2021

Trends in Demand for New Physicians, 2016-2019, 2021

A Summary of Demand Indicators for 31 Physician Specialties

CHWS
Center for Health Workforce Studies
School of Public Health
University at Albany, State University of New York

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September 2022

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PREFACE

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 2016–2019, 2021).

This report was prepared by the Center for Health Workforce Studies (CHWS) staff, Jinman Pang and David Armstrong, with layout design by Matt Allegretti. 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 2022

ACKNOWLEDGMENT

The authors would like to express their appreciation to the GME administrators and directors at participating teaching hospitals for their efforts to ensure a high response rate to the Resident Exit Survey each year. Without their assistance, this important data collection effort would not be possible.

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BACKGROUND

The Center for Health Workforce Studies (CHWS) conducts an annual survey of all physicians in New York State 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 2021 Exit Survey report available at: https://www.chwsny.org/our-work/reports-briefs/2021-new-york-residency-training-outcomes-a-summary-of-responses-to-the-2021-new-york-resident-exit-survey/.

Each year in the spring, CHWS distributes the Exit Survey to graduate medical education (GME) administrators at teaching hospitals in New York. The survey is then forwarded to individual programs where graduating residents and fellows are asked to complete a questionnaire in the weeks prior to finishing their program. In 2021, with the excellent participation of teaching hospitals, a total of 2,148 of the estimated 5,269 physicians finishing a residency or fellowship training program completed the Exit Survey (41% response rate). Over the 21 years the survey has been conducted (1998-2003, 2005, 2007-2019, 2021), 63,066 of 104,966 graduates have completed the survey (60% 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 2016–2019, 2021). The survey was not conducted in 2020 due to COVID-19 pandemic disruptions to GME programs in the state. Data on GME graduates are from the annual medical education issues of the *Journal of the American Medical Association (JAMA*), and summarize the number of residents (or fellows) completing GME training programs in the specialty in the US from 2011 to 2020.

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 2016-2019, 2021 were adjusted for inflation to reflect 2021 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 was 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

Overall, the job market for physicians completing training in New York in 2021 was not as strong as the job market in 2019.

In 2021, 92% 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, but 21% reported that they had to change plans due to limited practice opportunities compared to only 14% in 2019. In 2021, the average number of job offers physicians had received was 2.81, down from 3.45 in 2019. However, the median starting income of physicians was $264,200, a 3% increase from 2019.

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

In New York, specialties experiencing the strongest and weakest relative demand were as follows:

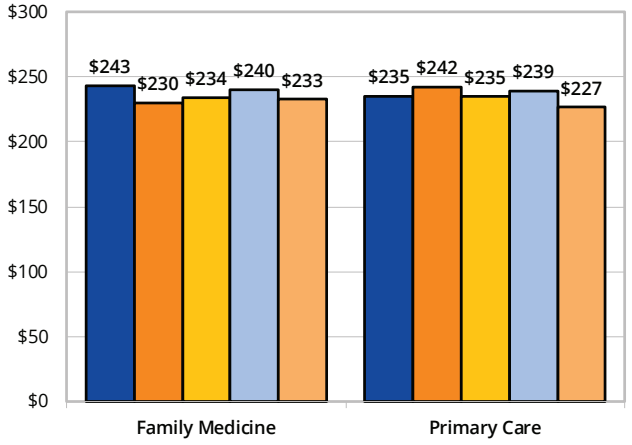
- **Strongest relative demand**: adult psychiatry, family medicine, anesthesiology, urology, and dermatology
    - **Greatest change in income over last 5 years**: ophthalmology, pulmonary disease, anesthesiology, obstetrics/gynecology, and infectious disease
    - **Most job offers**: dermatology, family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

SPECIALTIES

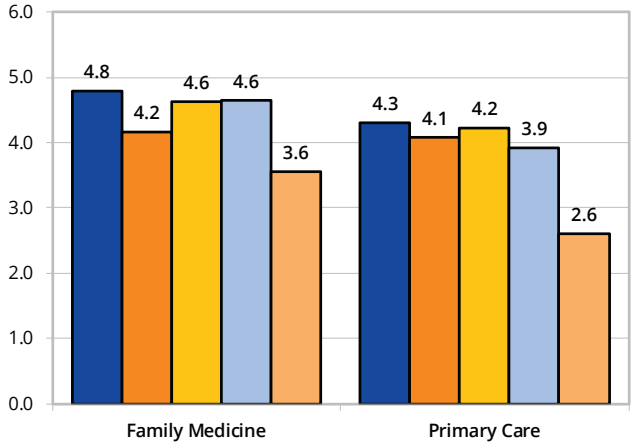
Specialty: Family Medicine

Legend: 2016 2017 2018 2019 2021

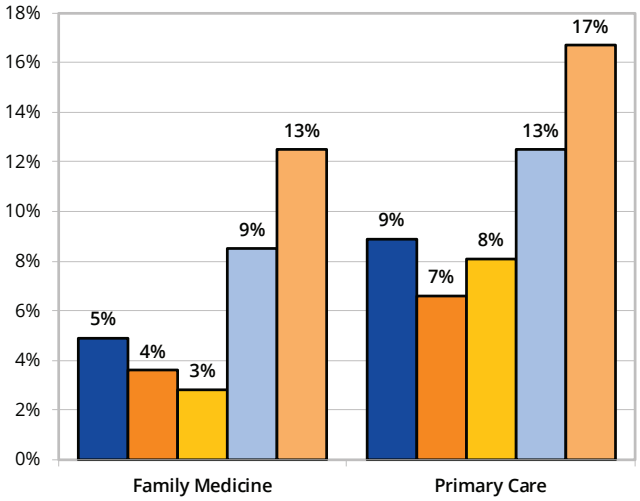
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



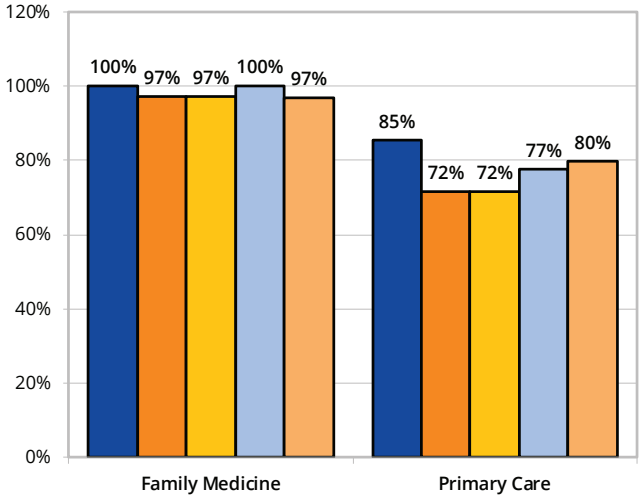
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



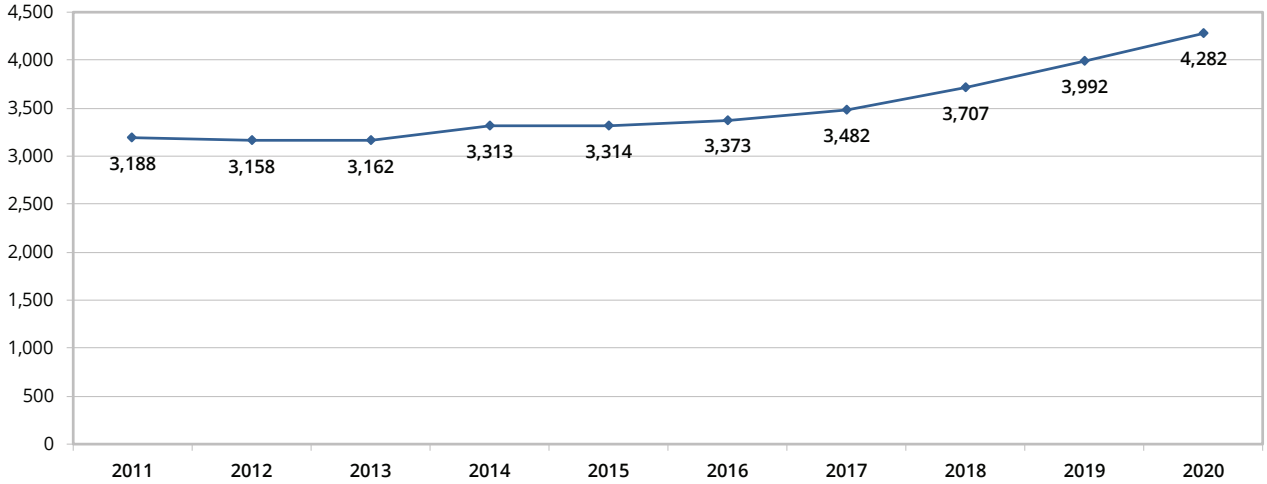
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Family Medicine, 2016-2019, 2021



Trends in Number of Graduates of Family Medicine GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 92, 2017: n = 117, 2018: n = 125, 2019: n = 112, 2021: n = 53.

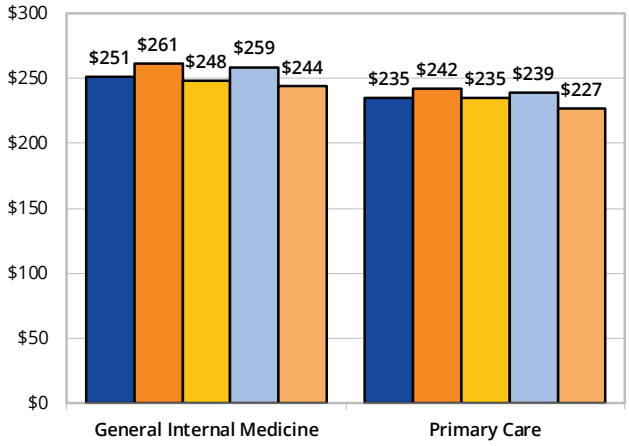
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

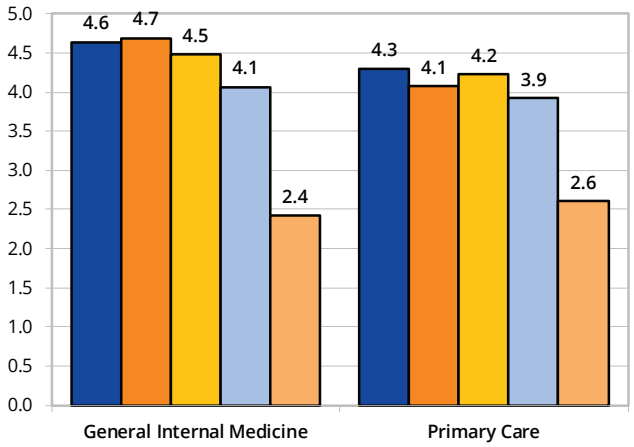
Specialty: General Internal Medicine

Legend: 2016 2017 2018 2019 2021

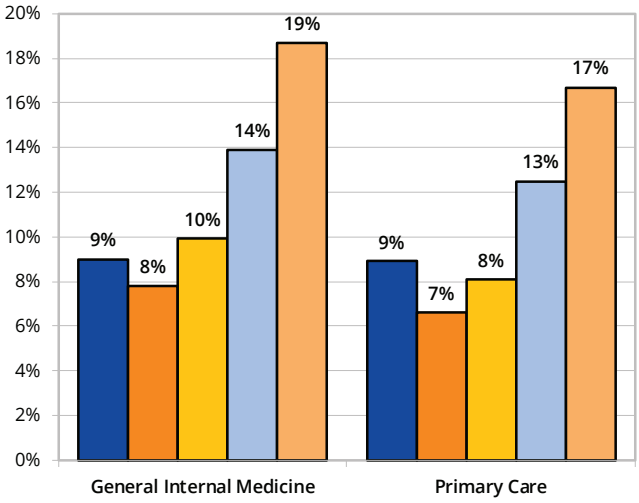
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



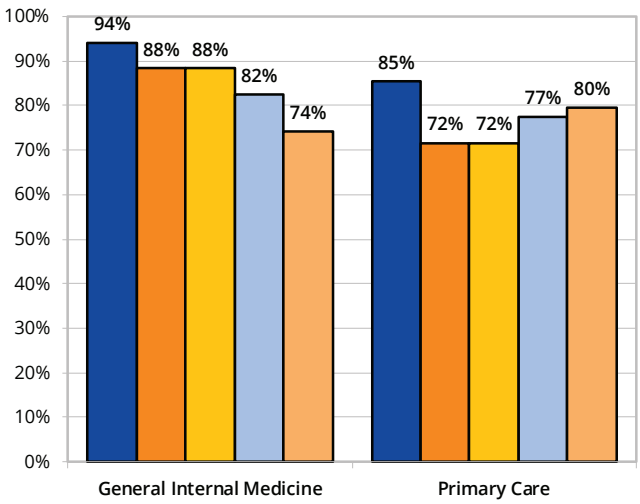
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



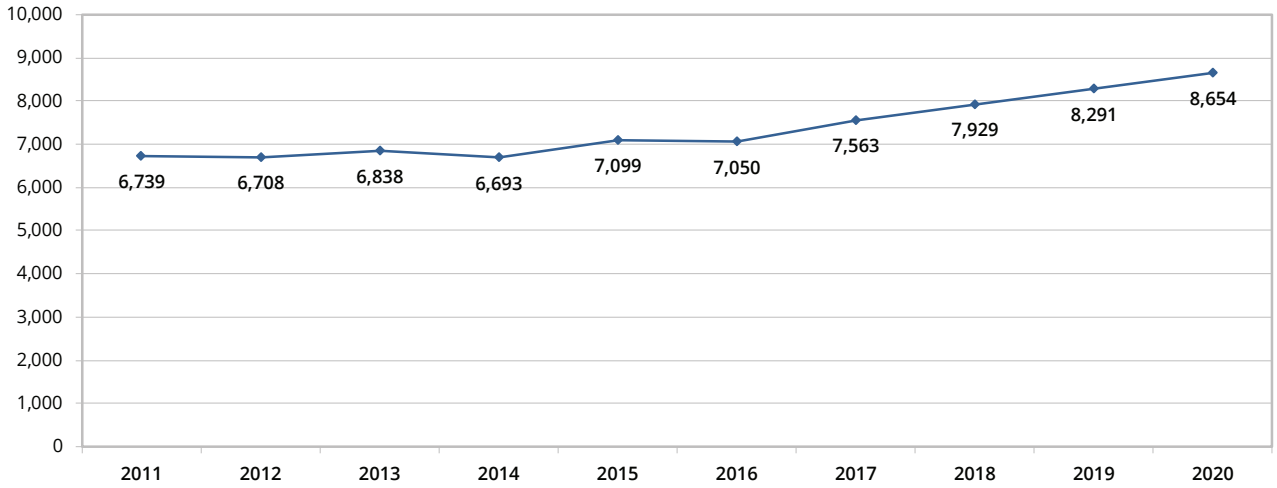
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of General Internal Medicine, 2016-2019, 2021



Trends in Number of Graduates of General Internal Medicine GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 259, 2017: n = 254, 2018: n = 239, 2019: n = 238, 2021: n = 118.

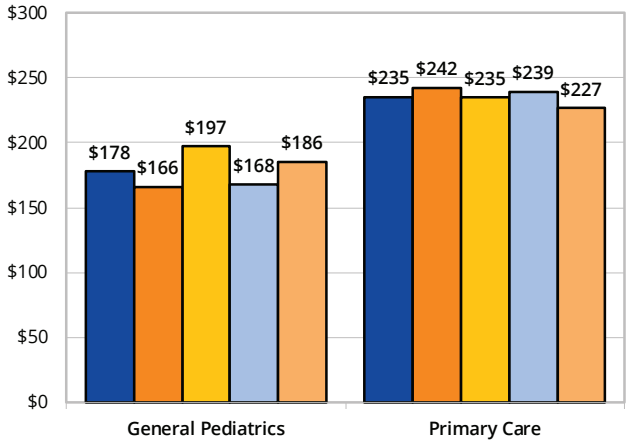
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

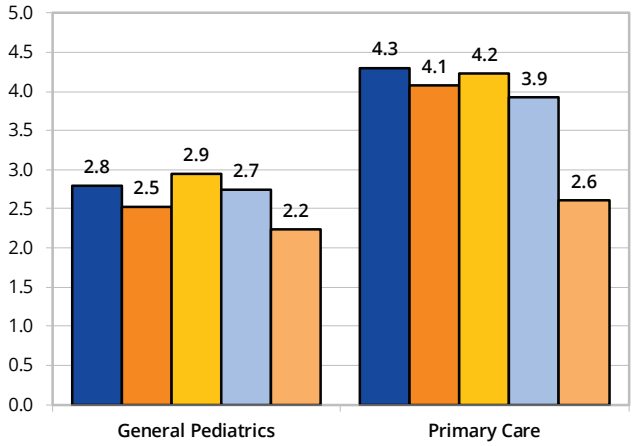
Specialty: General Pediatrics

Legend: 2016 2017 2018 2019 2021

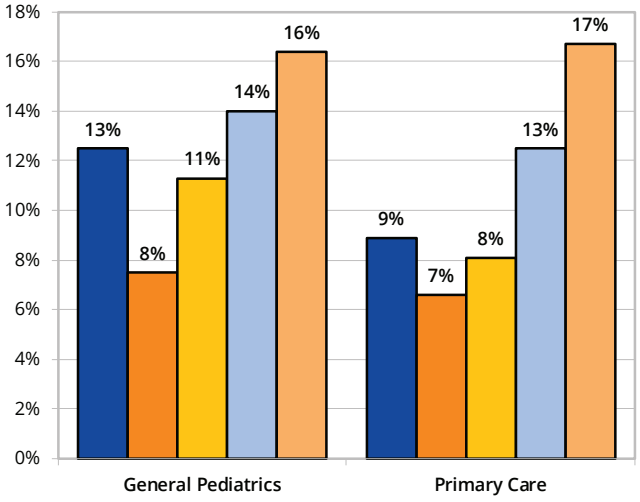
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



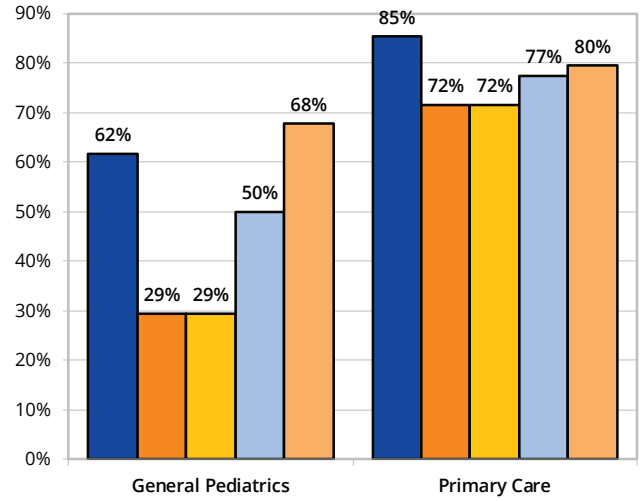
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



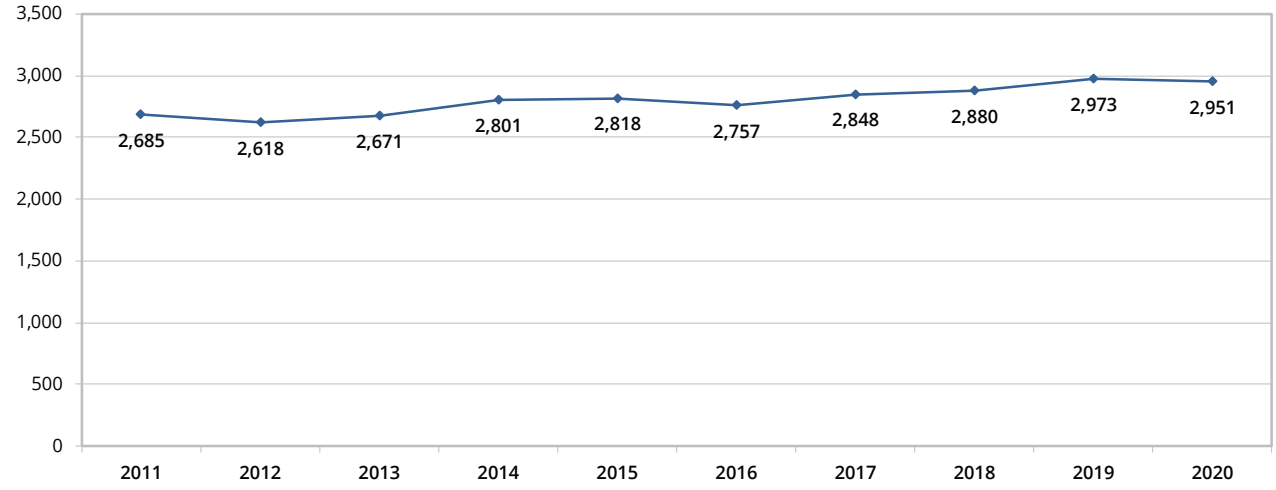
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of General Pediatrics, 2016-2019, 2021



Trends in Number of Graduates of General Pediatrics GME Programs in the US,** 2011-2020

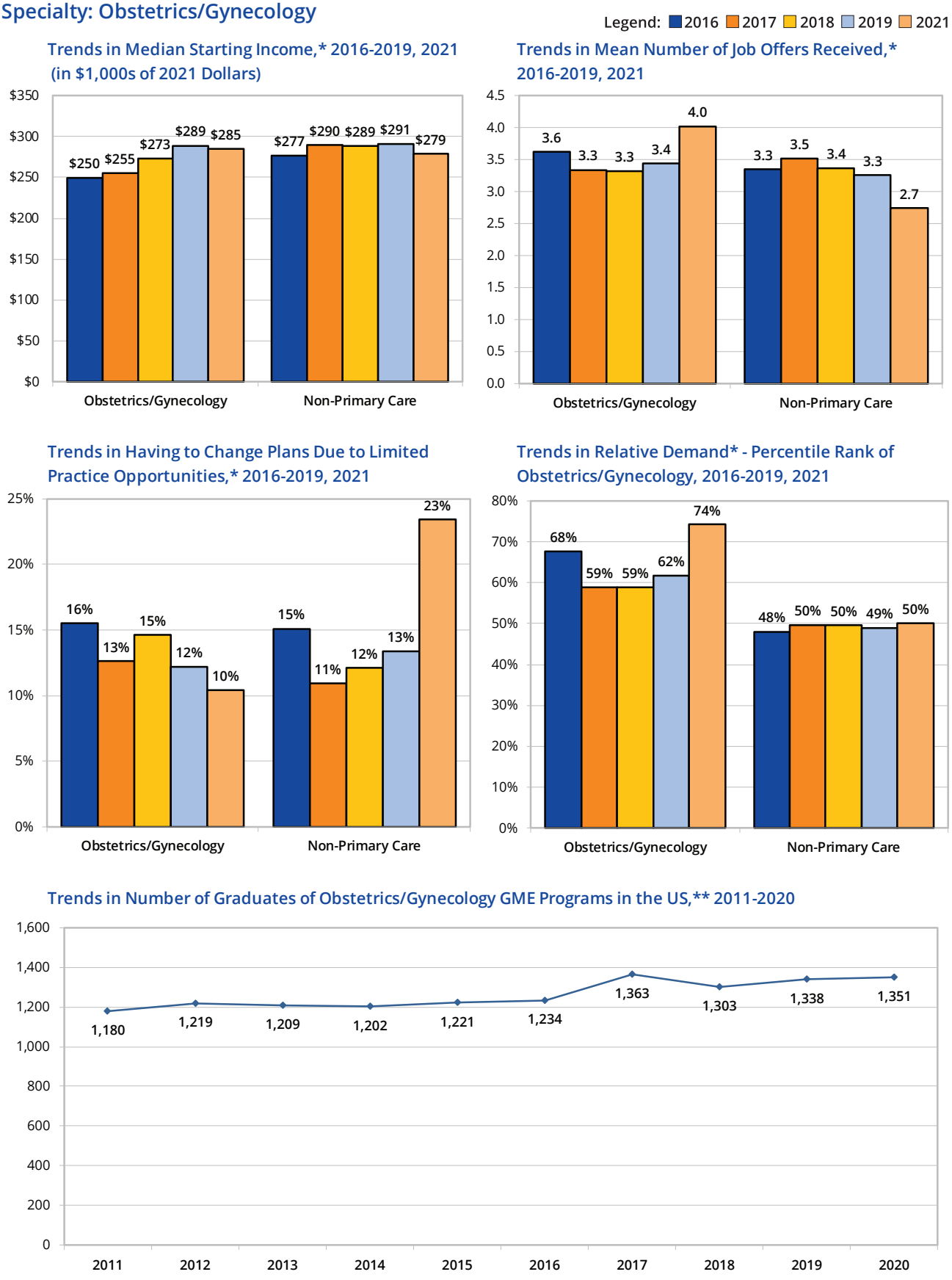


Number of responses: 2016: n = 96, 2017: n = 115, 2018: n = 92, 2019: n = 111, 2021: n = 70.

