Physician Supply and Demand Indicators in New York and California

A Summary of Trends in Starting Income, Relative Demand, and GME Graduates in 35 Medical Specialties

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BACKGROUND

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

Each May, the Center distributes the surveys to GME directors and administrators at teaching hospitals. In most cases, surveys are then forwarded to individual GME departments at each hospital who assume responsibility for having graduating residents and fellows fill out the surveys in the weeks prior to program completion. Completed surveys are then returned to the Center for data entry and analysis.

The Resident Exit Survey was first conducted in New York in 1998 and has been conducted each year since (2002 was the fifth consecutive year). Through the excellent collaboration of teaching hospitals throughout the state, over this five-year period, *an aggregate total of nearly 15,300 of the estimated 22,600 graduates have completed the survey (68% response rate)*. In addition to New York, several other states (including California, Georgia, Minnesota, New Jersey, and Texas) have conducted very similar surveys in recent years. 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 an annual 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 three key areas related to physician supply and demand for the specialty: starting income, relative demand, and numbers of graduates. Data on starting income and relative demand are based on responses to the Resident Exit Survey in New York (for the years 1998 to 2002) and California (2000 to 2002). Data on GME graduates are from the annual medical education editions 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 1993 to 2001. Definitions of the three areas are as follows:

- Starting income: The median starting income of survey respondents with confirmed plans to enter patient care/clinical practice somewhere in the U.S. following completion of their training program. Starting incomes include respondents base salaries plus their expected incentive/bonus income.
- Relative demand: Using several questions pertaining to the job market experiences and perceptions of survey respondents who had actively searched for a practice position, a composite score was computed to assign an overall rank (or relative demand score) for each specialty in each year and each state that the survey was conducted. 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. The percentages presented are the percentile rank of the specialty among all specialties in a given state and 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 AMA's data on number of residents completing training was compiled to observe how the number of new entrants to the physician marketplace has changed over time.

GENERAL RESULTS & KEY FINDINGS

Overall the job market for new physicians appears to be good. Despite the fact that New York is the most richly supplied state in the nation in terms of the number of physicians in practice relative to the state population, and that California has one of the highest rates of managed care penetration, the job market for physicians in each of these states is good. Furthermore, analysis of trends in variables pertaining to the physician job market reveals that opportunities for physicians entering practice in most specialties have improved over the period the Center has been conducting this survey. Similar findings are true for other states that have participated in the Resident Exit Survey as well.

Demand for non-generalist physicians (specialists) is significantly stronger than for generalist physicians.* Specialists reported less difficulty finding post-training employment, received more job offers, enjoyed higher starting income levels, and were more optimistic in their assessments of the marketplace for their specialties in each year and in every state the Resident Exit Survey has been conducted. In addition, specialists (in most specialties) have seen significant improvement in the demand for their services while generalists have more-less experienced flat or declining demand. However, while there is some inconsistency across the demand indicators, it would appear that the trough in demand for generalists occurred in 2000, and since then the market has shown some improvement.

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

- Strongest relative demand: child & adolescent psychiatry, gastroenterology, cardiology, anesthesiology, and urology.
- Weakest relative demand: pathology, general pediatrics, pediatric subspecialties, and ophthalmology.

There is a high degree of correlation in the relative demand for different individual specialties between different states. Despite the many differences that exist between New York and California in terms of the number and specialty mix of the physician supply, the demographic characteristics of the populations, and the health care delivery systems, the relative demand for physicians by specialty is very similar in these states.

ACKNOWLEDGEMENTS

This report was prepared by Joseph A. Nolan, Gaetano J. Forte, and Edward S. Salsberg of the Center for Health Workforce Studies. 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.

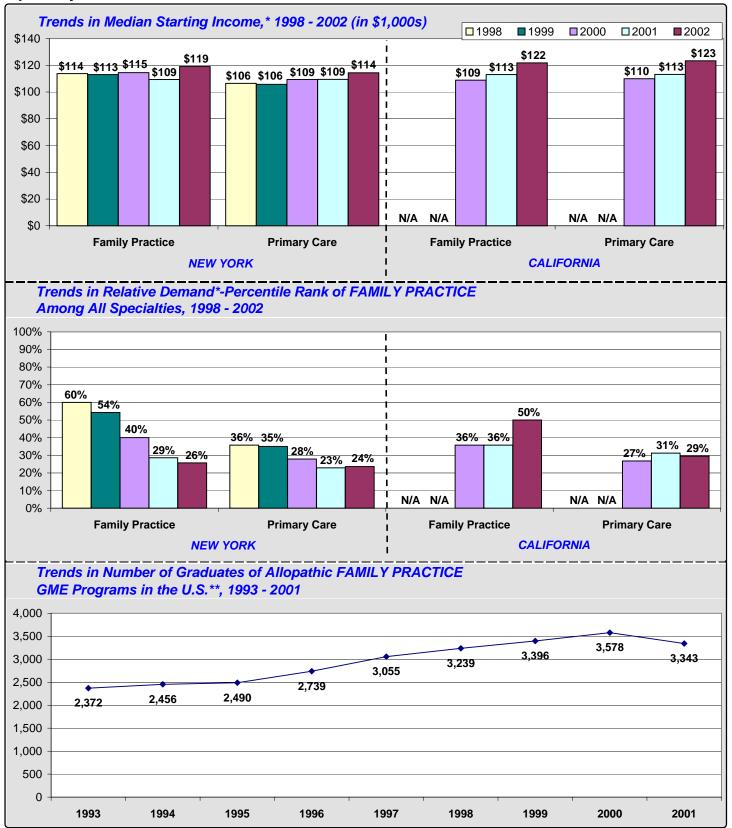
^{*} Generalist (or primary care) specialties include: family practice, general internal medicine, general pediatrics, and internal medicine and pediatrics-combined.

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*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 median starting income 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.

