



# Trends in Demand for New Physicians, 2005-2010

A Summary of Demand Indicators for 35 Physician Specialties

#### September 2011

#### The Center for Health Workforce Studies

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#### **ACKNOWLEDGEMENTS**

This report was prepared by David P. Armstrong and Gaetano J. Forte of the Center for Health Workforce Studies. The authors wish to acknowledge the editing efforts of Lyrysa Smith. Funding for the 2010 Resident Exit Survey and analysis was provided by the New York State Department of Health. The Center would like to express its 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.

#### BACKGROUND

The Center for Health Workforce Studies conducts an annual survey of all physicians completing a residency or fellowship training program in New York (the Resident Exit Survey). The survey instrument (see Appendix B) was developed by the Center in consultation with teaching hospitals in New York. The survey provides the medical education community with valuable information on outcomes of training and demand for new physicians in different specialties.

Each spring, the Center distributes the surveys to Graduate Medical Education (GME) directors and administrators at teaching hospitals in New York. In most cases, surveys are then forwarded to individual GME departments at each hospital which assume responsibility for having graduating residents and fellows fill out the surveys in the weeks prior to program completion. The surveys are then returned to the Center for data entry and analysis.

The year 2010 marked the eleventh year of the survey. Through the excellent collaboration of teaching hospitals throughout the state, an aggregated total of 32,695 of the 52,513 graduates have completed the survey (62% response rate) for the eleven years the survey has been conducted (1998, 1999, 2000, 2001, 2002, 2003, 2005, 2007, 2008, 2009, and 2010). Many of the questions on the Resident Exit Survey are designed to assess demand for physicians in general, and by specialty. In any given year, the Resident Exit Survey provides a snapshot of the physician marketplace at a specific point in time. By conducting the survey on a regular basis, trends may be observed which are useful in projecting future supply and demand.

This data book presents profiles for 35 specialties. Each specialty profile summarizes trends in five 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 2005 to 2010). 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 U.S. in the specialty from 2000 to 2009. Definitions of the five areas are as follows:

- ➤ <u>Starting income</u>: The median starting income of survey respondents with confirmed plans to enter patient care/clinical practice in the U.S. following completion of their training program. Starting incomes included respondents' base salaries plus their expected incentive/bonus income. Furthermore, starting incomes were adjusted for inflation to reflect 2010 dollars and are reported in \$1,000s.
- ➤ <u>Job offers</u>: 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 a 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 allopathic GME training programs in the U.S.: The American Medical Association's (AMA) data on the number of residents completing training was compiled to observe how the number of new entrants to the physician marketplace has changed over time.

#### **KEY FINDINGS**

For the second consecutive year the job market for new physicians was weaker when compared to the previous year, but overall the market continues to be good. With the exception of the last two years, analysis of trends in variables pertaining to the physician job market revealed that opportunities for physicians entering practice in most specialties have improved or remained stable over the period the Center has been conducting this survey.

In 2010, demand for primary care physicians (generalists) was stronger than the demand for non-primary care physicians (specialists).\* Historically, resident exit survey data showed that demand for generalists has been lower compared to demand for specialists. Over the past few years, however, demand for generalist has surpassed demand for specialists. In 2010, primary care physicians received more job offers than specialists and were less likely to have to change plans due to limited practice opportunities.

There are important differences in the job market experiences and assessments for different specialties. Although the overall marketplace appears relatively good for new graduates, there exist important differences in demand for individual specialties. In New York, specialties experiencing the strongest and weakest relative demand were:

- > <u>Strongest relative demand</u>: urology, otolaryngology, family medicine, gastroenterology, dermatology, general anesthesiology, and emergency medicine.
- ➤ <u>Weakest relative demand</u>: cardio-thoracic surgery, plastic surgery, nephrology, infectious disease, pathology, and ophthalmology.

#### **IMPORTANT NOTE**

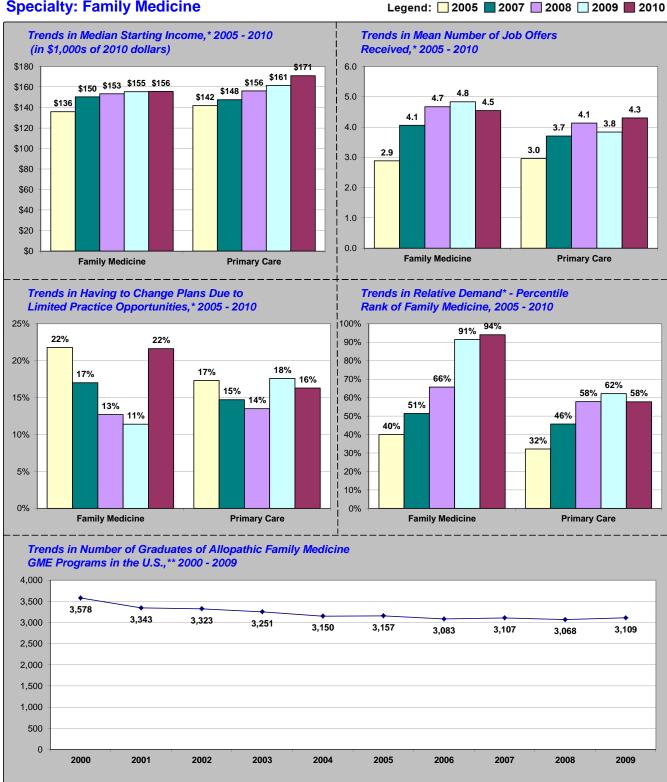
For each specialty the number of responses by year is listed at the bottom of the page in the report. Care should be taken when interpreting outcomes based on small samples because the measures may fluctuate greatly from year to year.

<sup>\*</sup> Primary care (or generalists) specialties include family medicine, general internal medicine, general pediatrics, and internal medicine and pediatrics (combined).

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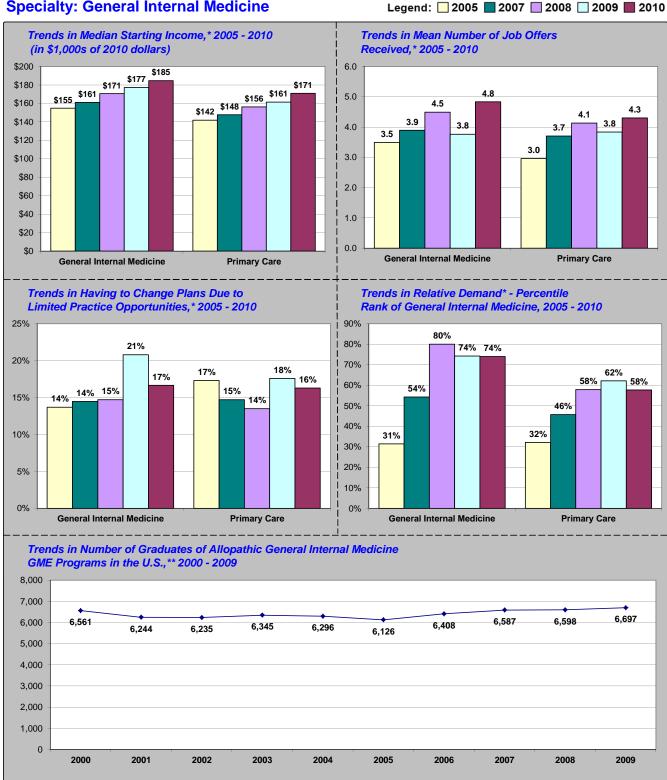
## **Specialty: Family Medicine**



Number of responses: 2005: n = 92, 2007: n = 56, 2008: n = 84, 2009: n = 80, 2010: n = 83.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

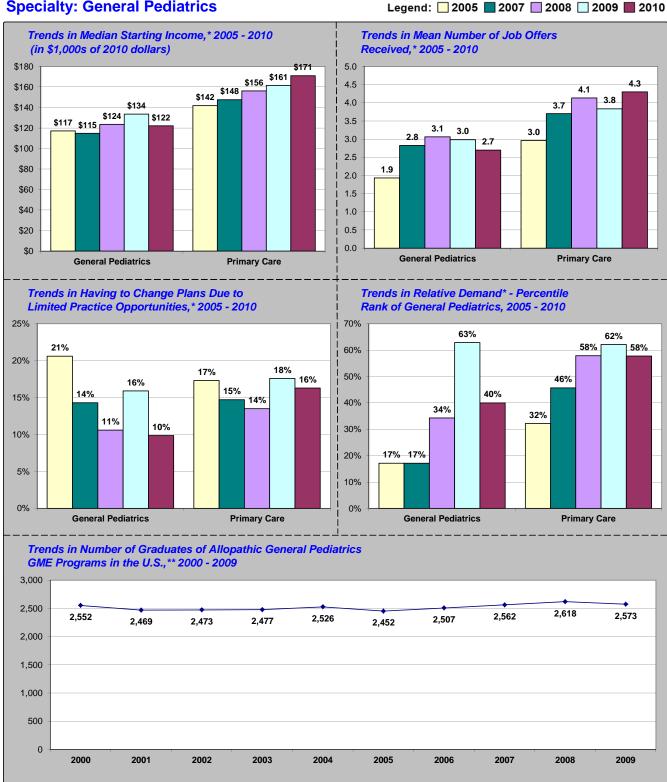
## **Specialty: General Internal Medicine**



Number of responses: 2005: n = 177, 2007: n = 180, 2008: n = 202, 2009: n = 204, 2010: n = 215.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. 
\*\*Source: JAMA Medical Education Issues, 2000 - 2009.

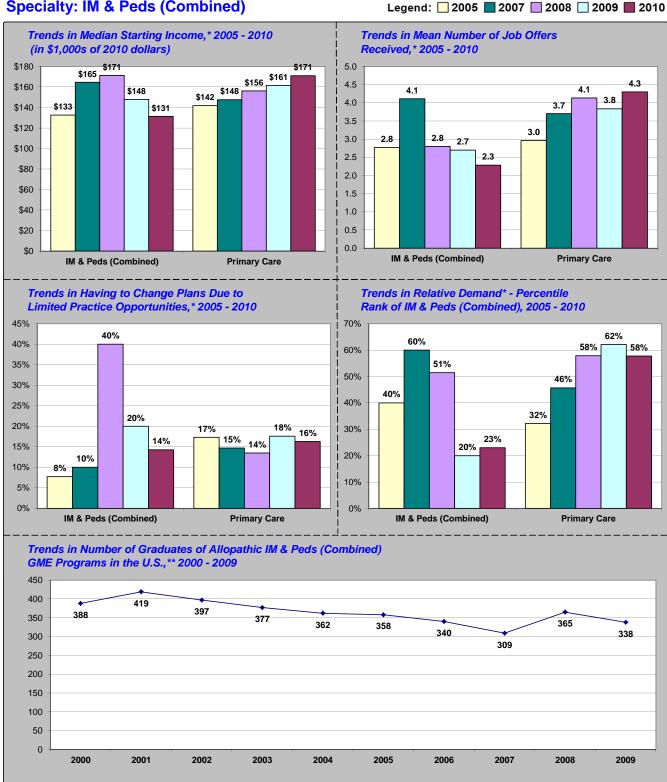
## **Specialty: General Pediatrics**



Number of responses: 2005: n = 78, 2007: n = 78, 2008: n = 114, 2009: n = 76, 2010: n = 86.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