*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

Specialty: Obstetrics/Gynecology



Number of responses: 2016: n = 85, 2017: n = 99, 2018: n = 89, 2019: n = 96, 2021: n = 57.

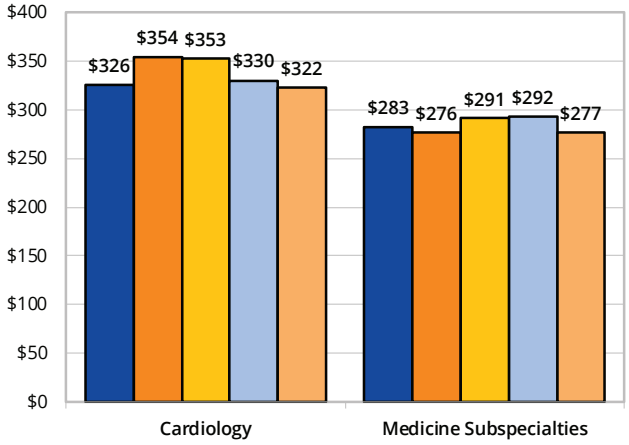
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

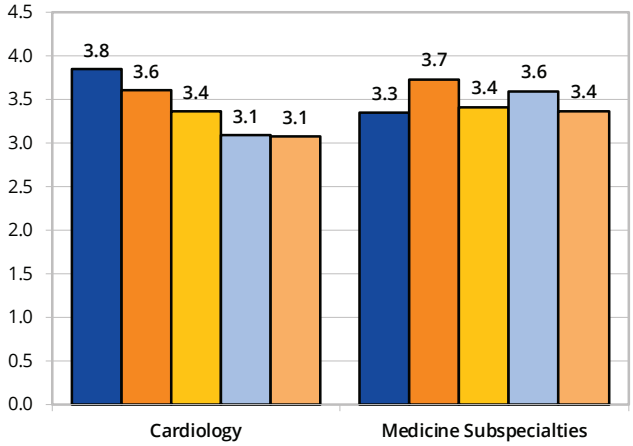
Specialty: Cardiology

Legend: 2016 2017 2018 2019 2021

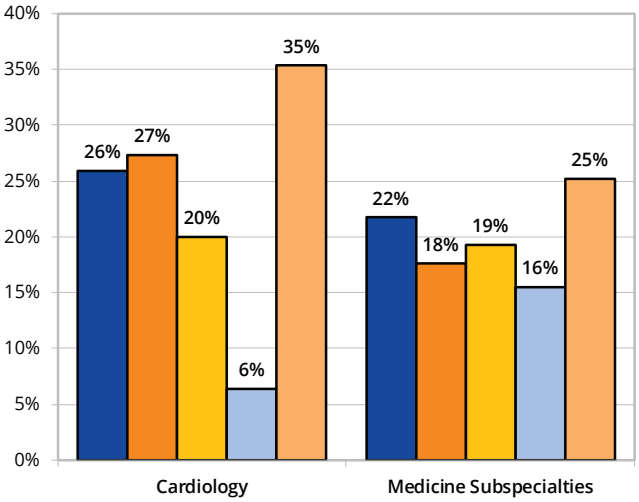
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



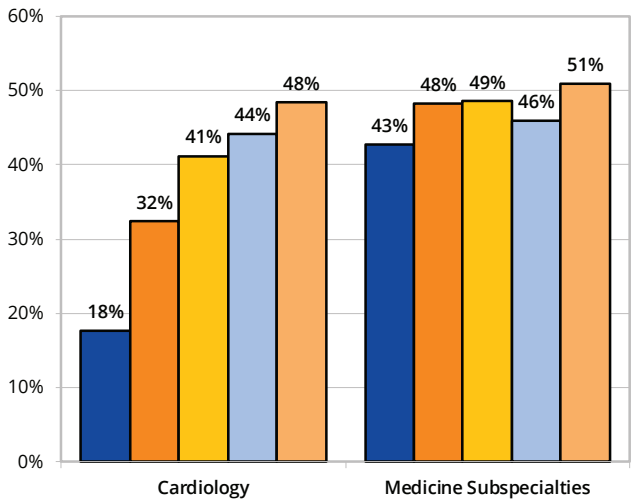
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



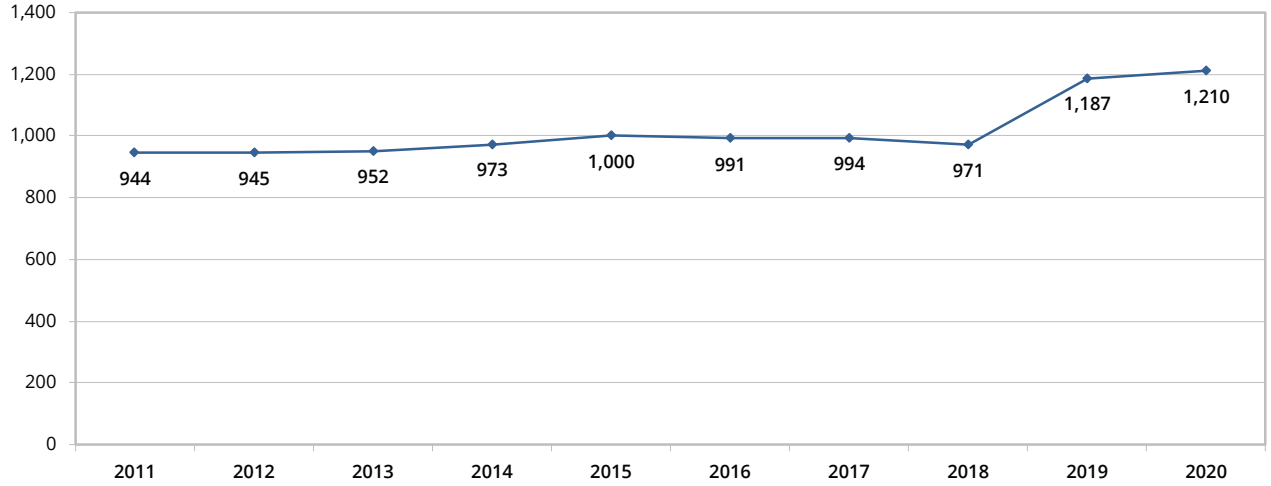
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Cardiology, 2016-2019, 2021



Trends in Number of Graduates of Cardiology GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 34, 2017: n = 36, 2018: n = 44, 2019: n = 52, 2021: n = 21.

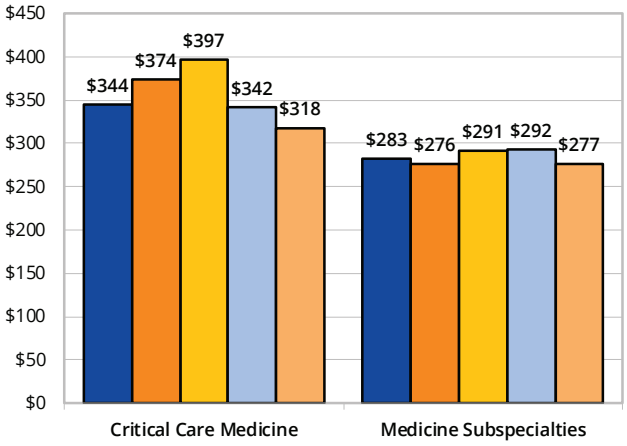
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

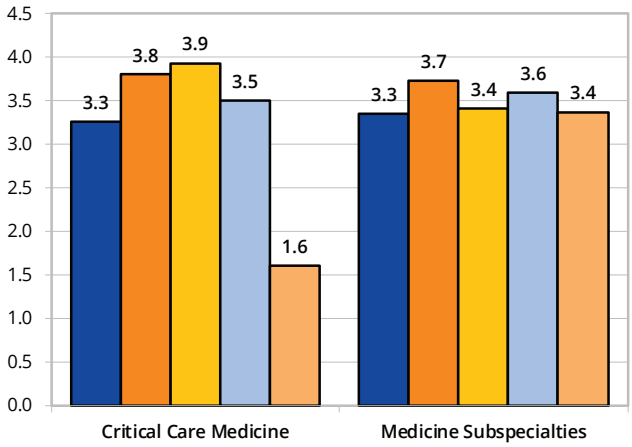
Specialty: Critical Care Medicine

Legend: 2016 2017 2018 2019 2021

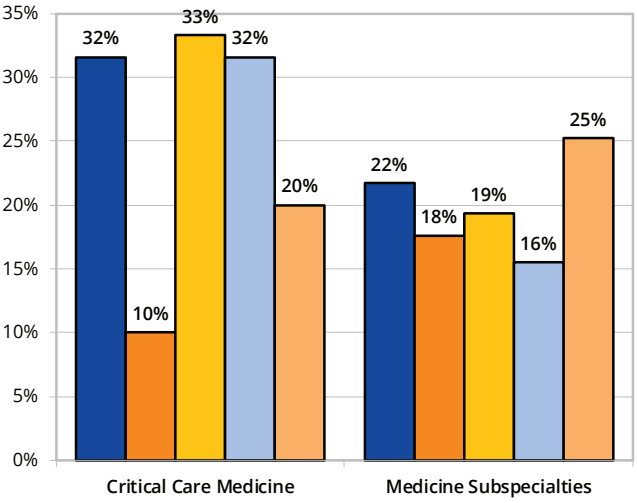
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



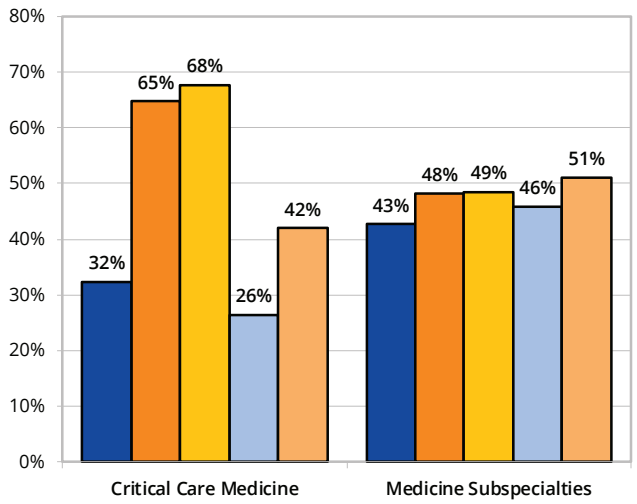
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



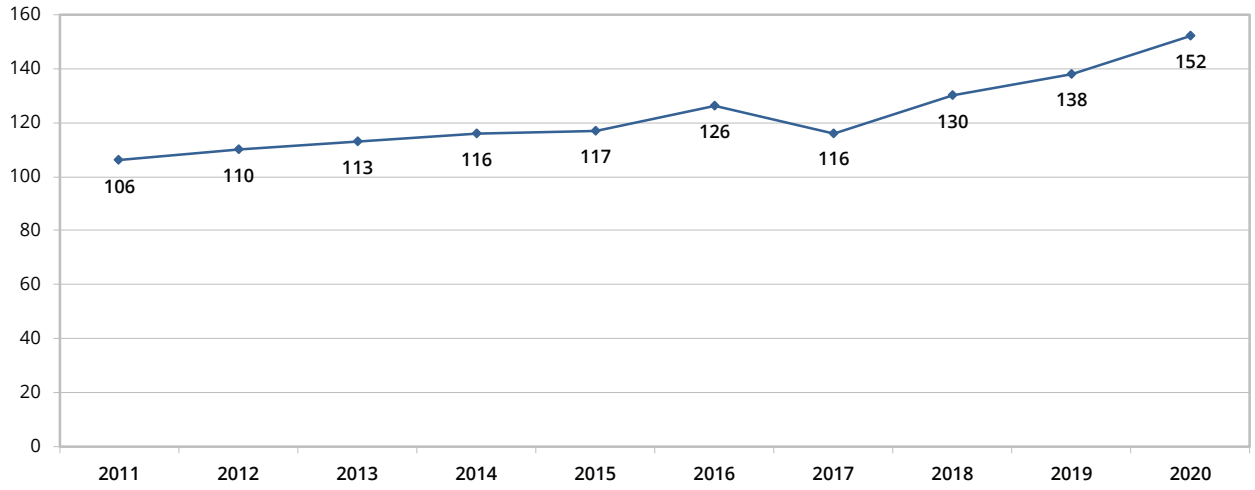
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Critical Care Medicine, 2016-2019, 2021



Trends in Number of Graduates of Critical Care Medicine GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 19, 2017: n = 11, 2018: n = 16, 2019: n = 21, 2021: n = 5.

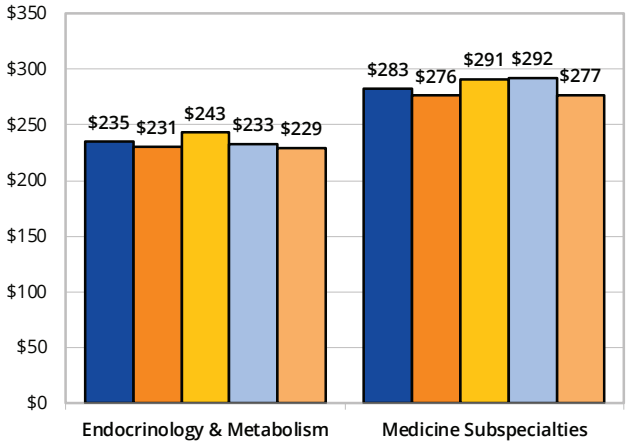
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

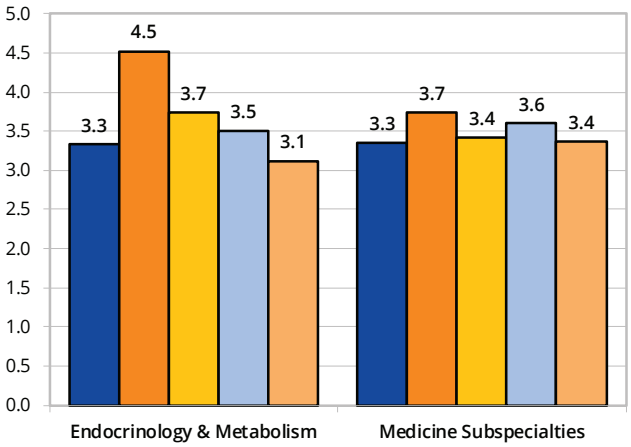
Specialty: Endocrinology & Metabolism

Legend: 2016 2017 2018 2019 2021

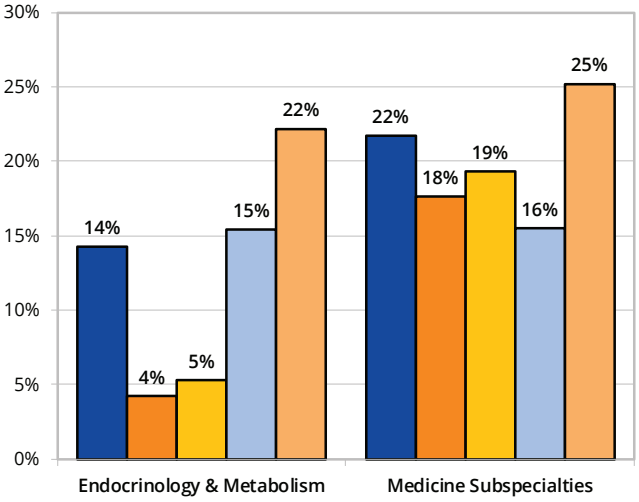
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



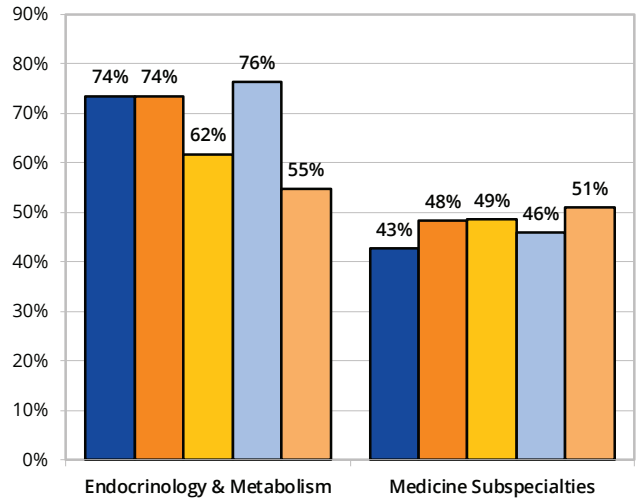
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



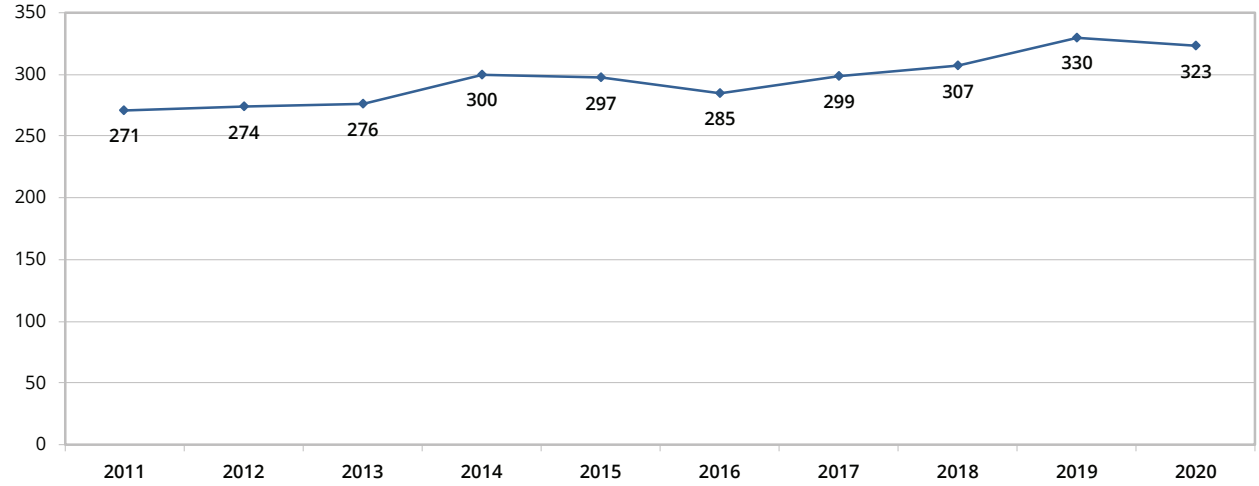
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Endocrinology & Metabolism, 2016-2019, 2021



Trends in Number of Graduates of Endocrinology & Metabolism GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 25, 2017: n = 25, 2018: n = 21, 2019: n = 27, 2021: n = 19.

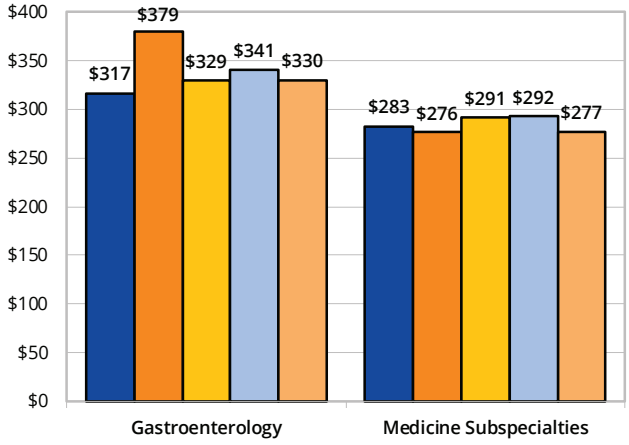
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

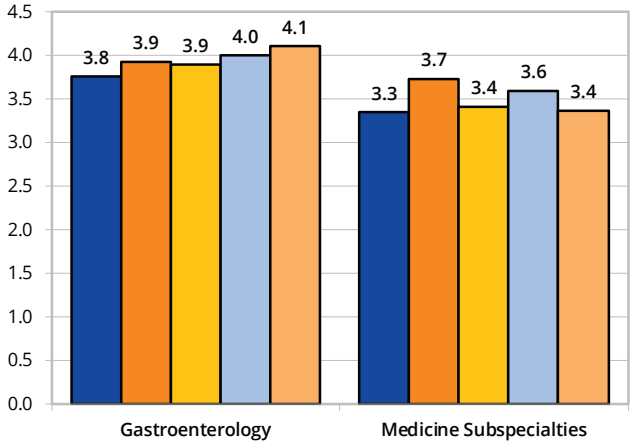
Specialty: Gastroenterology

Legend: 2016 2017 2018 2019 2021

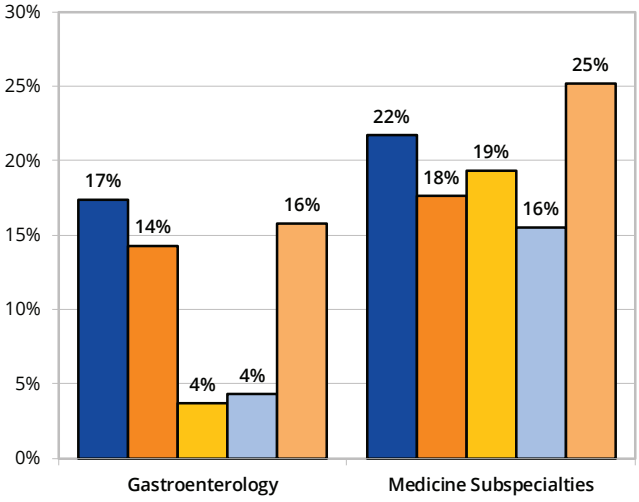
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



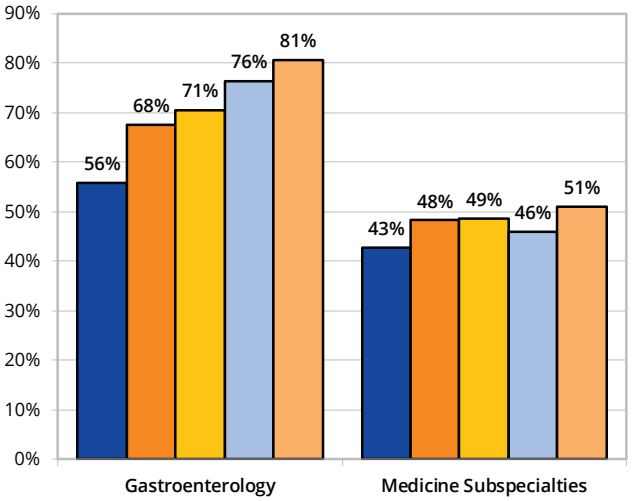
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



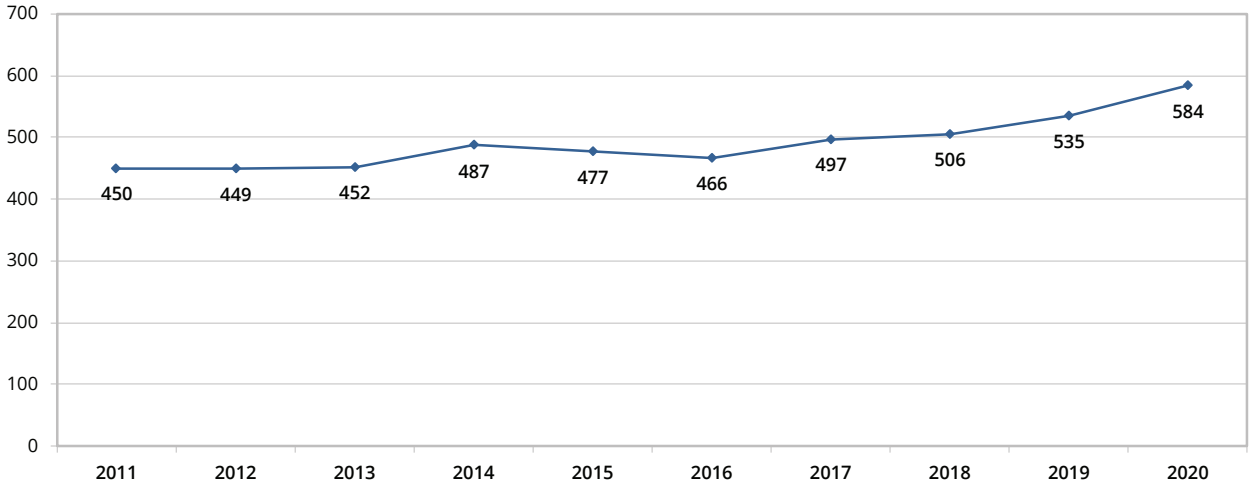
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Gastroenterology, 2016-2019, 2021



Trends in Number of Graduates of Gastroenterology GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 34, 2017: n = 29, 2018: n = 28, 2019: n = 24, 2021: n = 23.

