n = 36, 2021: n = 31, 2022: n = 24.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

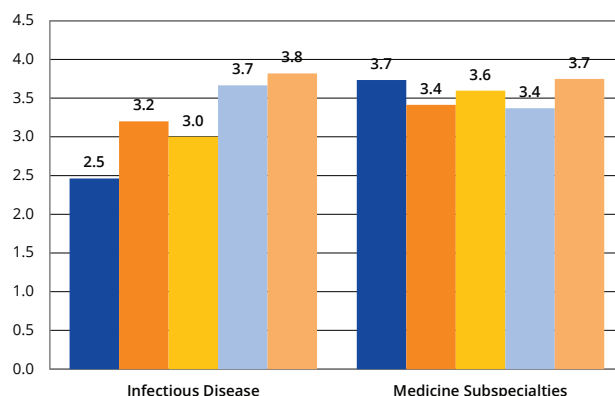
^b JAMA Medical Education Issues, 2012-2021.

Infectious Disease

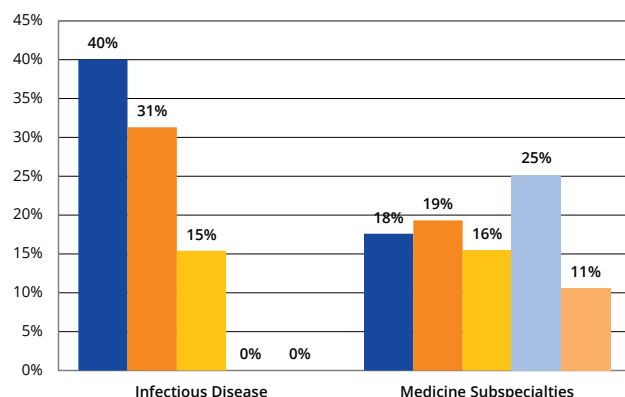
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



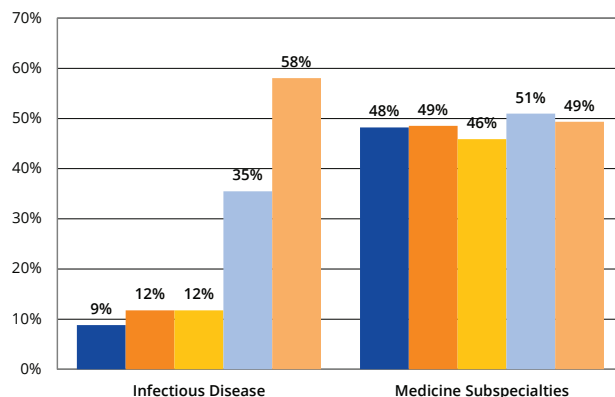
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



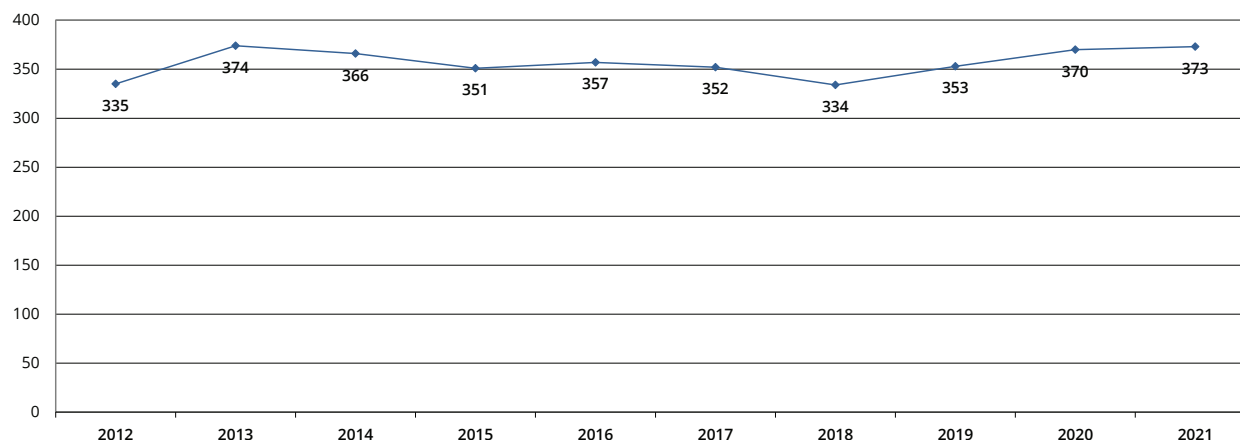
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Infectious Disease, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Infectious Disease GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

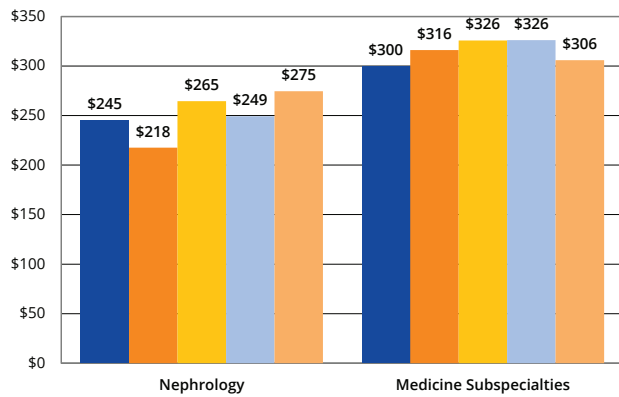
Number of responses: 2017: n = 17, 2018: n = 18, 2019: n = 13, 2021: n = 7, 2022: n = 13.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

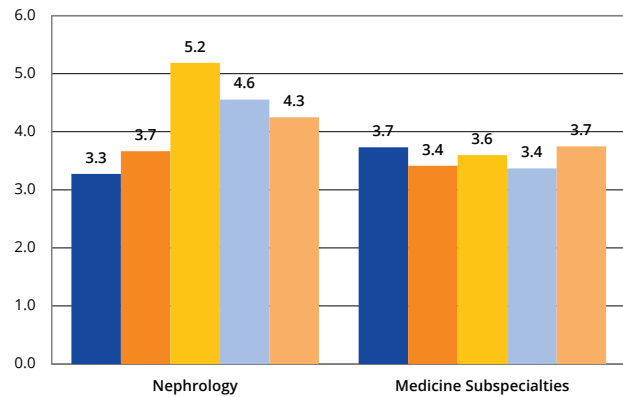
^b JAMA Medical Education Issues, 2012-2021.

Nephrology

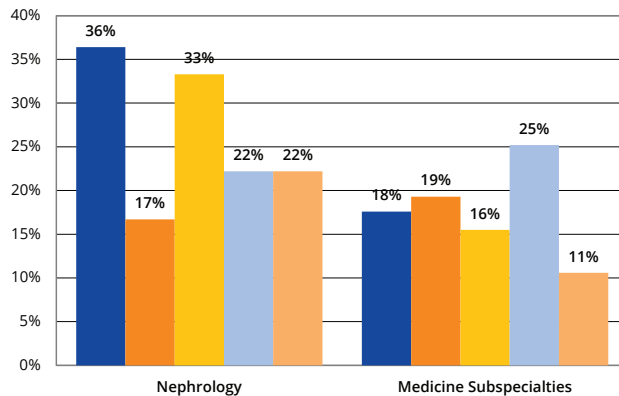
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



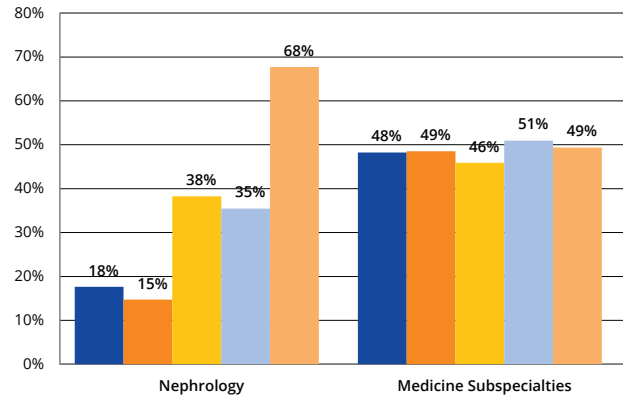
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



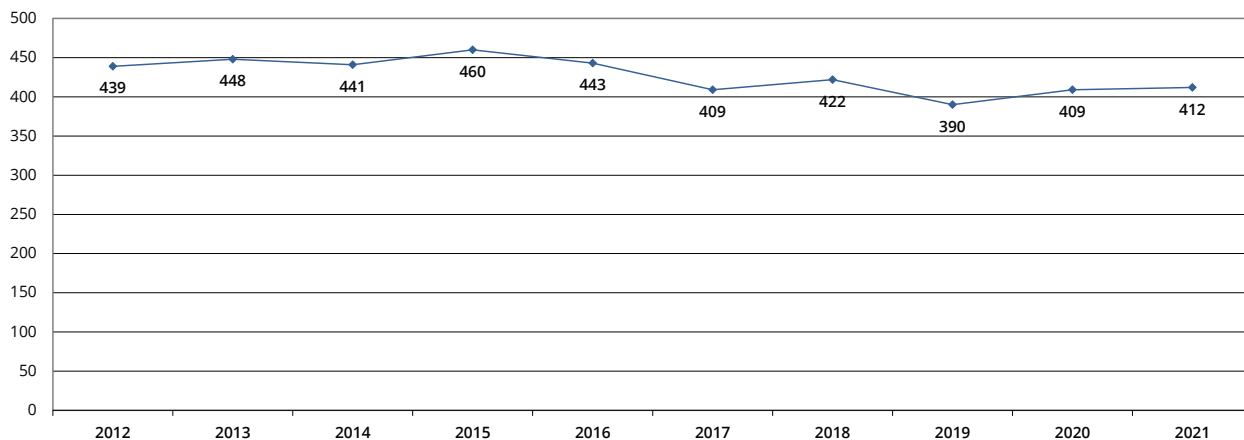
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Nephrology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Nephrology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

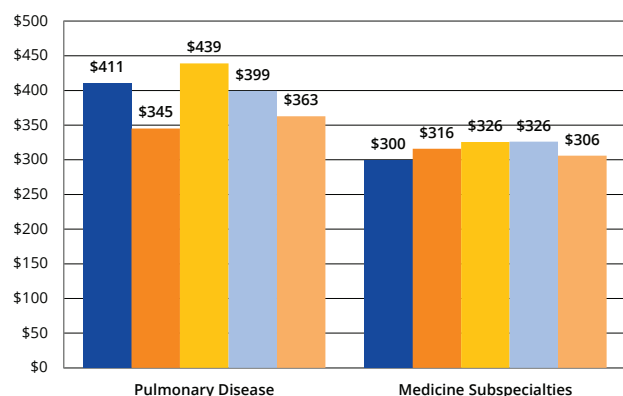
Number of responses: 2017: n = 24, 2018: n = 22, 2019: n = 17, 2021: n = 9, 2022: n = 10.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

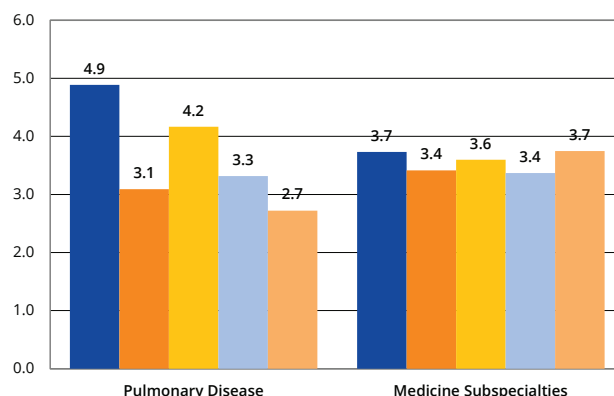
^b JAMA Medical Education Issues, 2012-2021.

Pulmonary Disease

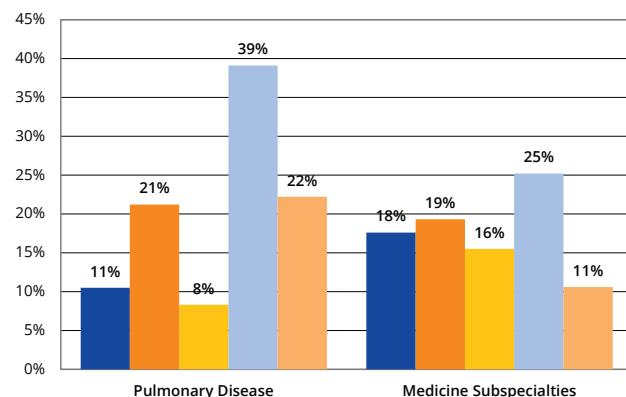
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



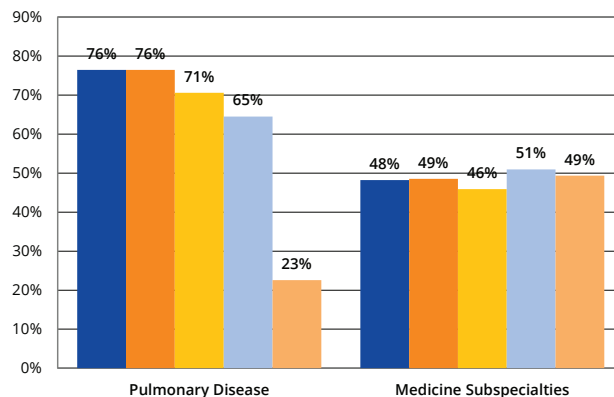
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



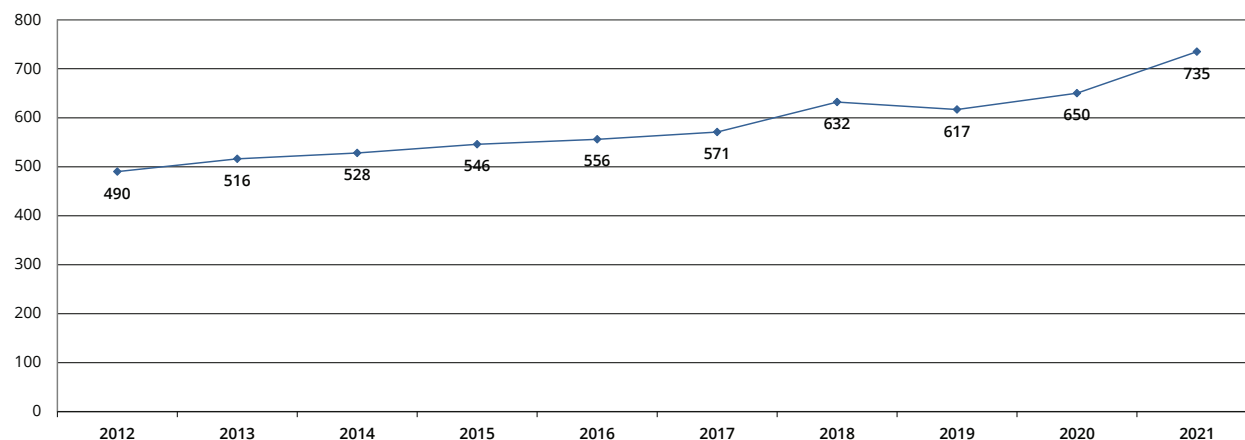
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Pulmonary Disease, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Pulmonary Disease GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

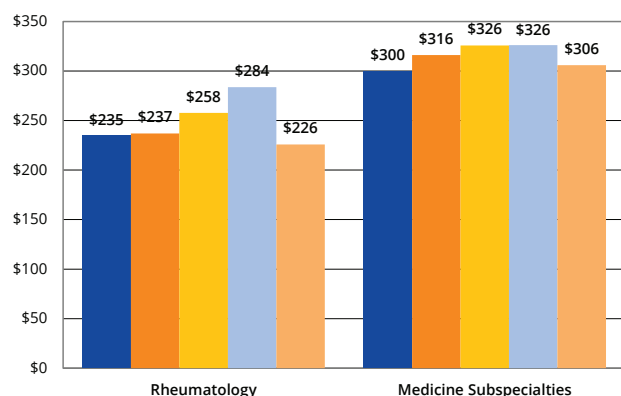
Number of responses: 2017: n = 21, 2018: n = 33, 2019: n = 26, 2021: n = 23, 2022: n = 20.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

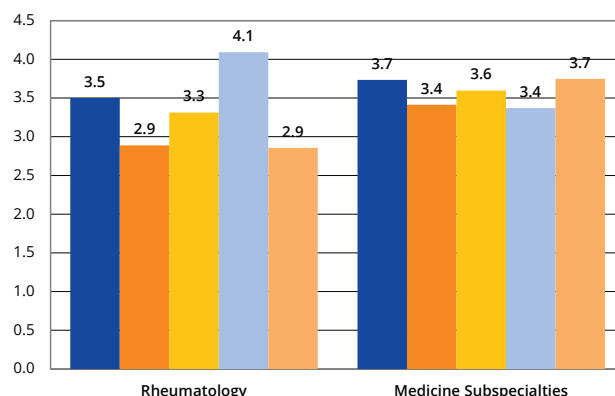
^b JAMA Medical Education Issues, 2012-2021.