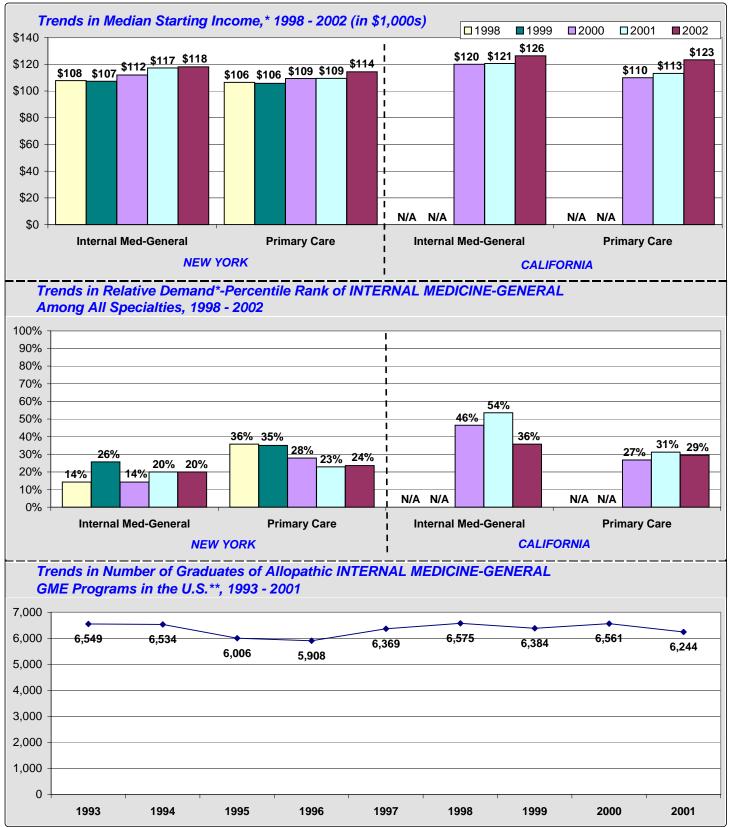
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*Source: CHWS, Survey of Residents Completing

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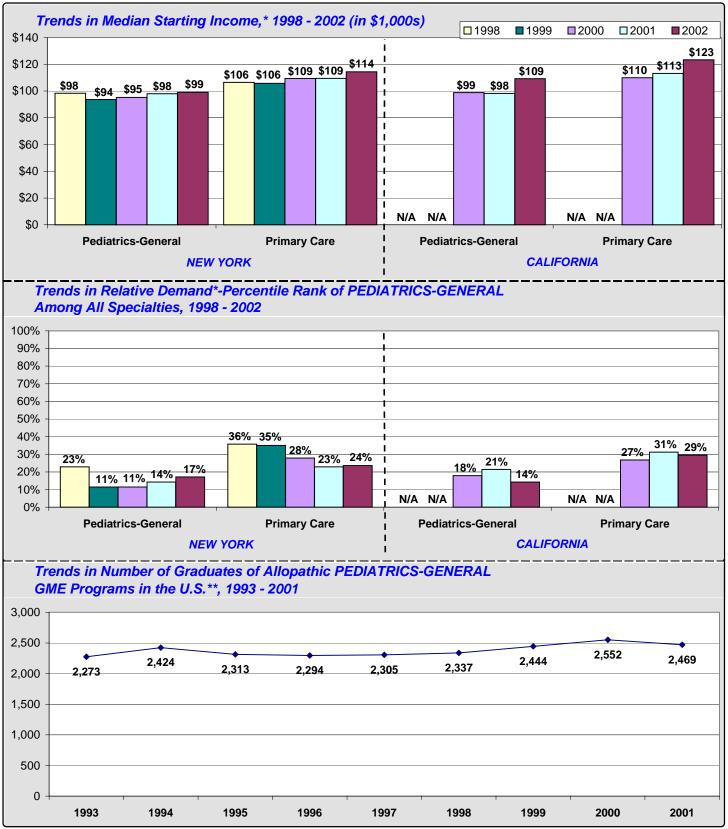
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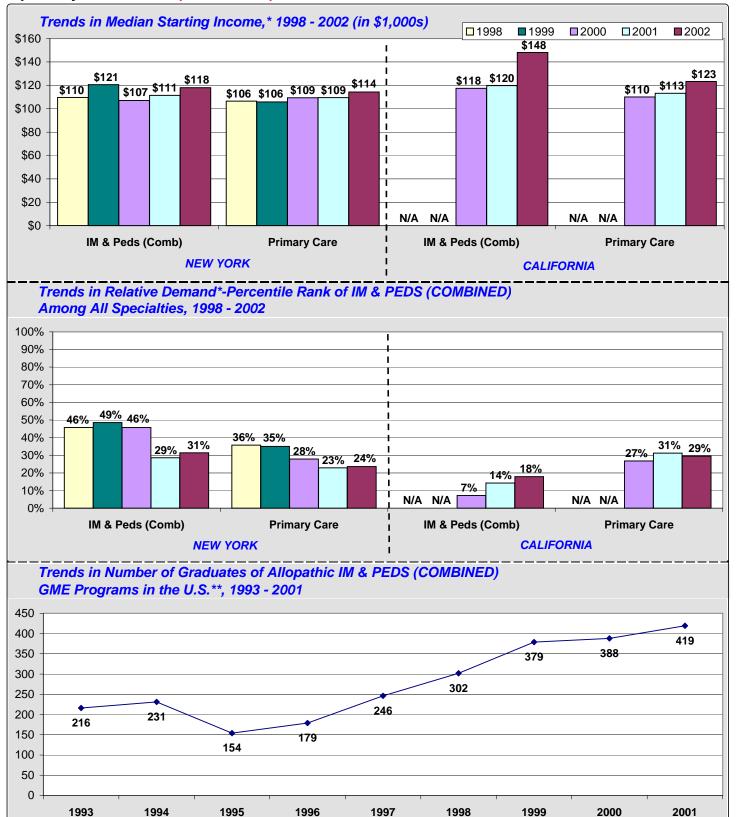
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*Source: CHWS, Survey of Residents Completing