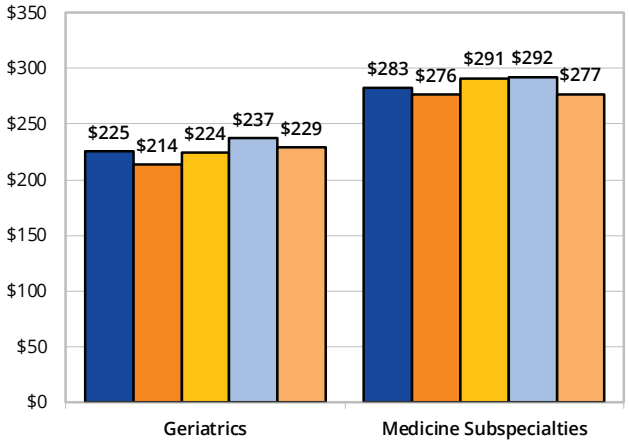
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

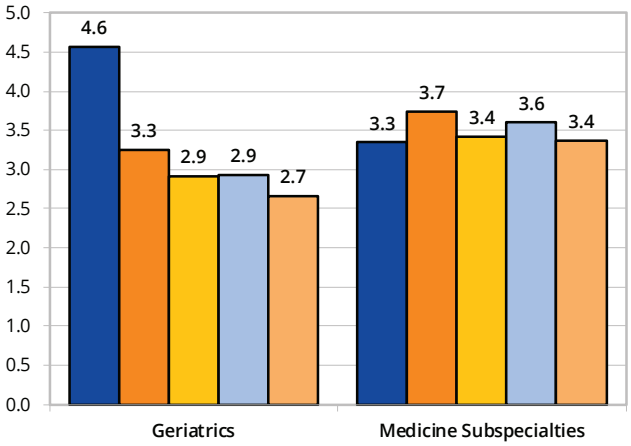
Specialty: Geriatrics

Legend: 2016 2017 2018 2019 2021

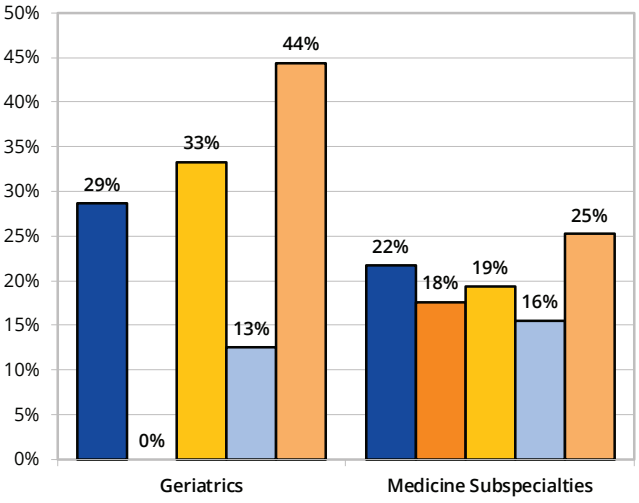
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



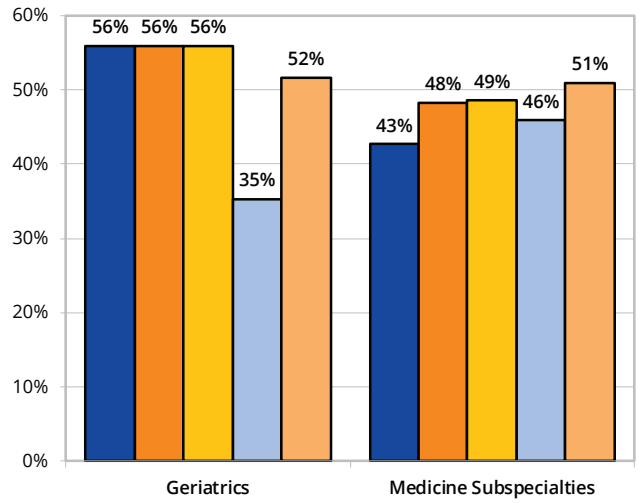
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



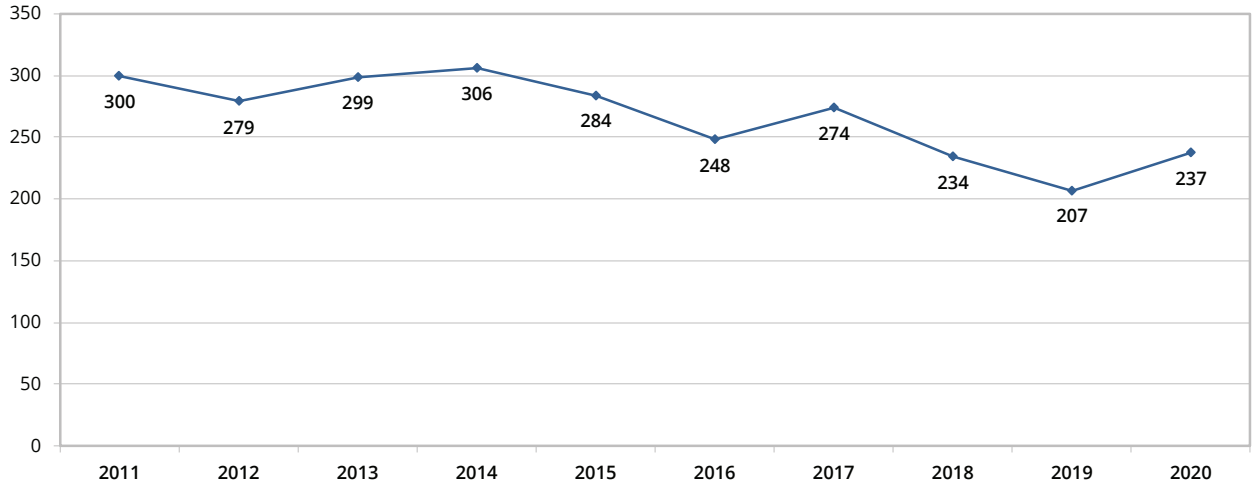
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Geriatrics, 2016-2019, 2021



Trends in Number of Graduates of Geriatrics GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 18, 2017: n = 15, 2018: n = 14, 2019: n = 18, 2021: n = 10.

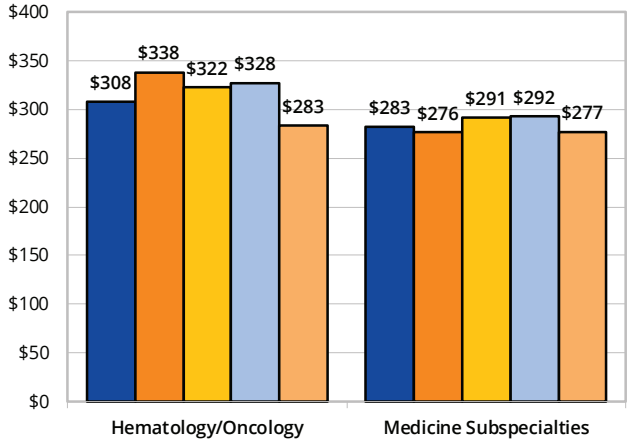
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

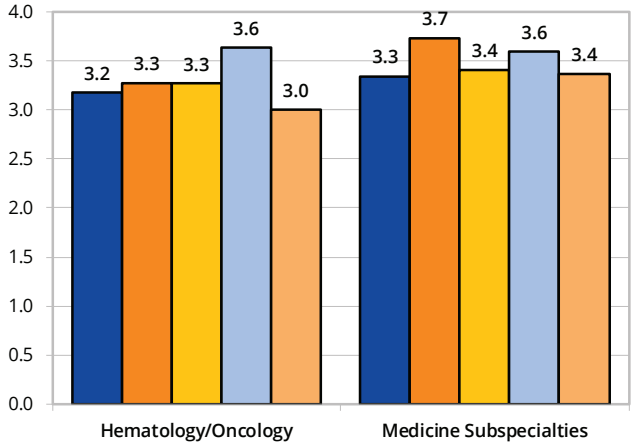
Specialty: Hematology/Oncology

Legend: 2016 2017 2018 2019 2021

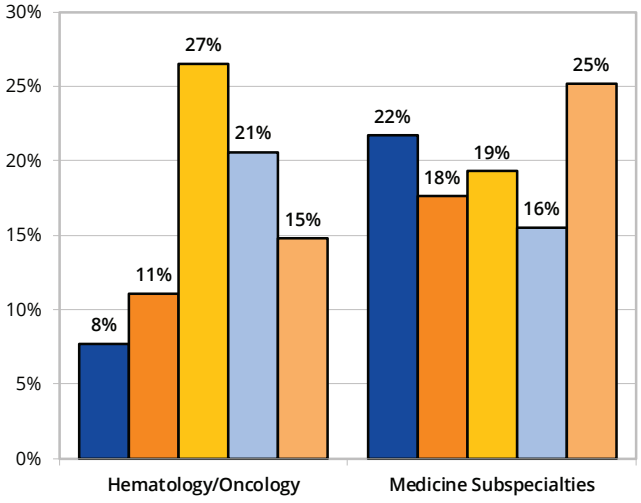
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



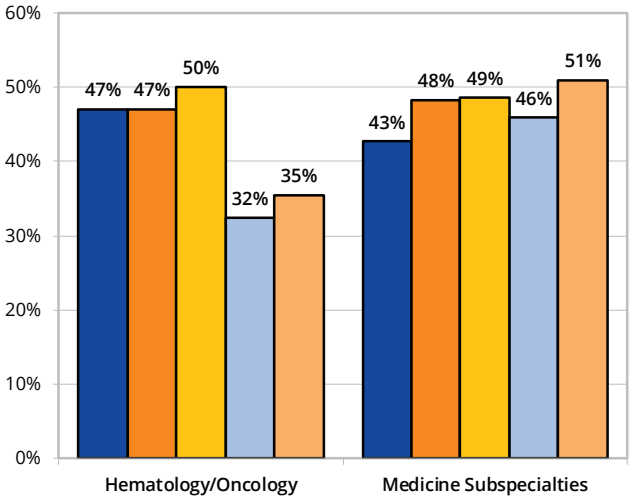
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



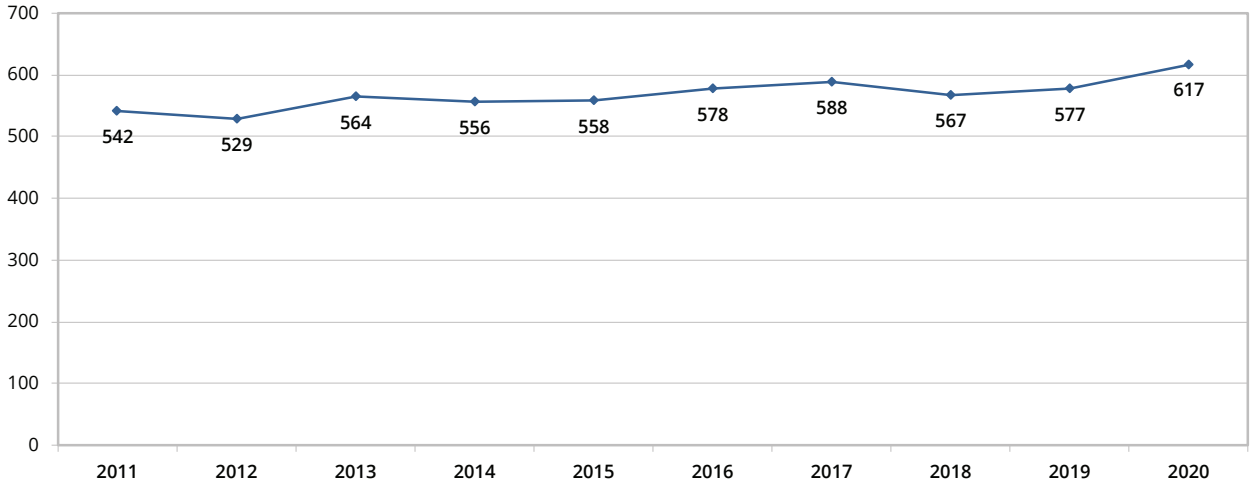
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Hematology/Oncology, 2016-2019, 2021



Trends in Number of Graduates of Hematology/Oncology GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 38, 2017: n = 19, 2018: n = 36, 2019: n = 36, 2021: n = 31.

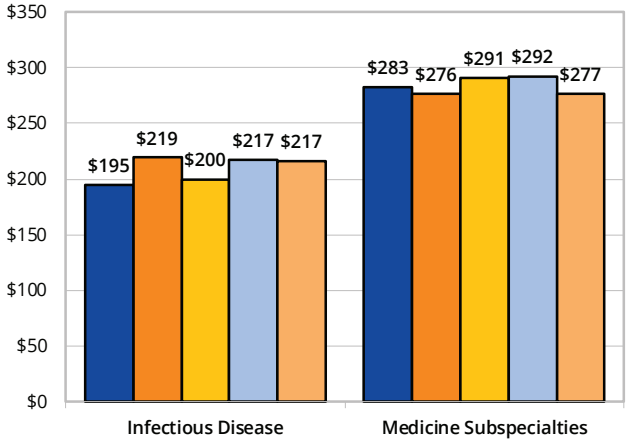
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

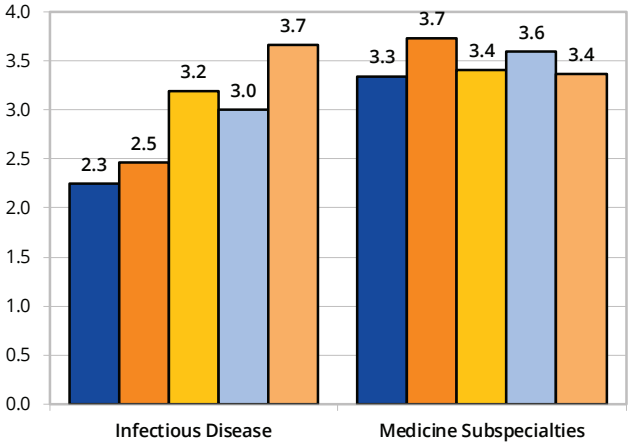
Specialty: Infectious Disease

Legend: 2016 2017 2018 2019 2021

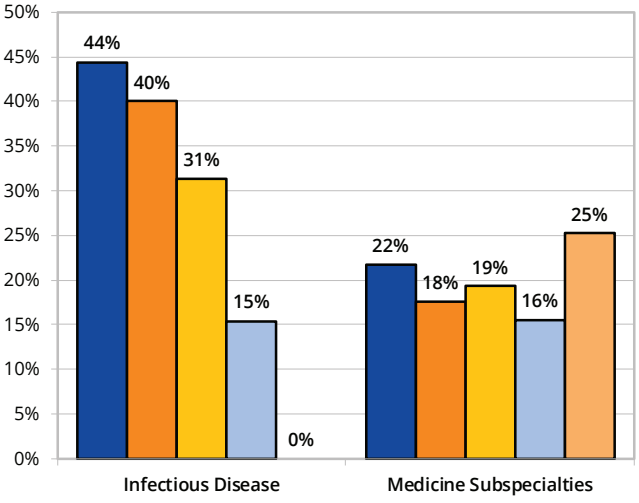
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



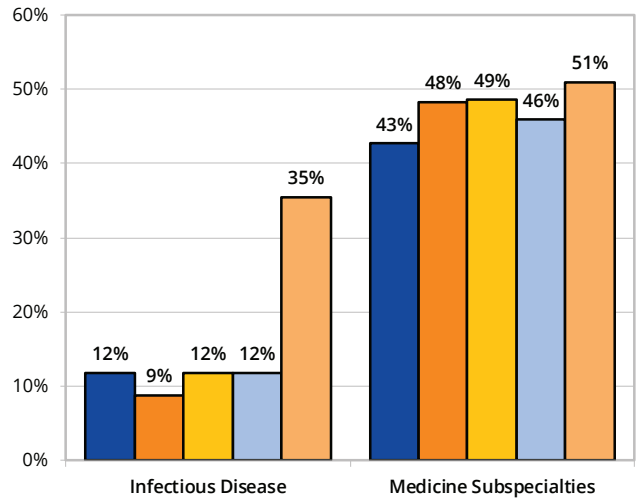
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



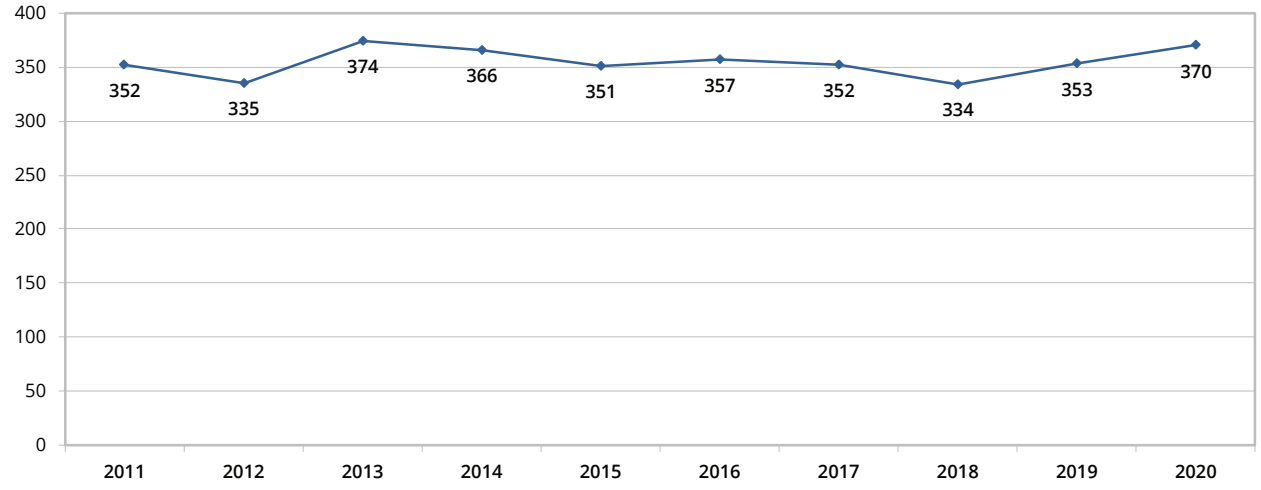
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Infectious Disease, 2016-2019, 2021



Trends in Number of Graduates of Infectious Disease GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 12, 2017: n = 17, 2018: n = 18, 2019: n = 13, 2021: n = 7.

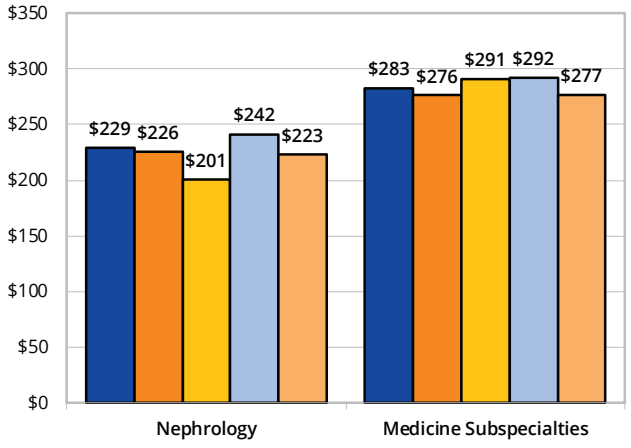
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

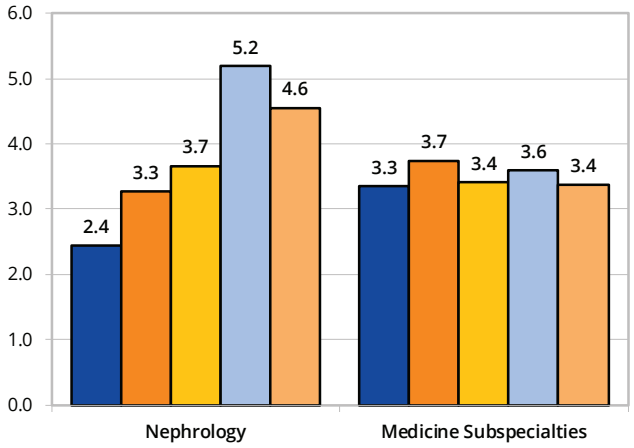
Specialty: Nephrology

Legend: 2016 2017 2018 2019 2021

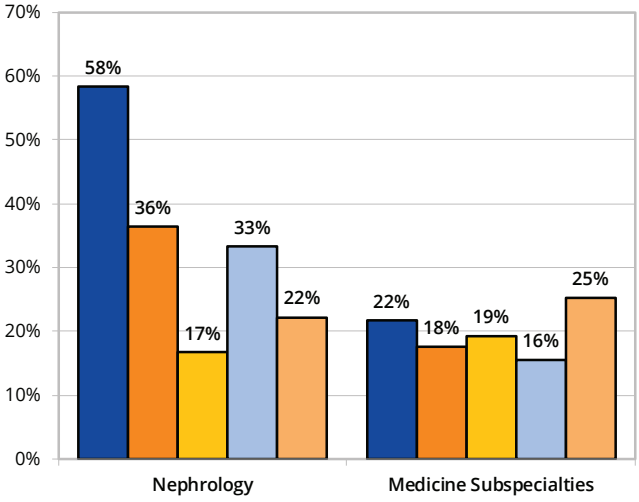
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



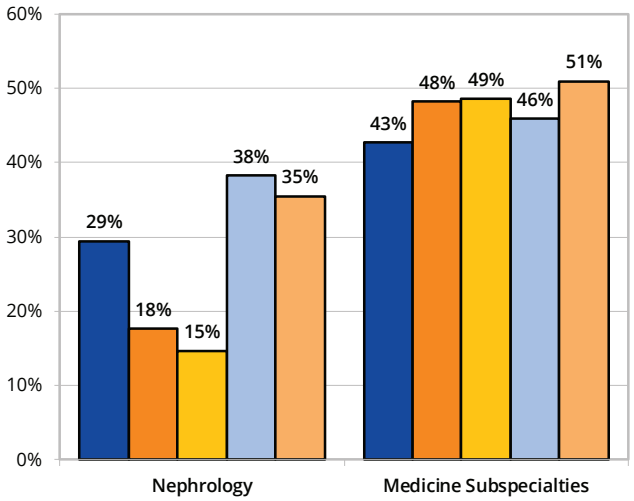
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



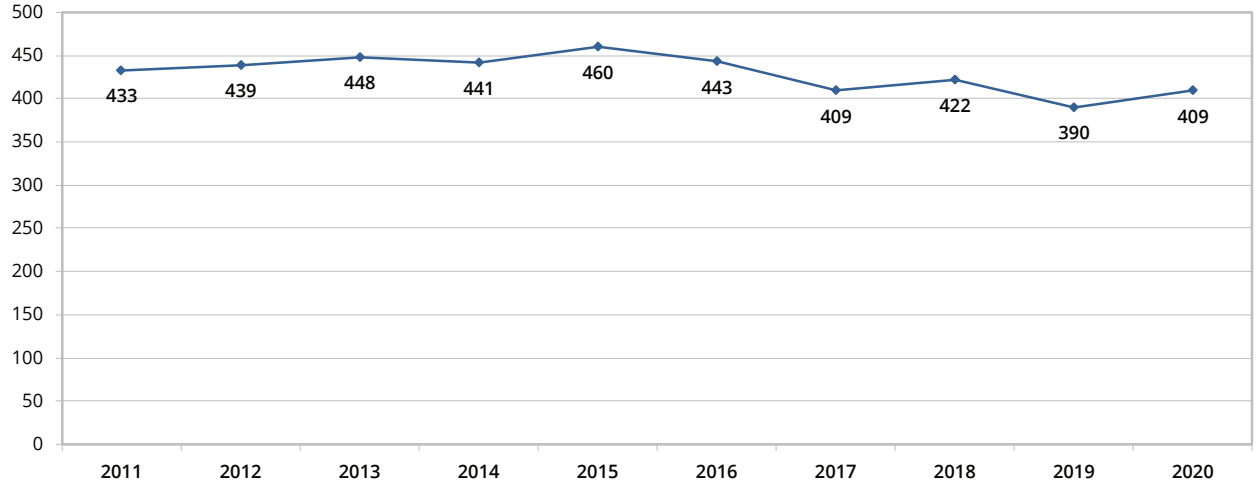
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Nephrology, 2016-2019, 2021



Trends in Number of Graduates of Nephrology GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 18, 2017: n = 24, 2018: n = 22, 2019: n = 17, 2021: n = 9.