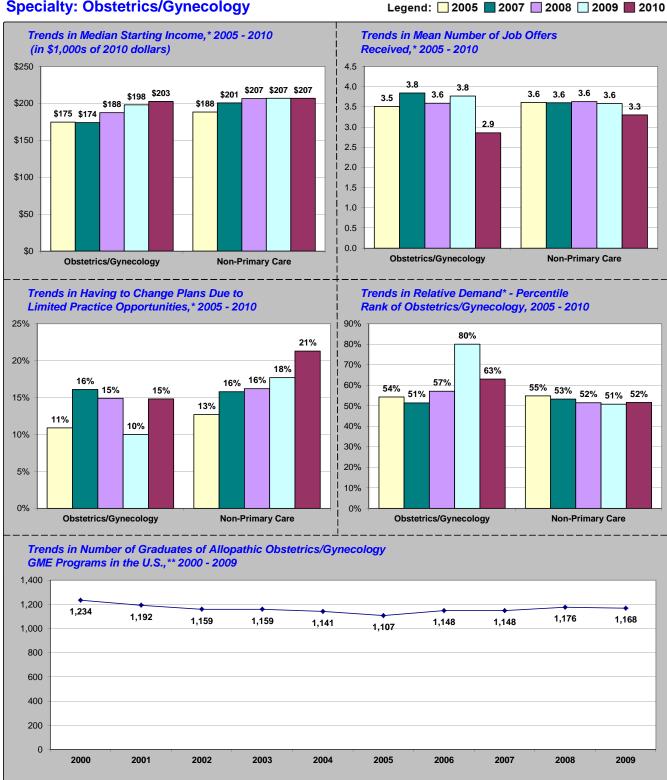
## **Specialty: IM & Peds (Combined)**



Number of responses: 2005: n = 16, 2007: n = 12, 2008: n = 7, 2009: n = 10, 2010: n = 9.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010.
\*\*Source: JAMA Medical Education Issues, 2000 - 2009.

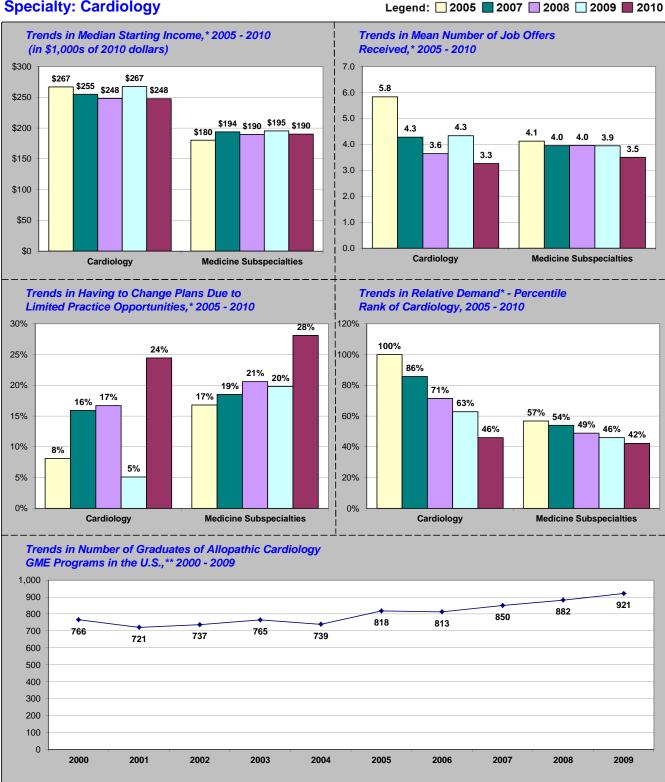
#### **Specialty: Obstetrics/Gynecology**



Number of responses: 2005: n = 63, 2007: n = 62, 2008: n = 76, 2009: n = 54, 2010: n = 94.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

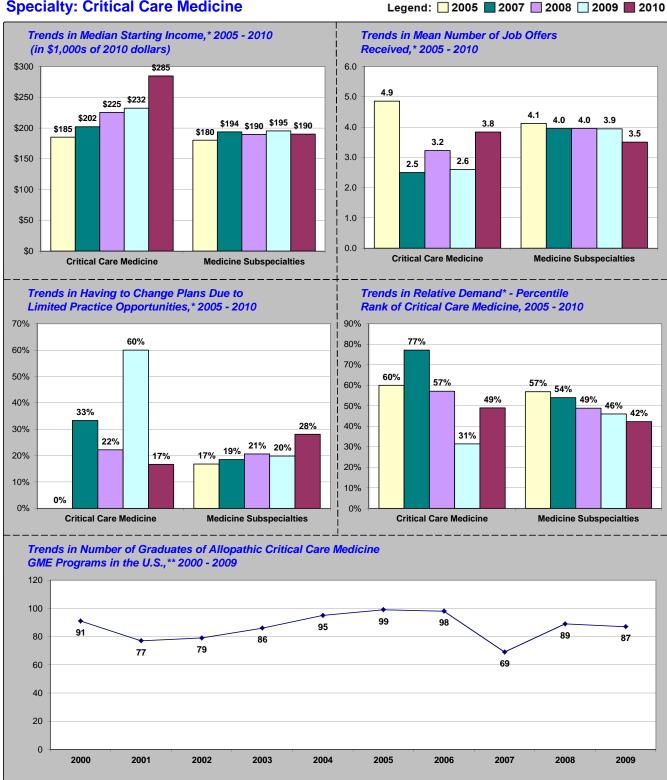
#### **Specialty: Cardiology**



Number of responses: 2005: n = 42, 2007: n = 48, 2008: n = 47, 2009: n = 63, 2010: n = 48.

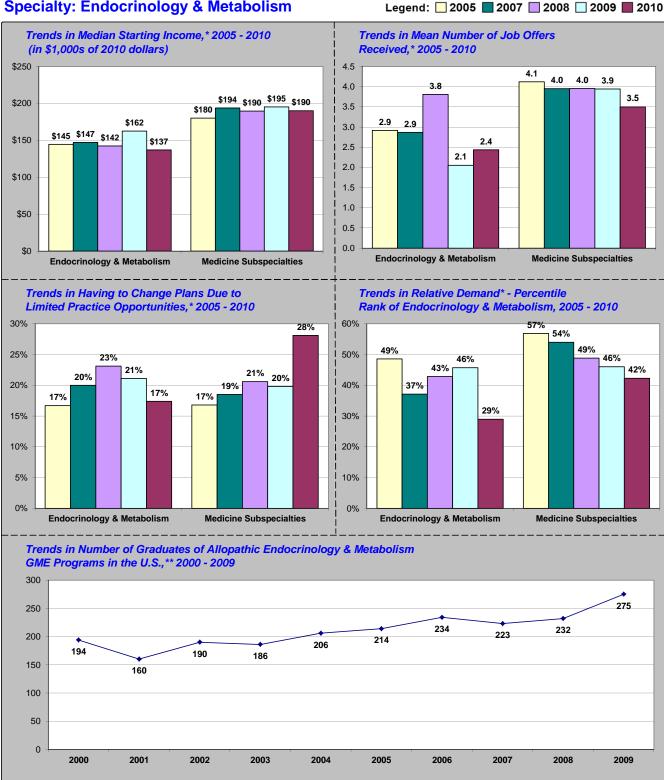
<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

## **Specialty: Critical Care Medicine**



Number of responses: 2005: n = 7, 2007: n = 7, 2008: n = 10, 2009: n = 5, 2010: n = 7. \*Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

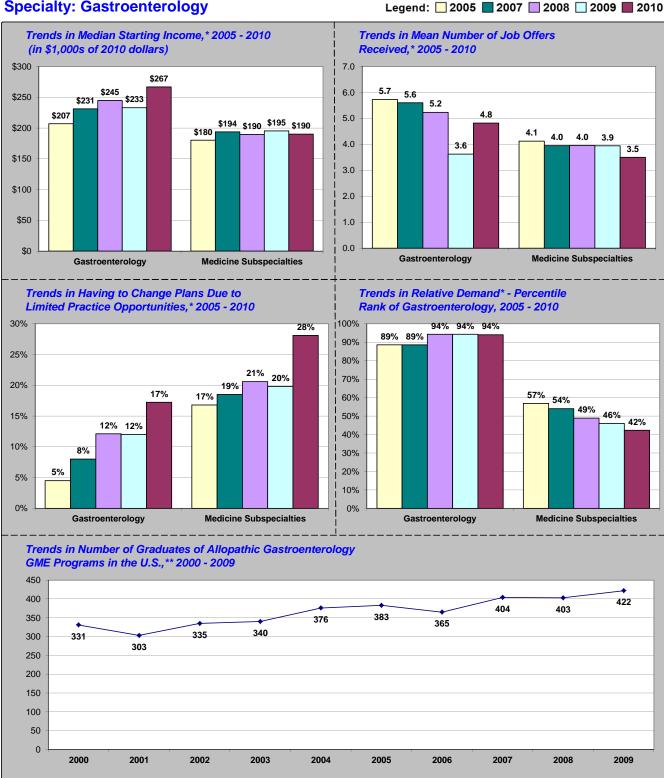
#### Specialty: Endocrinology & Metabolism



Number of responses: 2005: n = 13, 2007: n = 15, 2008: n = 27, 2009: n = 20, 2010: n = 23.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

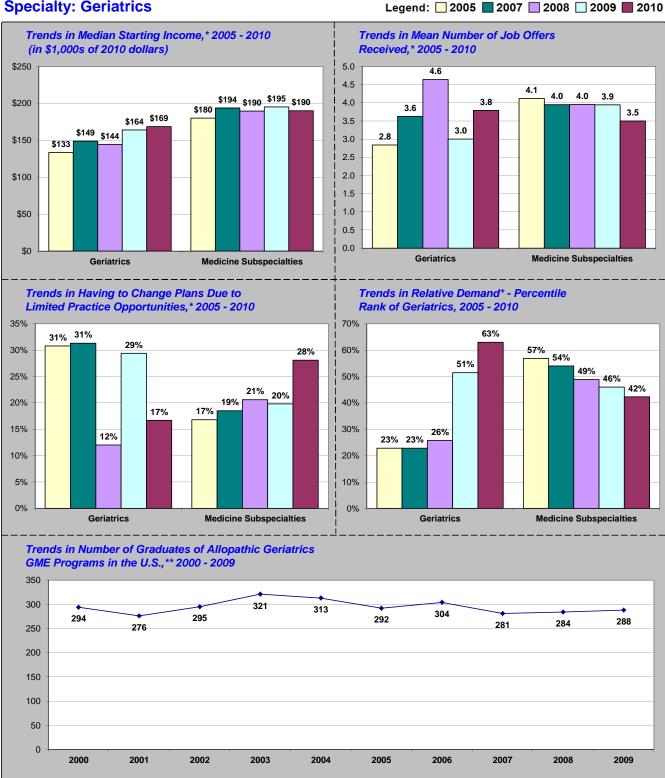
#### **Specialty: Gastroenterology**



Number of responses: 2005: n = 23, 2007: n = 25, 2008: n = 35, 2009: n = 25, 2010: n = 30.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010.
\*\*Source: JAMA Medical Education Issues, 2000 - 2009.