Rheumatology

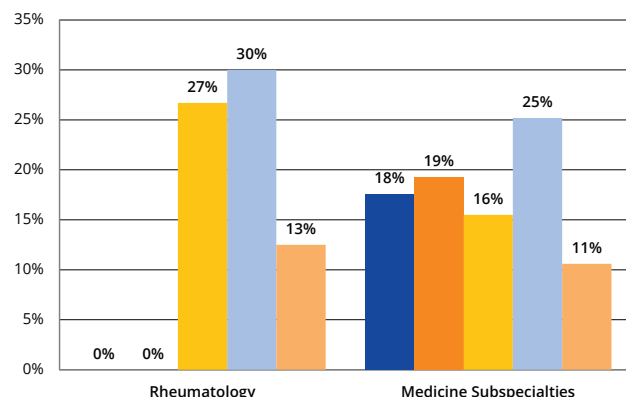
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



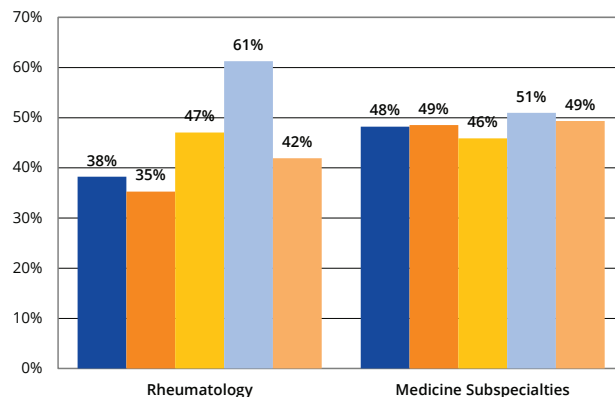
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



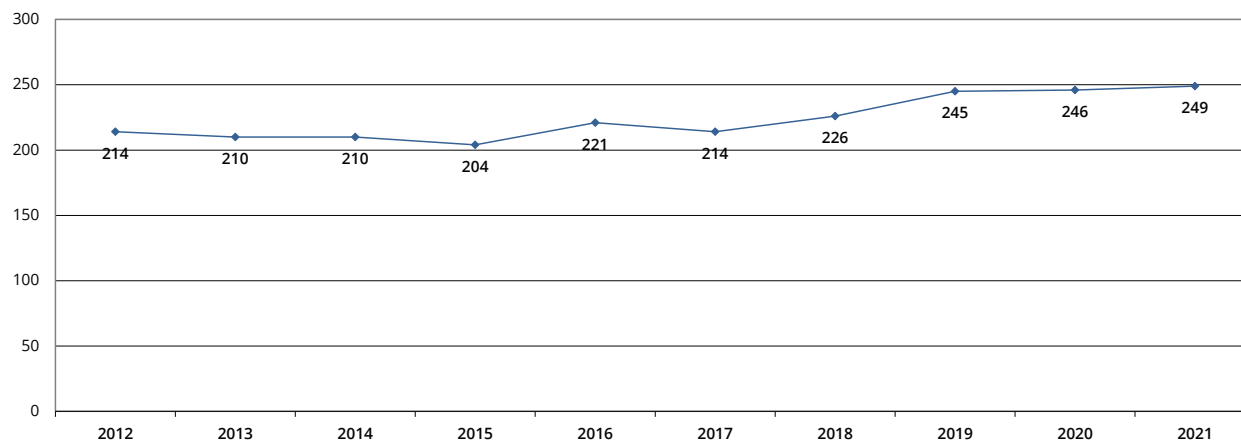
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Rheumatology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Rheumatology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

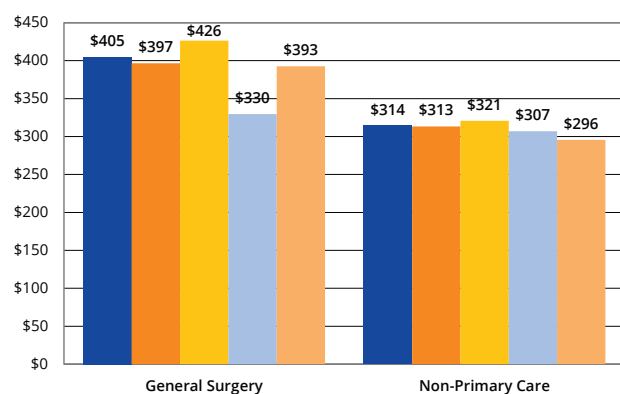
Number of responses: 2017: n = 8, 2018: n = 10, 2019: n = 16, 2021: n = 14, 2022: n = 8.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

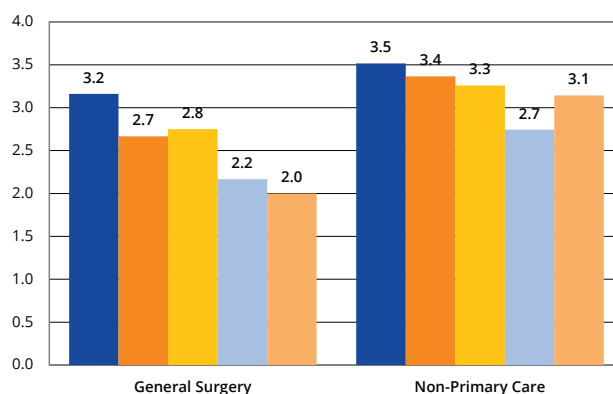
^b JAMA Medical Education Issues, 2012-2021.

General Surgery

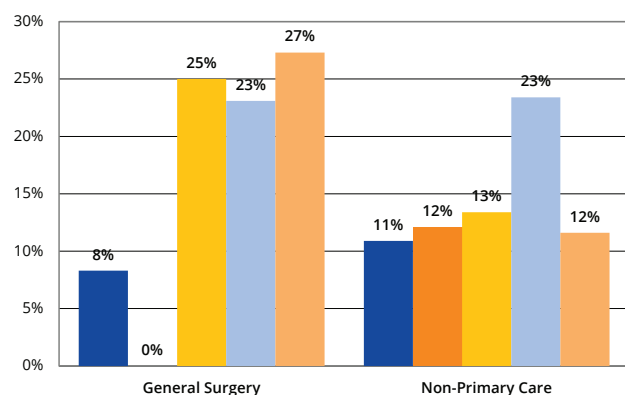
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



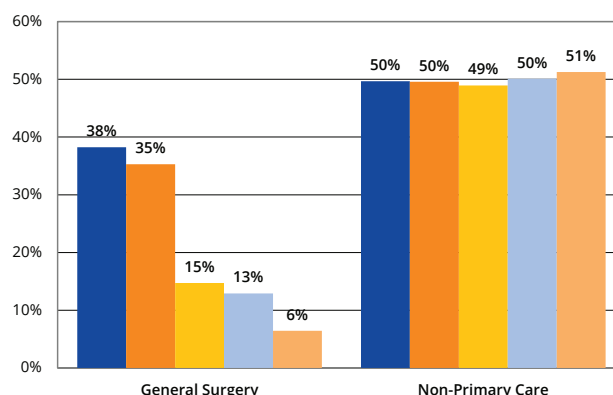
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



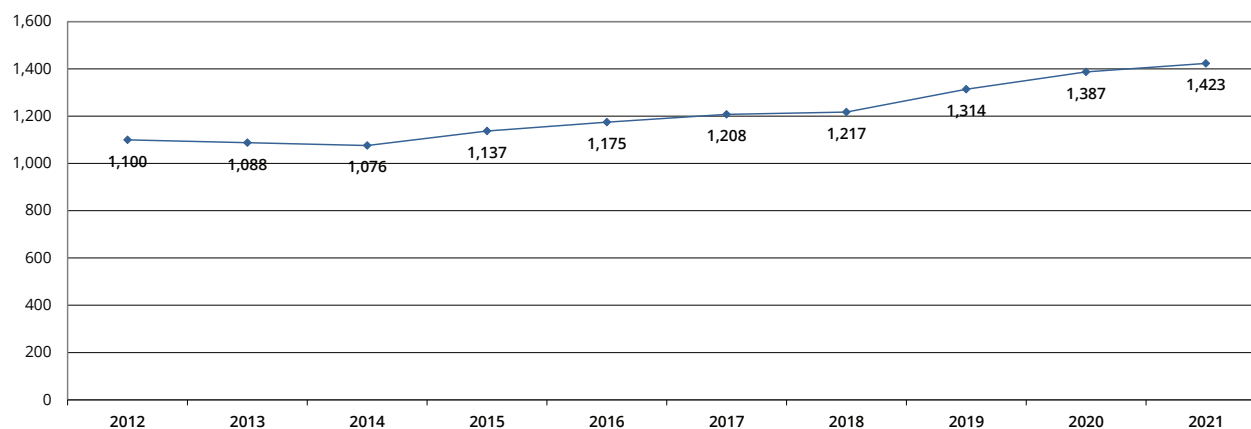
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of General Surgery, 2017-2019, 2021-2022^a



Trends in Number of Graduates of General Surgery GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

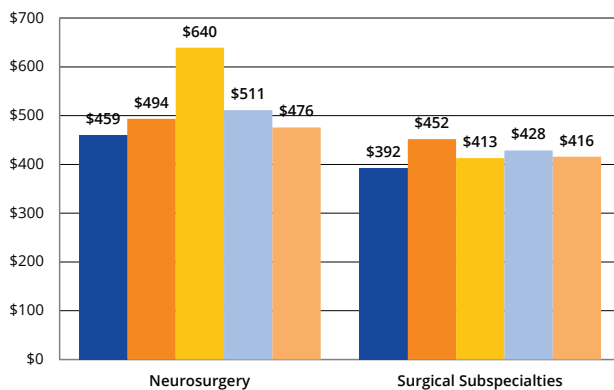
Number of responses: 2017: n = 27, 2018: n = 15, 2019: n = 21, 2021: n = 14, 2022: n = 16.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

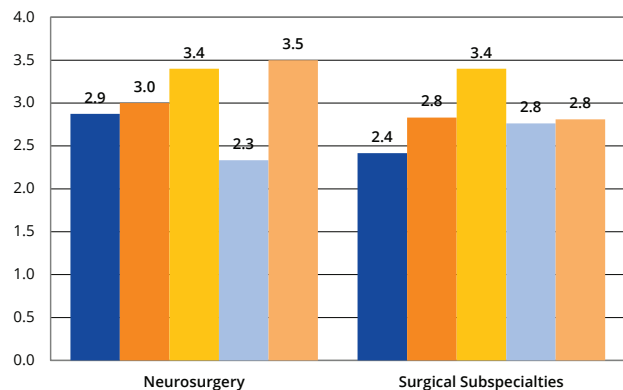
^b JAMA Medical Education Issues, 2012-2021.

Neurosurgery

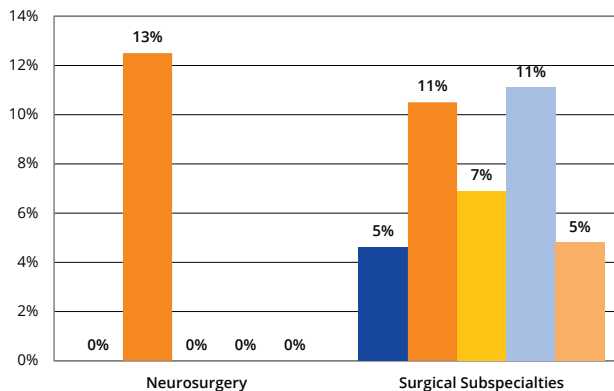
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



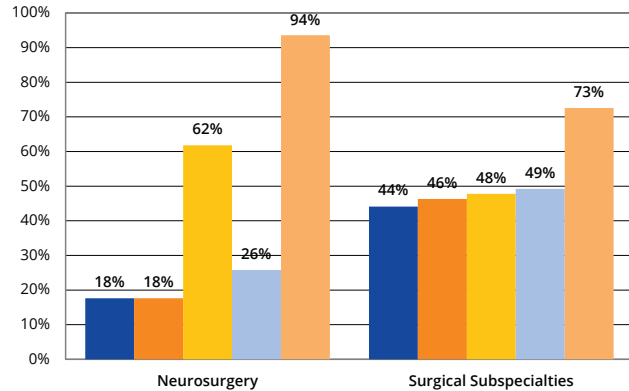
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



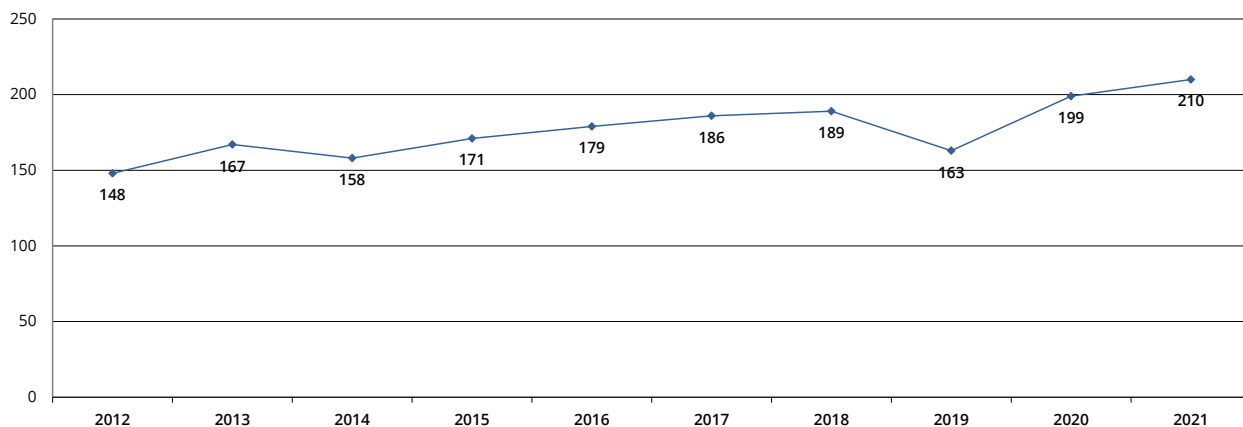
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Neurosurgery, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Neurosurgery GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