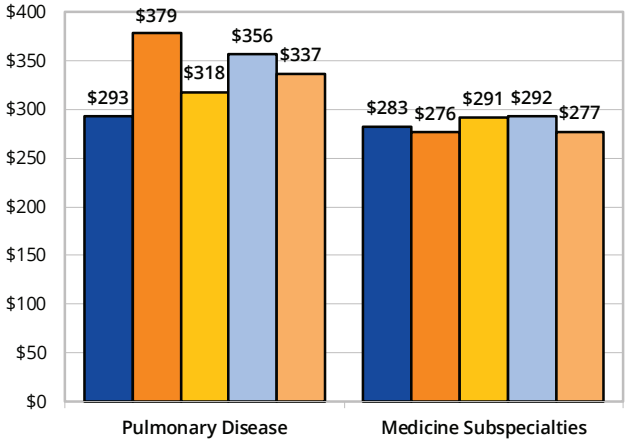
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

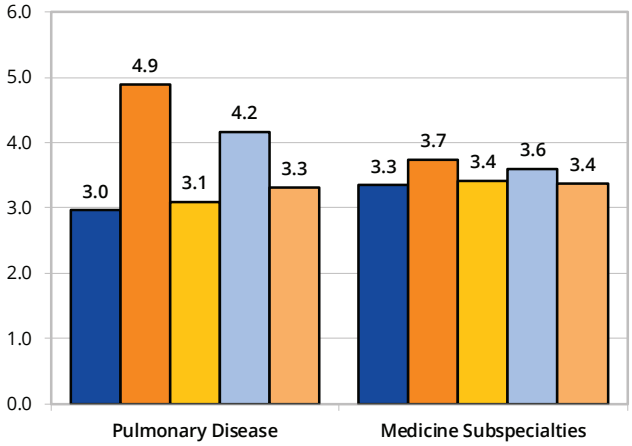
Specialty: Pulmonary Disease

Legend: 2016 2017 2018 2019 2021

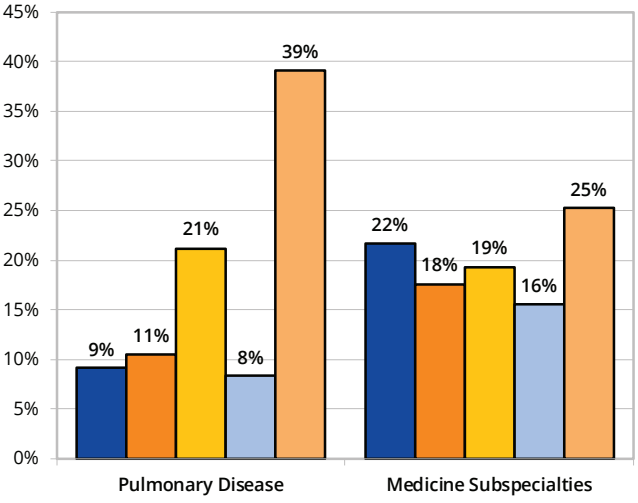
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



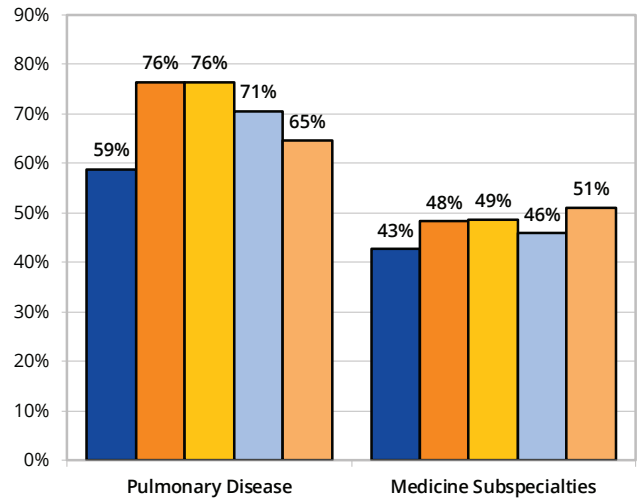
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



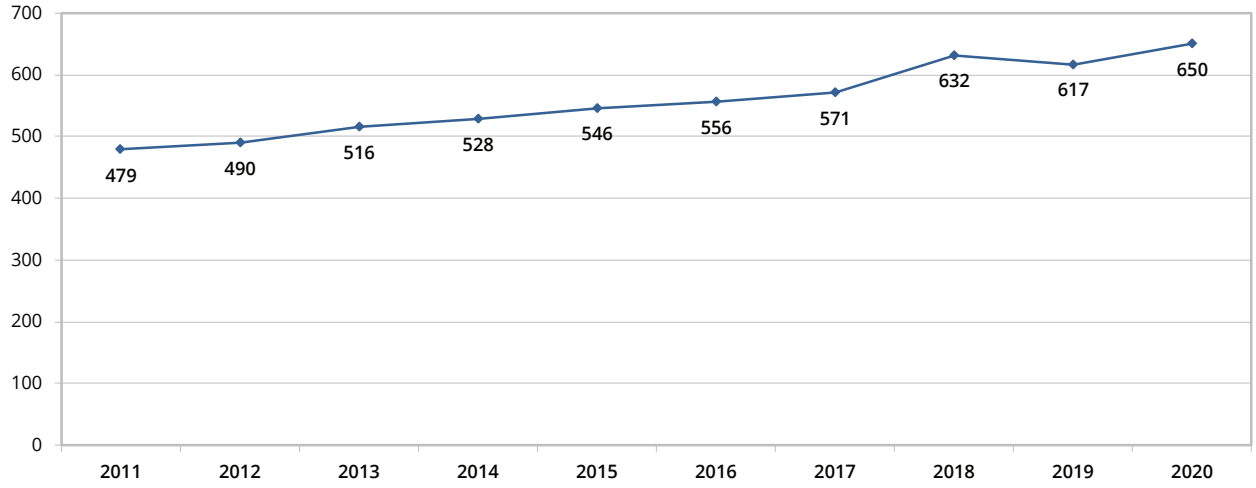
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Pulmonary Disease, 2016-2019, 2021



Trends in Number of Graduates of Pulmonary Disease GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 26, 2017: n = 21, 2018: n = 33, 2019: n = 26, 2021: n = 23.

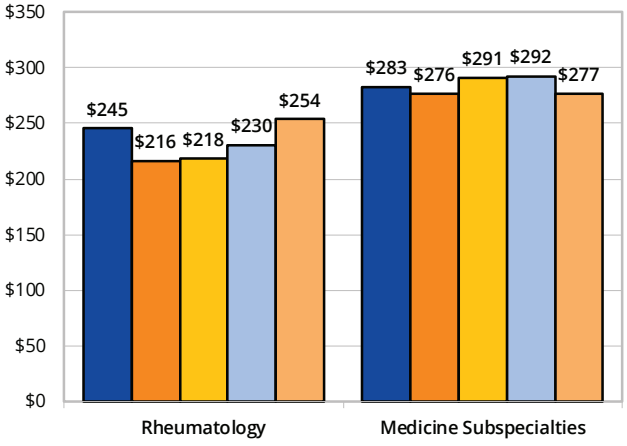
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

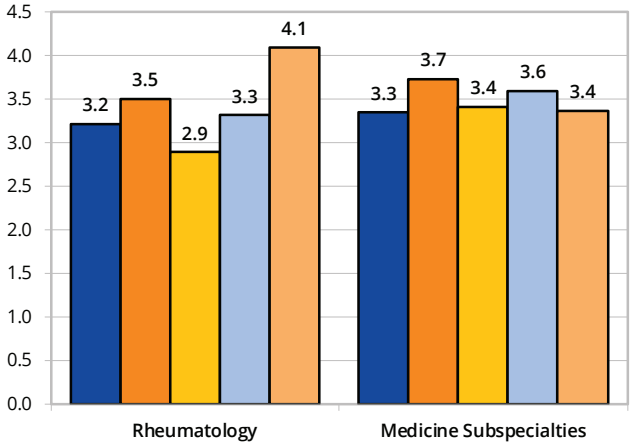
Specialty: Rheumatology

Legend: 2016 2017 2018 2019 2021

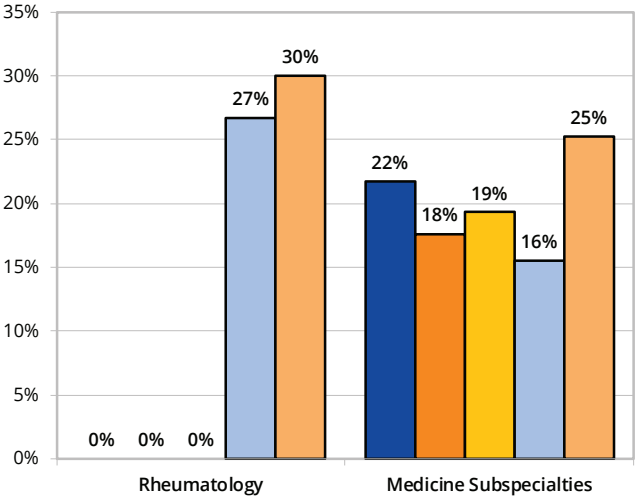
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



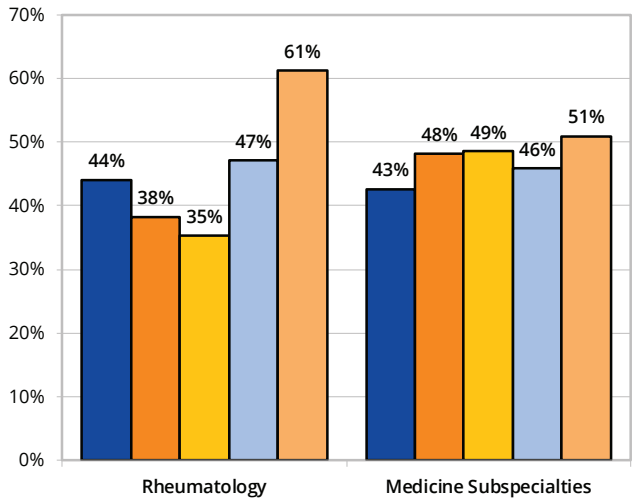
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



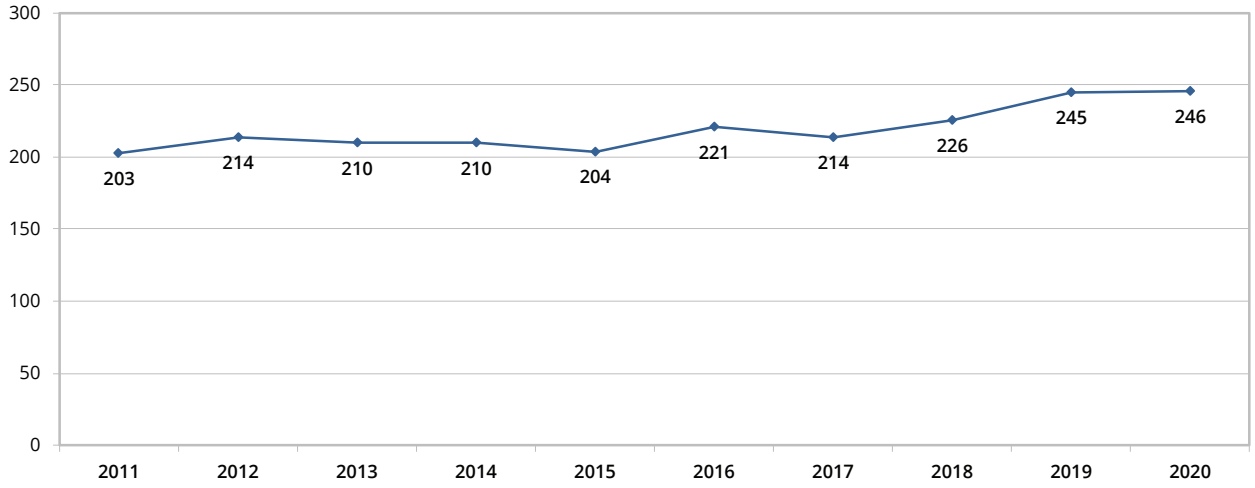
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Rheumatology, 2016-2019, 2021



Trends in Number of Graduates of Rheumatology GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 15, 2017: n = 8, 2018: n = 10, 2019: n = 16, 2021: n = 14.

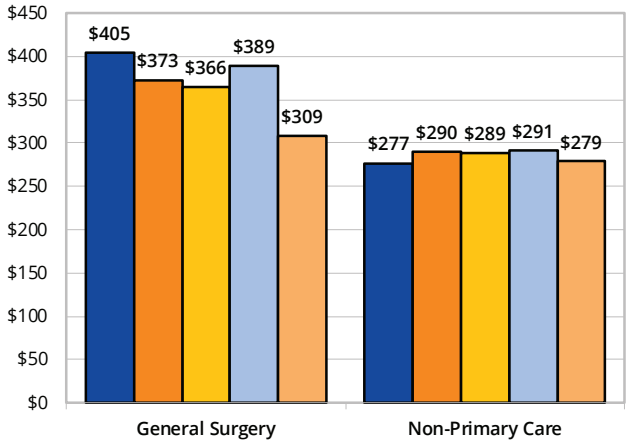
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues*, 2011-2020.

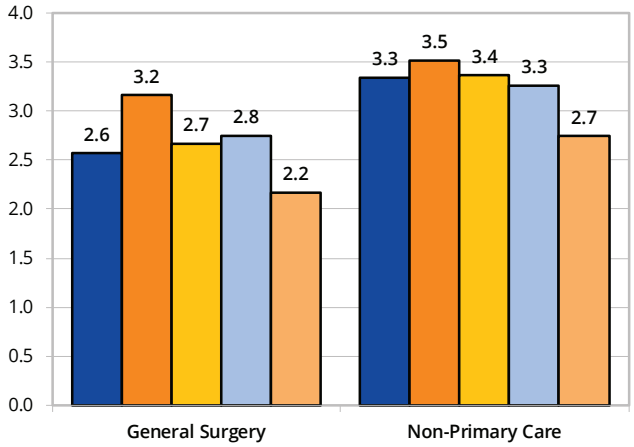
Specialty: General Surgery

Legend: 2016 2017 2018 2019 2021

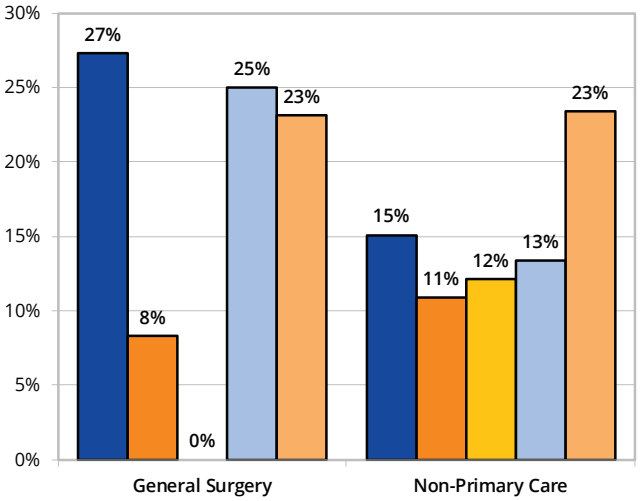
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



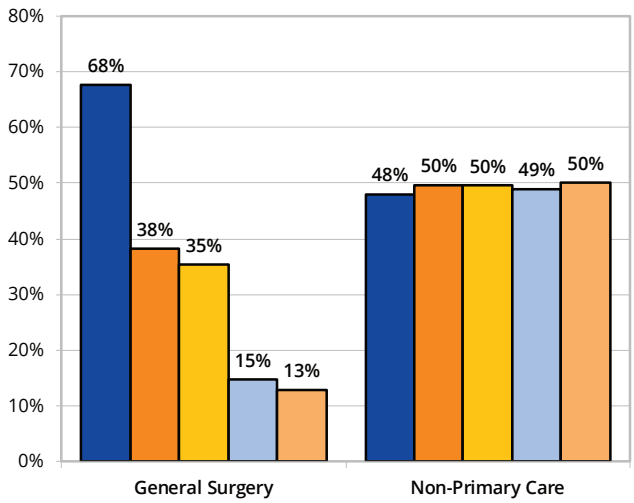
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



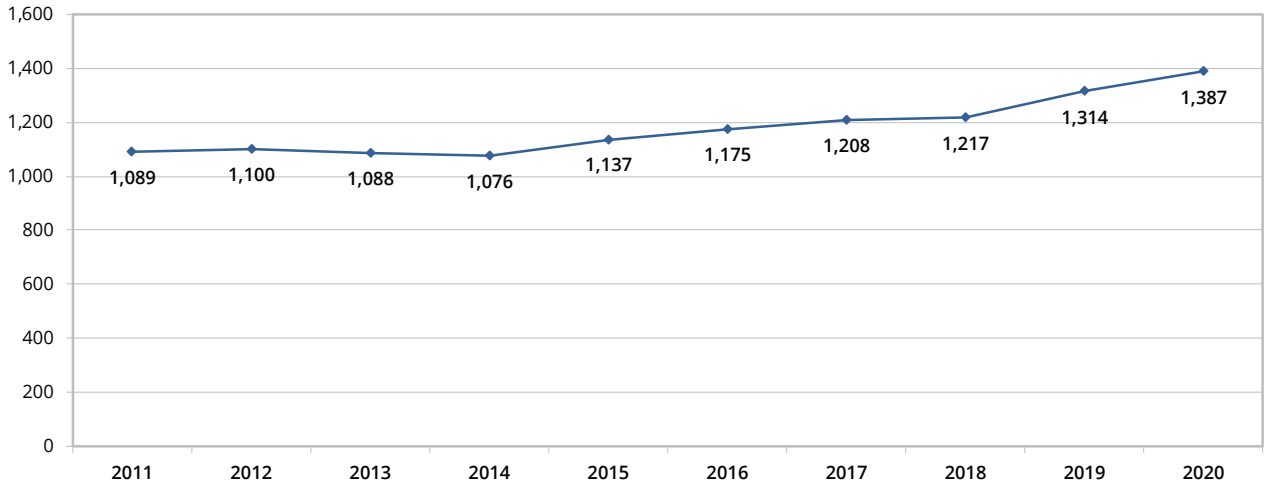
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of General Surgery, 2016-2019, 2021



Trends in Number of Graduates of General Surgery GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 15, 2017: n = 27, 2018: n = 15, 2019: n = 21, 2021: n = 14.

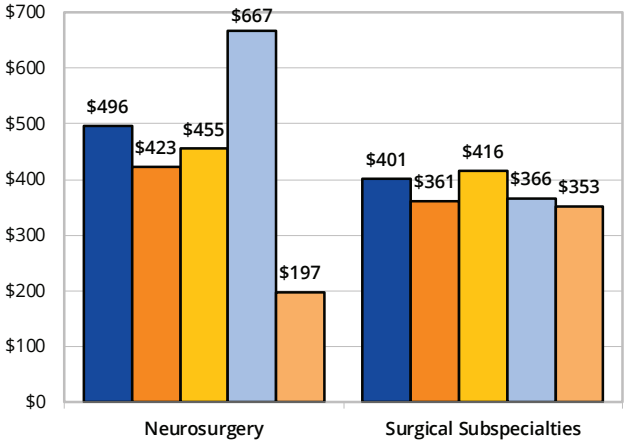
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

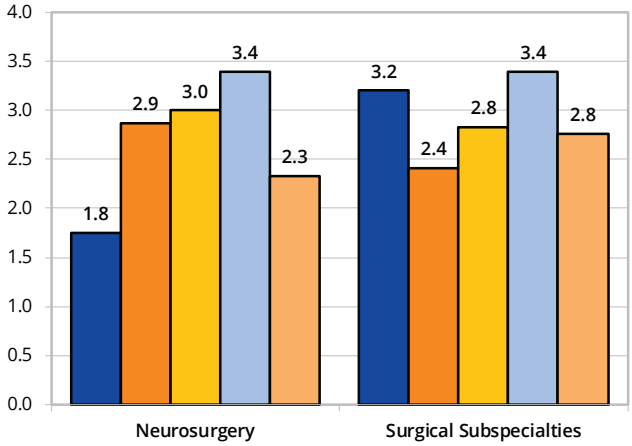
Specialty: Neurosurgery

Legend: 2016 2017 2018 2019 2021

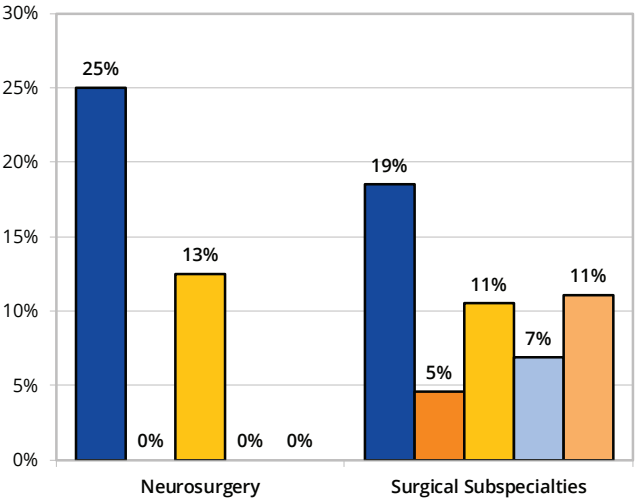
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



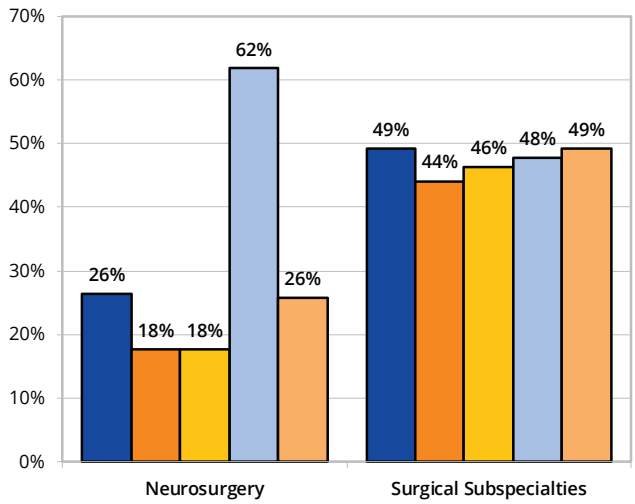
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



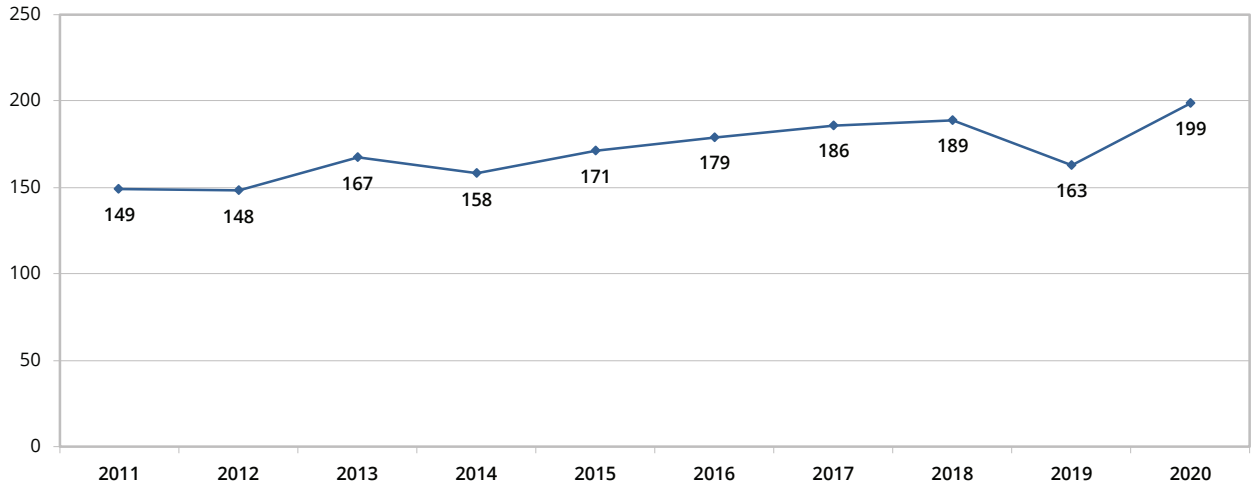
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Neurosurgery, 2016-2019, 2021



Trends in Number of Graduates of Neurosurgery GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 6, 2017: n = 8, 2018: n = 8, 2019: n = 5, 2021: n = 6.