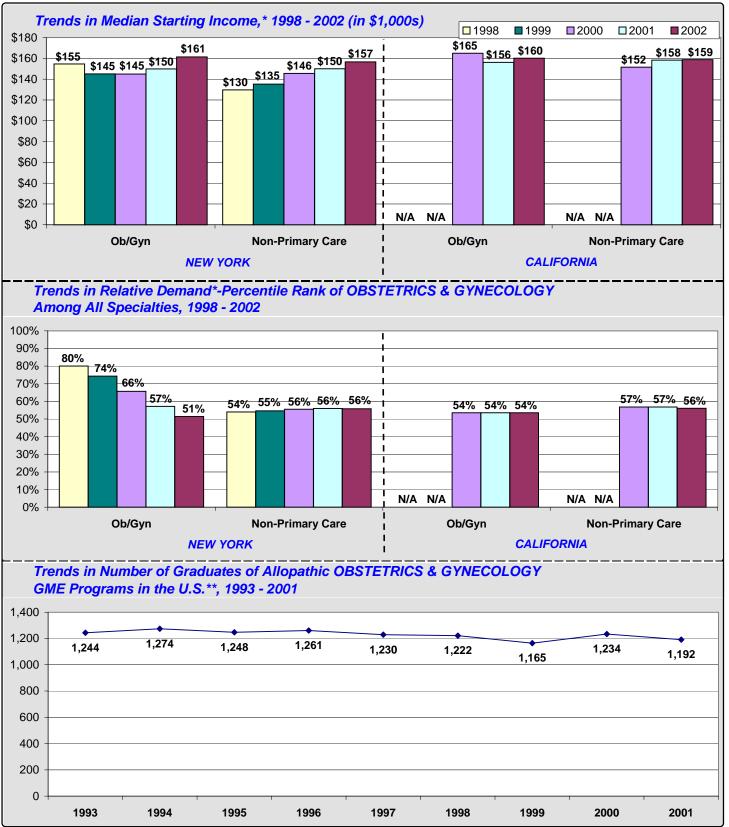
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*Source: CHWS, Survey of Residents Completing

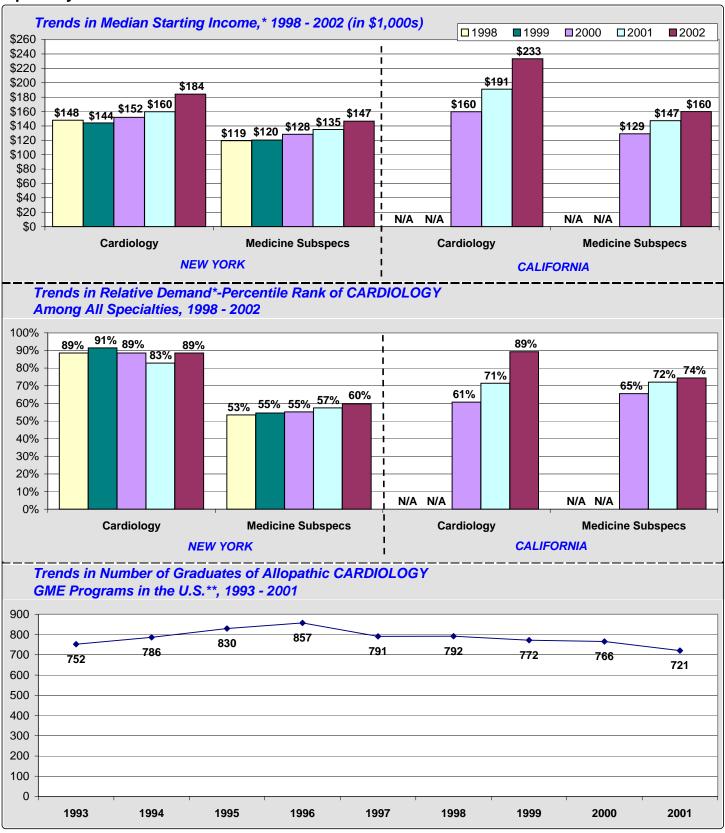
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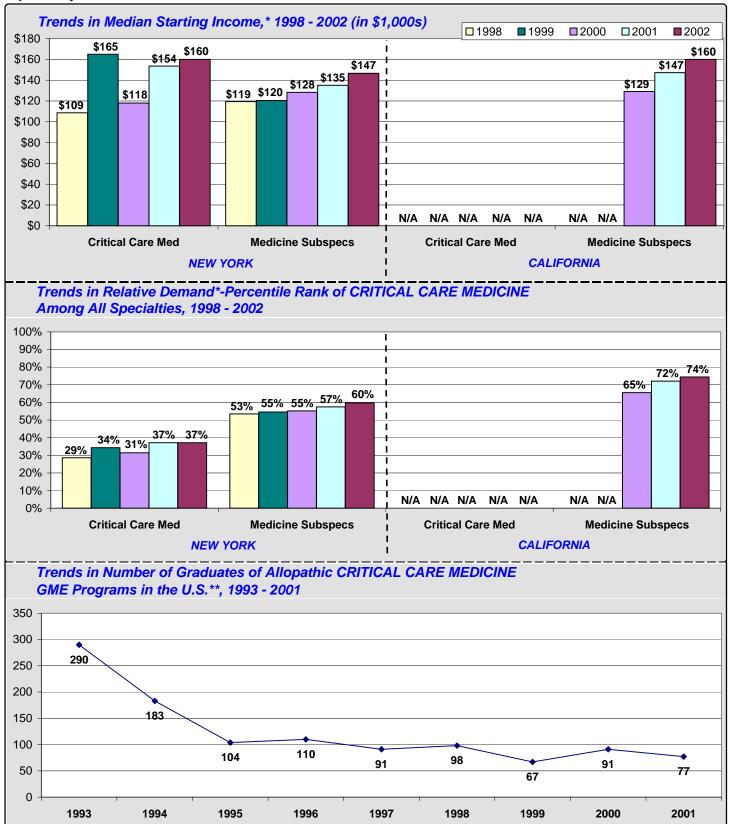
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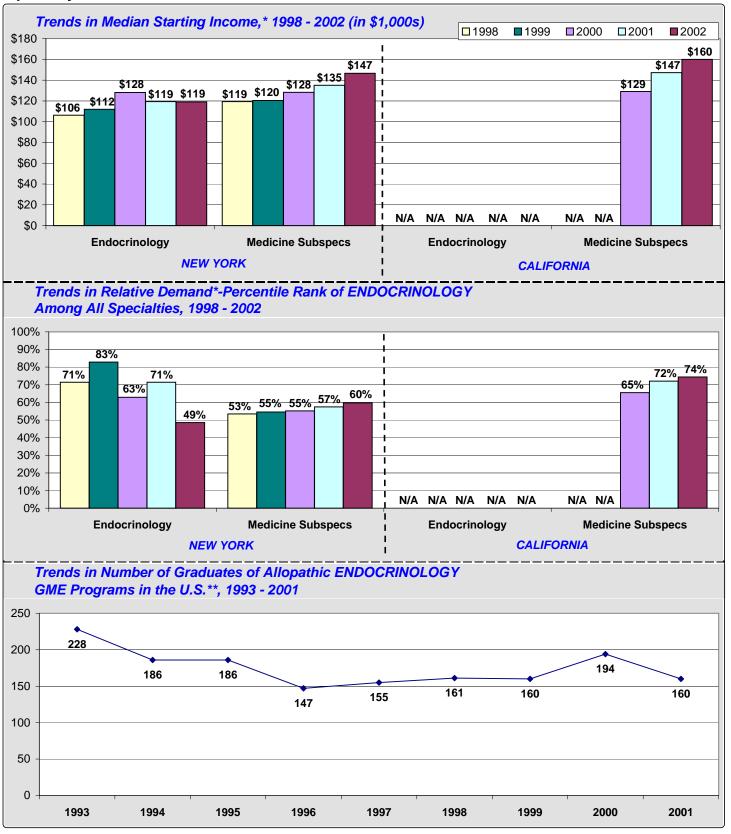
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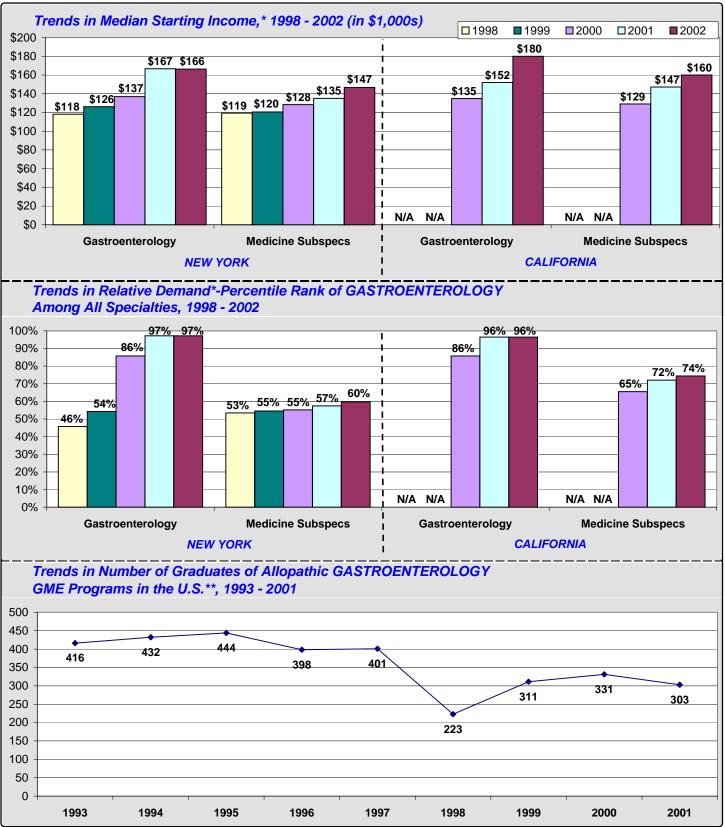
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*Source: CHWS, Survey of Residents Completing