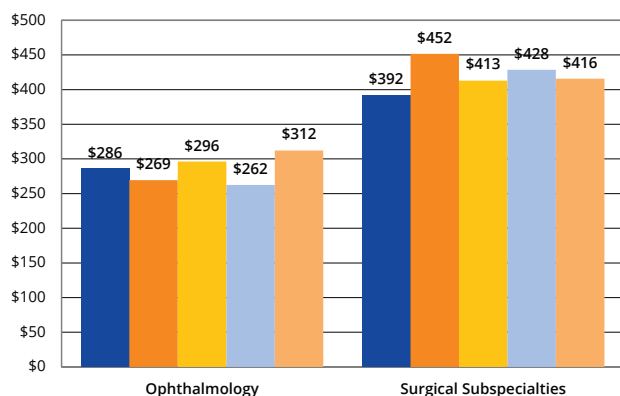
Number of responses: 2017: n = 8, 2018: n = 8, 2019: n = 5, 2021: n = 6, 2022: n = 4.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

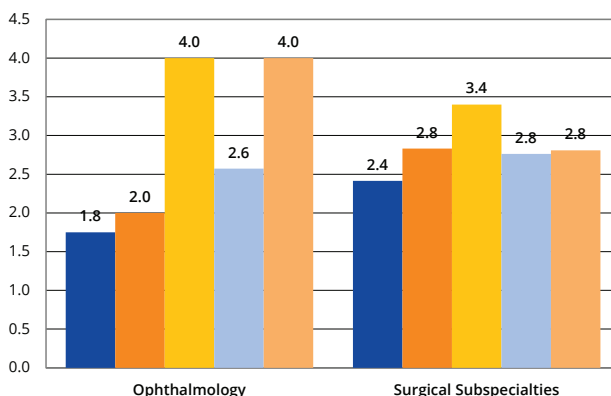
^b JAMA Medical Education Issues, 2012-2021.

Ophthalmology

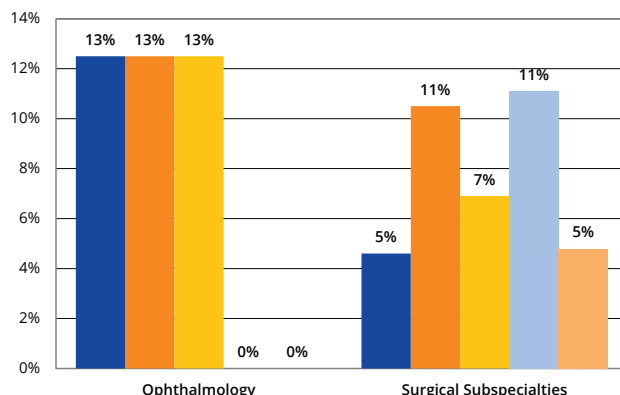
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



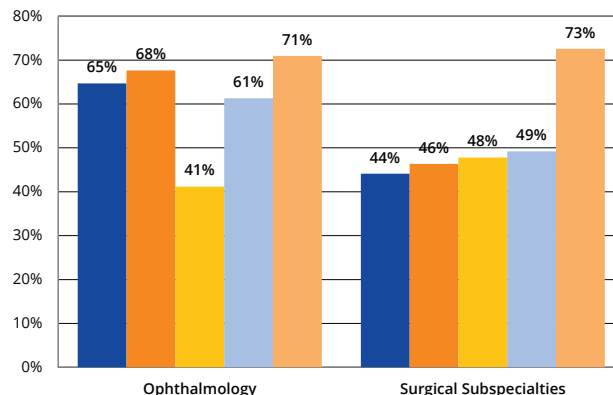
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



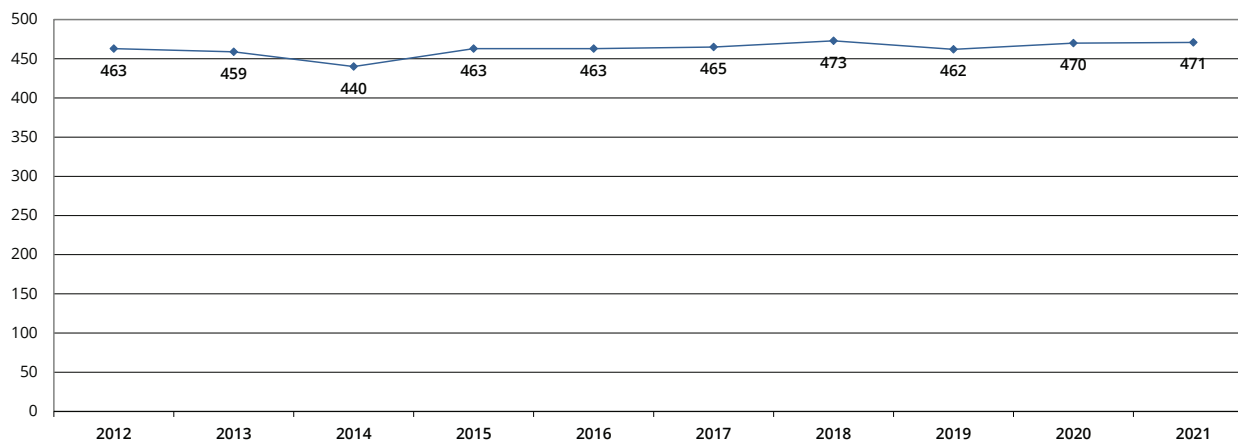
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Ophthalmology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Ophthalmology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

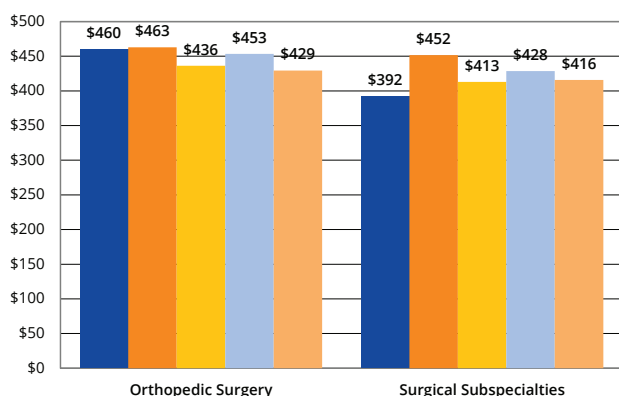
Number of responses: 2017: n = 10, 2018: n = 17, 2019: n = 13, 2021: n = 8, 2022: n = 6.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

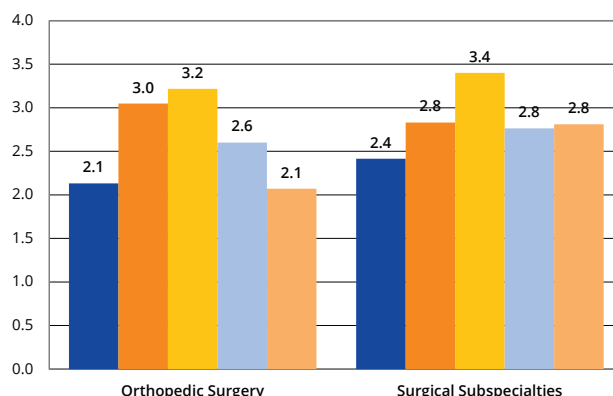
^b JAMA Medical Education Issues, 2012-2021.

Orthopedic Surgery

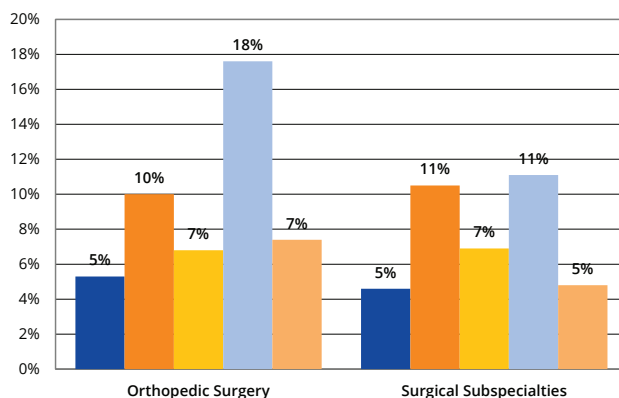
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



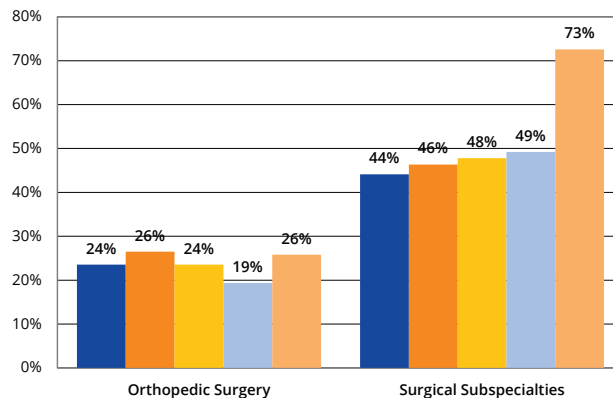
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



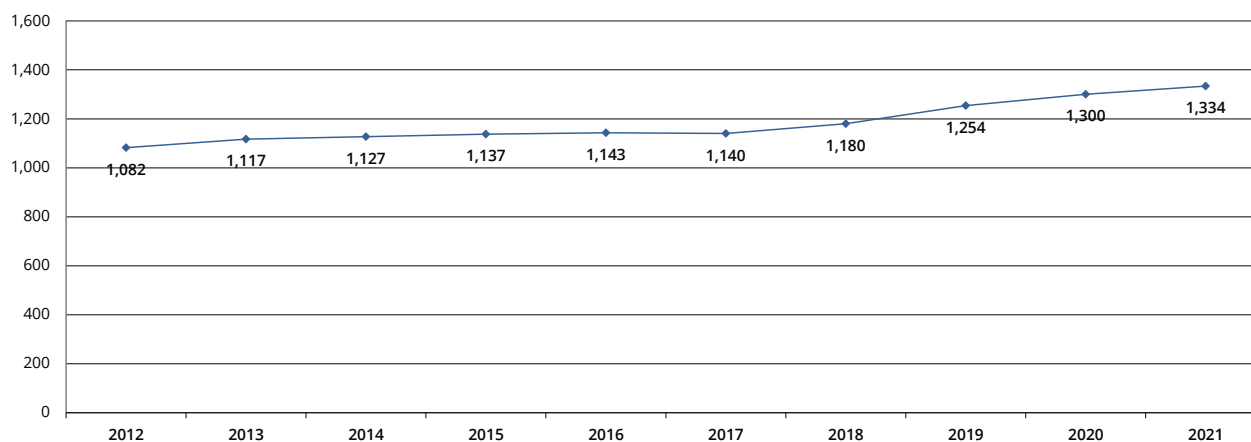
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Orthopedic Surgery, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Orthopedic Surgery GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

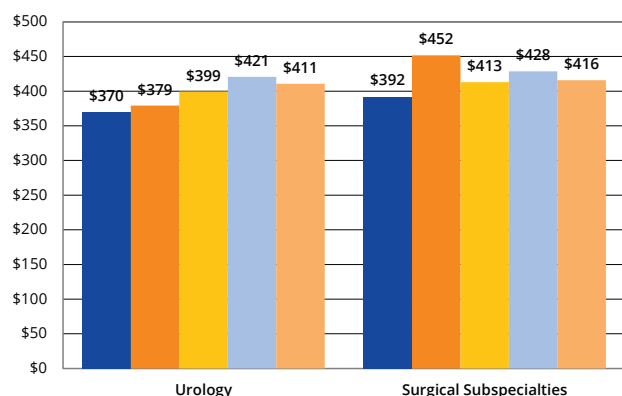
Number of responses: 2017: n = 40, 2018: n = 42, 2019: n = 50, 2021: n = 46, 2022: n = 32.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

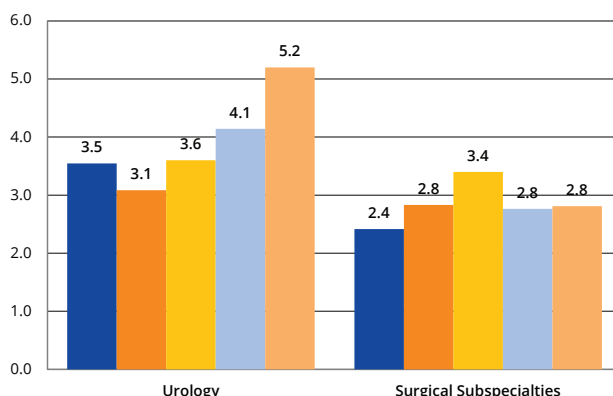
^b JAMA Medical Education Issues, 2012-2021.