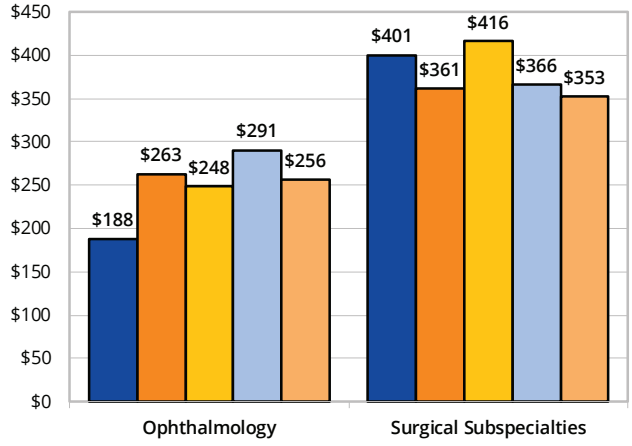
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

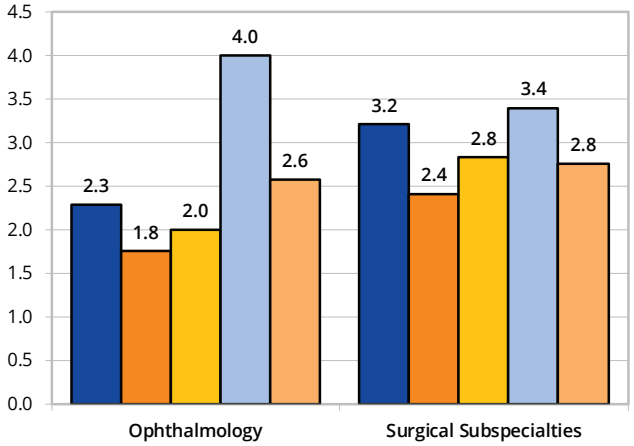
Specialty: Ophthalmology

Legend: 2016 2017 2018 2019 2021

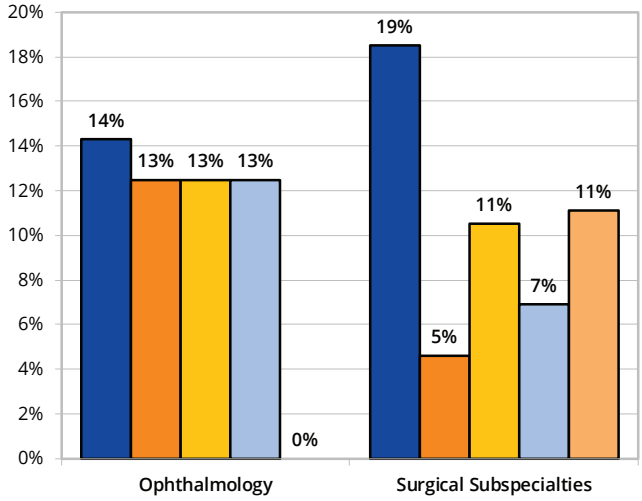
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



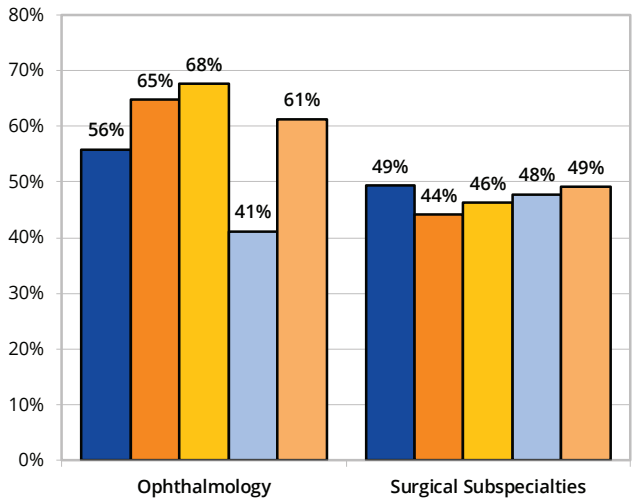
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



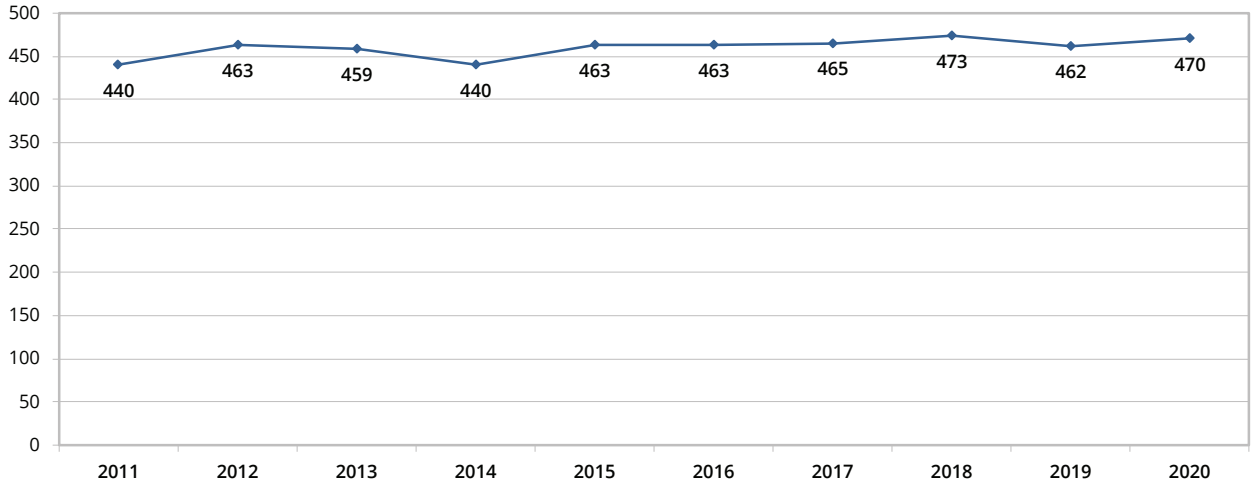
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Ophthalmology, 2016-2019, 2021



Trends in Number of Graduates of Ophthalmology GME Programs in the US,** 2011-2020



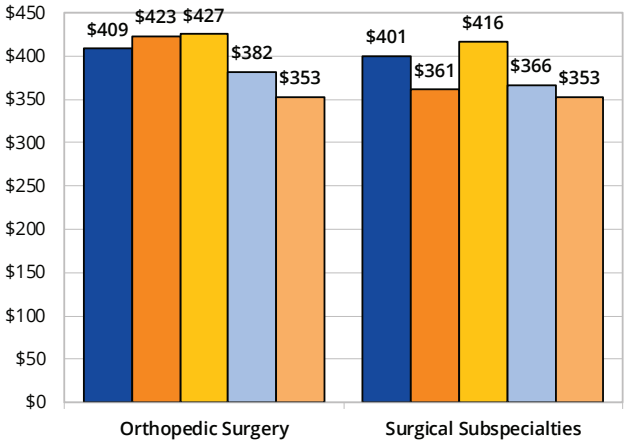
Number of responses: 2016: n = 8, 2017: n = 10, 2018: n = 17, 2019: n = 13, 2021: n = 8.

*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

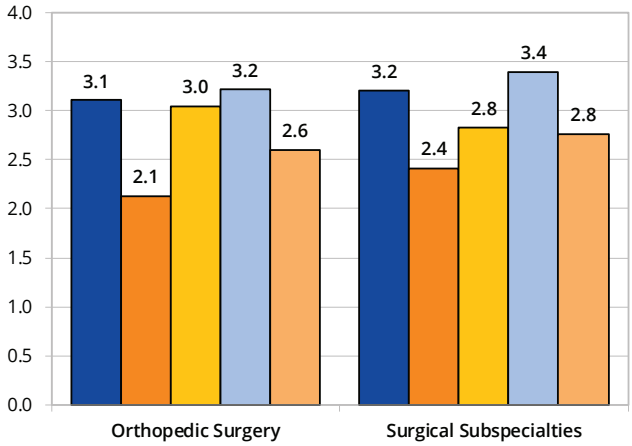
**Source: *JAMA Medical Education Issues,* 2011-2020.

Specialty: Orthopedic Surgery

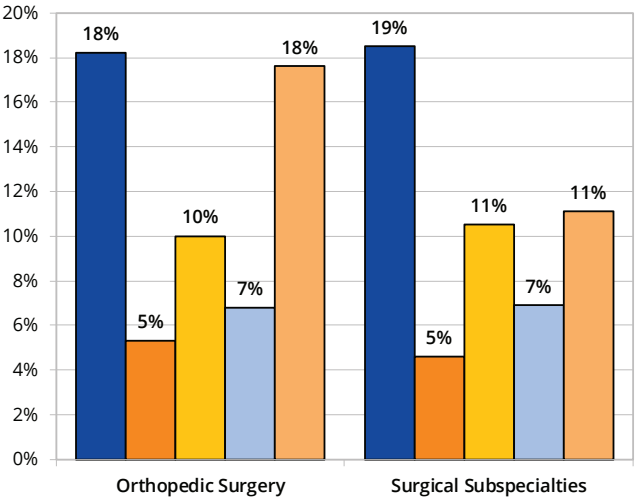
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



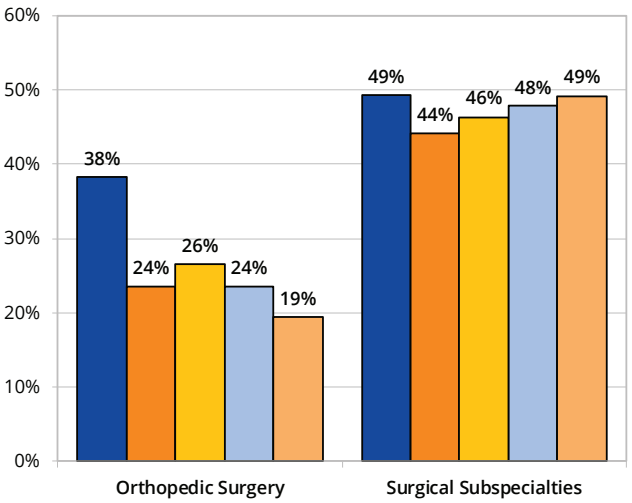
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



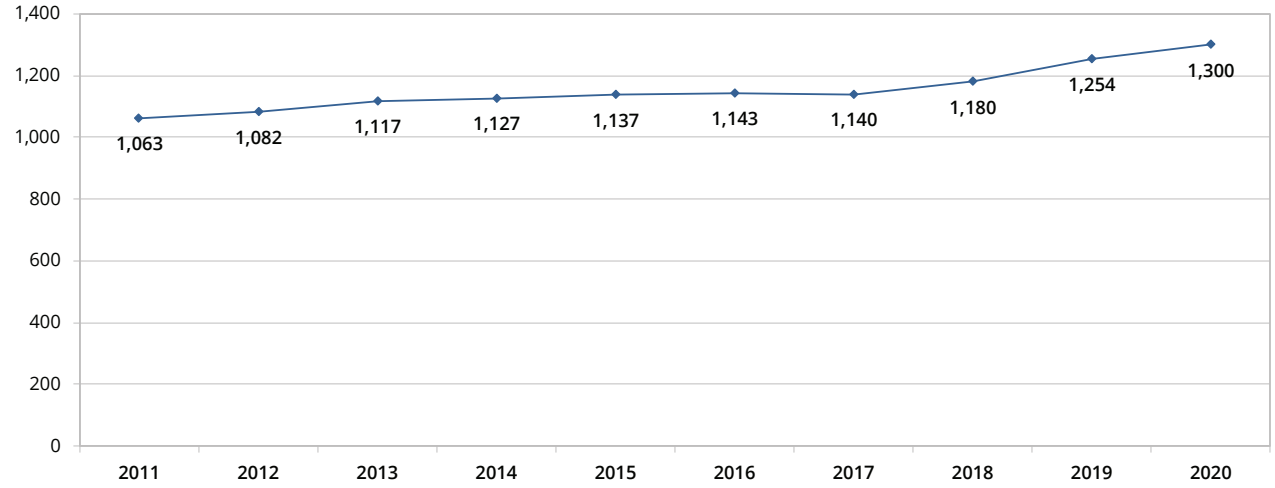
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Orthopedic Surgery, 2016-2019, 2021



Trends in Number of Graduates of Orthopedic Surgery GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 50, 2017: n = 40, 2018: n = 42, 2019: n = 50, 2021: n = 46.

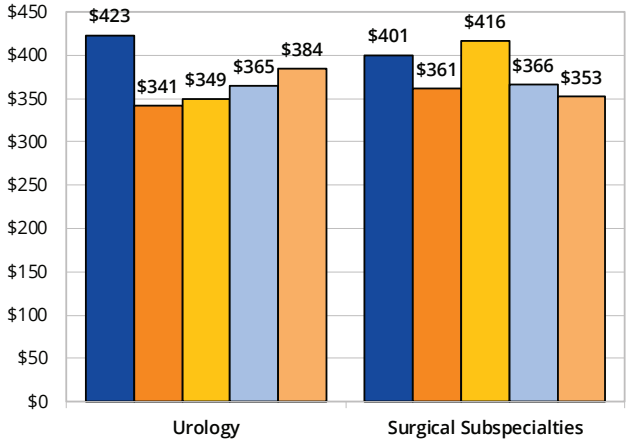
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

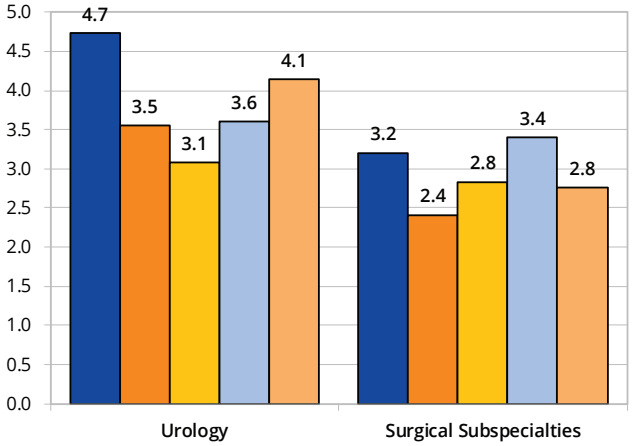
Specialty: Urology

Legend: 2016 2017 2018 2019 2021

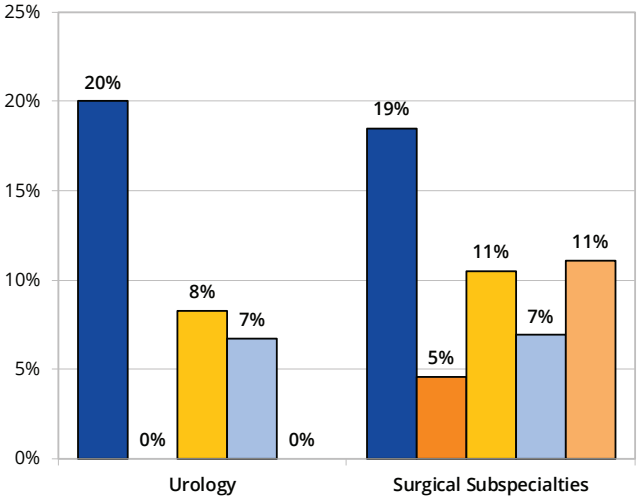
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



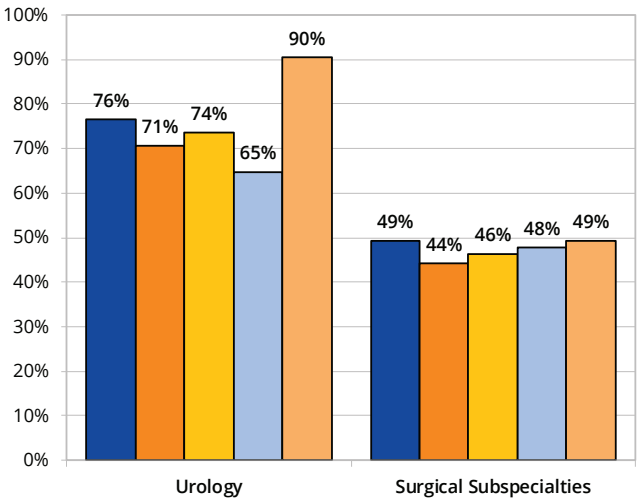
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



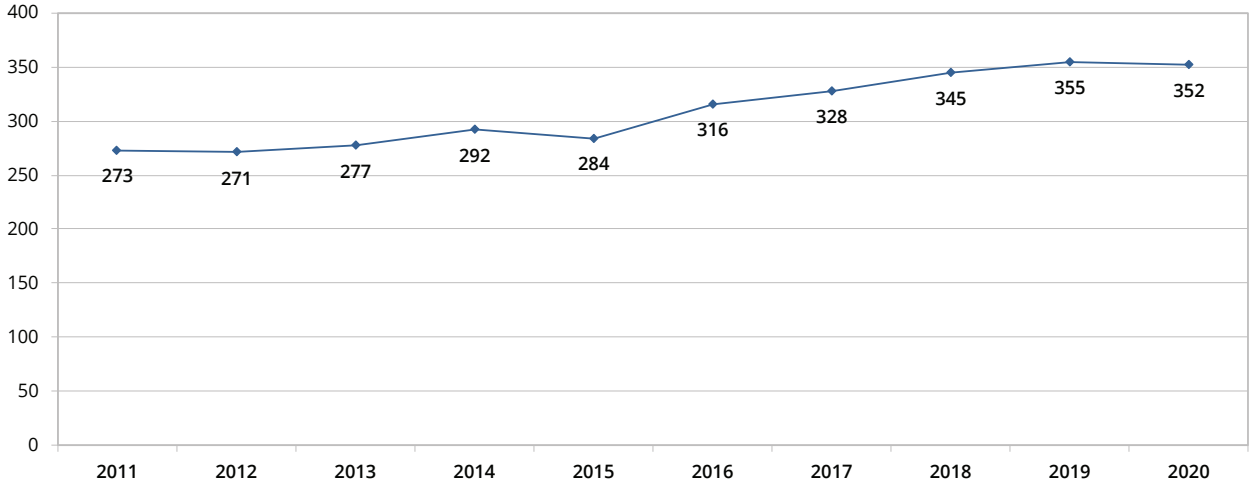
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Urology, 2016-2019, 2021



Trends in Number of Graduates of Urology GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 13, 2017: n = 12, 2018: n = 16, 2019: n = 16, 2021: n = 11.

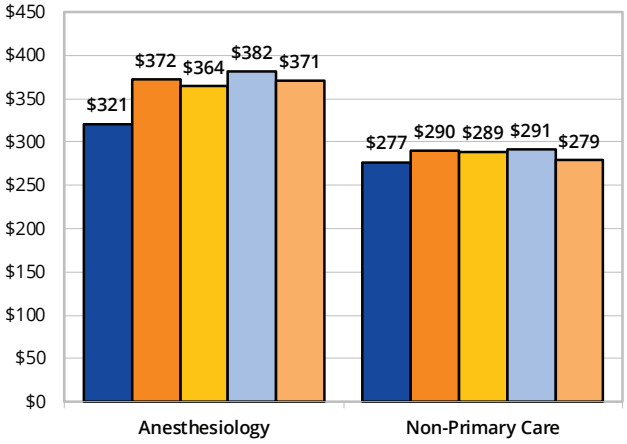
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

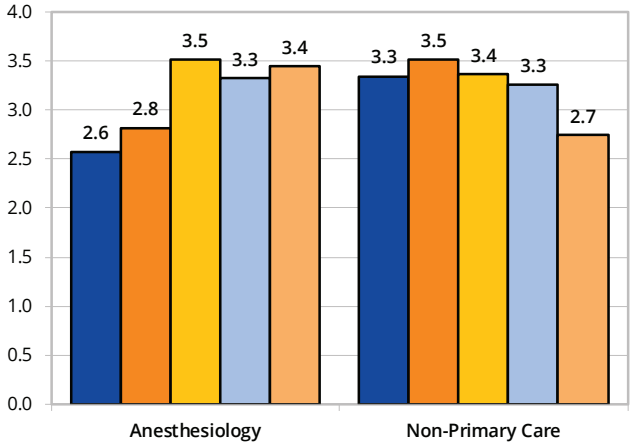
Specialty: Anesthesiology

Legend: 2016 2017 2018 2019 2021

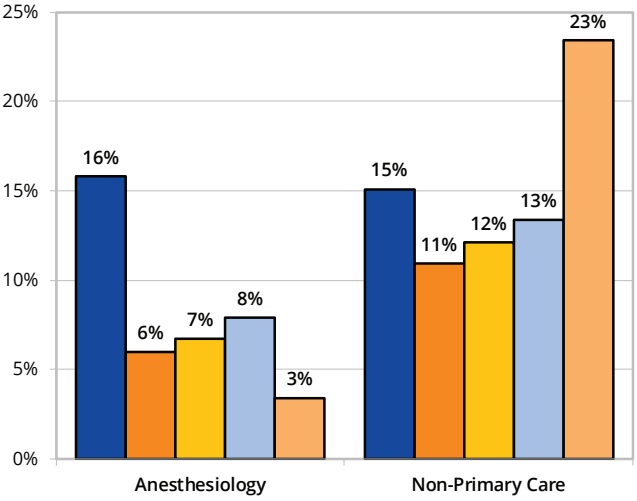
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



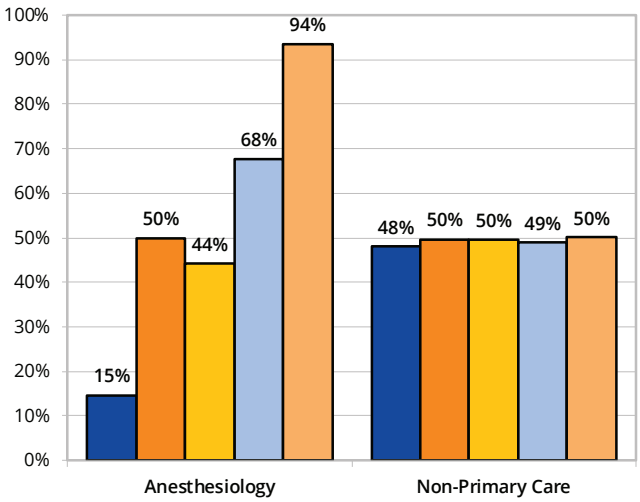
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



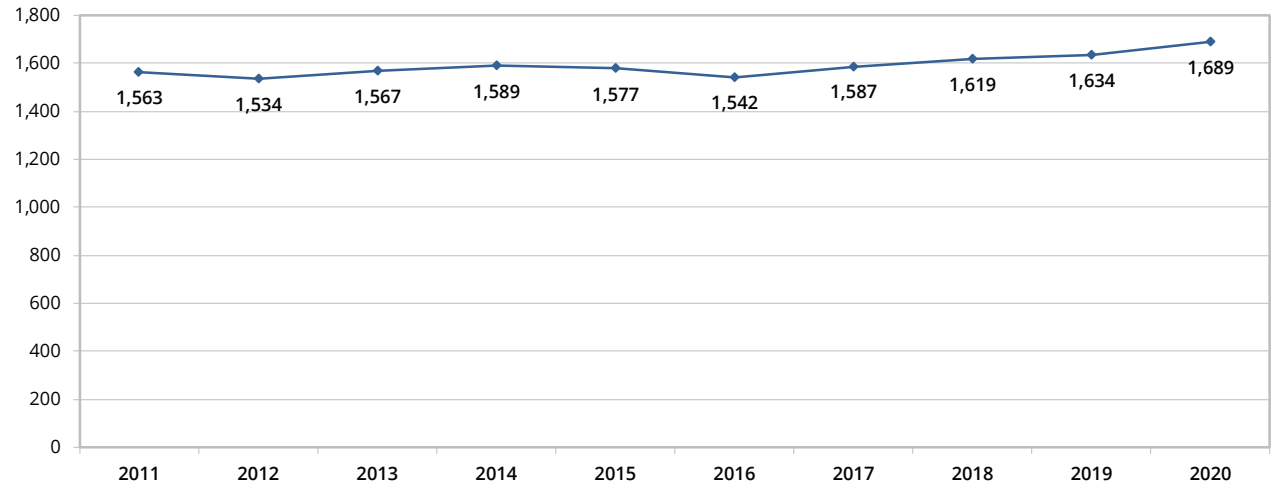
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Anesthesiology, 2016-2019, 2021



Trends in Number of Graduates of Anesthesiology GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 44, 2017: n = 73, 2018: n = 62, 2019: n = 45, 2021: n = 36.