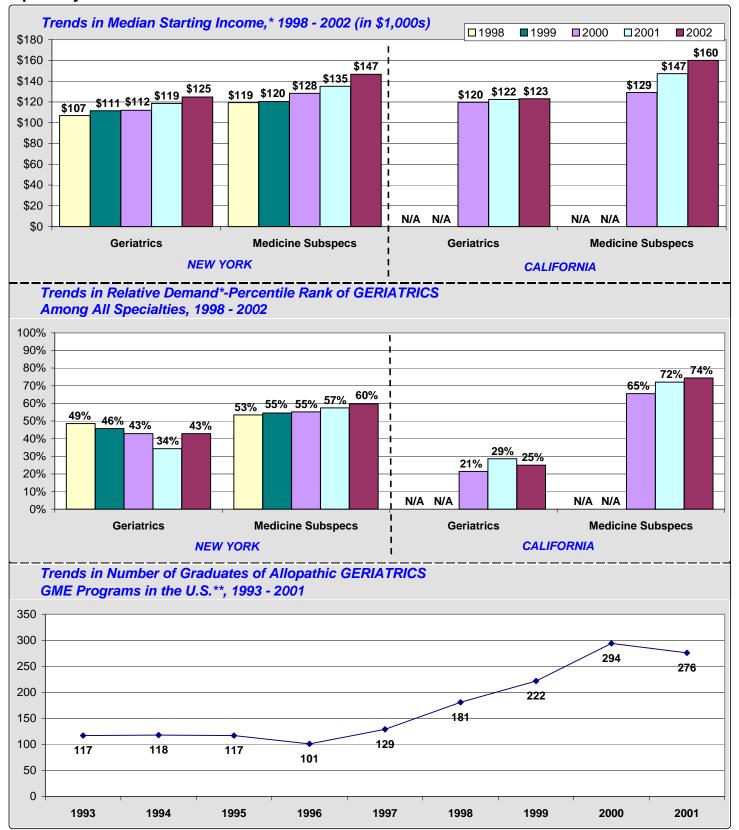
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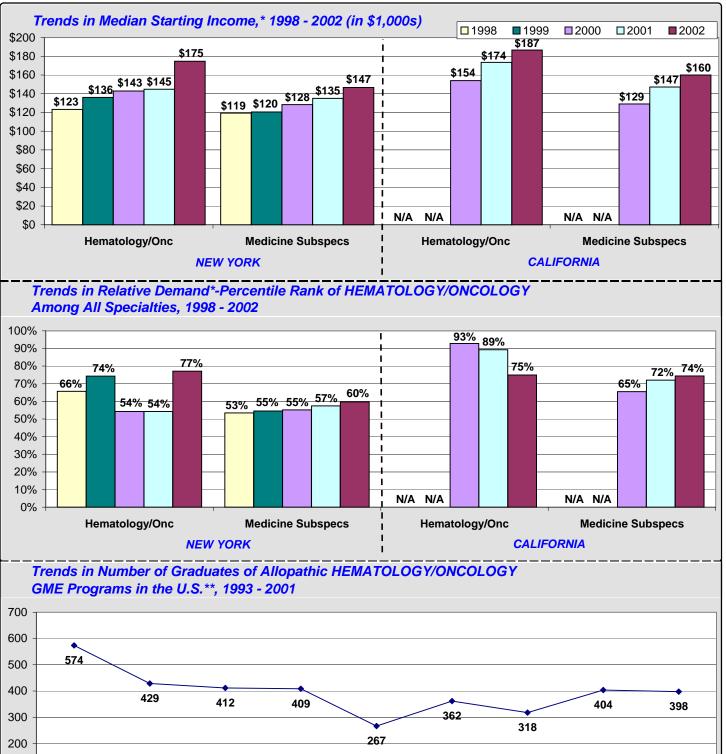
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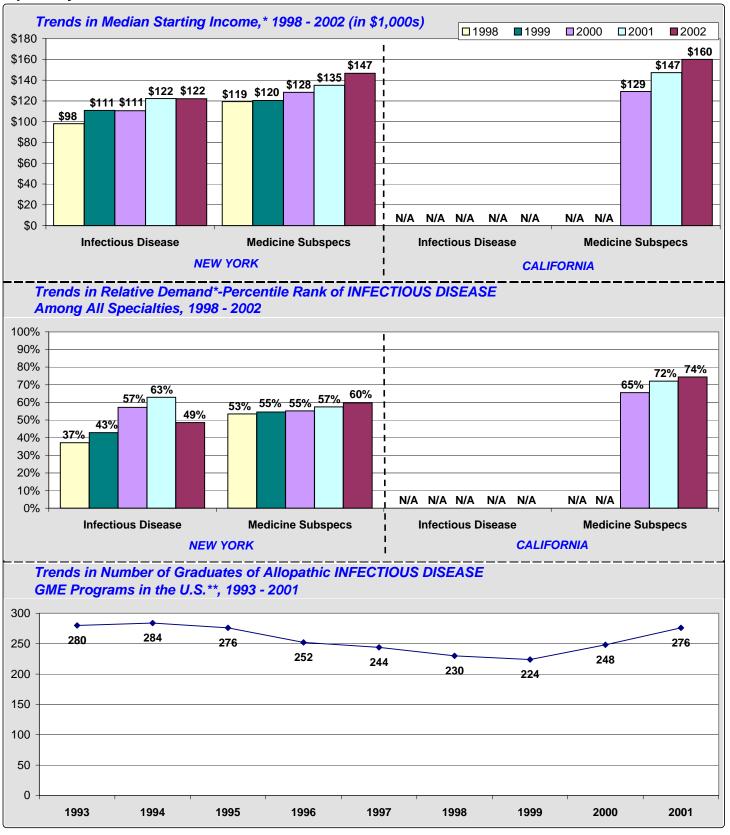
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*Source: CHWS, Survey of Residents Completing