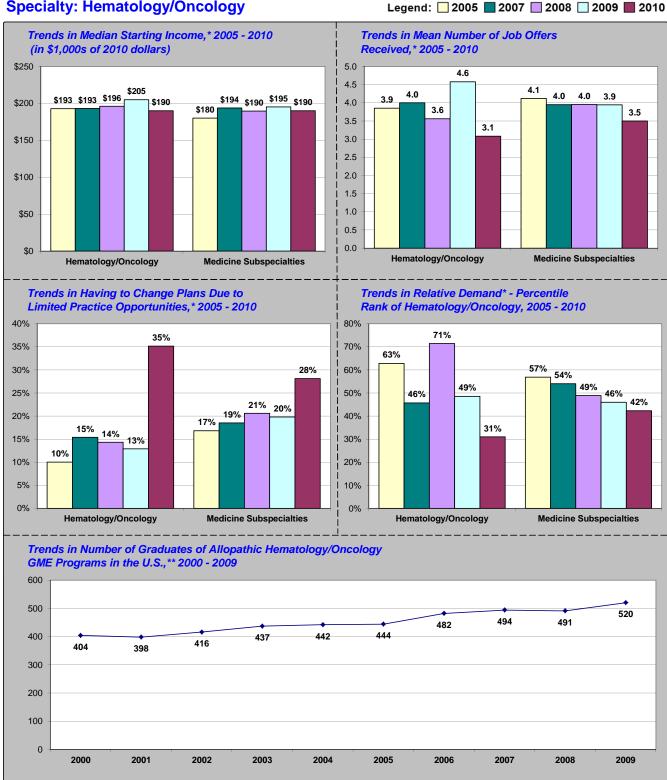




Number of responses: 2005: n = 26, 2007: n = 16, 2008: n = 27, 2009: n = 17, 2010: n = 19.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

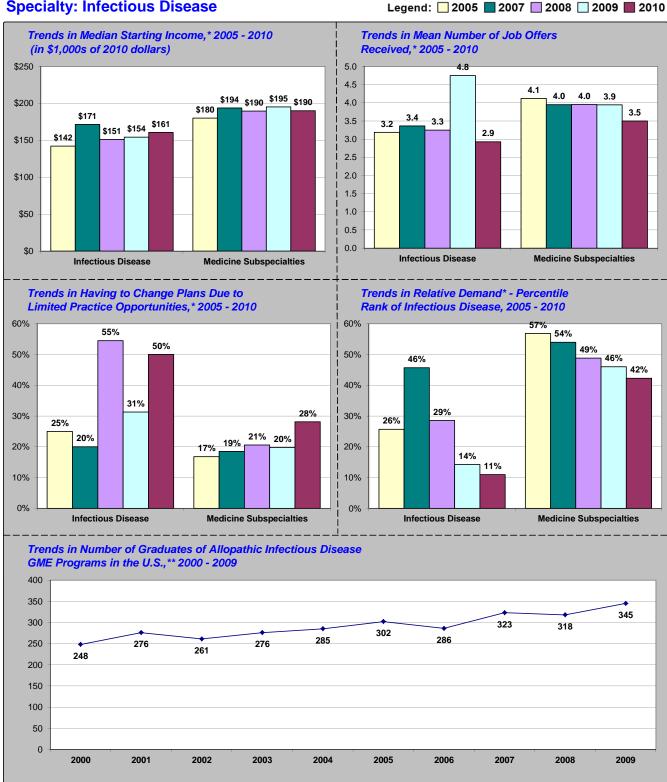
## **Specialty: Hematology/Oncology**



Number of responses: 2005: n = 20, 2007: n = 27, 2008: n = 37, 2009: n = 31, 2010: n = 38.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

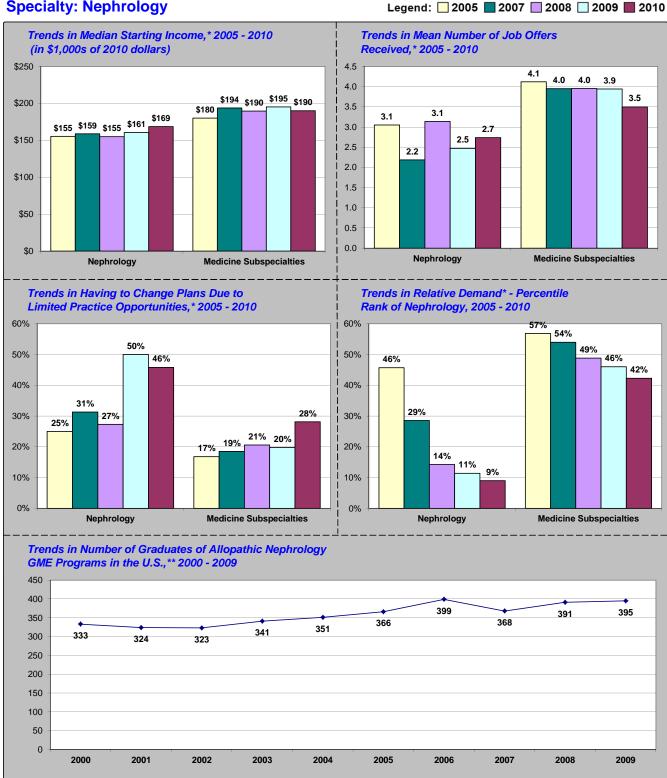
## **Specialty: Infectious Disease**



Number of responses: 2005: n = 17, 2007: n = 13, 2008: n = 14, 2009: n = 16, 2010: n = 15.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

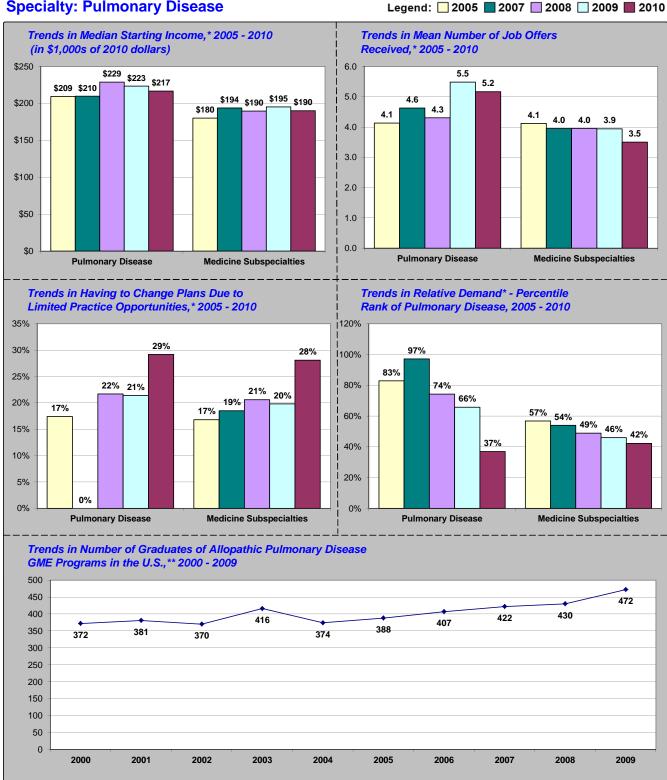
#### **Specialty: Nephrology**



Number of responses: 2005: n = 20, 2007: n = 17, 2008: n = 22, 2009: n = 21, 2010: n = 25.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

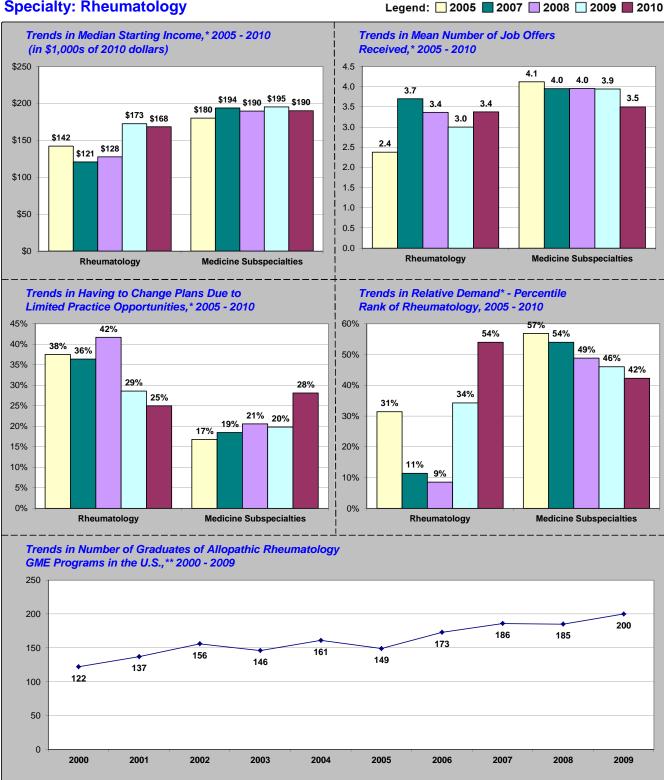
## **Specialty: Pulmonary Disease**



Number of responses: 2005: n = 23, 2007: n = 17, 2008: n = 25, 2009: n = 30, 2010: n = 25.

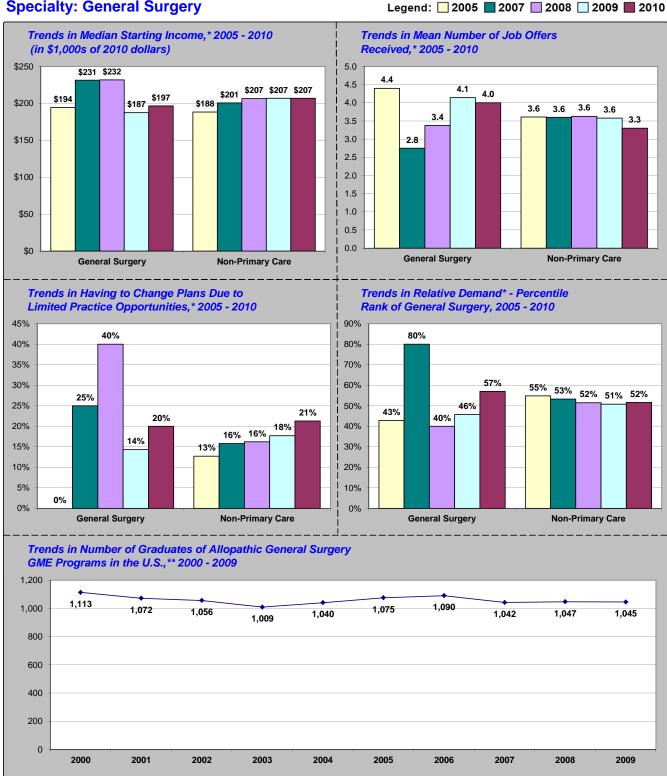
<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

#### **Specialty: Rheumatology**



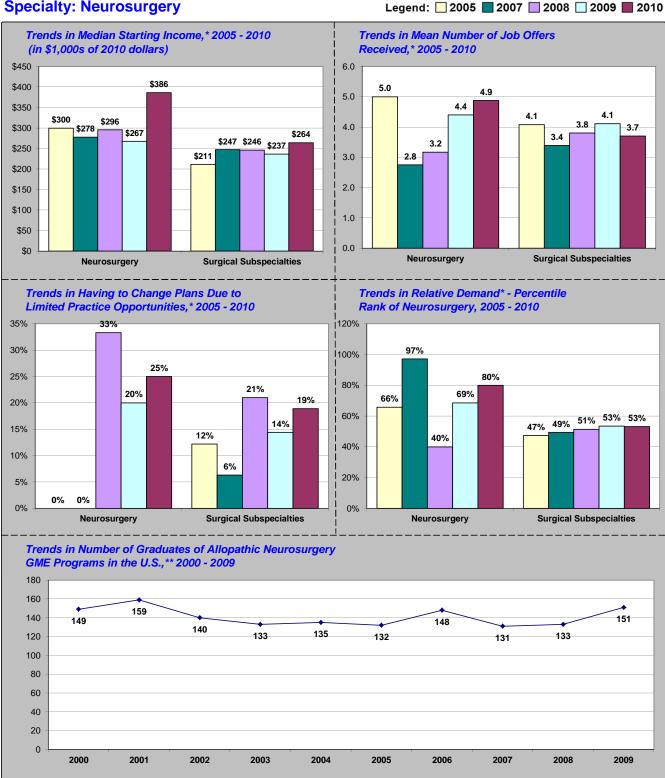
Number of responses: 2005: n = 8, 2007: n = 11, 2008: n = 13, 2009: n = 7, 2010: n = 8. \*Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010.
\*\*Source: JAMA Medical Education Issues, 2000 - 2009.