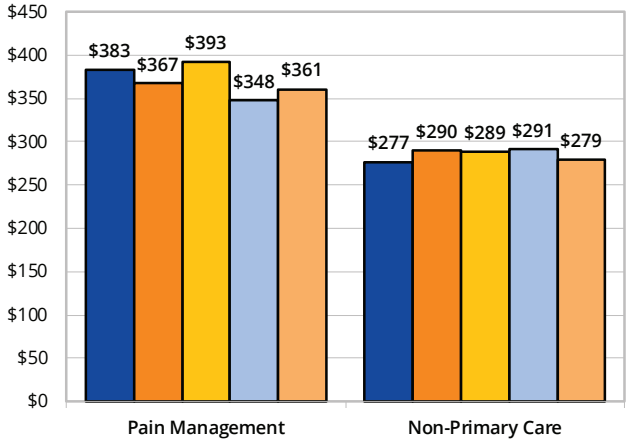
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

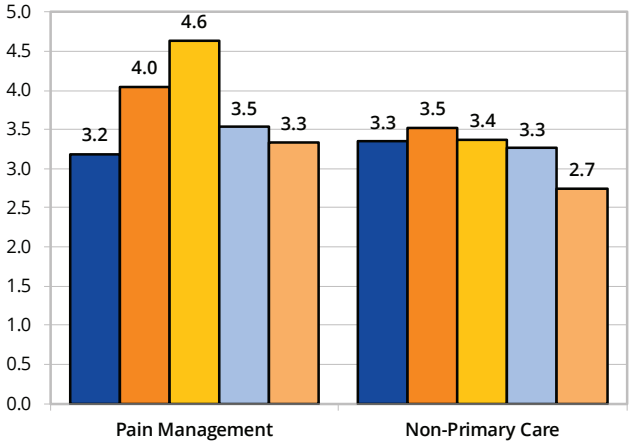
Specialty: Pain Management

Legend: 2016 2017 2018 2019 2021

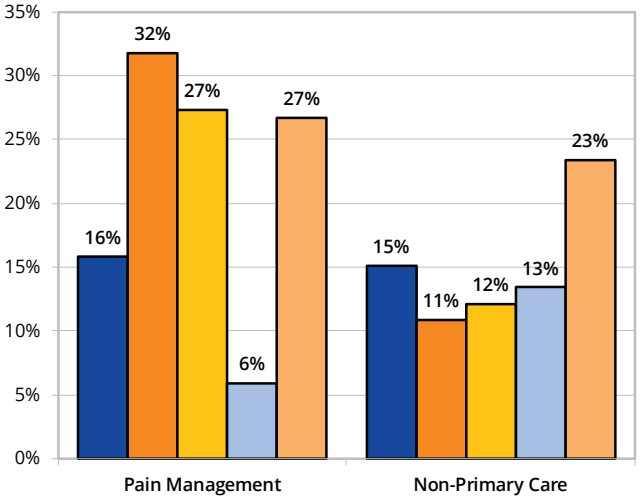
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



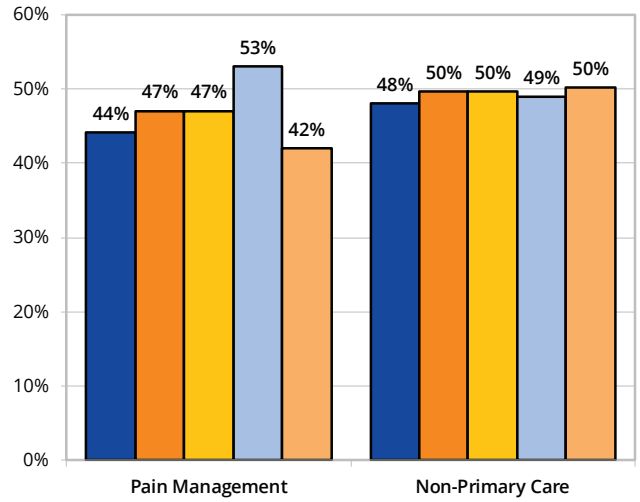
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



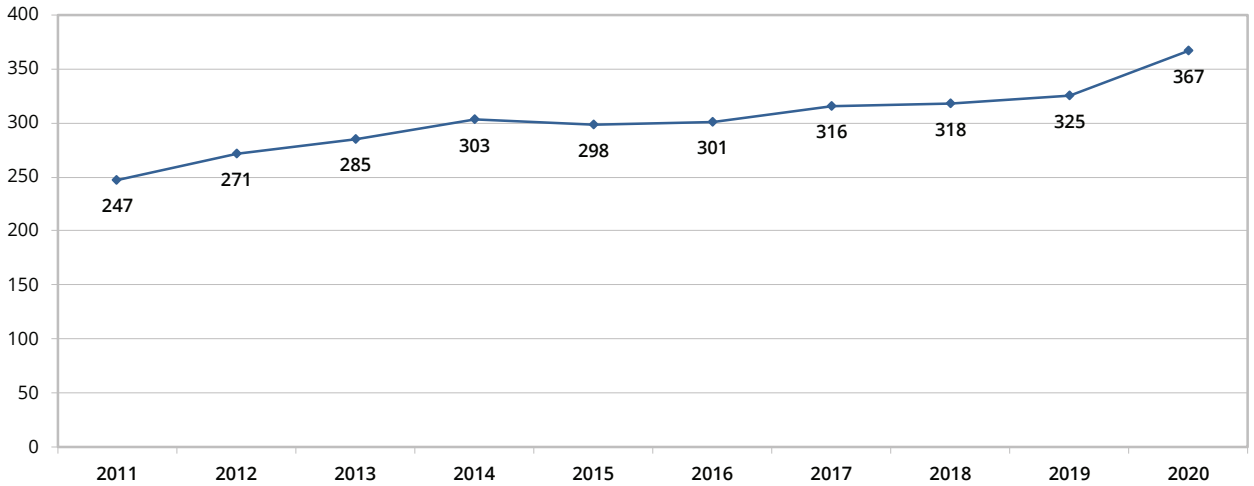
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Pain Management, 2016-2019, 2021



Trends in Number of Graduates of Pain Management GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 22, 2017: n = 22, 2018: n = 11, 2019: n = 17, 2021: n = 17.

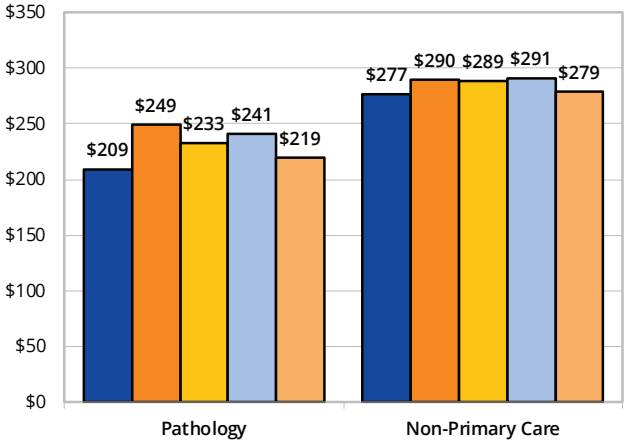
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

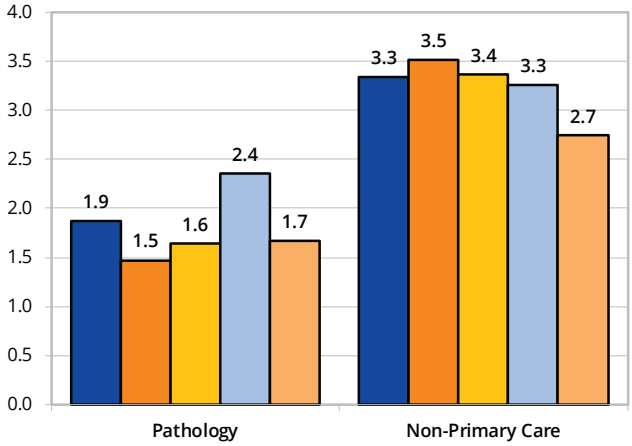
Specialty: Pathology

Legend: 2016 2017 2018 2019 2021

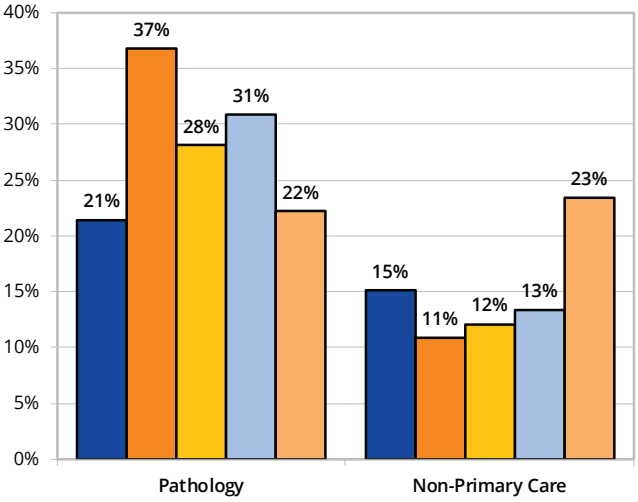
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



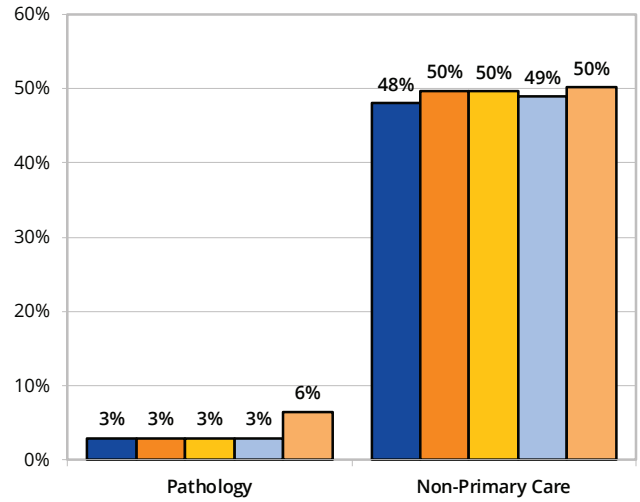
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



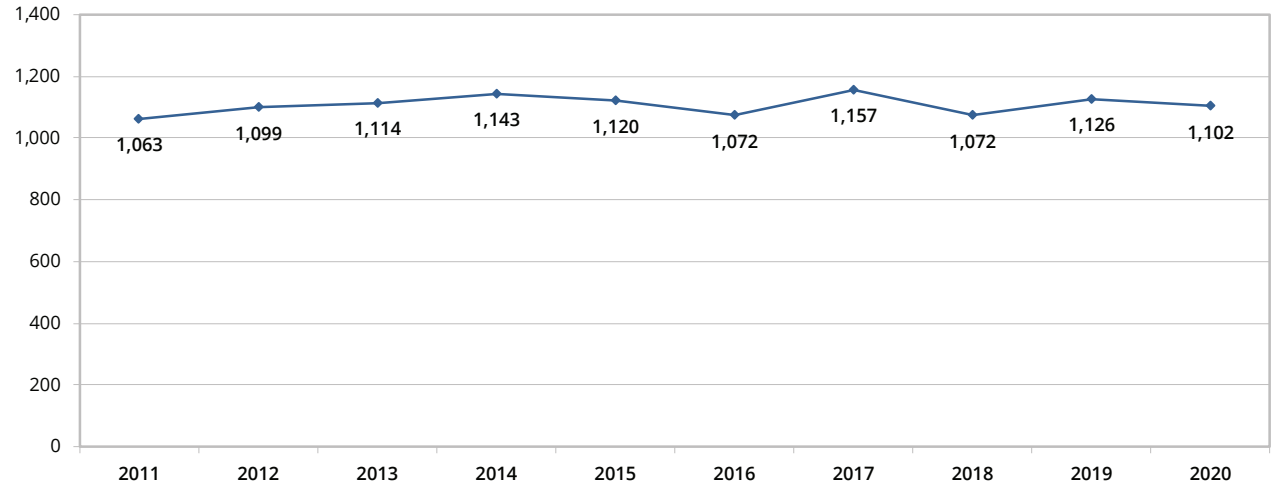
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Pathology, 2016-2019, 2021



Trends in Number of Graduates of Pathology GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 18, 2017: n = 20, 2018: n = 39, 2019: n = 27, 2021: n = 22.

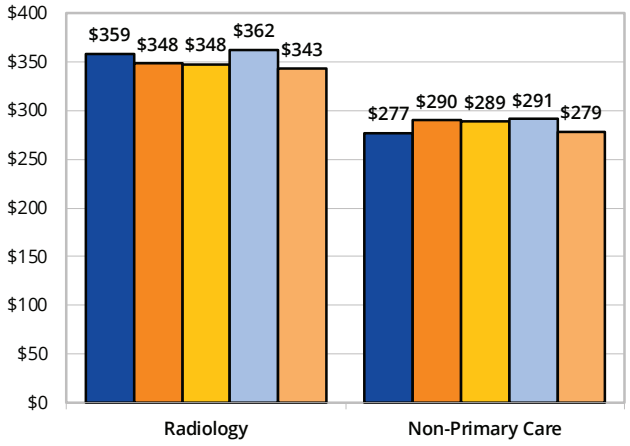
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

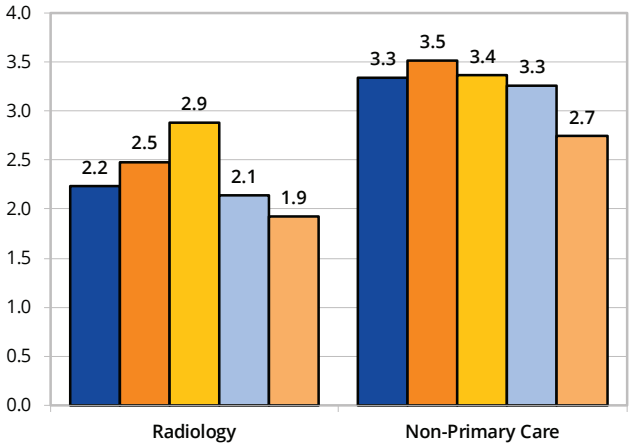
Specialty: Radiology

Legend: 2016 2017 2018 2019 2021

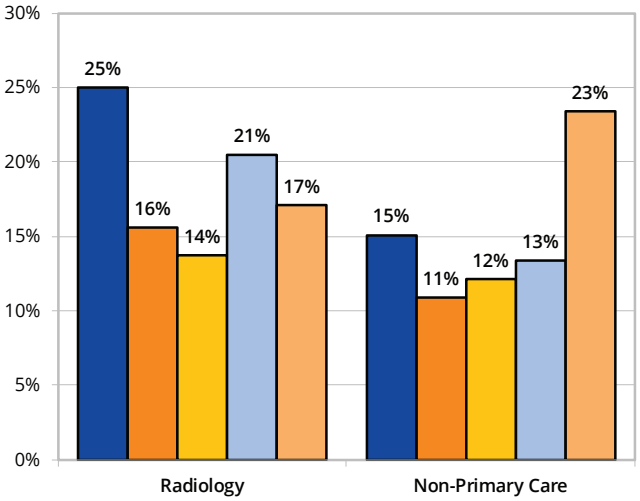
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



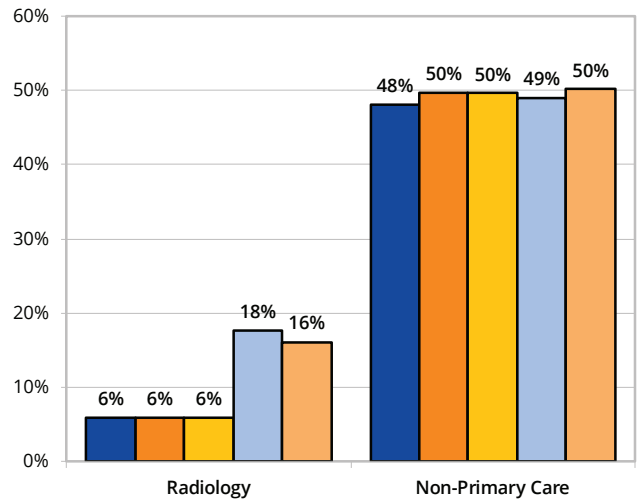
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



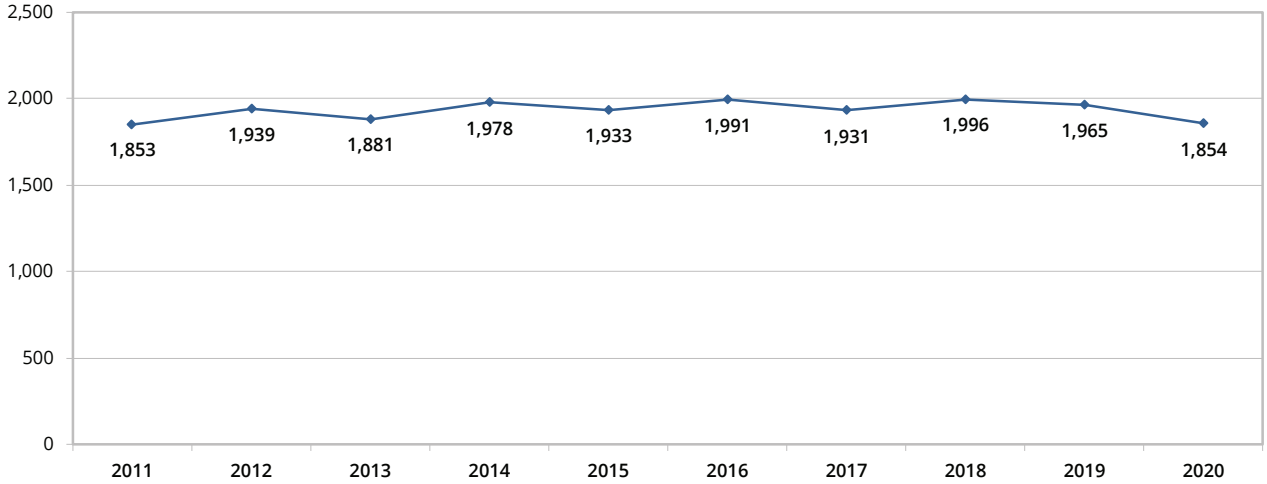
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Radiology, 2016-2019, 2021



Trends in Number of Graduates of Radiology GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 51, 2017: n = 43, 2018: n = 56, 2019: n = 52, 2021: n = 46.

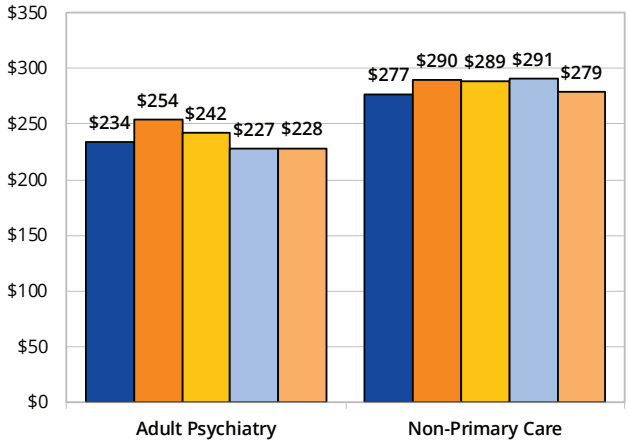
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

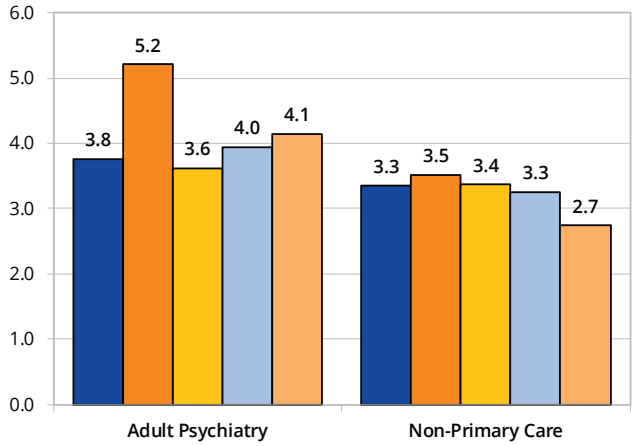
Specialty: Adult Psychiatry

Legend: 2016 2017 2018 2019 2021

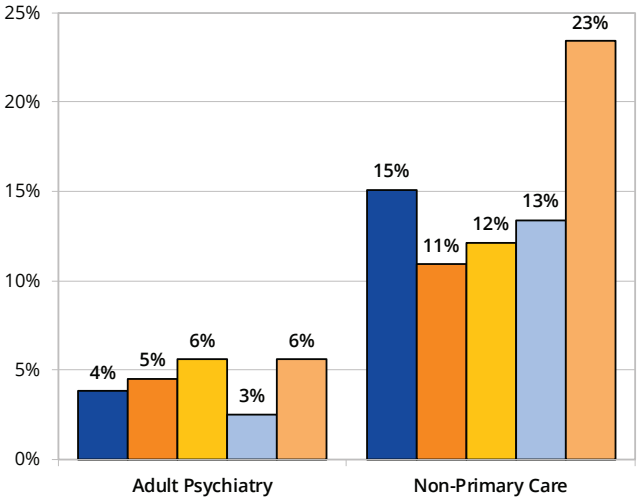
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



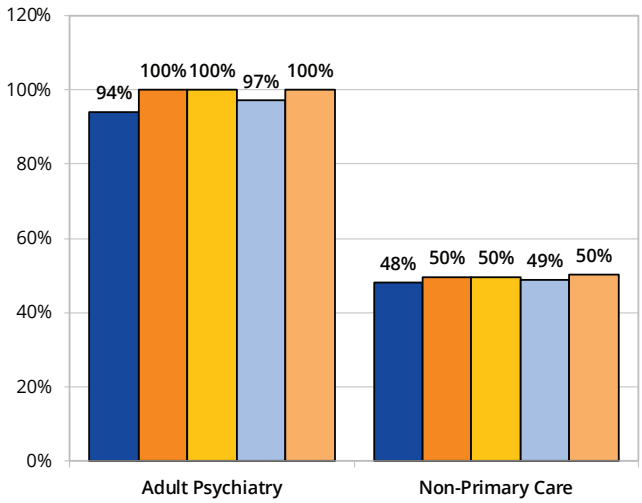
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



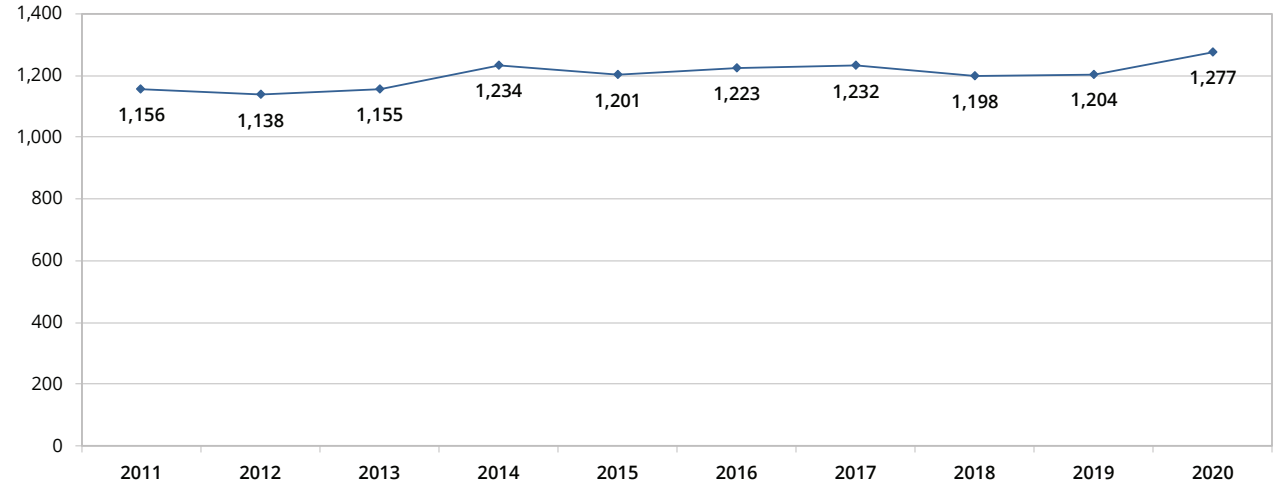
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Adult Psychiatry, 2016-2019, 2021



Trends in Number of Graduates of Adult Psychiatry GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 58, 2017: n = 49, 2018: n = 61, 2019: n = 45, 2021: n = 45.