Training: in NY: 1998 - 2002, and in CA: 2000 - 2002. **Source: JAMA Medical Education Editions, 1994 - 2002.

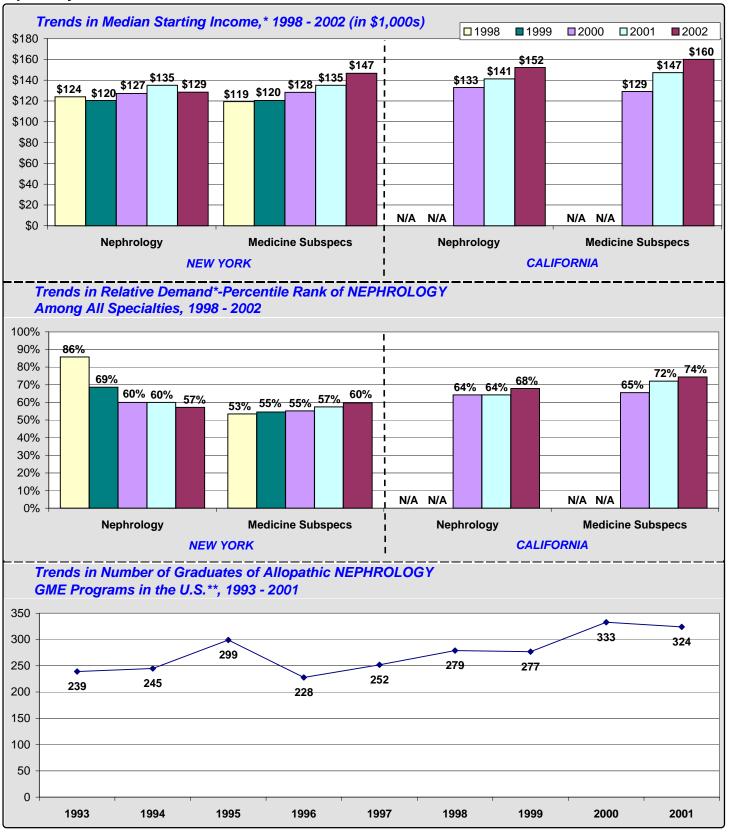
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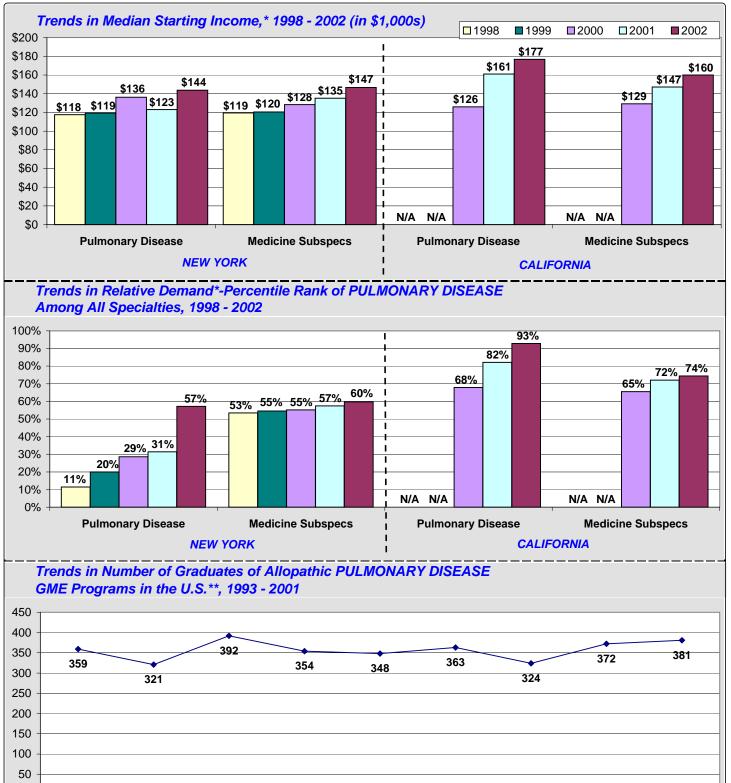
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*Source: CHWS, Survey of Residents Completing

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*Source: CHWS, Survey of Residents Completing

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Training: in NY: 1998 - 2002, and in CA: 2000 - 2002. **Source: JAMA Medical Education Editions, 1994 - 2002.