#### **Specialty: General Surgery**



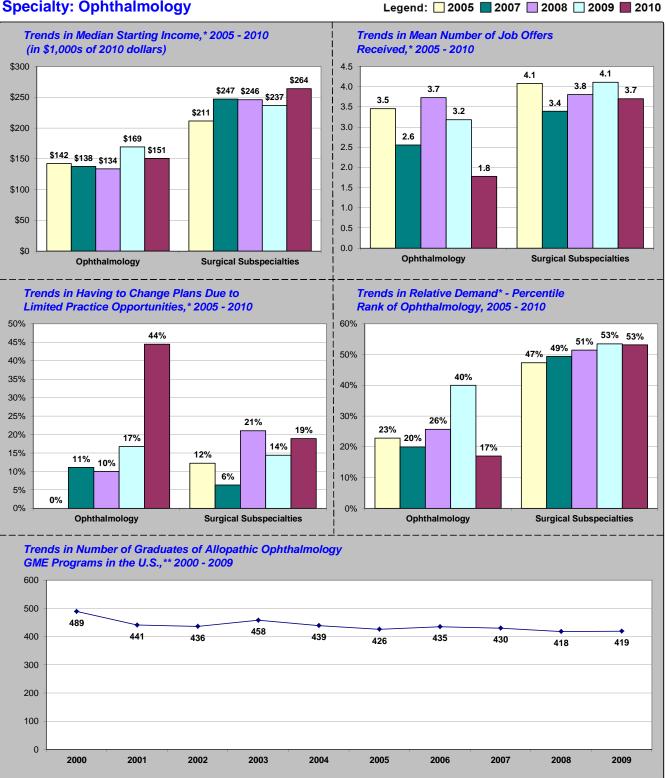
Number of responses: 2005: n = 17, 2007: n = 6, 2008: n = 11, 2009: n = 16, 2010: n = 12. \*Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010.
\*\*Source: JAMA Medical Education Issues, 2000 - 2009.

#### **Specialty: Neurosurgery**



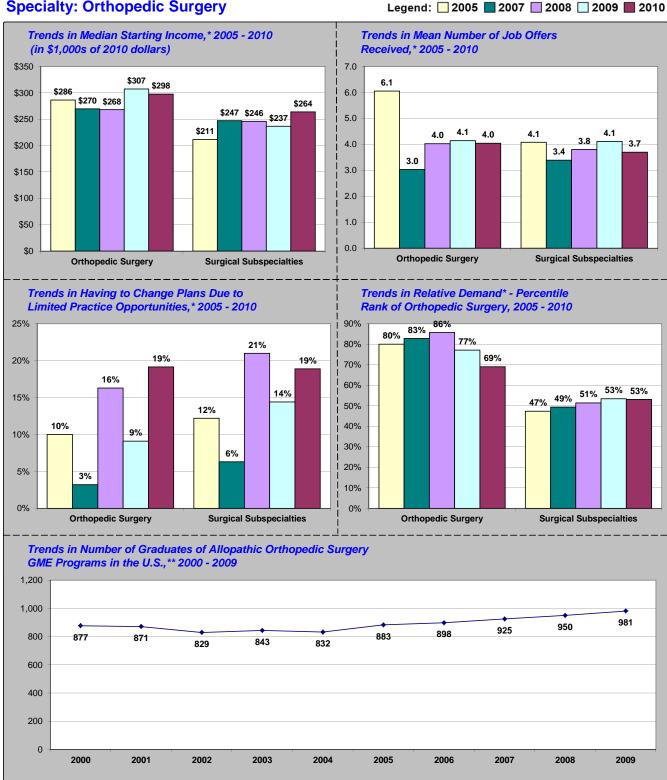
Number of responses: 2005: n = 4, 2007: n = 4, 2008: n = 6, 2009: n = 5, 2010: n = 8. \*Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

#### **Specialty: Ophthalmology**



Number of responses: 2005: n = 12, 2007: n = 10, 2008: n = 11, 2009: n = 13, 2010: n = 9. \*Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

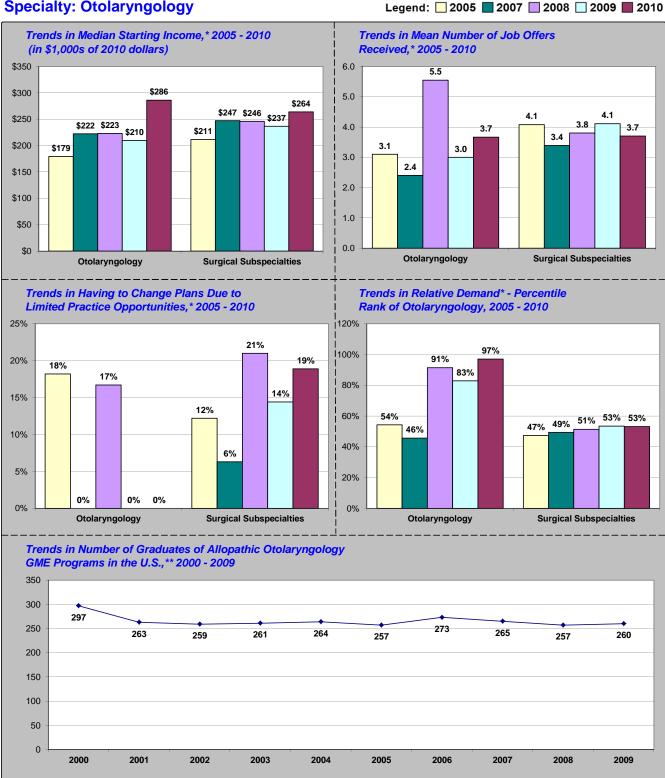
## **Specialty: Orthopedic Surgery**



Number of responses: 2005: n = 21, 2007: n = 33, 2008: n = 52, 2009: n = 47, 2010: n = 47.

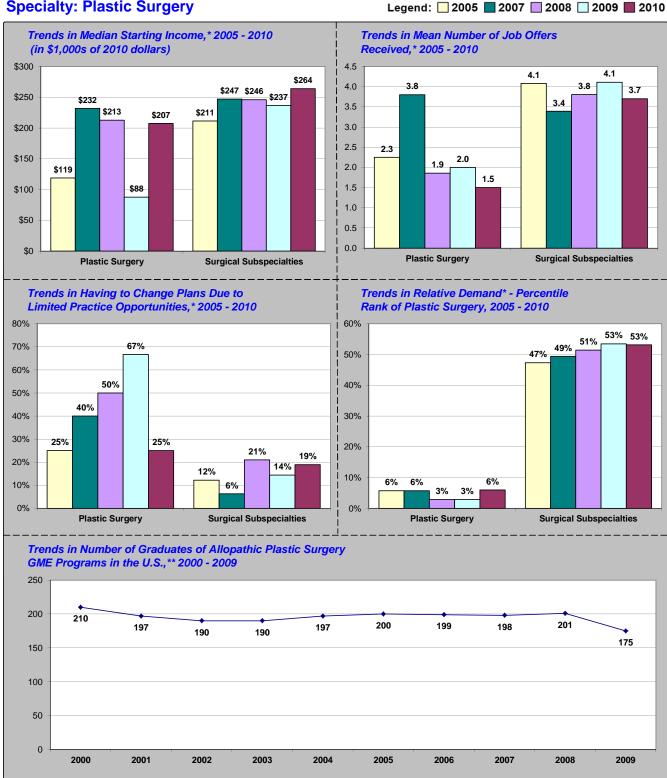
<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

#### **Specialty: Otolaryngology**



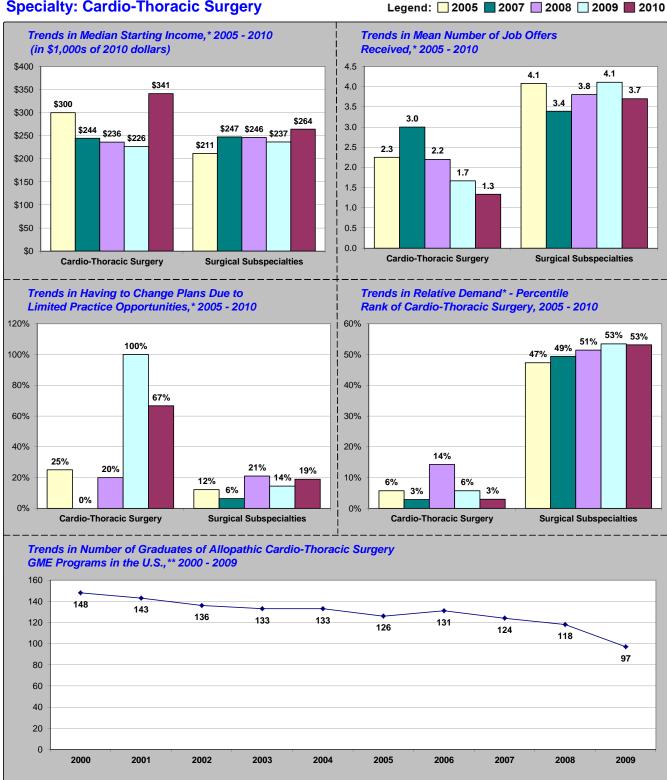
Number of responses: 2005: n = 11, 2007: n = 5, 2008: n = 12, 2009: n = 11, 2010: n = 6. \*Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010.
\*\*Source: JAMA Medical Education Issues, 2000 - 2009.