Urology

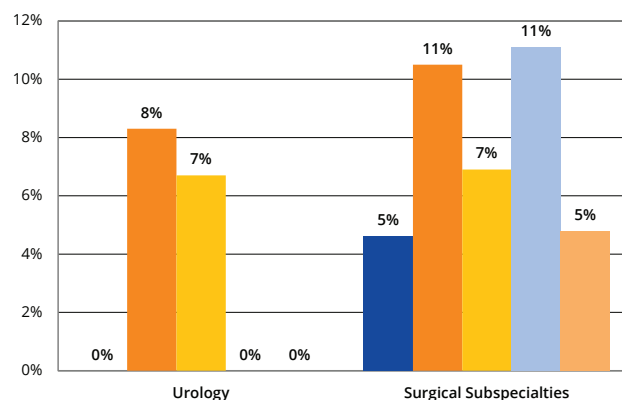
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



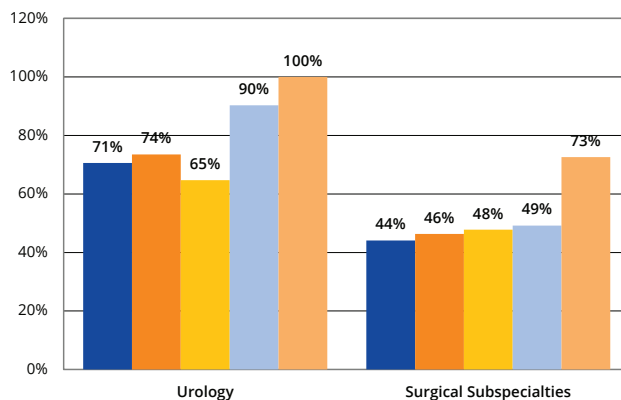
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



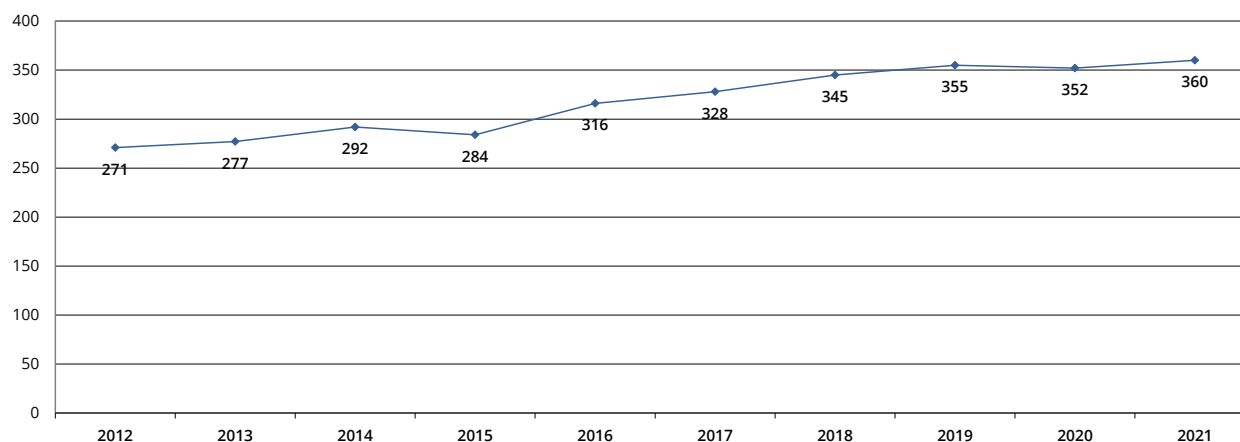
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Urology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Urology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

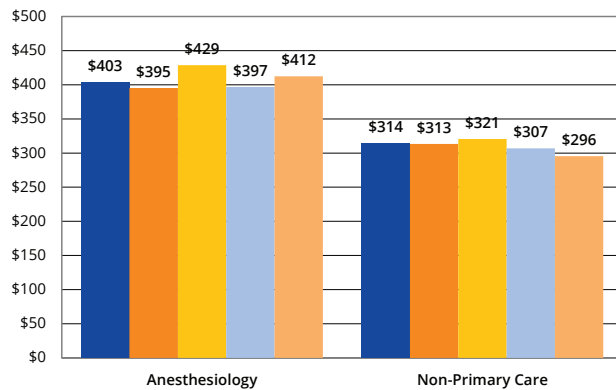
Number of responses: 2017: n = 12, 2018: n = 16, 2019: n = 16, 2021: n = 11, 2022: n = 6.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

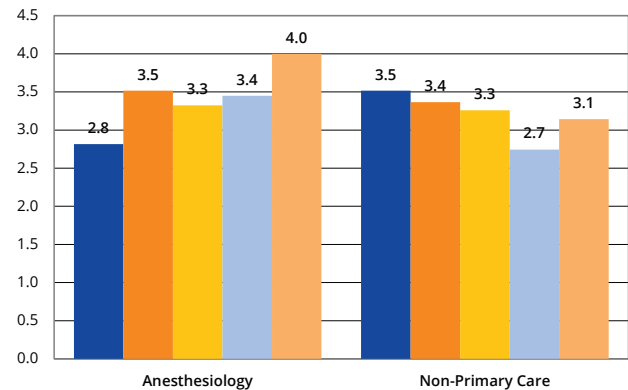
^b JAMA Medical Education Issues, 2012-2021.

Anesthesiology

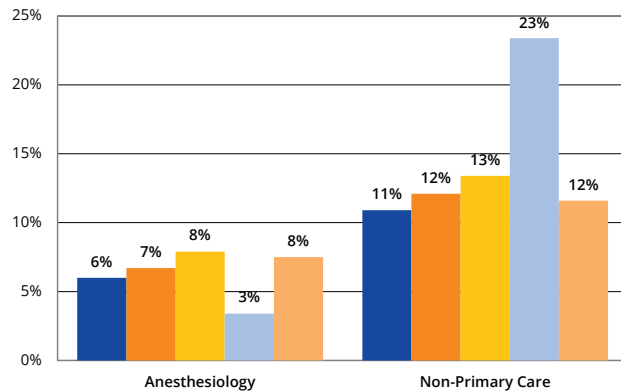
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



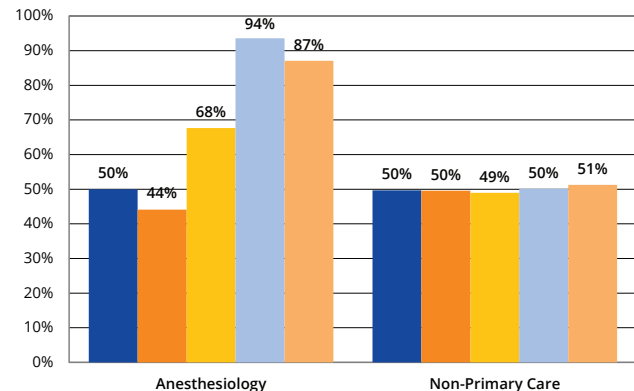
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



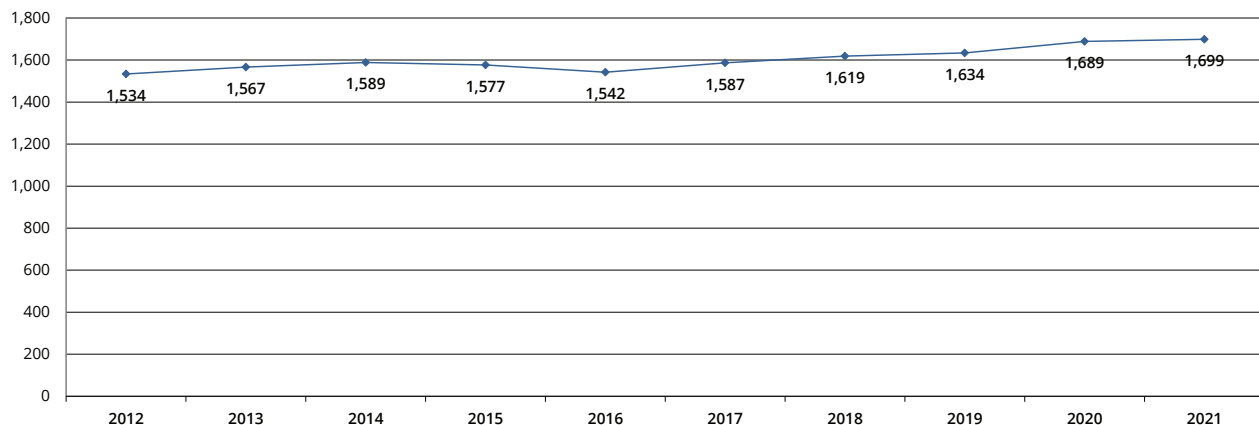
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Anesthesiology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Anesthesiology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

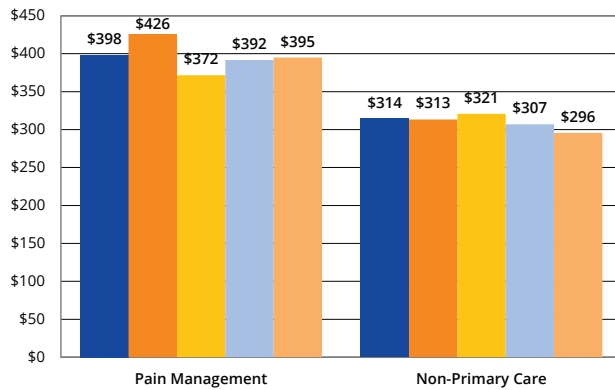
Number of responses: 2017: n = 73, 2018: n = 62, 2019: n = 45, 2021: n = 36, 2022: n = 49.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

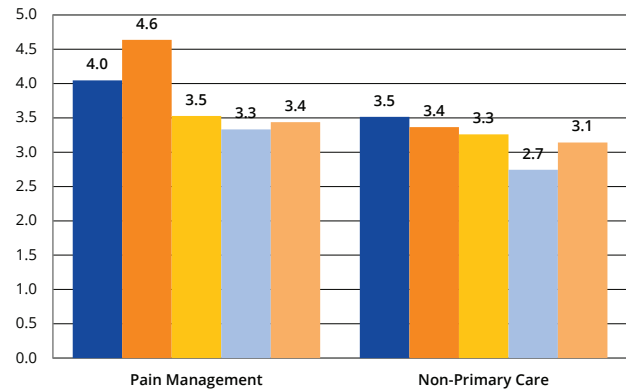
^b JAMA Medical Education Issues, 2012-2021.

Pain Management

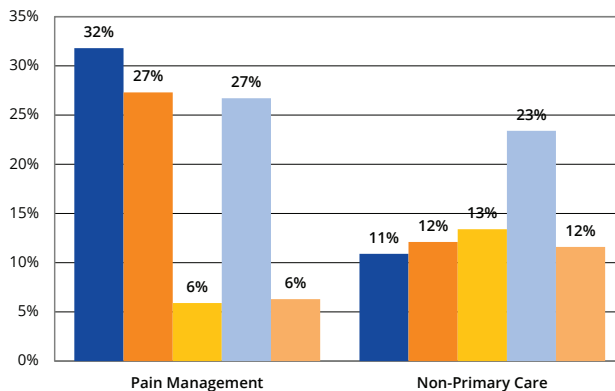
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



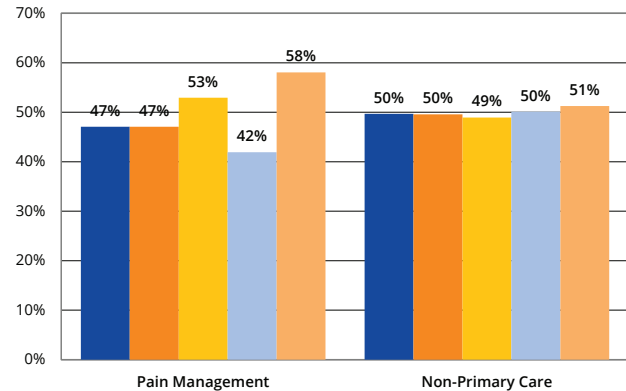
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



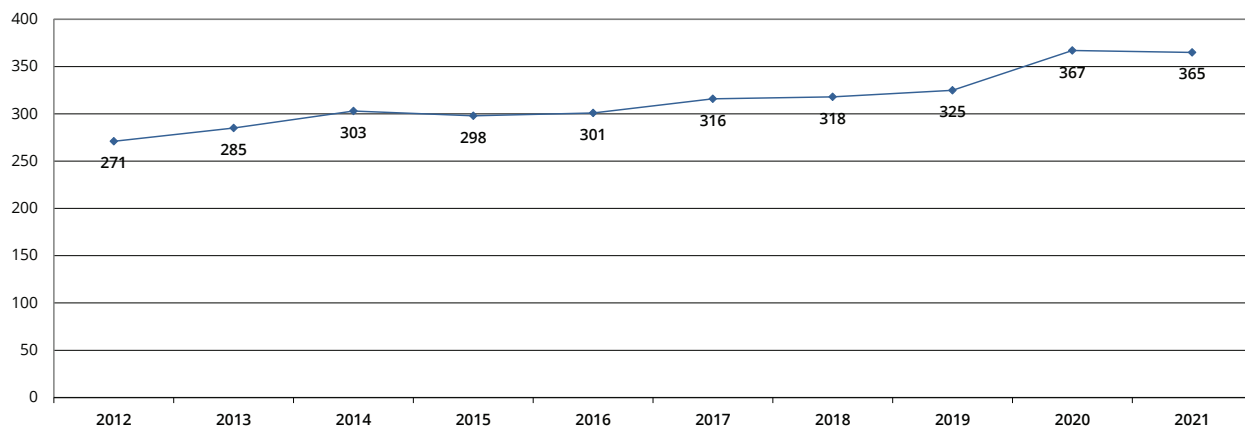
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Pain Management, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Pain Management GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

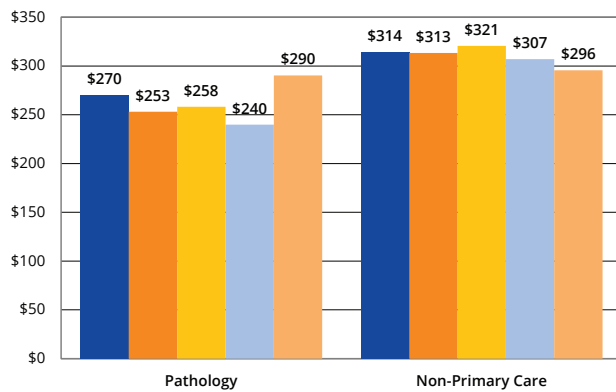
Number of responses: 2017: n = 22, 2018: n = 11, 2019: n = 17, 2021: n = 17, 2022: n = 16.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

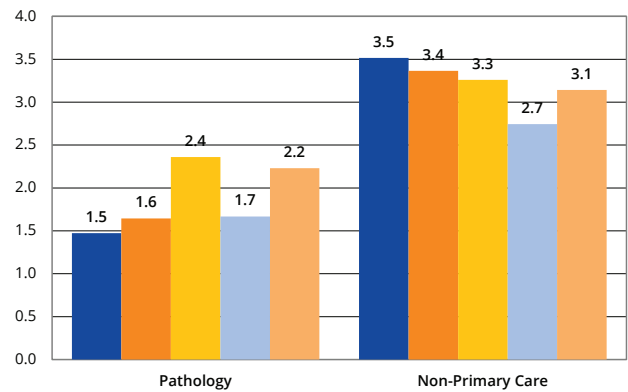
^b JAMA Medical Education Issues, 2012-2021.