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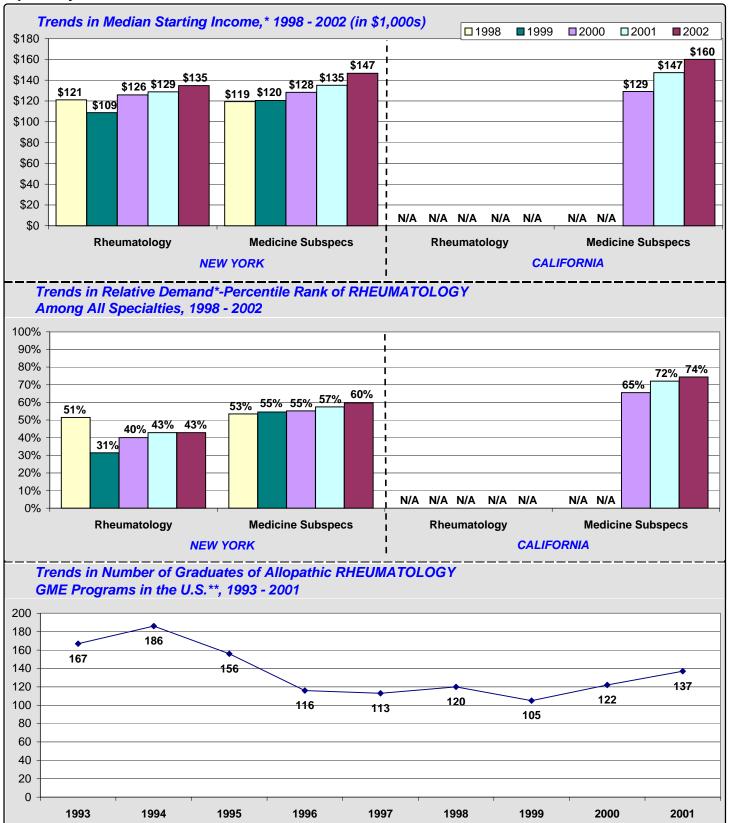
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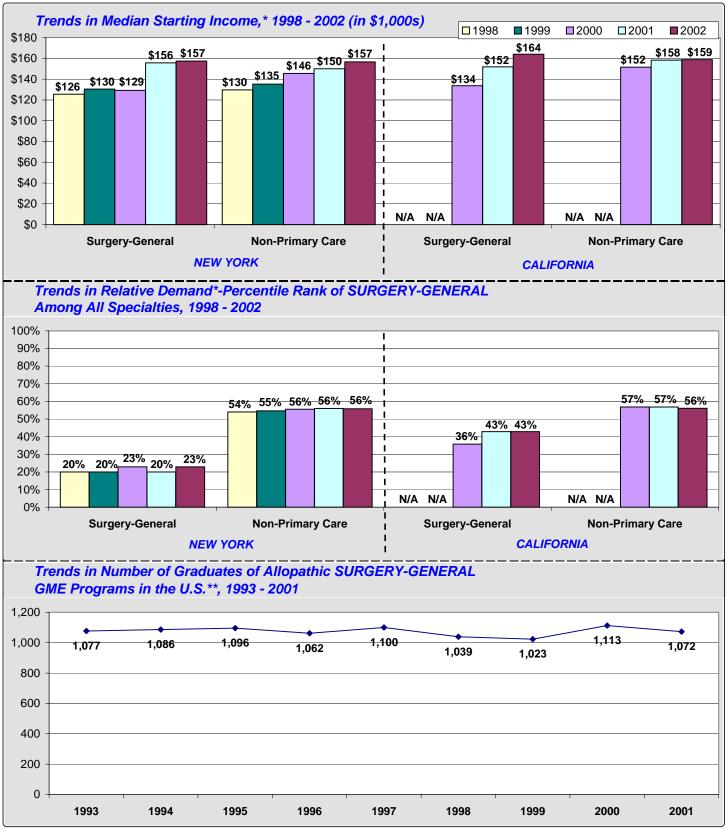
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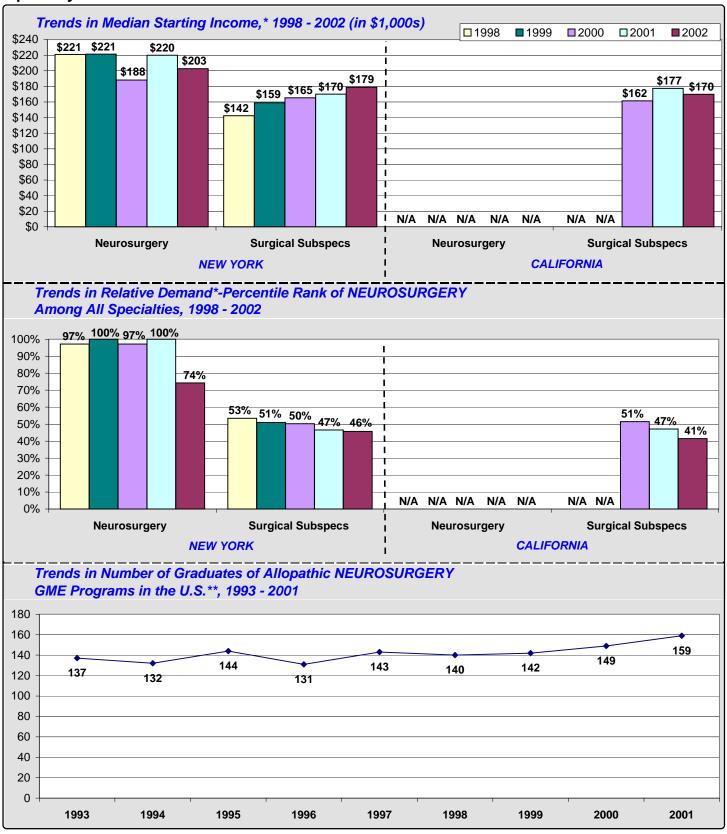
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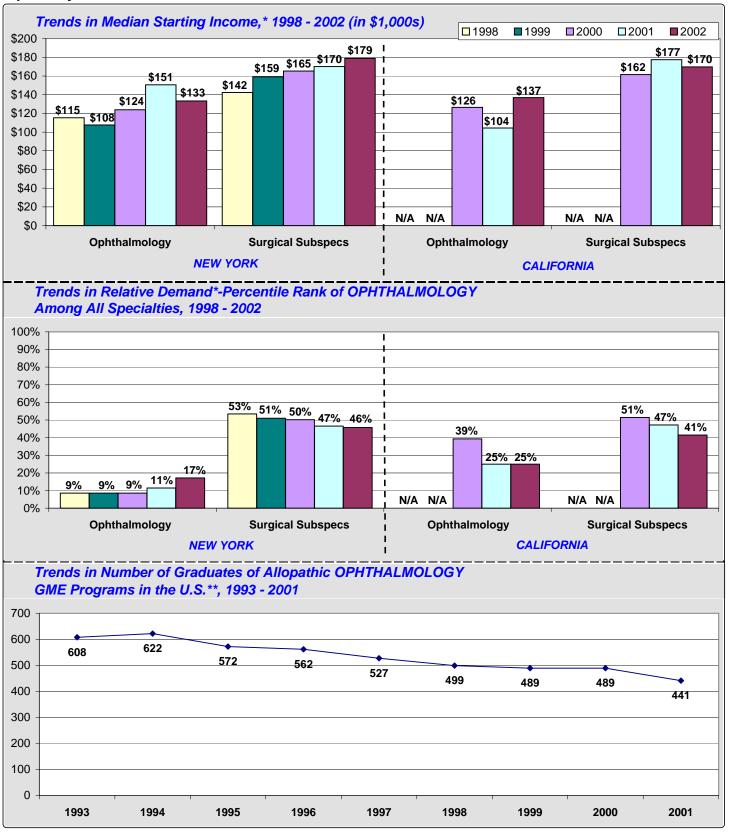
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*Source: CHWS, Survey of Residents Completing