## **Specialty: Plastic Surgery**



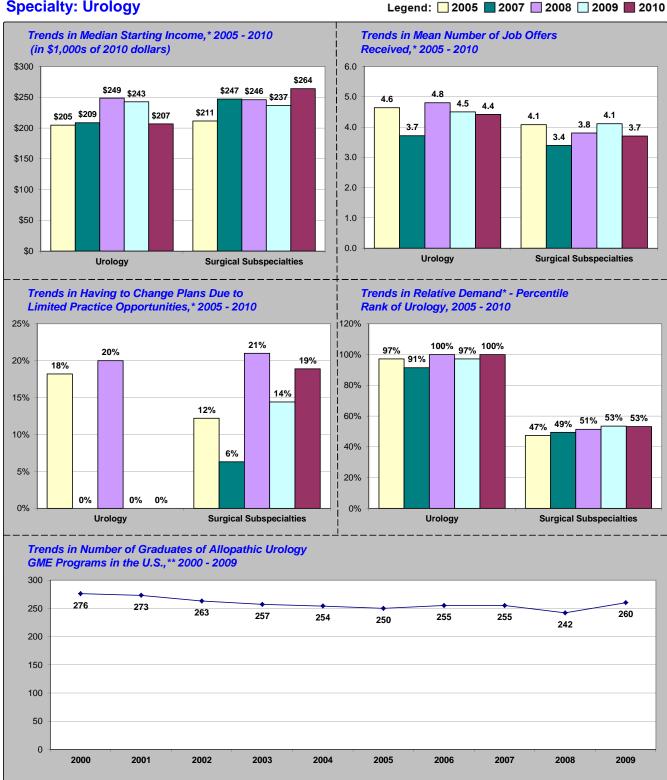
Number of responses: 2005: n = 8, 2007: n = 5, 2008: n = 8, 2009: n = 4, 2010: n = 4. \*Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

#### **Specialty: Cardio-Thoracic Surgery**



Number of responses: 2005: n = 4, 2007: n = 3, 2008: n = 5, 2009: n = 3, 2010: n = 3. \*Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

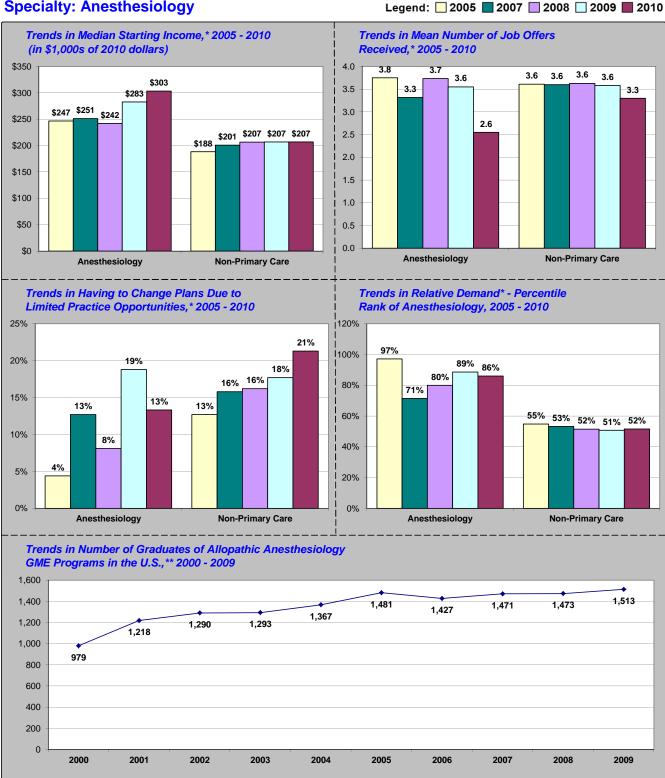




Number of responses: 2005: n = 11, 2007: n = 9, 2008: n = 15, 2009: n = 7, 2010: n = 12.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010.
\*\*Source: JAMA Medical Education Issues, 2000 - 2009.

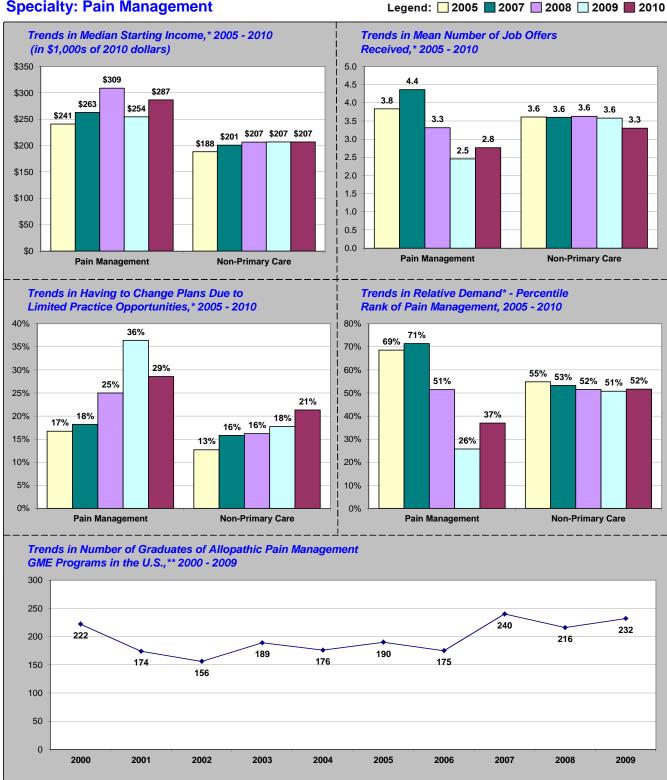
## **Specialty: Anesthesiology**



Number of responses: 2005: n = 49, 2007: n = 59, 2008: n = 67, 2009: n = 52, 2010: n = 67.

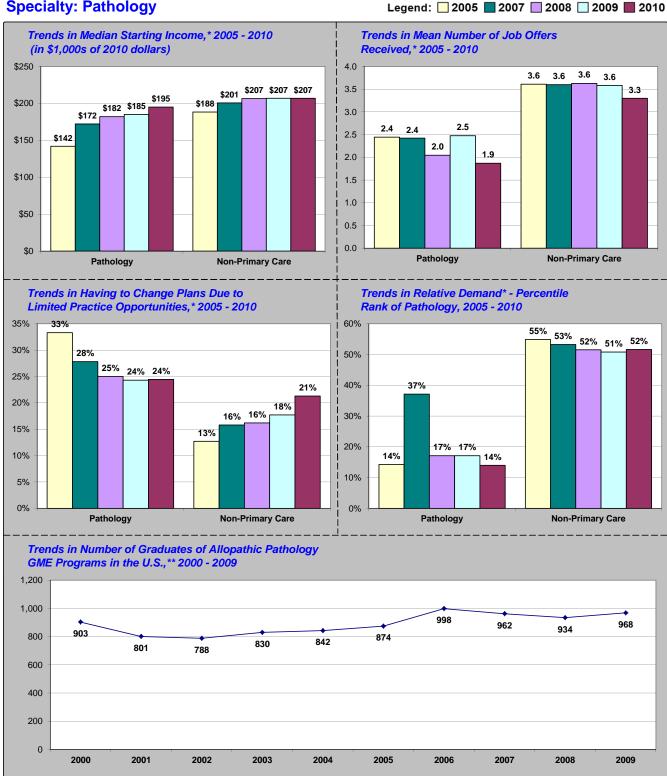
<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

#### **Specialty: Pain Management**



Number of responses: 2005: n = 7, 2007: n = 12, 2008: n = 17, 2009: n = 12, 2010: n = 21. \*Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

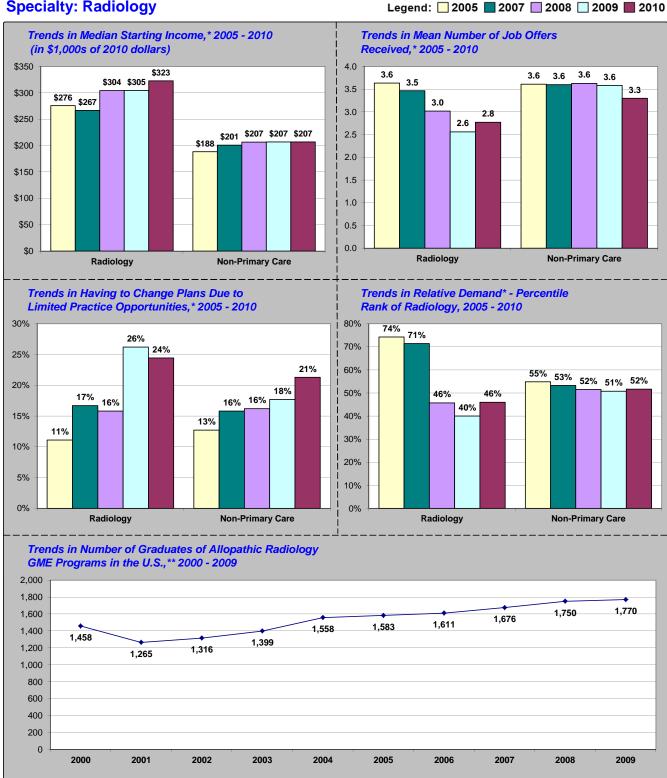
#### **Specialty: Pathology**



Number of responses: 2005: n = 12, 2007: n = 21, 2008: n = 23, 2009: n = 39, 2010: n = 47.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

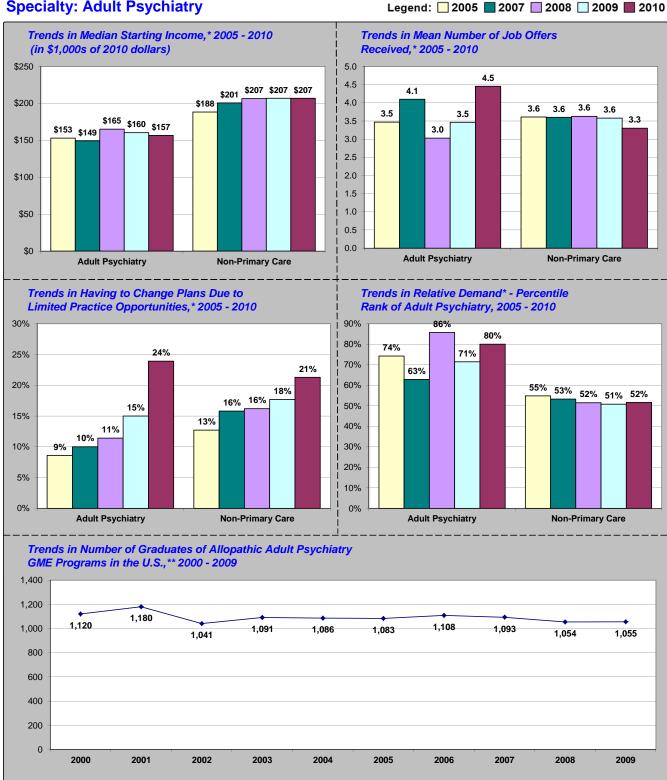




Number of responses: 2005: n = 44, 2007: n = 47, 2008: n = 62, 2009: n = 46, 2010: n = 49.

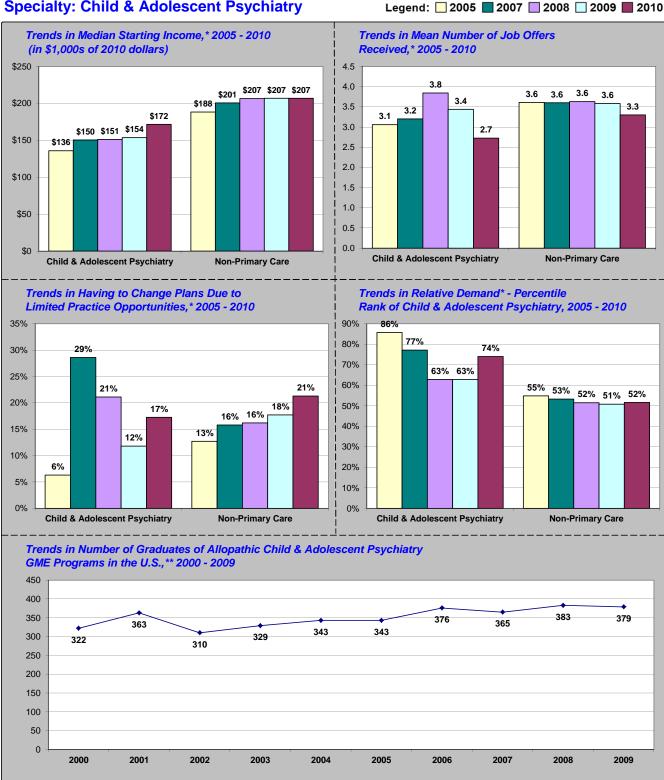
<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

#### **Specialty: Adult Psychiatry**



Number of responses: 2005: n = 39, 2007: n = 46, 2008: n = 38, 2009: n = 50, 2010: n = 48. \*Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010.
\*\*Source: JAMA Medical Education Issues, 2000 - 2009.