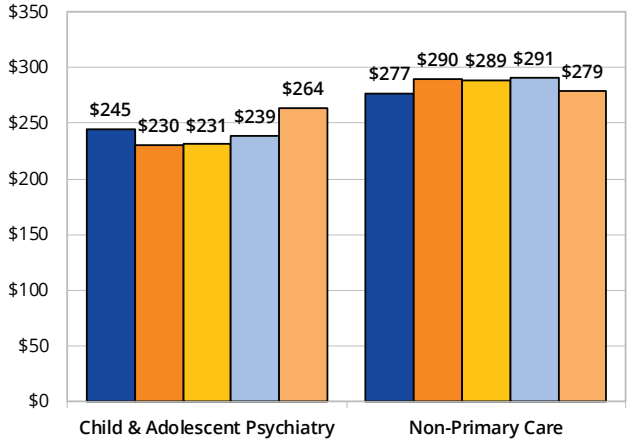
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

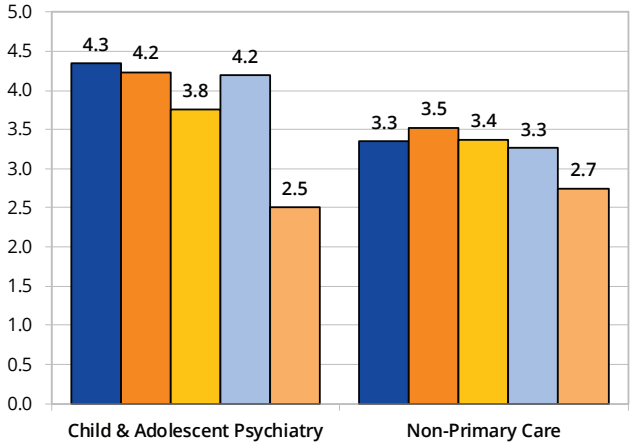
Specialty: Child & Adolescent Psychiatry

Legend: 2016 2017 2018 2019 2021

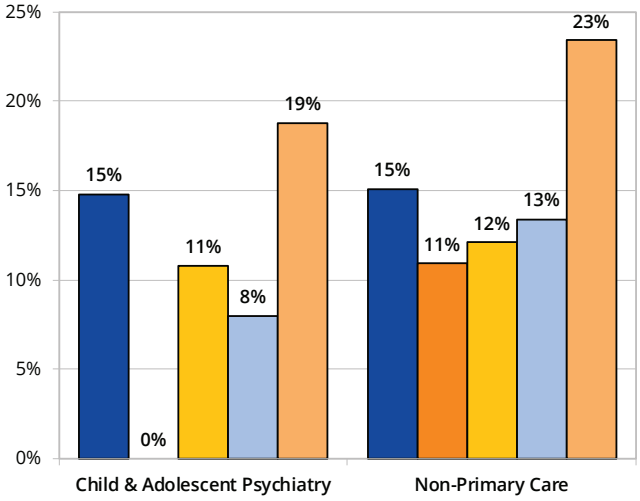
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



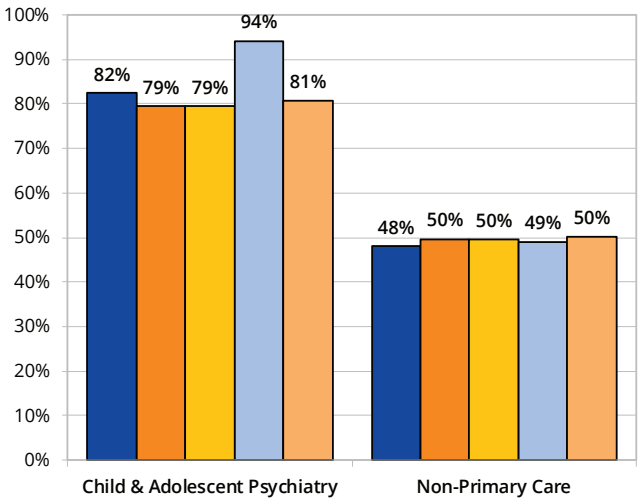
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



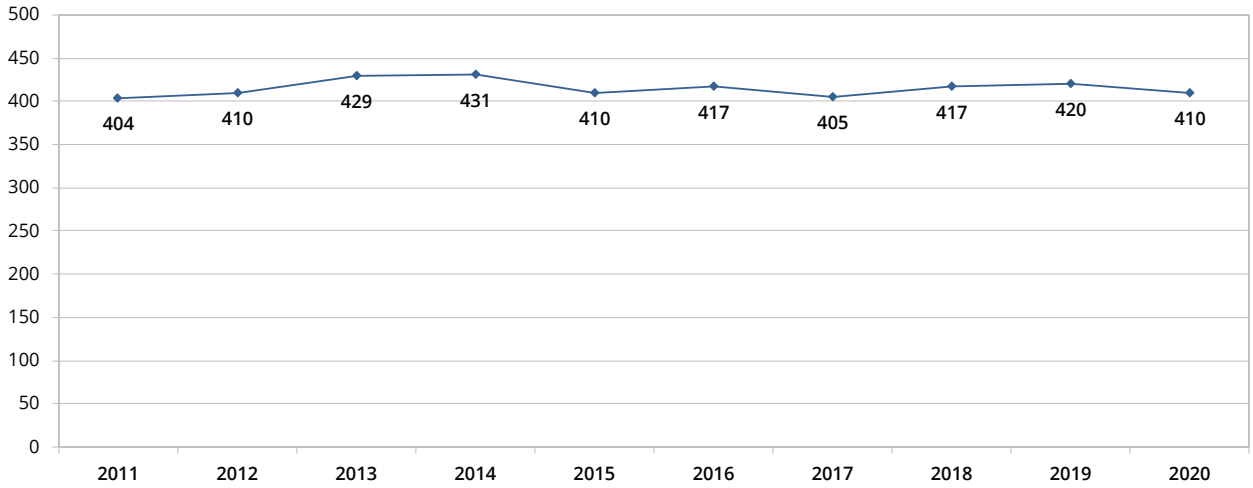
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Child & Adolescent Psychiatry, 2016-2019, 2021



Trends in Number of Graduates of Child & Adolescent Psychiatry GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 31, 2017: n = 28, 2018: n = 38, 2019: n = 28, 2021: n = 20.

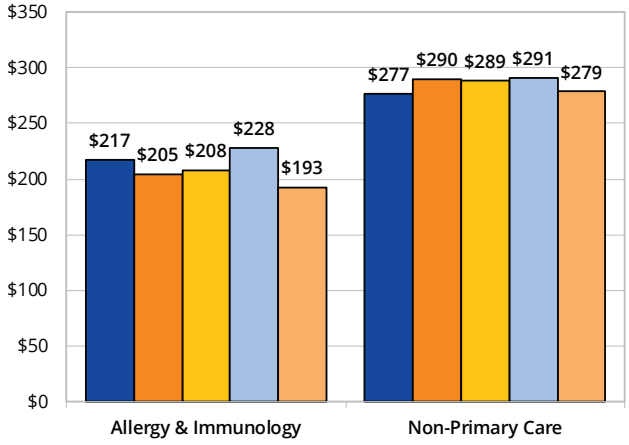
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

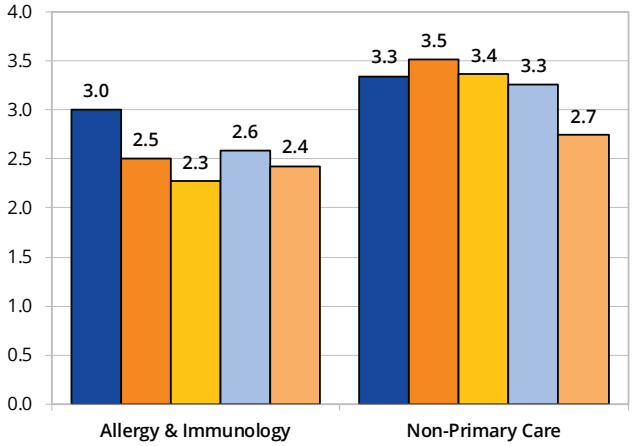
Specialty: Allergy & Immunology

Legend: 2016 2017 2018 2019 2021

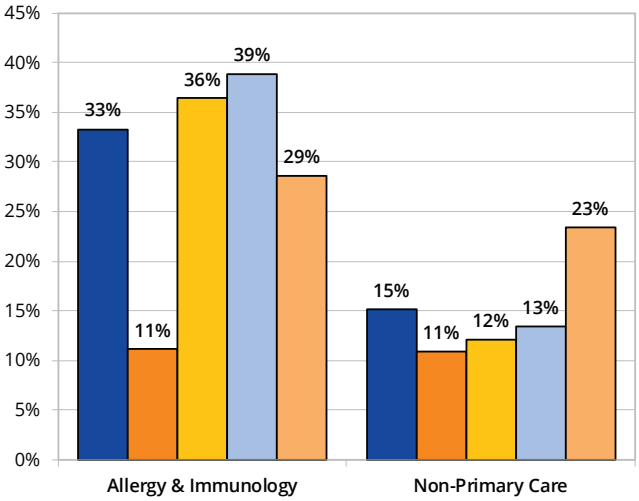
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



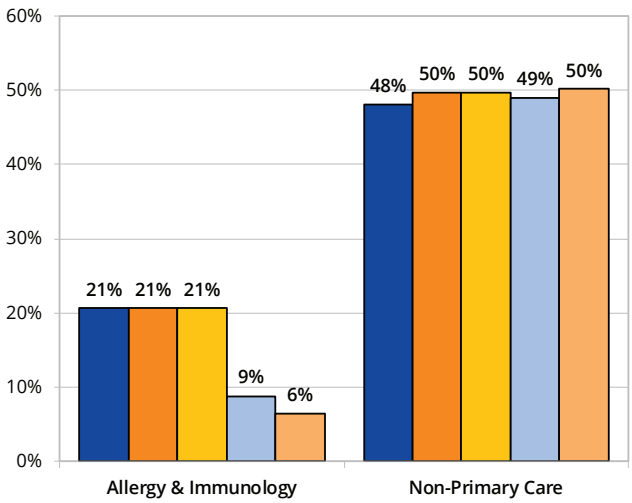
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



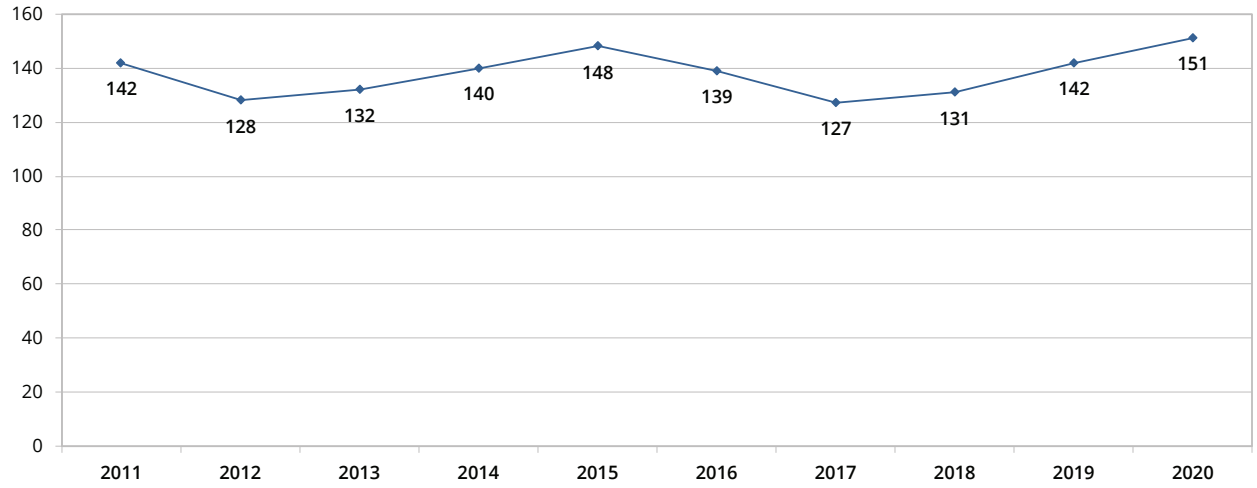
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Allergy & Immunology, 2016-2019, 2021



Trends in Number of Graduates of Allergy & Immunology GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 9, 2017: n = 11, 2018: n = 12, 2019: n = 18, 2021: n = 14.

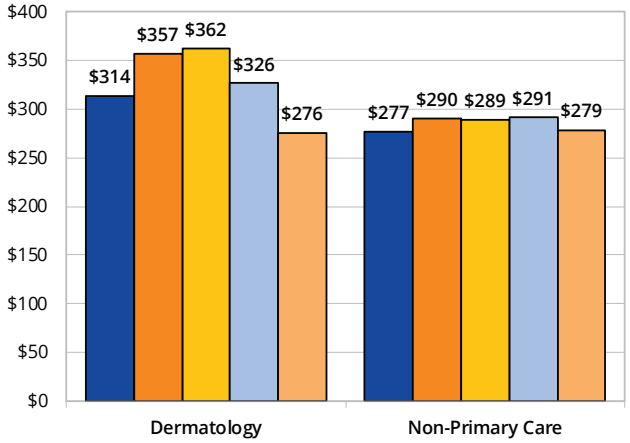
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

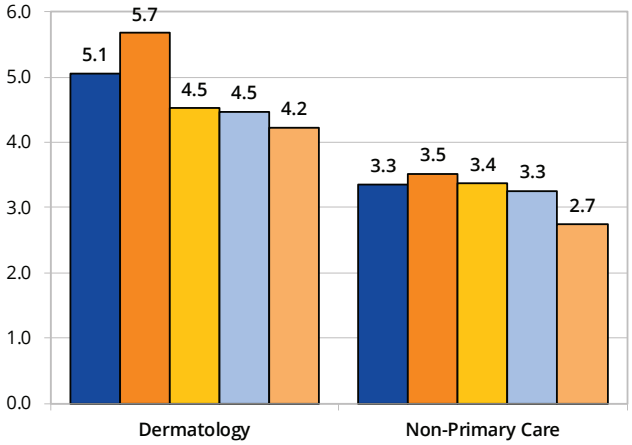
Specialty: Dermatology

Legend: 2016 2017 2018 2019 2021

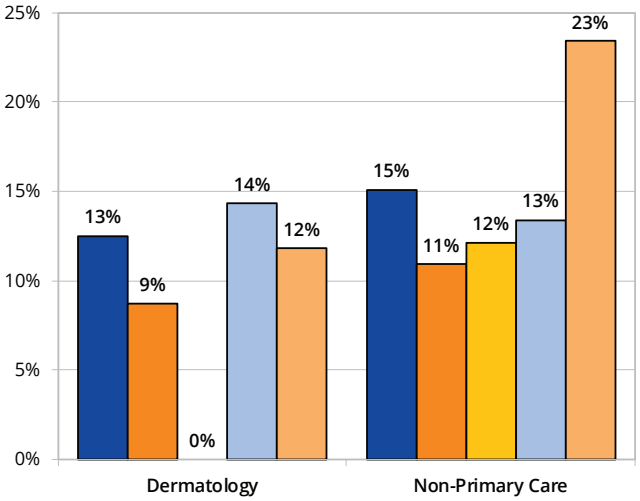
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



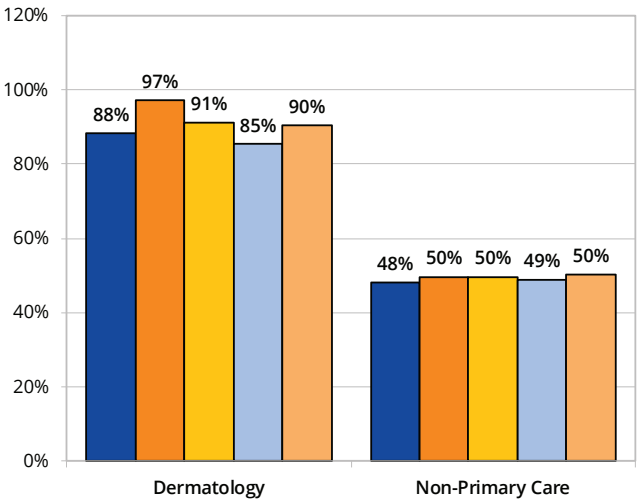
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



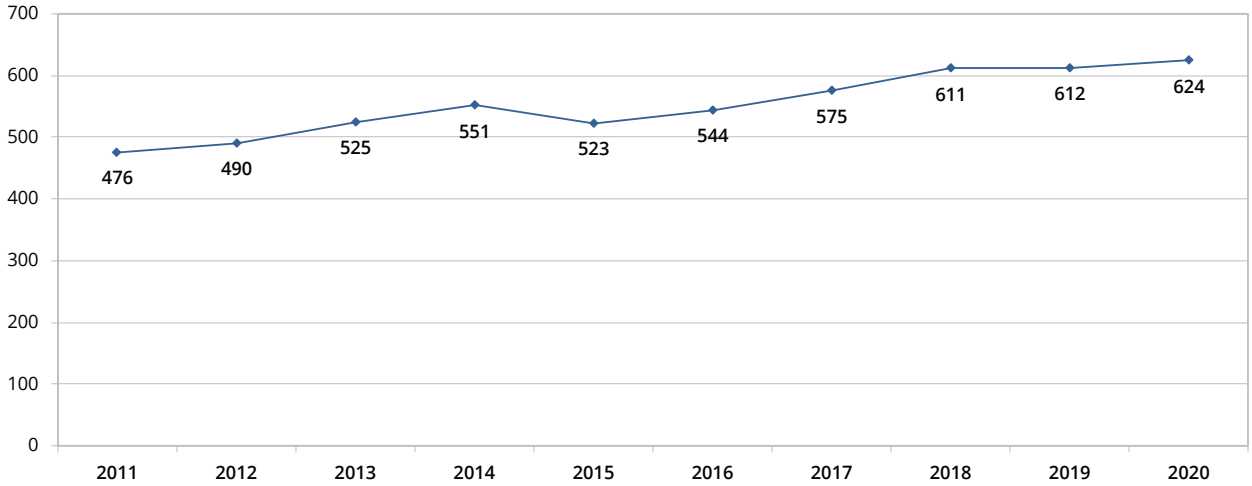
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Dermatology, 2016-2019, 2021



Trends in Number of Graduates of Dermatology GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 18, 2017: n = 23, 2018: n = 28, 2019: n = 28, 2021: n = 22.

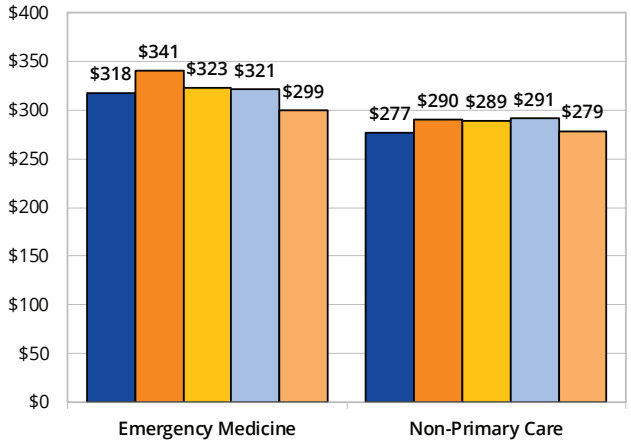
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

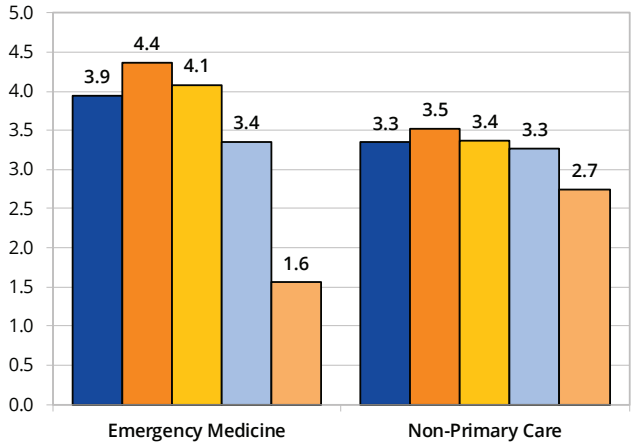
Specialty: Emergency Medicine

Legend: 2016 2017 2018 2019 2021

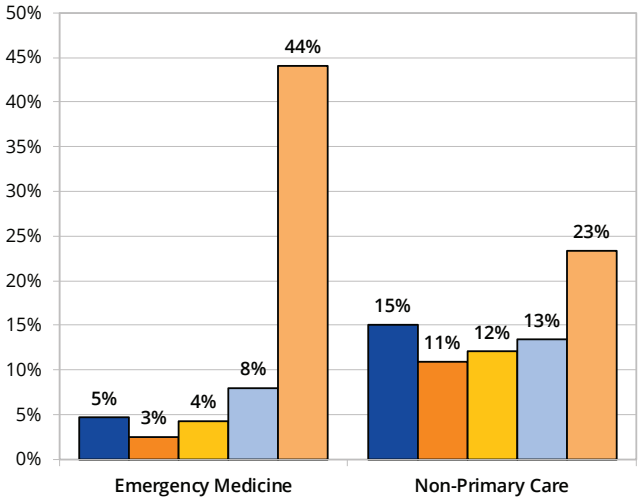
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



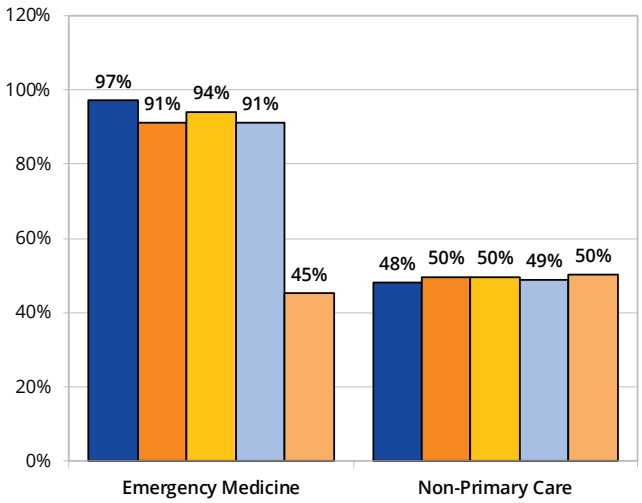
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



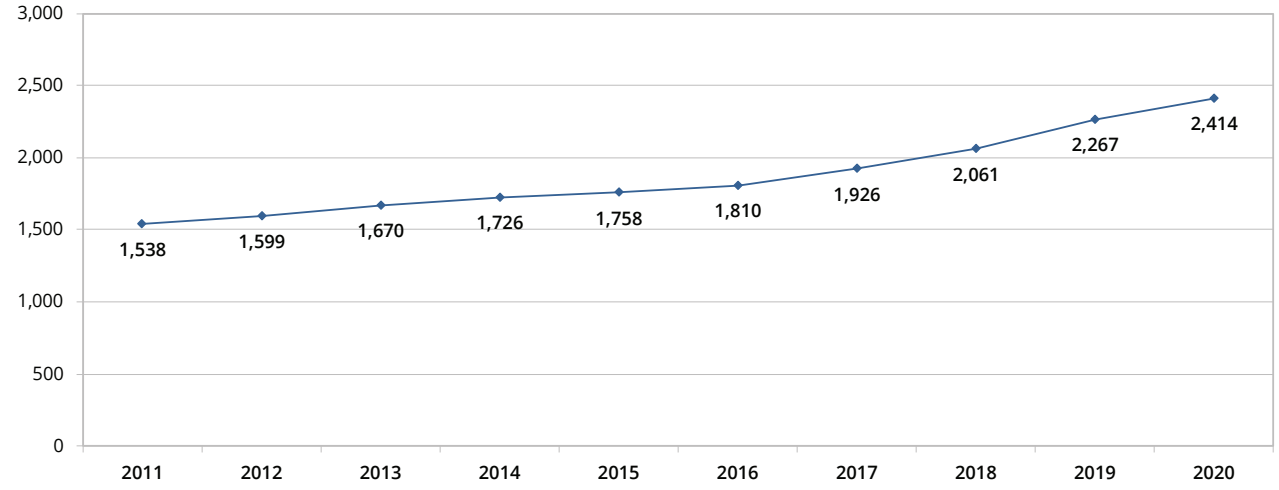
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Emergency Medicine, 2016-2019, 2021



Trends in Number of Graduates of Emergency Medicine GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 135, 2017: n = 126, 2018: n = 131, 2019: n = 125, 2021: n = 107.