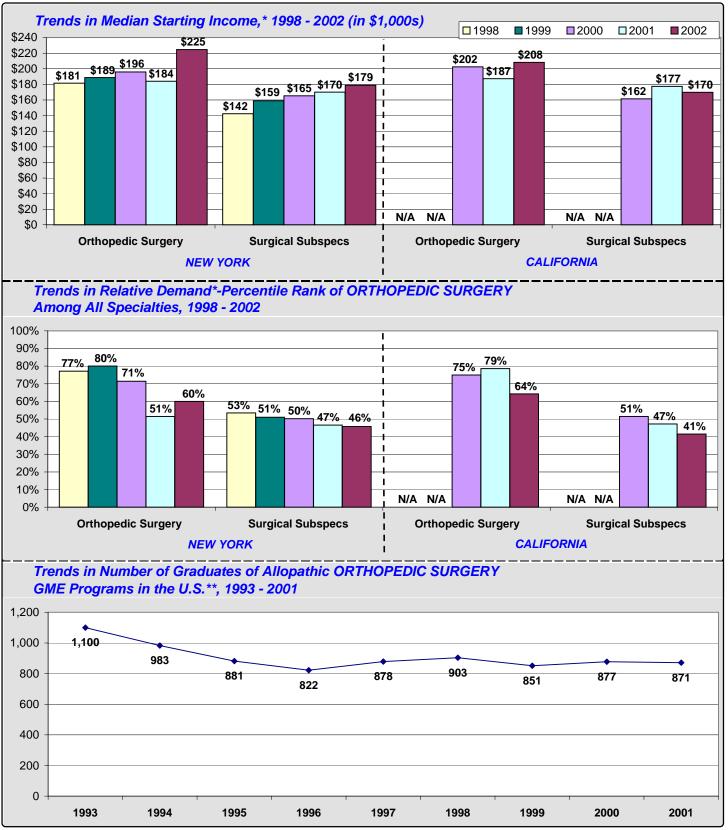
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*Source: CHWS, Survey of Residents Completing

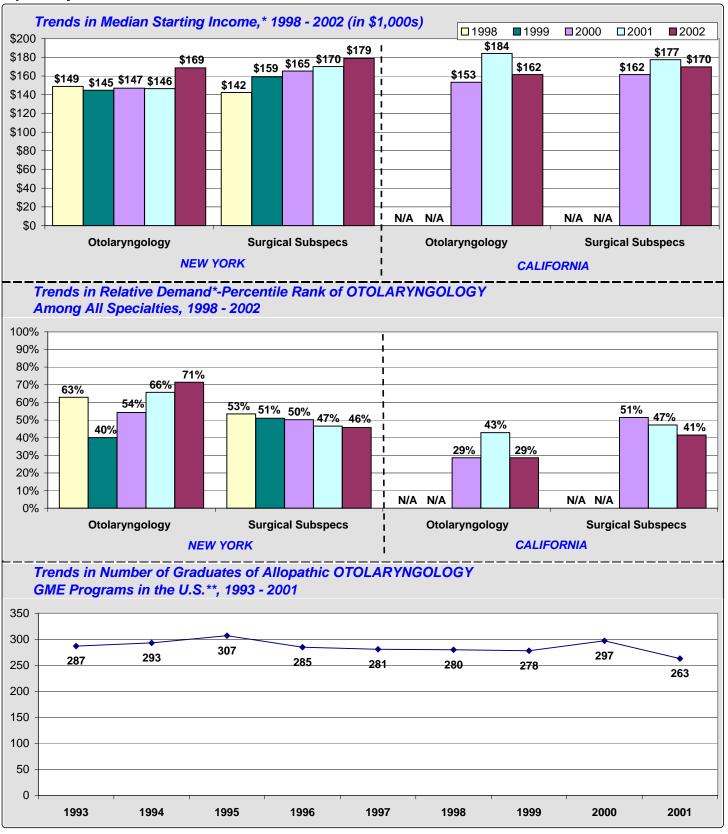
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*Source: CHWS, Survey of Residents Completing