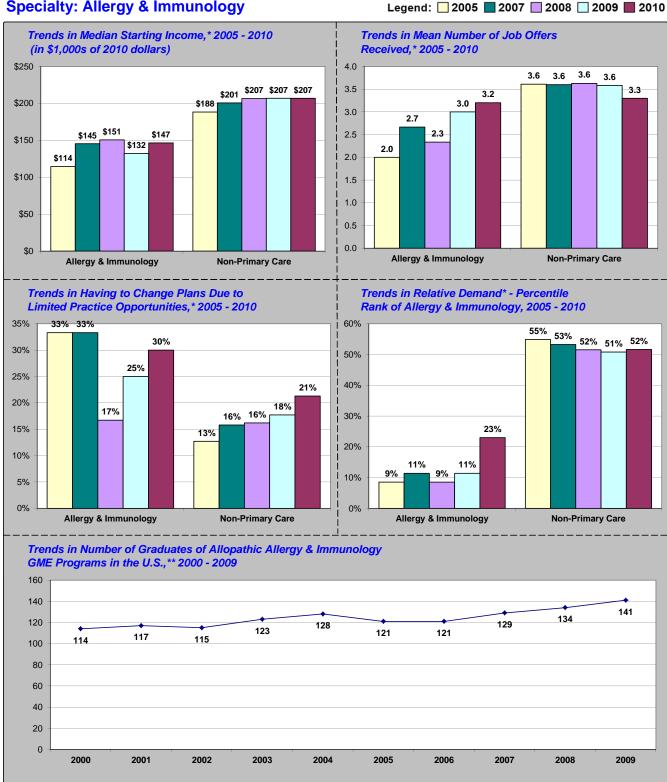




Number of responses: 2005: n = 17, 2007: n = 15, 2008: n = 22, 2009: n = 17, 2010: n = 31.

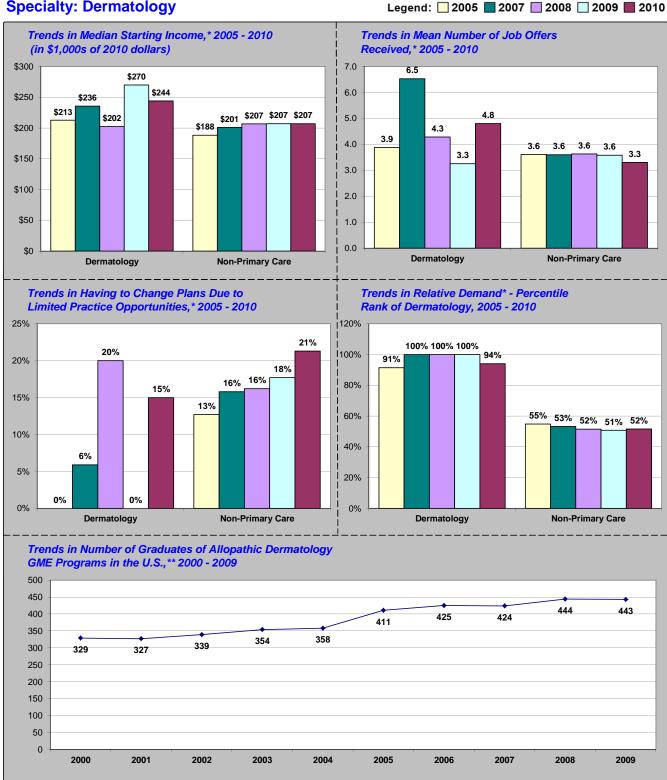
<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

## **Specialty: Allergy & Immunology**



Number of responses: 2005: n = 6, 2007: n = 6, 2008: n = 6, 2009: n = 9, 2010: n = 10. \*Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

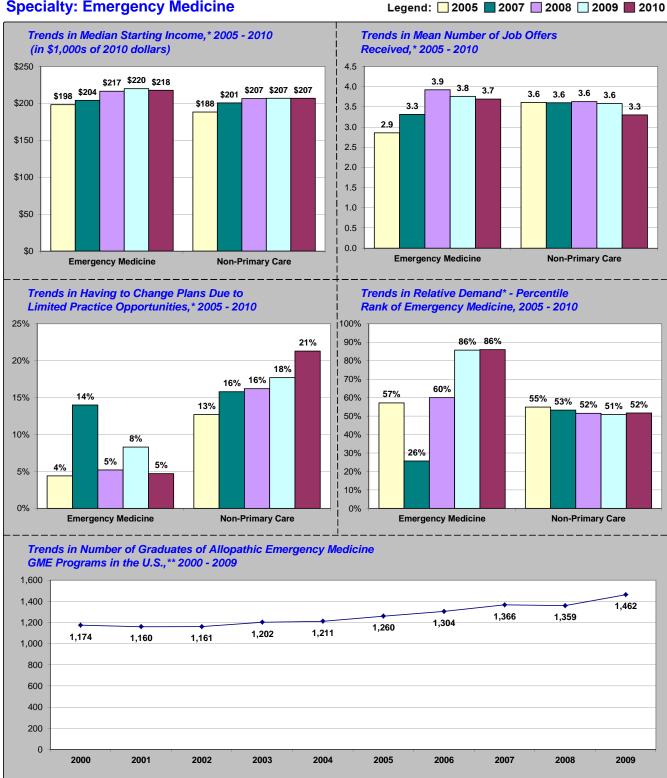
## **Specialty: Dermatology**



Number of responses: 2005: n = 17, 2007: n = 18, 2008: n = 21, 2009: n = 12, 2010: n = 22.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

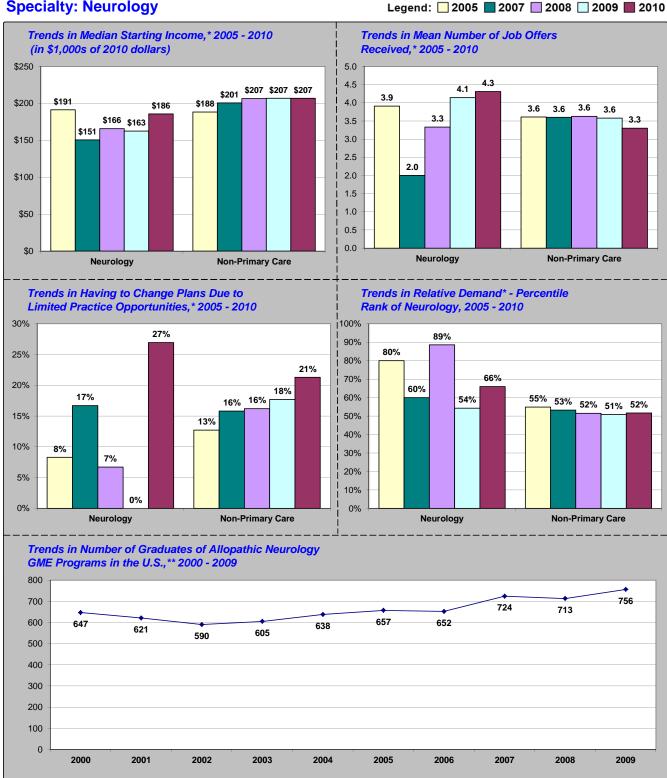
# **Specialty: Emergency Medicine**



Number of responses: 2005: n = 72, 2007: n = 88, 2008: n = 78, 2009: n = 115, 2010: n = 90.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

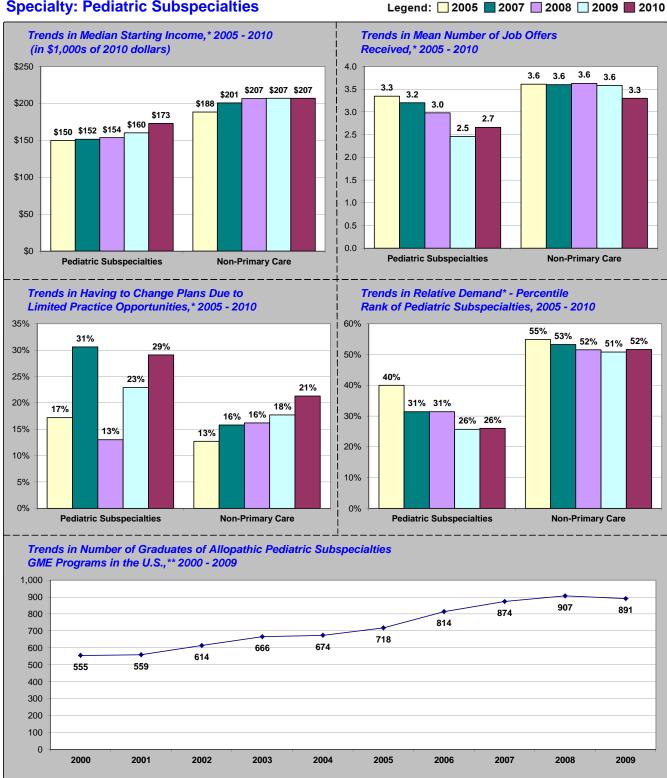




Number of responses: 2005: n = 13, 2007: n = 15, 2008: n = 18, 2009: n = 16, 2010: n = 27.

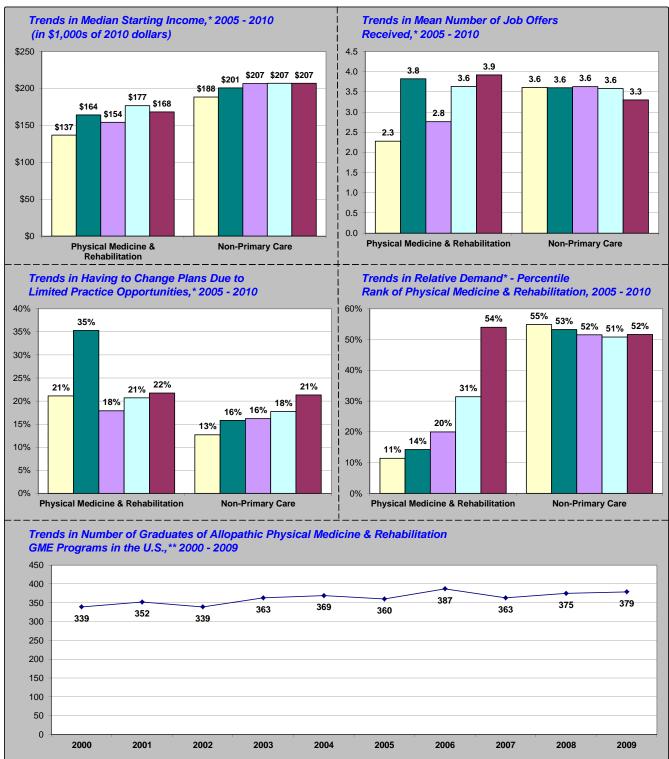
<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.

## **Specialty: Pediatric Subspecialties**



Number of responses: 2005: n = 30, 2007: n = 39, 2008: n = 49, 2009: n = 48, 2010: n = 58. \*Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010. \*\*Source: JAMA Medical Education Issues, 2000 - 2009.