Pathology

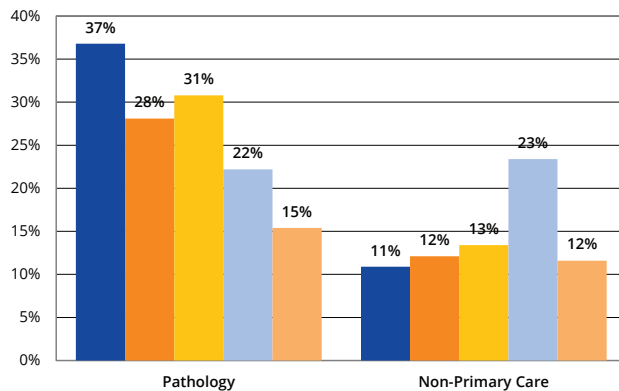
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



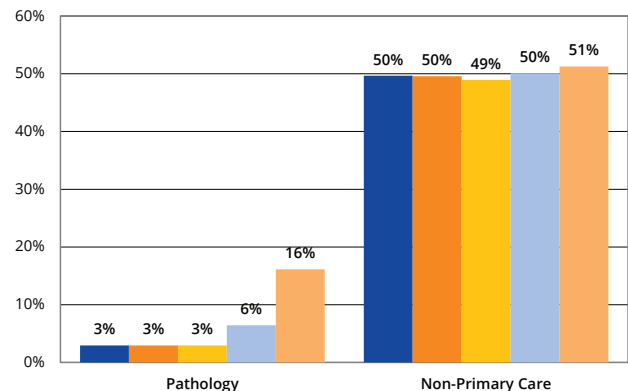
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



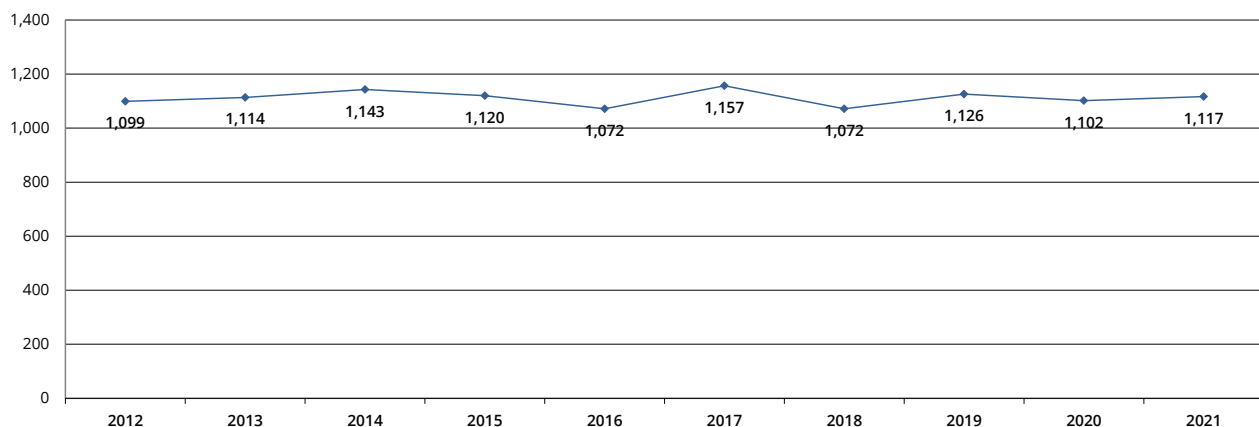
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Pathology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Pathology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

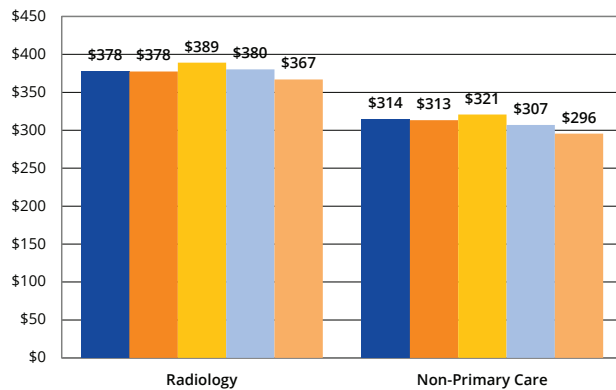
Number of responses: 2017: n = 20, 2018: n = 39, 2019: n = 27, 2021: n = 22, 2022: n = 18.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

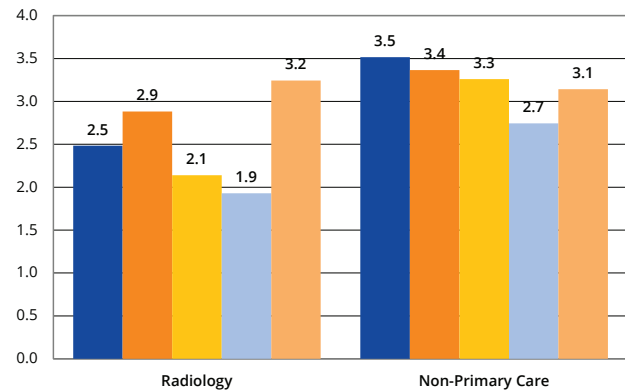
^b JAMA Medical Education Issues, 2012-2021.

Radiology

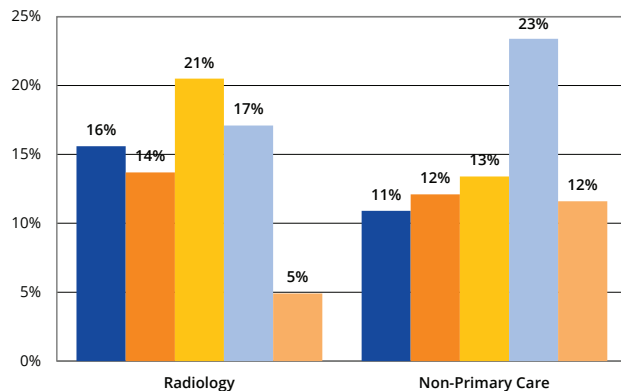
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



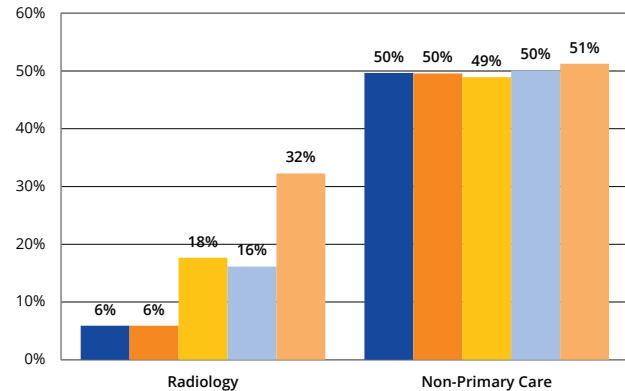
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



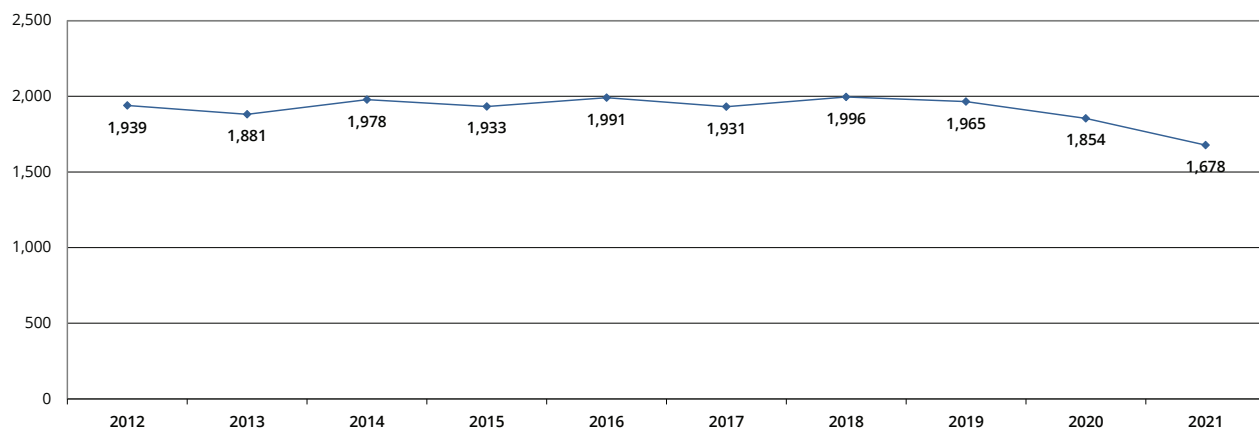
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Radiology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Radiology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

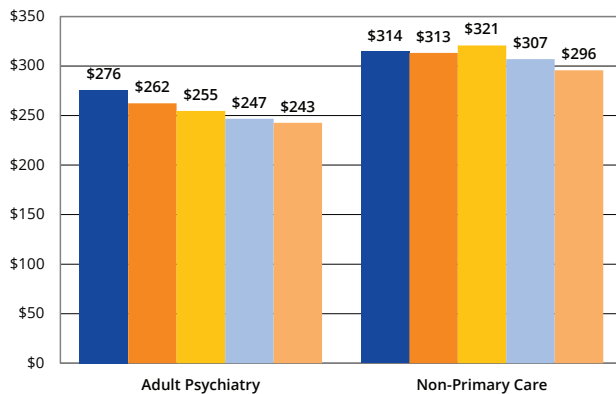
Number of responses: 2017: n = 43, 2018: n = 56, 2019: n = 52, 2021: n = 46, 2022: n = 46.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

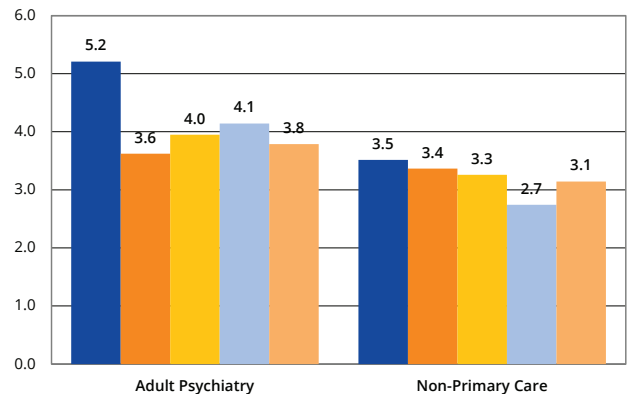
^b JAMA Medical Education Issues, 2012-2021.

Adult Psychiatry

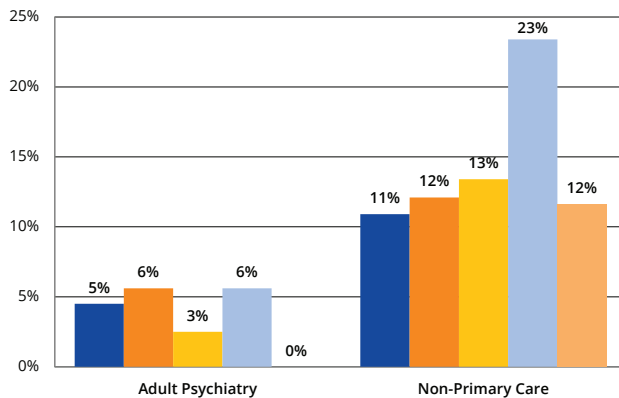
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



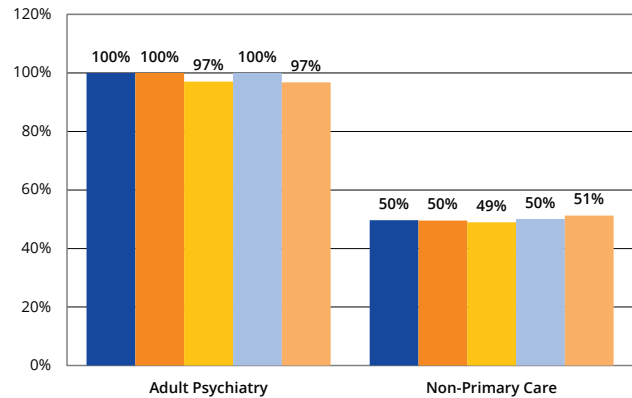
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



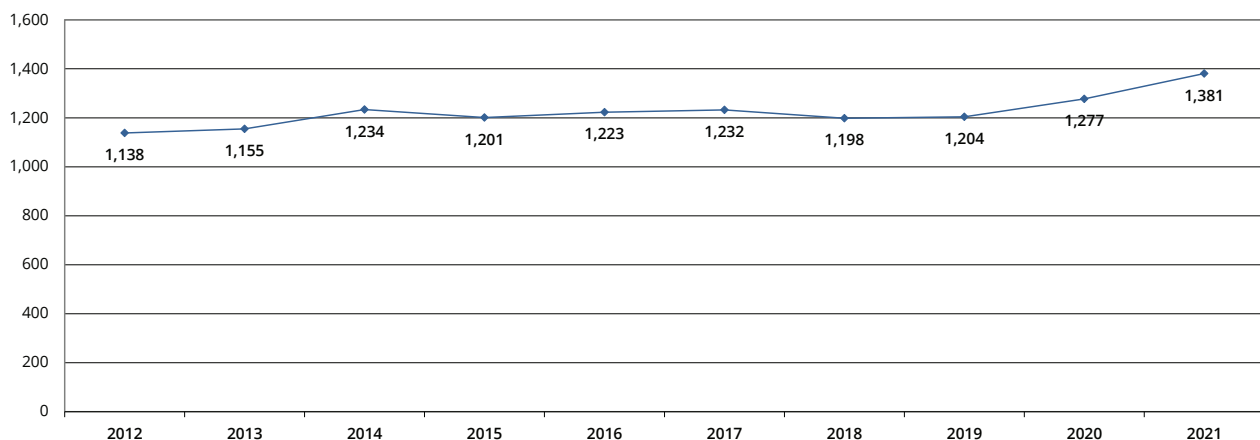
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Adult Psychiatry, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Adult Psychiatry GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

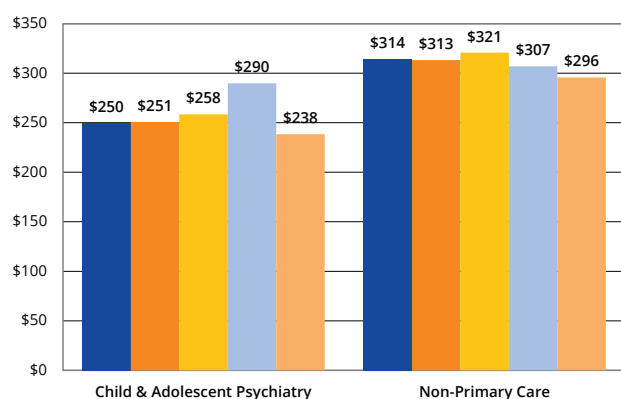
Number of responses: 2017: n = 49, 2018: n = 61, 2019: n = 45, 2021: n = 45, 2022: n = 56.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

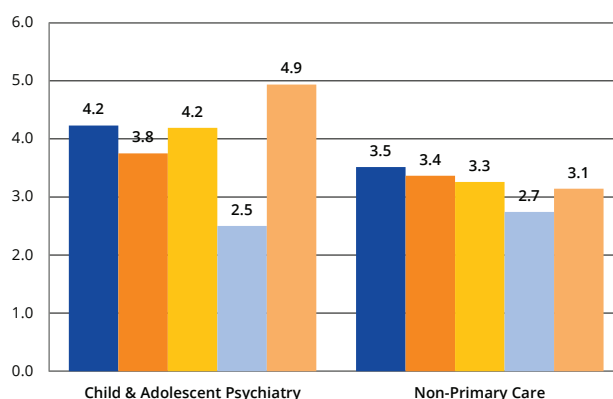
^b JAMA Medical Education Issues, 2012-2021.