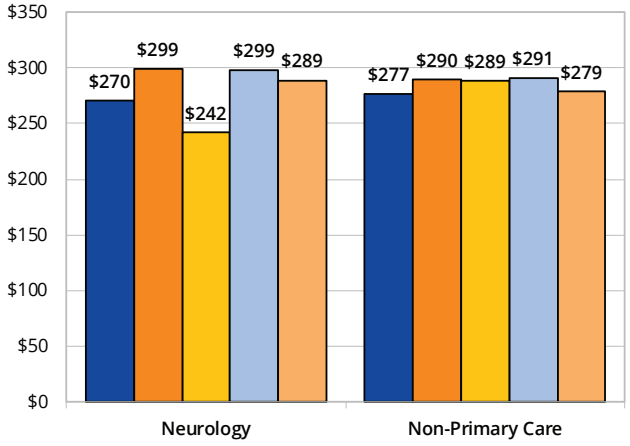
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

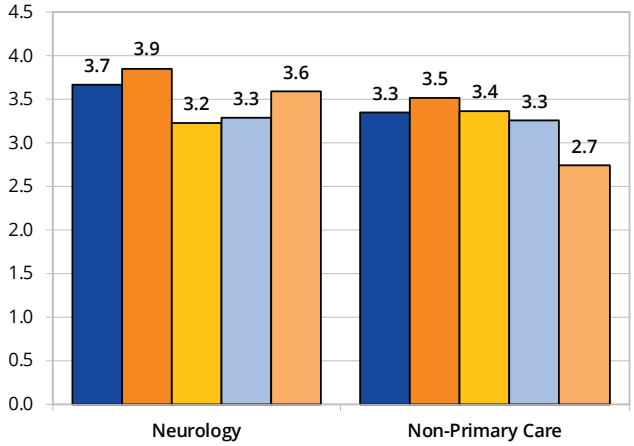
Specialty: Neurology

Legend: 2016 2017 2018 2019 2021

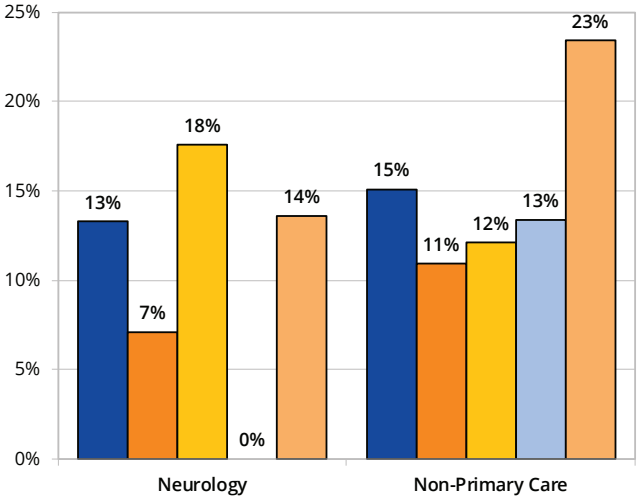
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



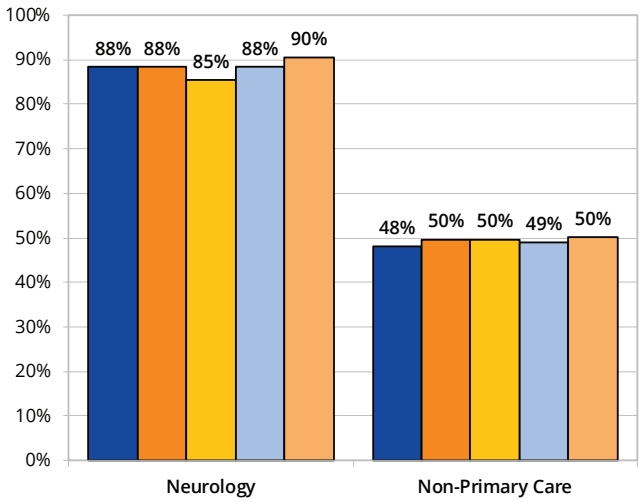
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



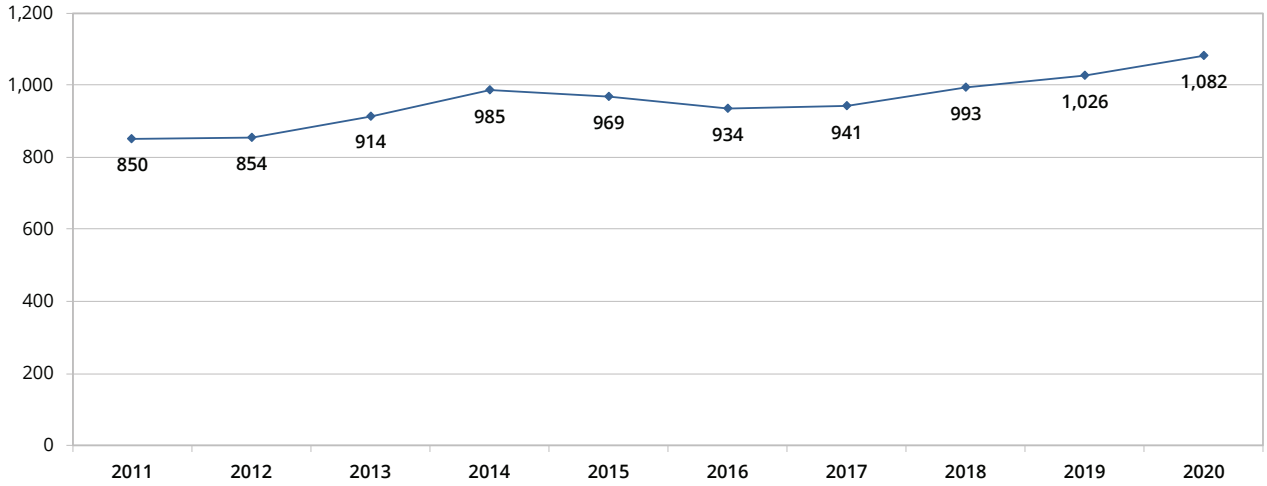
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Neurology, 2016-2019, 2021



Trends in Number of Graduates of Neurology GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 18, 2017: n = 14, 2018: n = 21, 2019: n = 20, 2021: n = 25.

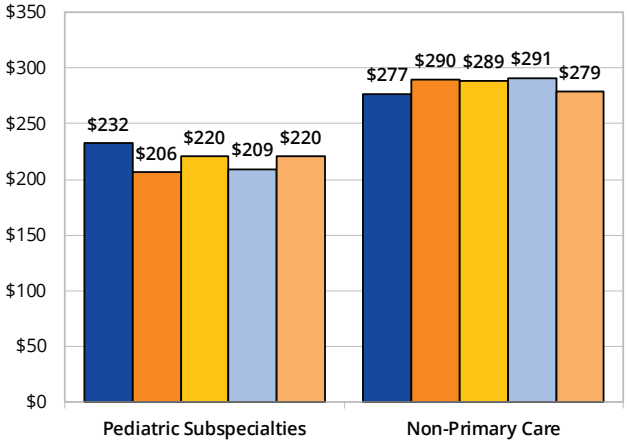
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

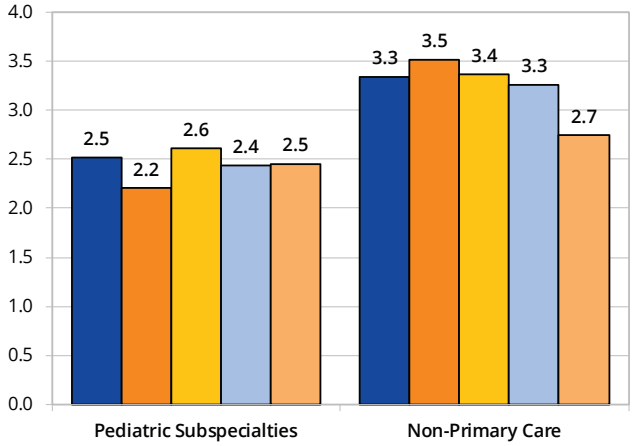
Specialty: Pediatric Subspecialties

Legend: 2016 2017 2018 2019 2021

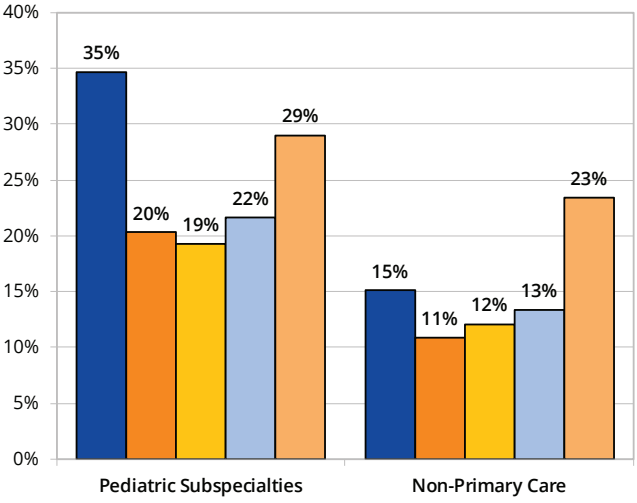
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



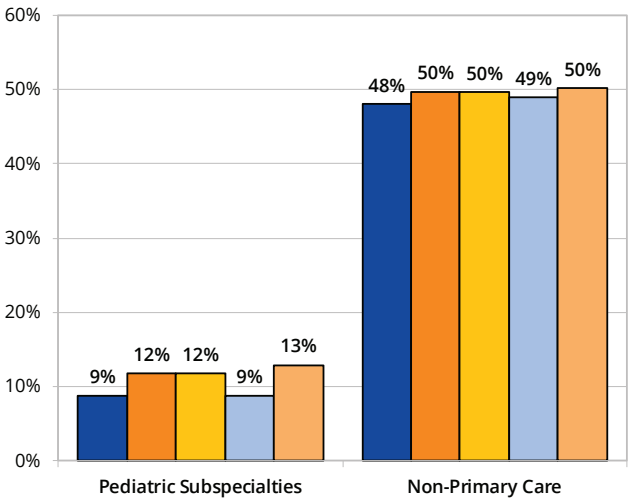
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



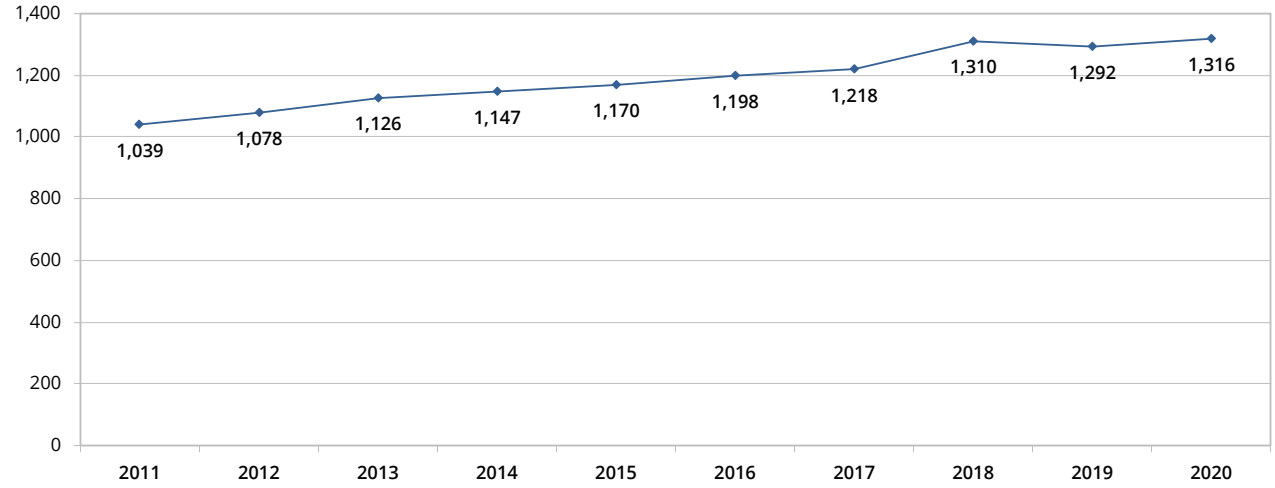
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Pediatric Subspecialties, 2016-2019, 2021



Trends in Number of Graduates of Pediatric Subspecialties GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 58, 2017: n = 70, 2018: n = 62, 2019: n = 54, 2021: n = 36.

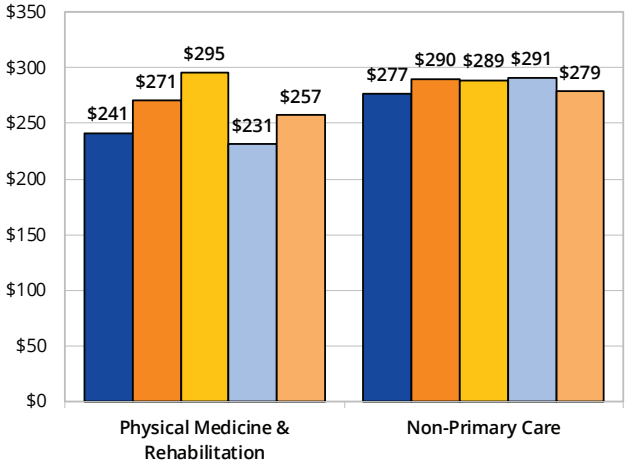
*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

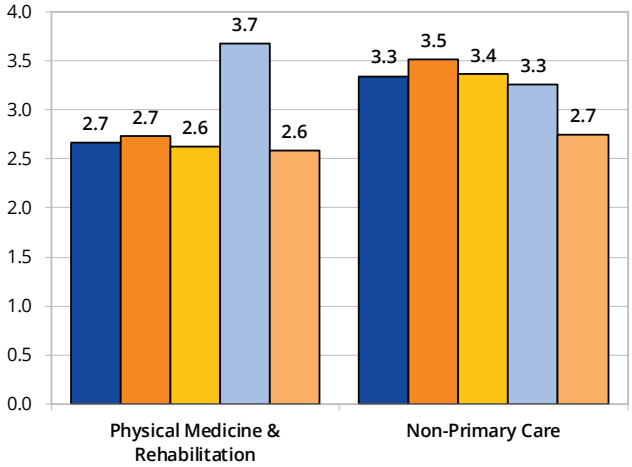
Specialty: Physical Medicine & Rehabilitation

Legend: 2016 2017 2018 2019 2021

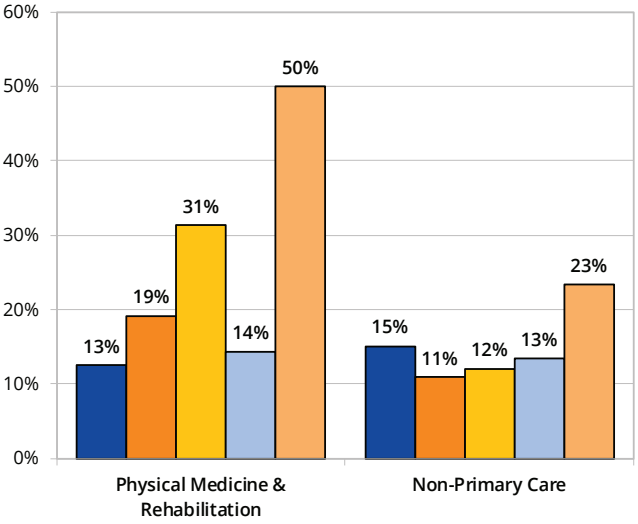
Trends in Median Starting Income,* 2016-2019, 2021 (in $1,000s of 2021 Dollars)



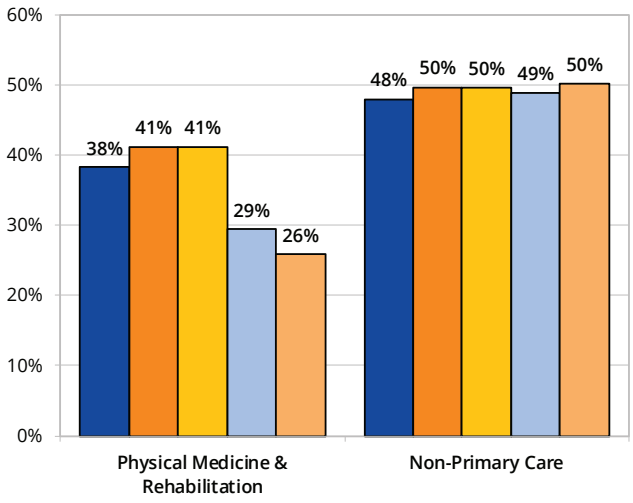
Trends in Mean Number of Job Offers Received,* 2016-2019, 2021



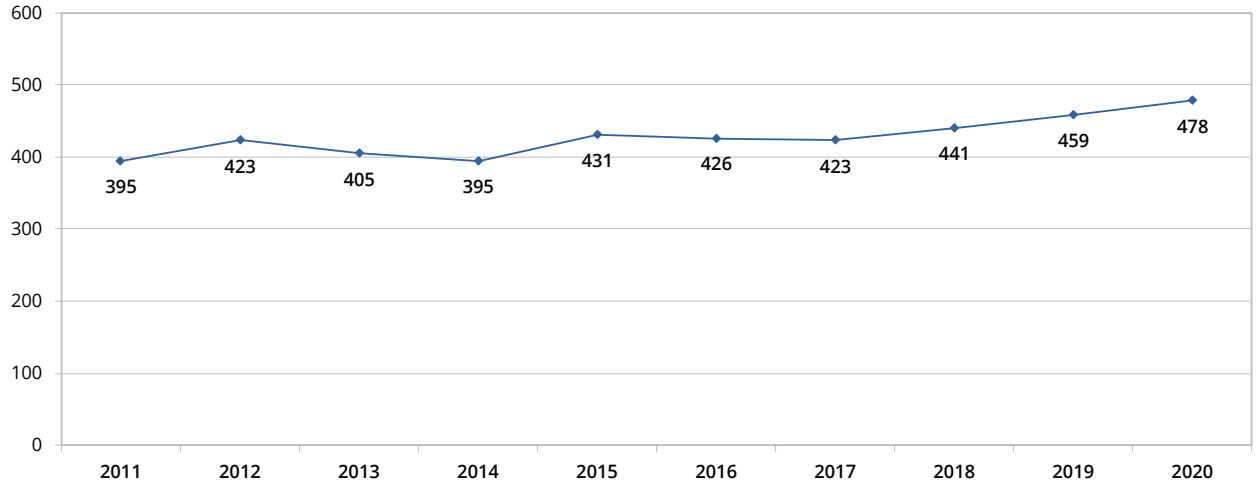
Trends in Having to Change Plans Due to Limited Practice Opportunities,* 2016-2019, 2021



Trends in Relative Demand* - Percentile Rank of Physical Medicine & Rehabilitation, 2016-2019, 2021



Trends in Number of Graduates of Physical Medicine & Rehabilitation GME Programs in the US,** 2011-2020



Number of responses: 2016: n = 21, 2017: n = 27, 2018: n = 18, 2019: n = 23, 2021: n = 20.

*Source: CHWS, Survey of Residents Completing Training in New York, 2016-2019, 2021.

**Source: *JAMA Medical Education Issues,* 2011-2020.

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 (measuring 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 general internal medicine in New York in 2021 was 74% (ie, general internal medicine had a relative rank equal to or better than 74% of the 31 specialties that were ranked), and the percentile rank of nephrology was 35%, this does not imply that demand for general internal medicine was more than twice as strong as for nephrology. 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. For example, when calculating the demand score for 2021, data from 2021 were weighted .40, data from 2019 were weighted .30, data from 2018 were weighted .20, and data from 2017 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 (Adult Psychiatry) 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 (Dermatology) 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 (Ophthalmology) ranked #1 and the specialty with the weakest trend in median starting income (Neurosurgery) ranked #31.

TABLE 1. Summary of Ranks and Demand Indicators

Specialty	Difficulty	Plans	Offers[a]	Market	Market	Trends[a]	Rank	Rank	Rank[b]
Family Medicine	6	5	2	3	3	20	4.0	2	97%
General Internal Medicine	10	14	5	6	7	18	8.5	9	74%
General Pediatrics	15	13	26	10	11	9	12.0	11	68%
Ob/Gyn	7	18	10	7	10	4	8.5	9	74%
Cardiology	18	21	17	24	20	15	17.5	17	48%
Critical Care Medicine	22	30	15	18	14	24	20.0	19	42%
Endocrinology and Metabolism	29	12	12	11	17	17	14.5	15	55%
Gastroenterology	8	6	6	8	8	10	8.0	7	81%
Geriatrics	14	24	20	13	16	13	15.0	16	52%
Hematology/Oncology	19	25	16	22	13	26	20.5	21	35%
Infectious Disease	20	28	21	17	27	5	20.5	21	35%
Nephrology	30	29	3	27	30	14	20.5	21	35%
Pulmonary Disease	21	15	11	23	18	2	13.0	12	65%
Rheumatology	31	17	13	15	15	12	14.0	13	61%
General Surgery	23	20	27	31	24	30	27.0	28	13%
Neurosurgery	2	4	24	20	19	31	22.0	24	26%
Ophthalmology	11	16	25	26	12	1	14.0	13	61%
Orthopedic	13	9	23	19	23	29	23.0	26	19%
Urology	4	8	7	12	4	25	7.5	4	90%
Anesthesiology	3	7	18	4	9	3	5.5	3	94%
Pain Management	27	19	9	16	21	22	20.0	19	42%
Pathology	28	27	31	28	29	11	28.0	30	6%
Radiology	17	22	30	25	26	21	23.5	27	16%
Adult Psychiatry	1	1	4	1	1	16	2.5	1	100%
Child and Adolescent Psychiatry	5	11	8	2	2	8	8.0	7	81%
Allergy and Immunology	26	31	28	30	31	27	28.0	30	6%
Dermatology	9	10	1	5	6	28	7.5	4	90%
Emergency Medicine	16	2	19	14	25	23	19.0	18	45%
Neurology	12	3	14	9	5	6	7.5	4	90%
Pediatric Subspecialties	25	26	29	29	28	19	27.0	28	13%
Physical Medicine and Rehabilitation	24	23	23	21	22	7	22.0	24	26%

[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 a median 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 2021:

Median $Rank_{FM}$ = median (difficulty, change plans, job offers, job offers, regional market, national market, income trends, income trends)

Median $Rank_{FM}$ = median (1, 1, 4, 4, 1, 1, 16, 16)

Median $Rank_{FM}$ = **2.5**

With a median rank of 2.5, Adult Psychiatry overall ranked 1st out of 31 specialties.

The ***percentile rank*** is computed as:

$\%rank_{FM}$ = { 1 – (RankFM / #Specs) + (1 / #Specs) }

"#Specs" = the number of specialties being ranked

In New York in 2021, there were 31 specialties being ranked, so the percentile rank of Adult Psychiatry is:

%rankFM = { 1 – (1 / 34) + (1 / 34) } = **100%**

APPENDIX B

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

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