Number of responses: 2005: n = 22, 2007: n = 17, 2008: n = 29, 2009: n = 30, 2010: n = 26.

<sup>\*</sup>Source: CHWS, Survey of Residents Completing Training in New York, 2005 - 2010.
\*\*Source: JAMA Medical Education Issues, 2000 - 2009.

APPENDIX A.	Methodology U	sed to Measure	e Relative Demand

A-1

The Resident Exit Survey cannot be used to determine *absolute* demand for new physicians in different specialties (i.e., 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 (i.e., 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 specialty 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 family medicine in New York in 2010 was 94% (i.e., family medicine had a relative rank equal to or better than 94% of the 35 specialties that were ranked), and the percentile rank of radiology was 46%, this *does not* imply that demand for family medicine was more than twice as strong as for radiology. The scale is only ordinal.

To measure demand for a given year, a composite score was computed by taking the median of the ranks (i.e., where each specialty stood relative to all 35 specialties) scored by each specialty on each of the demand indicators for data from the previous four 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 2010, data from 2010 were weighted .40, data from 2009 were weighted .30, data from 2008 were weighted .20, and data from 2009 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;
  and
- ✓ trend (i.e., 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 (i.e., 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." For this reason, the "job offers" variable and the "trends in starting income" variable were each double weighted in computing a composite demand score.

The table on the next page summarizes the rank of each specialty (ranked among 35 specialties) on each demand indicator. The variables are:

- ✓ <u>diff</u>: rank of each specialty based on the percentage of respondents reporting difficulty finding a satisfactory practice position→e.g., the specialty with the lowest percentage of respondents reporting difficulty (otolaryngology) ranked #1 and the specialty with the highest percentage of respondents reporting difficulty (cardio-thoracic surgery) ranked #35.
- ✓ <u>chpln</u>: rank of each specialty based on the percentage of respondents that had to change plans due to practice opportunities →e.g., the specialty with the lowest percentage of respondents having to change plans (otolaryngology) ranked #1 and the specialty with the highest percentage of respondents reporting difficulty (cardio-thoracic surgery) ranked #35.
- ✓ offrs: 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) →e.g., the specialty with the most job offers (pulmonary disease) ranked #1 and the specialty with the fewest job offers (cardio-thoracic surgery) ranked #35.
- ✓ reg mrkt: rank of each specialty in terms of the mean Likert score summarizing respondents' assessments of the regional job market for their specialty →e.g., 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 (cardiothoracic surgery) ranked #35.
- ✓ nat mrkt: rank of each specialty in terms of the mean Likert score summarizing respondents' assessments of the national job market for their specialty →e.g., the specialty with the most positive assessment of the national job market (urology) ranked #1 and the specialty with the least positive assessment of the national job market (cardio-thoracic surgery) ranked #35.
- ✓ <u>inc\_trnd</u>: rank of each specialty in terms the average annual change (or trend) in median starting income levels of respondents from each specialty →e.g., the specialty with the strongest trend in median starting income (plastic surgery) ranked #1 and the specialty with the weakest trend in median starting income (IM & Peds (combined)) ranked #35.

### SUMMARY OF RANKS ON DEMAND INDICATORS

OMMANT OF NAMES							Median	Overall	Percentile
Specialty	<u>diff</u>	ch_pln	offers*		nat_mrkt		<u>Rank</u>	Rank	Rank**
Family Medicine	8	11	3	7	8	27	8.0	3.0	94%
General Internal Med	17	13	6	13	7	12	12.0	10.0	74%
General Pediatrics	13	7	27	14	20	21	20.5	22.0	40%
IM & Peds (Comb)	11	4	29	5	23	35	26.0	28.0	23%
Ob/Gyn	14	8	20	11	21	10	12.5	14.0	63%
Cardiology	21	9	14	23	24	31	22.0	20.0	46%
Critical Care Med	25	30	21	21	9	5	21.0	19.0	49%
Endocrinology & Met	22	19	28	16	11	32	25.0	26.0	29%
Gastroenterology	9	10	2	10	6	11	9.5	3.0	94%
Geriatrics	24	17	13	24	25	16	16.5	14.0	63%
Hematology/Onc	28	23	17	26	14	30	24.5	25.0	31%
Infectious Disease	31	32	16	33	30	33	31.5	32.0	11%
Nephrology	32	33	32	34	28	23	32.0	33.0	9%
Pulmonary Disease	26	27	1	22	4	25	23.5	23.0	37%
Rheumatology	30	31	19	29	19	4	19.0	17.0	54%
General Surgery	6	21	10	17	16	34	16.5	16.0	57%
Neurosurgery	18	26	7	15	18	2	11.0	8.0	80%
Ophthalmology	29	20	30	25	31	18	27.0	30.0	17%
Orthopedic	5	12	8	18	15	19	13.5	12.0	69%
Otolaryngology	1	1	12	8	5	6	6.0	2.0	97%
Plastic Surgery	33	34	34	32	34	1	33.5	34.0	6%
Cardio-Thoracic Surg	35	35	35	35	35	3	35.0	35.0	3%
Urology	3	2	4	9	1	28	4.0	1.0	100%
Anesthesiology	7	5	23	3	13	9	9.0	6.0	86%
Pain Management	23	29	25	20	29	15	24.0	23.0	37%
Pathology	27	24	33	30	33	17	28.5	31.0	14%
Radiology	16	18	26	28	27	8	22.0	20.0	46%
Adult Psychiatry	4	15	11	1	2	24	11.0	8.0	80%
Child & Adol Psych	15	14	22	6	12	13	13.5	10.0	74%
Allergy & Immun	34	28	24	31	32	29	29.0	28.0	23%
Dermatology	12	6	5	4	10	20	8.0	3.0	94%
Emergency Medicine	2	3	15	2	3	22	9.0	6.0	86%
Neurology	10	16	9	12	17	7	9.5	13.0	66%
Pediatric Subspecs	20	25	31	27	26	14	25.5	27.0	26%
Phys Med & Rehab	19	22	18	19	22	26	20.5	17.0	54%

<sup>\*</sup>The job offers variable and the income trend variable were each double weighted in computing the median rank.

The following example illustrates how the demand score was calculated for family medicine in New York in 2010:

Median Rank<sub>FM</sub> = median (diff, chpln, offers, offers, reg\_mrkt, nat\_mrkt, inc\_trnd, inc\_trnd)

Median Rank<sub>FM</sub> = median (8, 11, 3, 3, 7, 8, 22, 22)

Median Rank<sub>FM</sub> = 8.0\*\*\*

\*\*\*With a median rank of 8.0, family medicine ranked 3 out of 35 specialties. The percentile rank is computed as:

%rank<sub>FM</sub> = { 1 - (Rank<sub>FM</sub> / #specs) + (1 / #specs) } where "#specs" is the

number of specialties being ranked. In New York in 2010, there were 35 specialties being ranked, so the percentile rank of family medicine is:

$$%$$
rank<sub>FM</sub> = { 1 - (3 / 35) + (1 / 35) }  $\sim$  94%.

<sup>\*\*</sup>The percentile rank is the percentage of all 35 specialties with a median demand rank equal to or lower than each specialty.

**APPENDIX B. Specialty Comparison Groups** 

### **SPECIALTY COMPARISON GROUPS**

Specialty	Comparison Group*		
Family Medicine	Primary Care		
General Internal Medicine	Primary Care		
General Pediatrics	Primary Care		
IM & Peds (Combined)	Primary Care		
Obstetrics/Gynecology	Non-Primary Care		
Cardiology	Medicine Subspecialties		
Critical Care Medicine	Medicine Subspecialties		
Endocrinology & 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		
Otolaryngology	Surgical Subspecialties		
Plastic Surgery	Surgical Subspecialties		
Cardio-Thoracic 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 & Adolescent Psychiatry	Non-Primary Care		
Allergy & Immunology	Non-Primary Care		
Dermatology	Non-Primary Care		
Emergency Medicine	Non-Primary Care		
Neurology	Non-Primary Care		
Pediatric Subspecialties	Non-Primary Care		
Physical Medicine & Rehabilitation	Non-Primary Care		

<sup>\*</sup>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 (i.e., 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.

<b>APPENDIX</b>	C. 2010	NY	<b>Resident Exit</b>	Survey	<sup>7</sup> Instrument
-----------------	---------	----	----------------------	--------	-------------------------

S	Use a No. 2	Survey of Residents	Completing Training in NY in 2010				
	pencil or blue or black ink	Center for Health Workforce Studies					
	pen only.		at Albany, School of Public Health				
	Do not use	1 ัน	Iniversity Place / Suite 220				
	pens with ink	Re	nsselaer, NY 12144-3445				
	that soaks	ACGME	For Office				
	through the	Residency	Use				
$\simeq$	paper. Make solid	Program #					
	marks that fill	This questionnaire s	hould be completed by all physicians completing a				
	the oval		ing program in New York in 2010 (excluding preliminary				
Z	completely.	training positions).	and brodenic in their interest of their control of their				
	Make no stray						
	marks on this	LAST NAME					
	form.  Do not fold,						
	tear, or	FIRST NAME					
	mutilate this						
	form.	Main Hospital at					
$ \alpha $	CORRECT	Which You Did ——					
	Ø Ø 🕳 💿	Your Training:					
	INCORRECT	For each question mark on	aly one answer unless otherwise directed.				
	INCORRECT	i or each question mark on	tig one answer diffess officially se diffected.				
	A. BAC	CKGROUND	B. MEDICAL EDUCATION AND TRAINING				
	1. Ge	ender: OMale OFemale	6. At the end of your current year of training, how				
	1. 00	erider. O Male O reilidie	many total years of post-graduate training will				
			you have completed in the U.S.?				
	2. Ag	ge: 3. Citizenship Status:	01 02 03 04 05 06 or more				
		O Native born U.S.					
			7. Type of Medical Education:				
		O Naturalized U.S.					
		© Permanent resident	O Allopathic (M.D.) Osteopathic (D.O.)				
		① O H-1, H-2, H-3	8. Medical School Attended:				
		Temporary worker					
		O J-1, J-2 Exchange visitor	O New York (if yes, complete below) O Canada				
		Other	Other state in the U.S. Other				
	-		Specify if in NY: country				
			Albany Medical College  Albany Finisher College  Albany Finisher College  Albany Finisher College  Albany Medical College				
			Albert Einstein Col of Med of Yeshiva Univ				
		8	Columbia University Col of Phys and Surg				
		9	O Mt. Sinai School of Medicine				
			New York College of Osteo Med of NYIT				
		Are you of Hispanic/Latino origin?	New York University School Med				
	4. A.		New York University Sch of Med				
		○ Yes ○ No	Stony Brook Univ Med Ctr Sch of Med				
	D	What is your room (mark all that apply)	O SUNY Buffalo Sch of Med & Biomed Sci				
		What is your race? (mark all that apply)  American Indian/Alaska Native	SUNY Downstate Med Ctr Col of Med     Tours College of Octoopathic Med				
			O Touro College of Osteopathic Med				
		Asian or Pacific Islander	O University of Rochester				
		Black/African American	O Upstate Medical University, SUNY				
		White	○ Weill Cornell Medical College				
		Other	9 What is your current level of advectional debt				
			9. What is your current level of educational debt?  None \$150,000-\$174,999				
		here did you live when you					
	gr	aduated from high school?					
		New York					
		Other U.S.	\$50,000-\$74,999 \$225,000-\$249,999 \$75,000-\$99,999 \$250,000-\$274,999				
		o Canada	\$100,000-\$124,999 \$275,000-\$299,999				
			\$100,000=\$124,999  \$275,000=\$299,999  \$125,000=\$149,999  \$300,000 and over				
		Other country					
			continue Page 1				
			SERIAL #				