Child and Adolescent Psychiatry

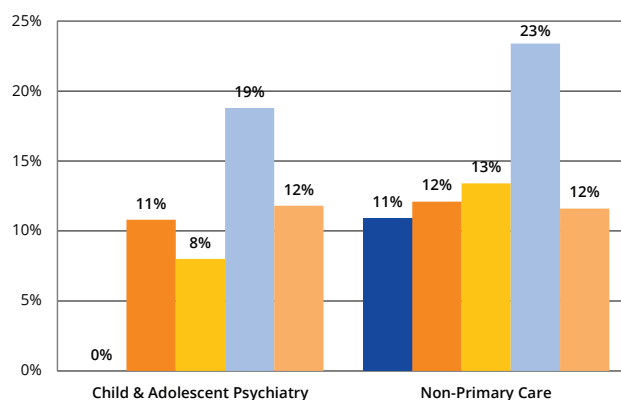
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



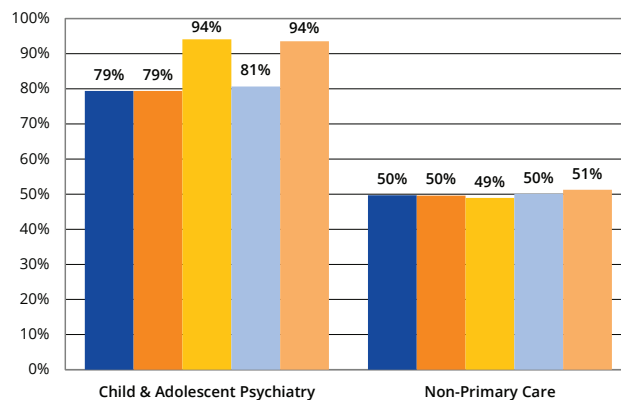
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



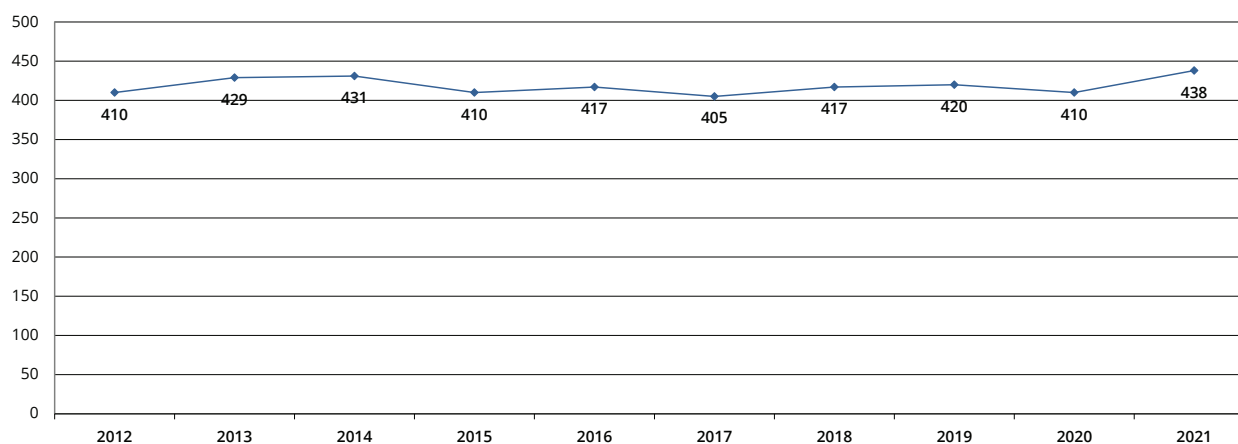
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Child & Adolescent Psychiatry, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Child & Adolescent Psychiatry GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

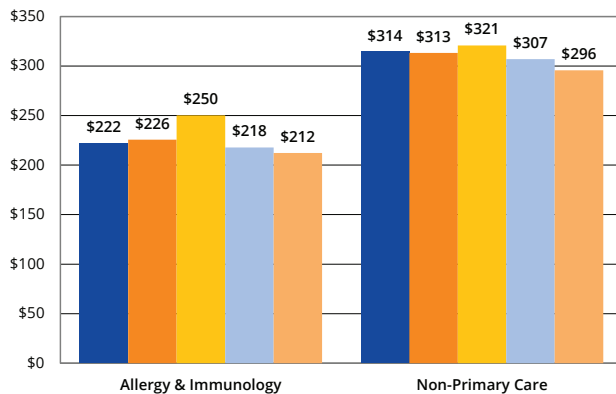
Number of responses: 2017: n = 28, 2018: n = 38, 2019: n = 28, 2021: n = 20, 2022: n = 19.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

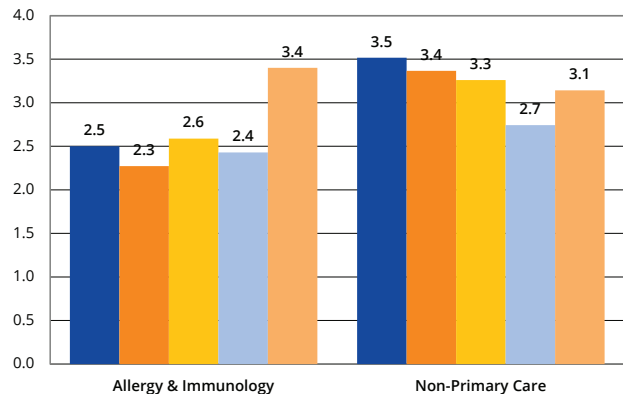
^b JAMA Medical Education Issues, 2012-2021.

Allergy and Immunology

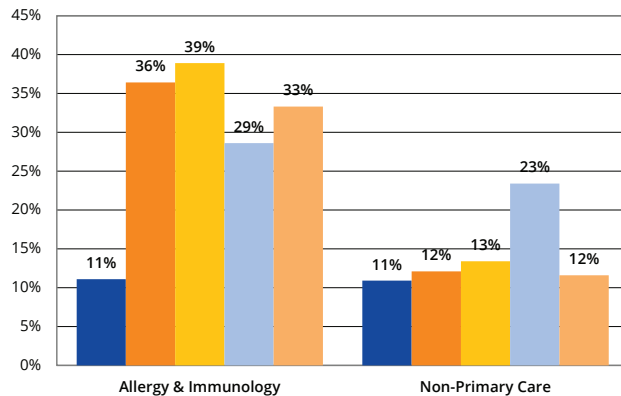
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



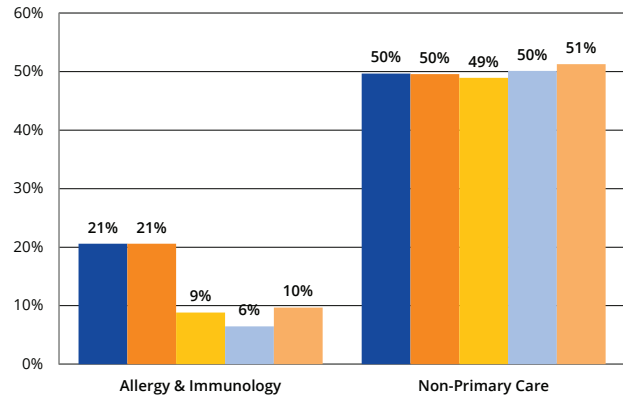
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



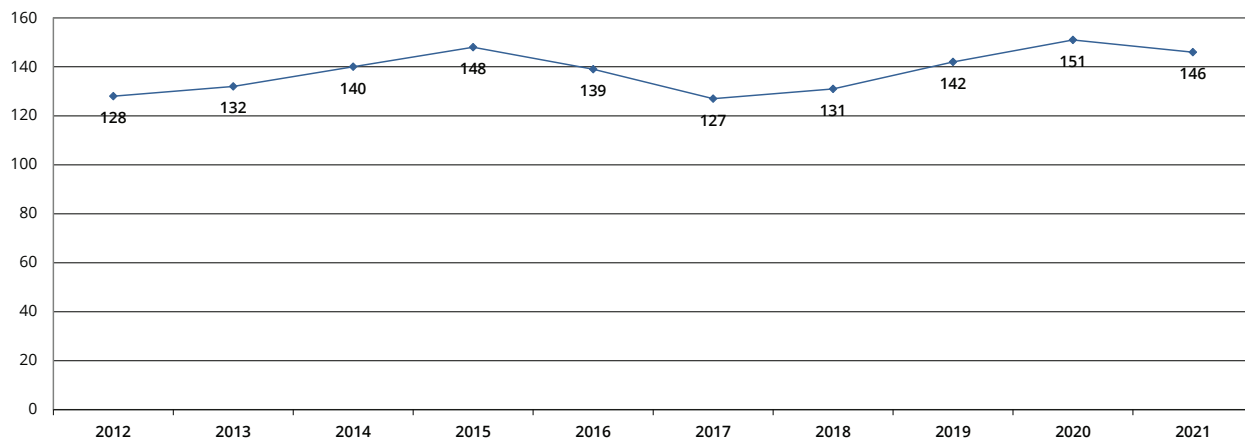
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Allergy & Immunology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Allergy & Immunology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

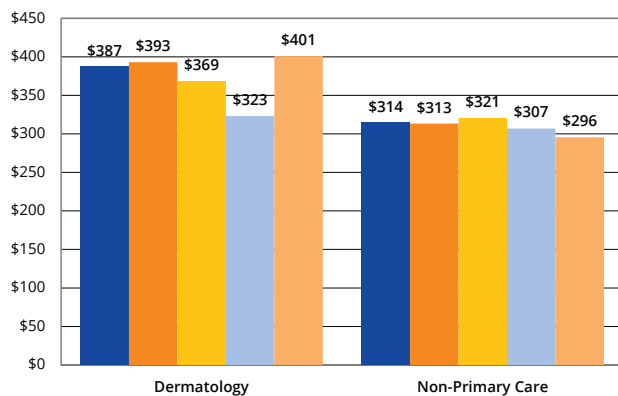
Number of responses: 2017: n = 11, 2018: n = 12, 2019: n = 18, 2021: n = 14, 2022: n = 6.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

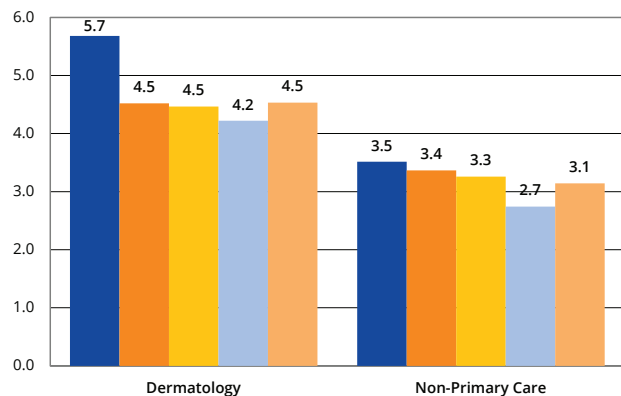
^b JAMA Medical Education Issues, 2012-2021.

Dermatology

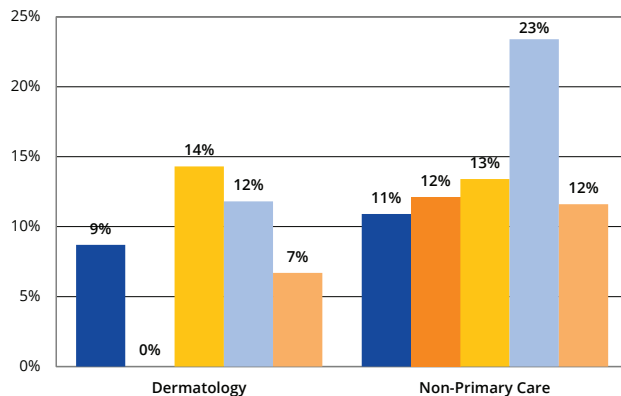
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



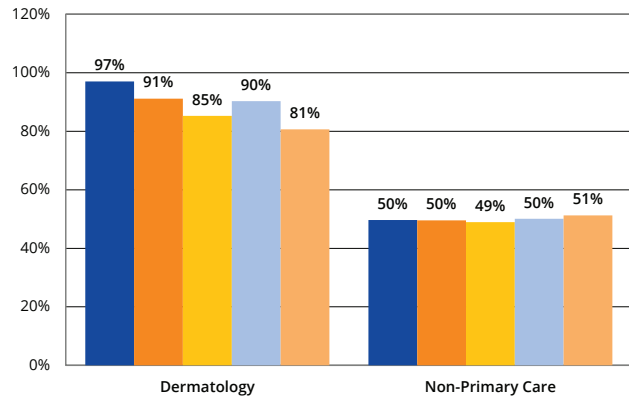
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



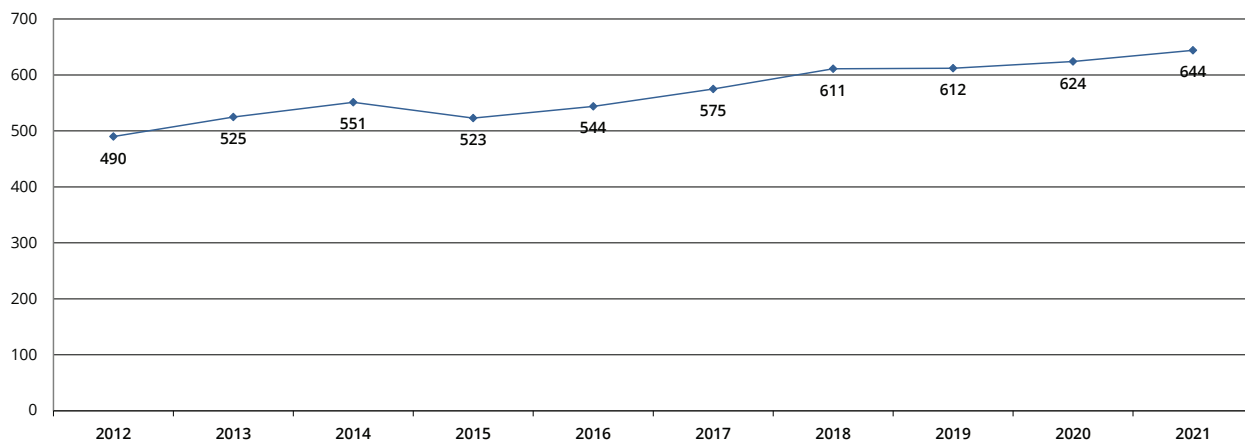
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Dermatology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Dermatology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

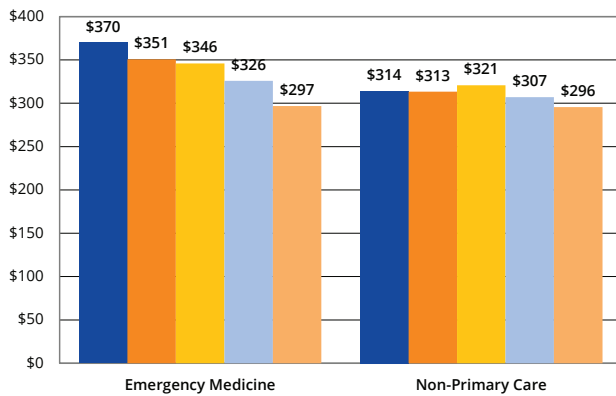
Number of responses: 2017: n = 23, 2018: n = 28, 2019: n = 28, 2021: n = 22, 2022: n = 15.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

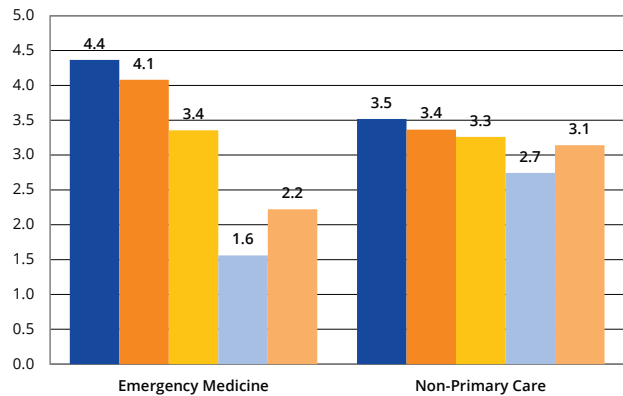
^b JAMA Medical Education Issues, 2012-2021.