PLEASE DO NOT WRITE IN THIS AREA

Survey of Residents Completing Training in NY in 2010

(select only one)  Allergy and Immunology  Anesthesiology (General)  Anesthesiology-Pain Management  Other Anesthesiology Subspecialty-specify:  Dermatology  Emergency Medicine	12. If you are going on for additional training/fellowship, please answer the following:  A. Why are you subspecializing/continuing training? (mark all that apply)
Anesthesiology (General)     Anesthesiology–Pain Management     Other Anesthesiology Subspecialty–specify:     Dermatology     Emergency Medicine	training/fellowship, please answer the following: A. Why are you subspecializing/continuing
<ul> <li>Anesthesiology–Pain Management</li> <li>Other Anesthesiology Subspecialty–specify:</li> <li>Dermatology</li> <li>Emergency Medicine</li> </ul>	A. Why are you subspecializing/continuing
O Other Anesthesiology Subspecialty–specify: D Dermatology D Emergency Medicine	
D Dermatology D Emergency Medicine	
imergency Medicine	
	○ To further your medical education
	O Unable to find a job you are happy with
amily Medicine	O Unable to find any job
nternal Medicine (General)	To stay in the U.S. (i.e., due to visa status)
Cardiology	Other (specify):
Critical Care Medicine	<ul> <li>Question does not apply</li> </ul>
Endocrinology and Metabolism	
Gastroenterology	B. If you are leaving NY to continue your
Geriatrics	training, do you plan to return to NY to
Hematology/Oncology	practice when your training is complete?
Infectious Disease	○ Yes ○ Don't know yet
Nephrology	○ No ○ Question does not apply
Pulmonary Disease/CCM	
Rheumatology	13. In your upcoming position, how many hours
Other Internal Medicine Subspecialty–specify:	per week do you expect to spend in each of
iternal Medicine and Pediatrics (Combined)	the following activities?
leurology	None 1–9 10–19 20–29 30–39 40–49 50–59 60+
luclear Medicine	<b>* * * * * * * * * *</b>
bstetrics and Gynecology (General)	Direct patient care O O O O O O
Obstetrics and Gynecology (Subspecialty)—specify:	Research O O O O O O
ithology (General)	Teaching O O O O O
Pathology (Subspecialty)—specify:	Administration O O O O O
ediatrics (General)	Volunteering/Community
Pediatrics (Subspecialty)–specify:	service O O O O O
hysical Medicine and Rehabilitation	
Preventive Medicine/Public Health/Occupational Medicine	14. Where is the location of your primary activity
Psychiatry	after completing your current training position?
Child and Adolescent Psychiatry	○ Same city/county as current training
Other Psychiatry Subspecialty—specify:	Same region within NY, but different
Radiology (Diagnostic)	city/county
Radiology (Therapeutic)	Other area within NY
Surgery (General)	O Other state
Cardio-Thoracic Surgery	Outside the U.S.
Neurological Surgery	O Don't know yet
	DOIT KNOW YEL
Ophthalmology Othonodic Surgery	15. Do you have an obligation or visa requirement
Orthopedic Surgery	to work in a federally designated Health
Otolaryngology	to work in a federally designated Health
Plastic Surgery	Professional Shortage Area?
Urology	○ Yes ○ No
Other Surgical Subspecialty–specify:	
Other-specify:	1/ 1/
What I are the first terms of th	16. If you are planning to enter or have considered
What do you expect to be doing after completion	entering patient care/clinical practice:
of your current training program?	A. Have you actively searched for a job?
mary Activity (mark only one)	○ Yes
Patient care/clinical practice (in non-training position)	○ No, not yet (Skip to 16C)
Additional subspecialty training or fellowship	○ No, I will be self-employed (Skip to 16C)
(specify specialty):	
Chief resident	-
Teaching/research (in non-training position)	
Temporarily out of medicine	
Other (specity).	_
Other (specify):  Undecided/don't know yet	

B. Which of the following approaches have you used in your job search? Which one did you find most effective?	<u>Used</u> (mark all that apply) ▼	Most <u>Effective</u> (mark only one)	19. A. What is the zip code of the principal practice address where you will be working? If zip code is unknown, please	00000 11111 2222 33333 44444	Principal Practice Zip Code
Third party representation (recruitment agencies/headhunters, online or otherw Independent search activity on the Internal (direct to employers)  Print/traditional want ad responses (journal newspapers, trade publications)	et O	0	give city or town and state.	5555 66666 77777 88888 99999	
Residency program announcements/career Social networking/word of mouth		0	City/Town		State
Other (specify):	O	0			_
C. Have you been offered a jo  Yes, and I have accepted a  Yes, but I declined the offe (Skip to Question 25)  No, but I have not actively s (Skip to Question 25)  No, I have not yet been offe (Skip to Question 25)	n offer r(s) and am sti searched yet		B. Is this principal praction a federally designed Professional Shortage Yes No Old  C. If you are not going to please indicate the recolumn, indicate all contains all that apply). In the the main reason why	ed Health e Area? don't know to practice in lasons why. In of the reasons second colum	New York, the first why <i>(mark</i> nn, indicate
D. PRACTICE PLANS  If you have accepted a positic care/clinical practice please a	answer the f	t following	Practice Reasons	All <u>Reasons</u> (mark all that apply)	Main <u>Reason</u> (mark only one)
questions, if not, skip to Que	estion 25.		Overall lack of jobs/practice	•	•
17. Which best describes the		ient	opportunities in New York Better jobs/practice opportunitie	s in	
care practice you will be  Principal Secondary	entering?		desired locations outside New	/York O	0
Practice Setting Practice Setting (mark only one) (mark all the			Better jobs/practice opportunitie practice setting (e.g., hospital, practice, etc.) outside New Yo	group	0
Ŏ Solo p	ractice		Better jobs/practice opportunitie		
O O Partner			outside New York that meet vis	6a	
<ul><li>○</li><li>○</li><li>O</li><li>O</li><li>Hospit</li></ul>			status requirements Financial Reasons	O	0
<ul><li>○</li><li>○</li><li>O</li><li>Hospit</li></ul>	al—Ambulator al—Emergency	/room	Better salary/compensation offere outside New York	ed O	0
OO Freesta		enter or clinic	Cost of malpractice insurance in New York		
OO.ther:			Cost of establishing a medical pro	actice	
			in New York	$\circ$	
18. What level of ownership	will you have	e in your	Taxes in New York	0	0
upcoming practice?  None, I will be an employed.			Cost of living in New York Personal Reasons	O	O
O None currently, but I ma		ion to	Proximity to family	$\bigcirc$	
become a partner in t		,5,1,65	Better employment opportunities	s for	
O I will be a partner, but w		y capital	spouse/partner outside New Y		
invested in the practic			Climate (e.g., weather)	0	0
O I will be an owner/partn			Other Reasons		
invested and own a fil practice)	nanciai stake ir	i the	Never intended to practice in New York		
procede)			Other reason:	0	0
		'		nue	Page 3

20. How many years do you expect to be at your principal practice?			24. What is your level of satisfaction with your salary/compensation?		
○1 ○2 ○3 ○4 ○5 or more			<ul><li>Very dissatisfied</li><li>Somewhat satisfied</li><li>Very satisfied</li></ul>		
21. Which best describes the demographics of			O Somewhat dissatisfied O very satisfied		
the area in which you wi	ill be practic	ing?	E. EXPERIENCE IN JOB MARKET		
○ Inner city			(If you are going into patient care or have		
Other area within major	city		considered going into patient care, please		
<ul><li>Suburban</li></ul>			complete the following.)		
<ul> <li>Small city (population le</li> </ul>	ess than 50,00	0)	1 37		
○ Rural			25. A. Did you have difficulty finding a practice		
00			position you were satisfied with?		
22. A. Please identify all of t					
received for accepting			○ Yes ○ No ○ Haven't looked yet		
(mark all that apply).			(Skip to Question #28)		
most influential incen		decision to			
accept this practice po	osition	Most	B. If Yes, what would you say was the main reason? ( <u>mark only one</u> )		
(mark only one).	Incentives	Influential			
	Received	<u>Incentive</u>	<ul> <li>Overall lack of jobs/practice opportunities</li> </ul>		
	<b>V</b>		<ul> <li>Lack of jobs/practice opportunities that meet visa</li> </ul>		
H-1 visa sponsorship	<u> </u>	0	status requirements		
J-1 visa waiver	0	0	<ul> <li>Lack of jobs/practice opportunities in desired</li> </ul>		
Sign-on bonus	0	0	locations		
Income guarantees	0	0	○ Lack of jobs/practice opportunities in desired practice		
On-call payments	0	0	setting (e.g., hospital, group practice, etc.)		
Relocation allowances	0	0	<ul> <li>Inadequate salary/compensation offered</li> </ul>		
Partner/Spouse job transition assista		O	<ul> <li>Lack of employment opportunities for spouse/partner</li> </ul>		
Support for maintenance of certific			Other (specify):		
and continuing medical education		0	26. Did you have to change your plans		
Career development opportunities			because of limited practice opportunities?		
Educational loan repayment Other, specify:	0	0	<ul> <li>✓ Yes</li> <li>✓ No</li> <li>✓ Haven't looked yet</li> </ul>		
None	_		(Skip to Question #28)		
B. If you received any inc	entives how				
important were they in			27. How many offers for practice positions did		
accept this practice position?			you receive (excluding fellowships, chief		
O Not at all important		ely important	residency, and other training positions)?		
<ul><li>Somewhat important</li></ul>			○ None ○ 1 ○ 2 ○ 3		
	, , , , , , , , , , , , , , , , , , , ,		○ 4 ○ 5 ○ 6–10 ○ Over 10		
03 5	L C	C	28. What is your overall assessment of practice		
23. Expected gross income d	iuring iirst ye	ar oi			
practice:	3. Anticipated	l Additional	opportunities in your specialty, and within 50 miles of the site where you trained?		
A. <u>Base Salary/Income</u>	<u>Incentive Ir</u>		50 times of the site where you trained?		
○ Less than \$75,000	None		○ No jobs ○ Some jobs		
\$75,000-\$99,999	<ul><li>Less that</li></ul>	n \$5,000	○ Very few jobs ○ Many jobs		
\$100,000-\$124,999	<b>\$5,000</b>		○ Few jobs ○ Unknown		
\$125,000-\$149,999	<b>\$10,000</b>		29. What is your overall assessment of practice		
\$150,000-\$174,999	<b>O</b> \$15,000		opportunities in your specialty nationally?		
\$175,000-\$199,999	<b>\$20,000</b>				
\$200,000-\$224,999	O \$25,000		O No jobs O Some jobs		
\$225,000-\$249,999	\$30,000		O Very few jobs O Many jobs		
\$250,000-\$274,999	O \$35,000		○ Few jobs ○ Unknown		
\$275,000-\$299,999	\$40,000				
\$300,000-\$324,999	O \$45,000				
\$325,000-\$349,999	\$50,000		THANK YOU FOR COMPLETING		
\$350,000 = \$374,999	\$55,000		THIS IMPORTANT SURVEY.		
○ \$375,000 and over	<b>\$60,000</b>	aria over			
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SERIAL #