Emergency Medicine

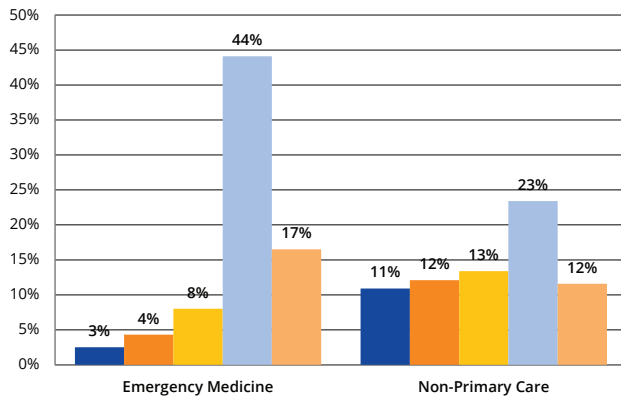
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



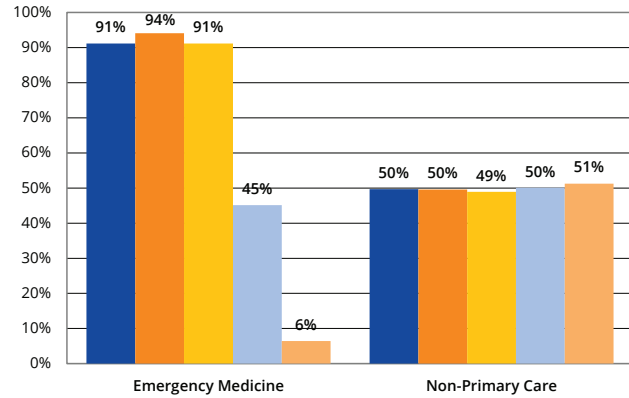
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



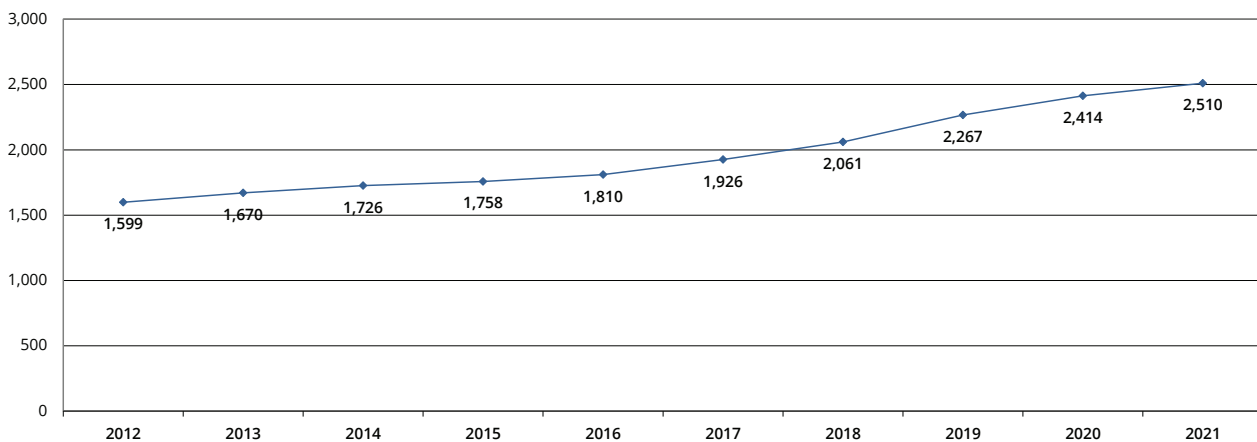
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Emergency Medicine, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Emergency Medicine GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

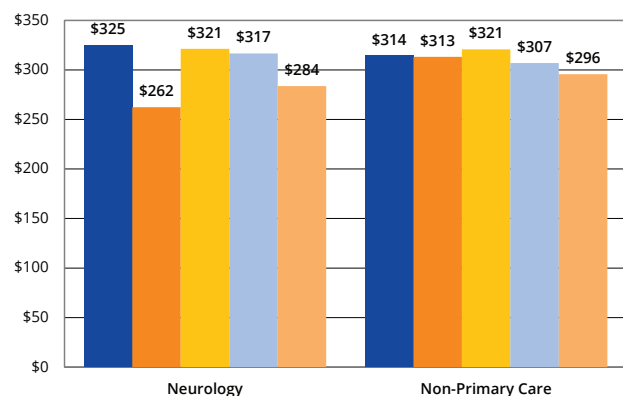
Number of responses: 2017: n = 126, 2018: n = 131, 2019: n = 125, 2021: n = 107, 2022: n = 119.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

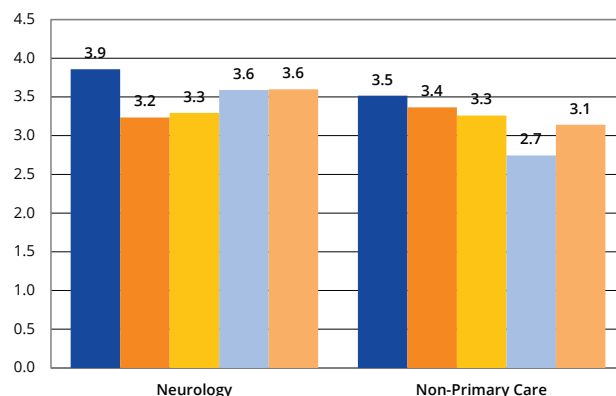
^b JAMA Medical Education Issues, 2012-2021.

Neurology

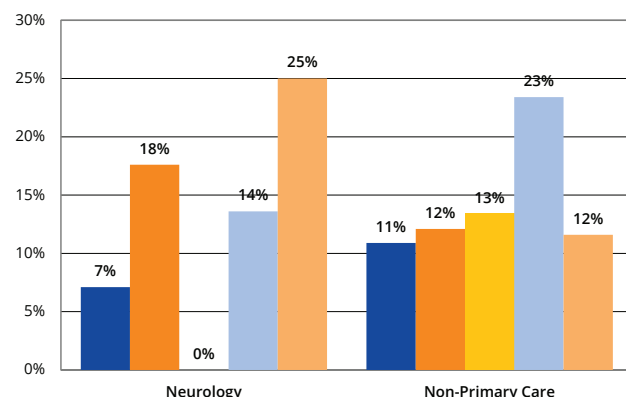
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



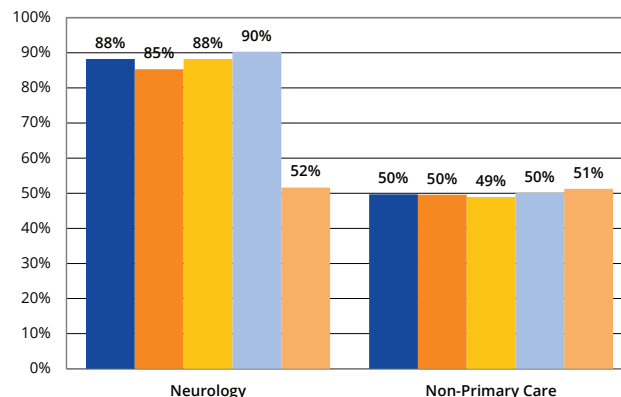
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



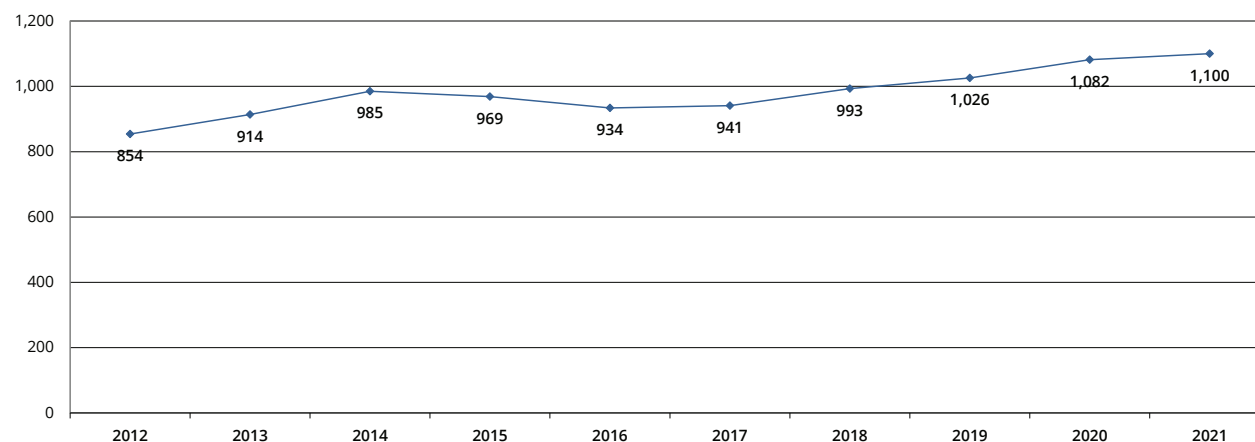
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Neurology, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Neurology GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

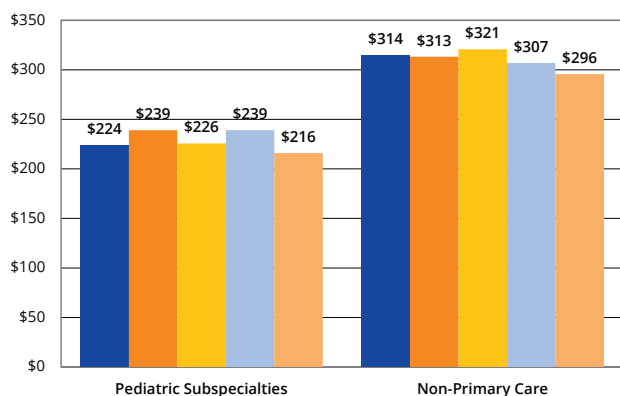
Number of responses: 2017: n = 14, 2018: n = 21, 2019: n = 20, 2021: n = 25, 2022: n = 16.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

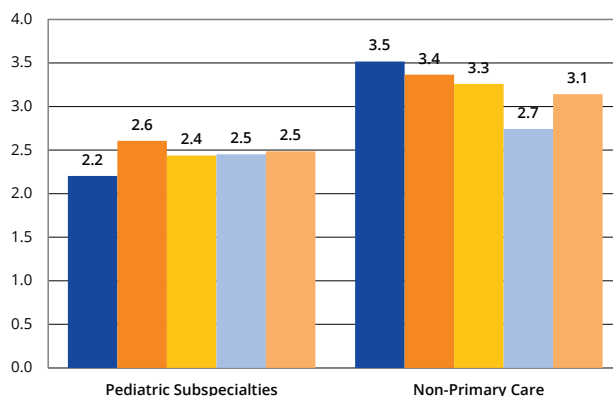
^b JAMA Medical Education Issues, 2012-2021.

Pediatric Subspecialties

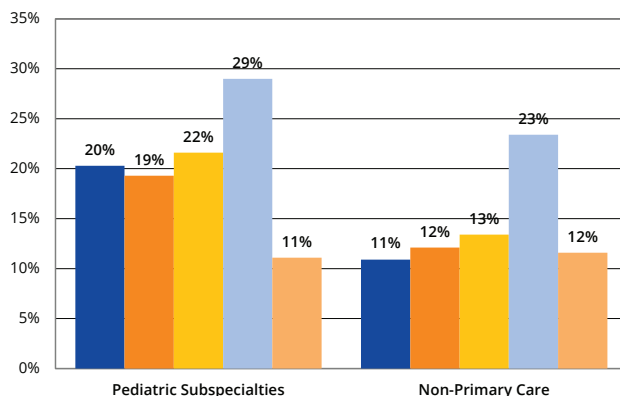
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



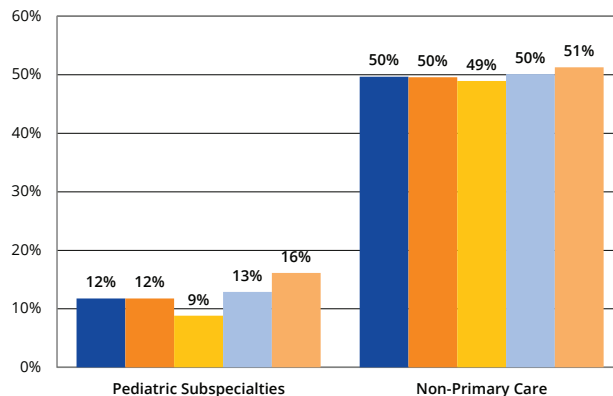
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



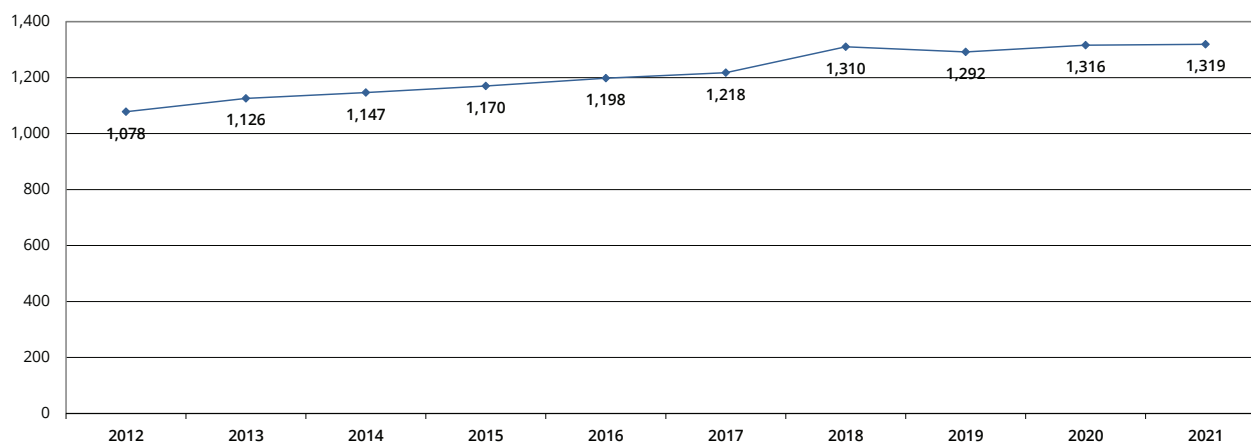
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Pediatric Subspecialties, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Pediatric Subspecialties GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

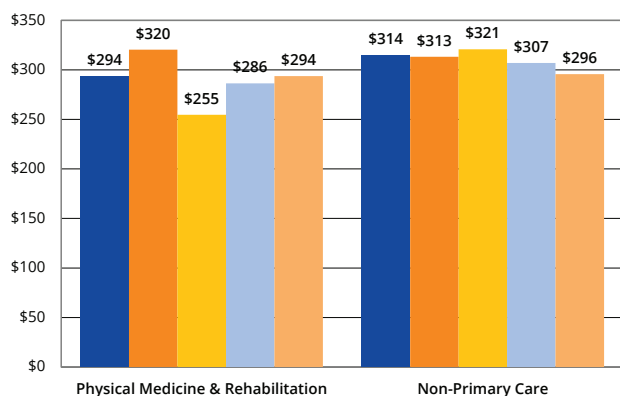
Number of responses: 2017: n = 70, 2018: n = 62, 2019: n = 54, 2021: n = 36, 2022: n = 39.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

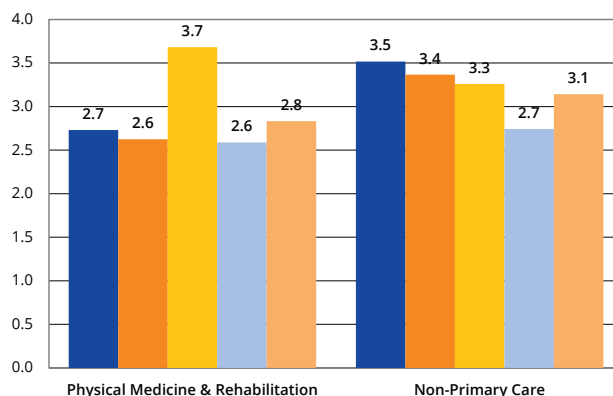
^b JAMA Medical Education Issues, 2012-2021.

Physical Medicine and Rehabilitation

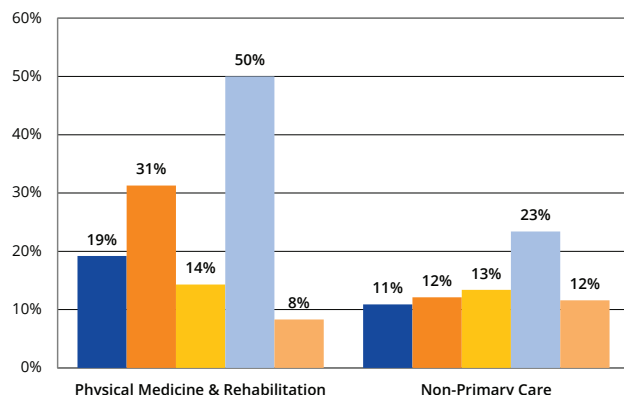
Trends in Median Starting Income, 2017-2019, 2021-2022 (in \$1,000s of 2021 Dollars)^a



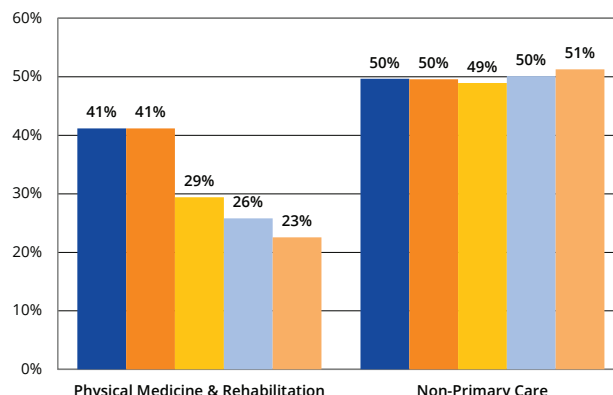
Trends in Mean Number of Job Offers Received, 2017-2019, 2021-2022^a



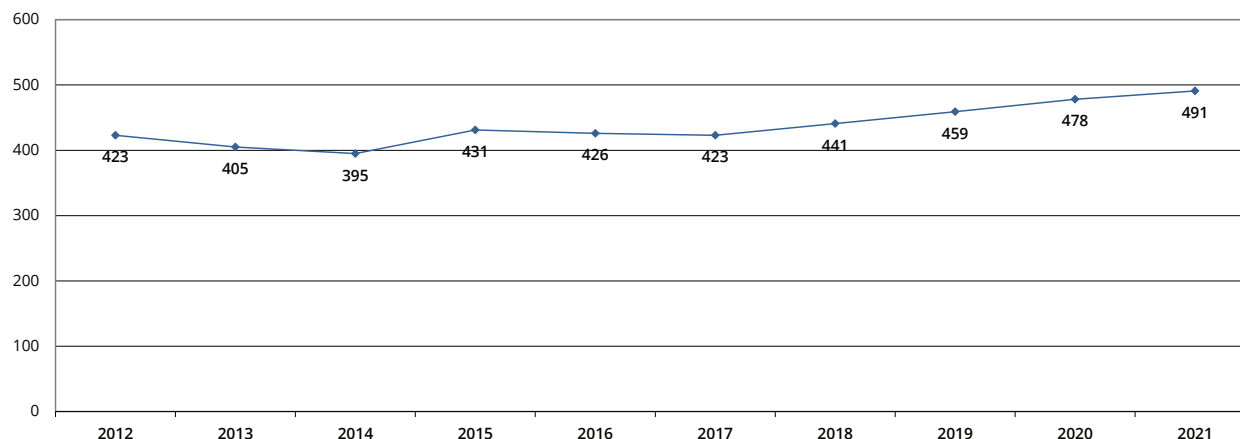
Trends in Having to Change Plans Due to Limited Practice Opportunities, 2017-2019, 2021-2022^a



Trends in Relative Demand - Percentile Rank of Physical Medicine & Rehabilitation, 2017-2019, 2021-2022^a



Trends in Number of Graduates of Physical Medicine & Rehabilitation GME Programs in the US, 2012-2021^b



Legend: ■ 2017 ■ 2018 ■ 2019 ■ 2021 ■ 2022

Number of responses: 2017: n = 27, 2018: n = 18, 2019: n = 23, 2021: n = 20, 2022: n = 13.

^a CHWS, Survey of Residents Completing Training in New York, 2017-2019, 2021-2022.

^b JAMA Medical Education Issues, 2012-2021.



APPENDIX A

METHODOLOGY USED TO MEASURE RELATIVE DEMAND

The Resident Exit Survey cannot be used to determine absolute demand for new physicians in different specialties (ie, it cannot be used to determine the number of physicians necessary to serve a given population). However, by analyzing several questions pertaining to job market experiences and perceptions of new physicians and comparing responses over time, in different geographical locations, and between specialties, it is possible to assess whether respondents from certain specialties or in certain locations are finding more or fewer practice opportunities (ie, it measures *relative* demand).

The implication is that while a specialty, such as pathology, may be in low demand relative to other specialties in an absolute sense, there may still be good opportunities for pathologists, but not as good or as many as another specialist that is seeing higher demand (such as child and adolescent psychiatry). In addition, it is not possible to measure the magnitude of the difference in demand between different specialties. So, if the percentile rank of nephrology in New York in 2022 was 68% (ie, nephrology had a relative rank equal to or better than 68% of the 31 specialties that were ranked), and the percentile rank of radiology was 32%, this does not imply that demand for nephrology was more than twice as strong as for radiology. The scale is at the ordinal level of measurement.

To measure demand for a given year, a composite score was computed by taking the median of the ranks (ie, where each specialty stood relative to all 31 specialties) scored by each specialty on each of the demand indicators for data from the previous 4 years of the survey. Data from more recent years of the survey received a greater weight than data from earlier years. (The survey was not administered in 2020 due to the COVID-19 pandemic). For example, when calculating the demand score for 2022, data from 2022 were weighted .40, data from 2021 were weighted .30, data from 2019 were weighted .20, and data from 2018 were weighted .10. The following variables were used as indicators of demand:

- Percentage of respondents having difficulty finding a satisfactory practice position
- Percentage of respondents having to change plans due to limited practice opportunities
- Mean number of job offers received by respondents
- Respondents' mean Likert score summarizing their assessment of the regional job market
- Respondents' mean Likert score summarizing their assessment of the national job market
- Trend (ie, average annual change) in median starting income

None of these indicators used alone will provide a perfect picture of demand. However, considered together, they provide a good picture of relative demand by specialty. There was a high degree of correlation between the "percentage of respondents with difficulty finding a satisfactory practice position" variable and the "percentage of respondents having to change plans due to limited practice opportunities" variable (ie, a respondent reporting "difficulty..." was much more likely to also report "having to change plans..."). There was also a high degree of correlation between respondents' assessments of the "regional job market" and

the “national job market.” To compensate for these observed correlations, the “job offers” variable and the “trends in starting income” variable were each double weighted in computing a composite demand score.

Table 1 summarizes the rank of each specialty (ranked among 31 specialties) on each demand indicator.

The variables are:

- **Difficulty:** Rank of each specialty based on the percentage of respondents reporting difficulty finding a satisfactory practice position
 - eg, the specialty with the lowest percentage of respondents reporting difficulty (Adult Psychiatry) ranked #1 and the specialty with the highest percentage of respondents reporting difficulty (Rheumatology) ranked #31
- **Change Plans:** Rank of each specialty based on the percentage of respondents that had to change plans due to practice opportunities
 - eg, the specialty with the lowest percentage of respondents having to change plans (Neurosurgery) ranked #1 and the specialty with the highest percentage of respondents reporting difficulty (Allergy and Immunology) ranked #31
- **Job Offers:** Rank of each specialty in terms of the mean number of job offers received by respondents (this variable was double weighted in computing the overall demand score)
 - eg, the specialty with the most job offers (Nephrology) ranked #1 and the specialty with the fewest job offers (Pathology) ranked #31
- **Regional Market:** Rank of each specialty in terms of the mean Likert score summarizing respondents’ assessments of the regional job market for their specialty
 - eg, the specialty with the most positive assessment of the regional job market (Adult Psychiatry) ranked #1 and the specialty with the least positive assessment of the regional job market (General Surgery) ranked #31
- **National Market:** Rank of each specialty in terms of the mean Likert score summarizing respondents’ assessments of the national job market for their specialty
 - eg, the specialty with the most positive assessment of the national job market (Adult Psychiatry) ranked #1 and the specialty with the least positive assessment of the national job market (Allergy and Immunology) ranked #31
- **Income Trend:** Rank of each specialty in terms the average annual change (or trend) in median starting income levels of respondents from each specialty
 - eg, the specialty with the strongest trend in median starting income (Nephrology) ranked #1 and the specialty with the weakest trend in median starting income (Emergency Medicine) ranked #31

TABLE 1. Summary of Ranks and Demand Indicators

Specialty	Difficulty	Change Plans	Job Offers ^a	Regional Market	National Market	Income Trends ^a	Median Rank	Overall Rank	Percentile Rank ^b
Family Medicine	11	8	5	4	3	24	6.5	5	87%
General Internal Medicine	15	17	10	8	11	28	13.0	12	65%
General Pediatrics	19	19	24	11	19	2	19.0	21	35%
Obstetrics/Gynecology	8	12	9	6	10	9	9.0	9	74%
Cardiology	10	16	17	16	21	16	16.0	17	48%
Critical Care Med	20	25	15	18	23	30	21.5	23	29%
Endocrinology and Metabolism	24	20	11	7	12	15	13.5	13	61%
Gastroenterology	6	6	2	10	8	8	7.0	7	81%
Geriatrics	16	24	23	17	15	13	16.5	18	45%
Hematology/Oncology	13	15	18	19	14	27	18.0	20	39%
Infectious Disease	12	7	14	13	17	23	14.0	14	58%
Nephrology	28	28	1	22	27	1	11.5	11	68%
Pulmonary Disease	21	29	19	24	18	25	22.5	25	23%
Rheumatology	31	22	16	20	16	17	17.0	19	42%
General Surgery	27	26	30	31	29	12	28.0	30	6%
Neurosurgery	4	1	21	23	6	6	6.0	3	94%
Ophthalmology	7	4	20	26	13	3	10.0	10	71%
Orthopedic Surgery	18	10	26	21	24	22	22.0	24	26%
Urology	2	3	4	12	9	4	4.0	1	100%
Anesthesiology	3	5	8	3	5	11	6.5	5	87%
Pain Management	30	14	12	14	22	14	14.0	14	58%
Pathology	26	27	31	28	26	5	26.5	27	16%
Radiology	9	13	27	15	20	20	20.0	22	32%
Adult Psychiatry	1	2	7	1	1	29	4.5	2	97%
Child and Adolescent Psychiatry	5	11	6	2	2	19	6.0	3	94%
Allergy and Immunology	29	31	25	29	31	21	27.0	29	10%
Dermatology	14	9	3	5	7	7	7.0	7	81%
Emergency Medicine	22	23	28	25	30	31	28.0	30	6%
Neurology	17	18	13	9	4	26	15.0	16	52%
Pediatric Subspecialties	25	21	29	30	28	18	26.5	27	16%
Physical Medicine and Rehabilitation	23	30	22	27	25	10	22.5	25	23%

^a The job offers variable and the income trend variable were each double weighted in computing the median rank.

^b The percentile rank is the percentage of all 31 specialties with an overall demand rank equal to or lower than each specialty.

The following example illustrates how the demand score was calculated for Adult Psychiatry in New York in 2022:

$\text{Median Rank}_{AP} = \text{median}(\text{difficulty, change plans, job offers, job offers, regional market, national market, income trends, income trends})$

$$\text{Median Rank}_{AP} = \text{median}(1, 2, 7, 7, 1, 1, 29, 29)$$

$$\text{Median Rank}_{AP} = 4.5$$

With a median rank of 4.5, Adult Psychiatry overall ranked 2nd out of 31 specialties.

The **percentile rank** is computed as:

$$\%rank_{AP} = \{ 1 - (\text{Rank}_{AP} / \#Specs) + (1 / \#Specs) \}$$

"#Specs" = the number of specialties being ranked

In New York in 2022, there were 31 specialties being ranked, so the percentile rank of Adult Psychiatry is:

$$\%rank_{AP} = \{ 1 - (2 / 31) + (1 / 31) \} = 97\%$$



APPENDIX B

TABLE 2. Specialty Comparison Groups

Specialty	Comparison Group ^a
Family Medicine	Primary Care
General Internal Medicine	Primary Care
General Pediatrics	Primary Care
Obstetrics/Gynecology	Non-Primary Care
Cardiology	Medicine Subspecialties
Critical Care Medicine	Medicine Subspecialties
Endocrinology and Metabolism	Medicine Subspecialties
Gastroenterology	Medicine Subspecialties
Geriatrics	Medicine Subspecialties
Hematology/Oncology	Medicine Subspecialties
Infectious Disease	Medicine Subspecialties
Nephrology	Medicine Subspecialties
Pulmonary Disease	Medicine Subspecialties
Rheumatology	Medicine Subspecialties
General Surgery	Non-Primary Care
Neurosurgery	Surgical Subspecialties
Ophthalmology	Surgical Subspecialties
Orthopedic Surgery	Surgical Subspecialties
Urology	Surgical Subspecialties
Anesthesiology	Non-Primary Care
Pain Management	Non-Primary Care
Pathology	Non-Primary Care
Radiology	Non-Primary Care
Adult Psychiatry	Non-Primary Care
Child and Adolescent Psychiatry	Non-Primary Care
Allergy and Immunology	Non-Primary Care
Dermatology	Non-Primary Care
Emergency Medicine	Non-Primary Care
Neurology	Non-Primary Care
Pediatric Subspecialties	Non-Primary Care
Physical Medicine and Rehabilitation	Non-Primary Care

^a In each specialty profile, statistics for the specialty are presented next to the average of all specialties in the group to which the specialty belongs (ie, the comparison group). As an example, the starting median of family practice is compared to the median starting income of all primary care. Likewise, the relative demand (or percentile rank) of cardiology is compared against the average percentile rank of all medicine subspecialties.

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Dr. Pang conducts data analysis, updates federal data sources, and conducts literature reviews, among other tasks as needed. Dr. Pang specializes in health econometrics, applied microeconomics, data analysis, modeling, and forecasting.



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