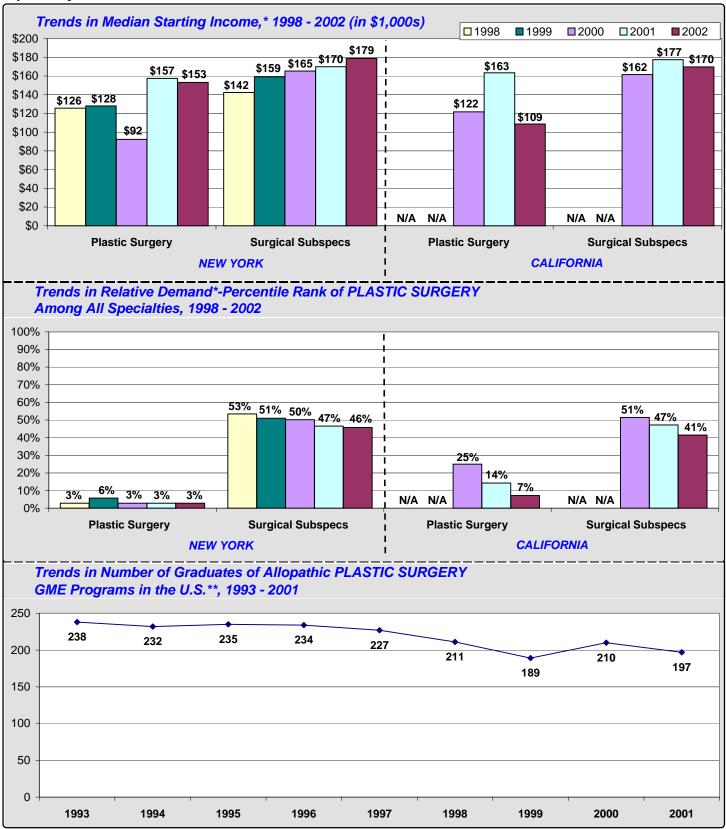
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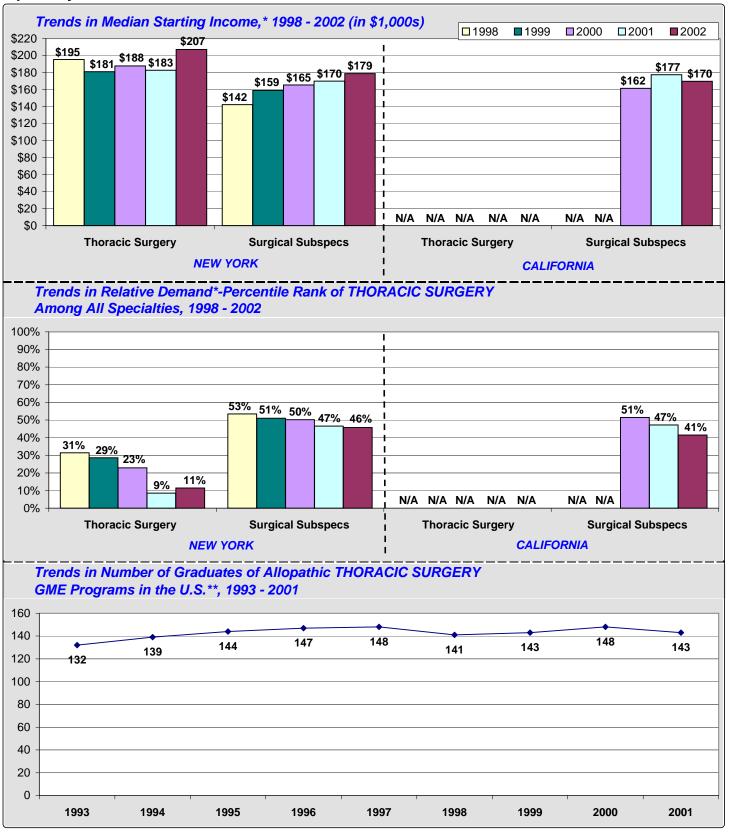
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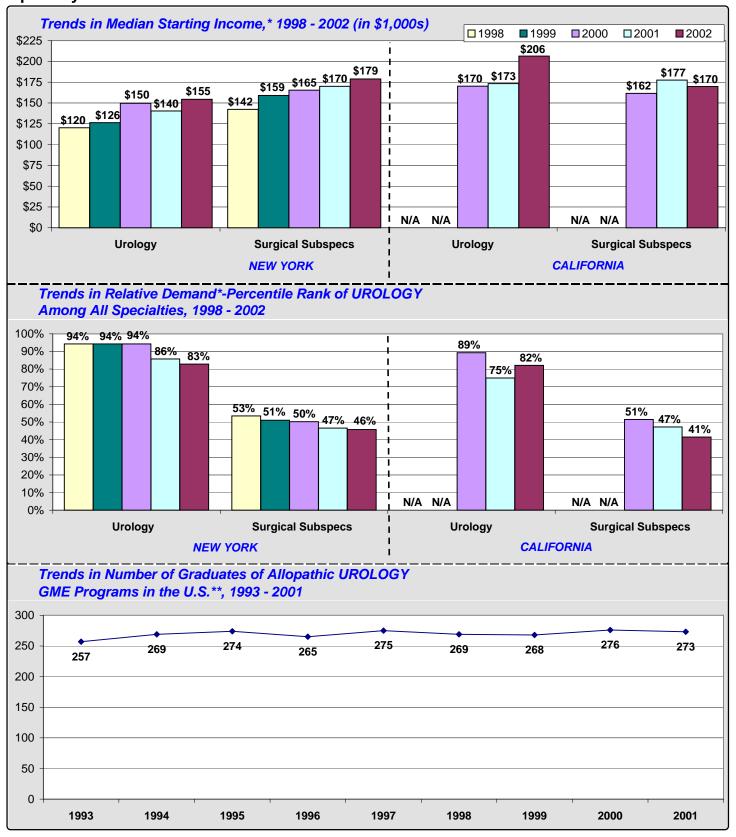
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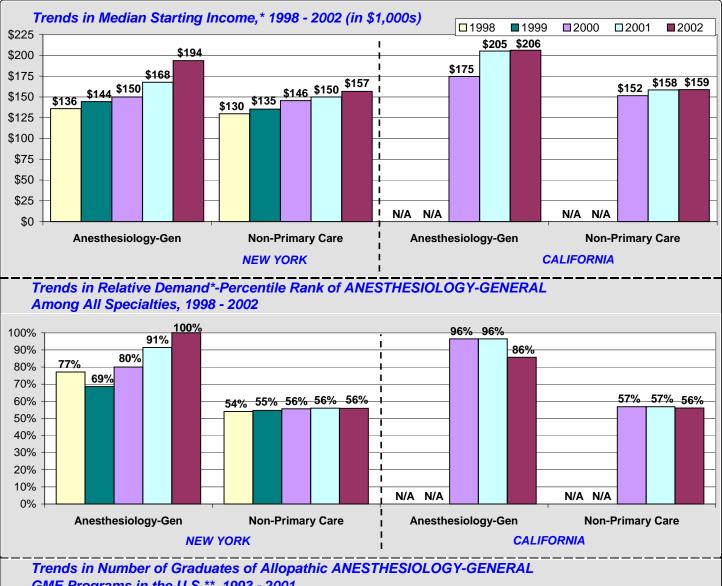
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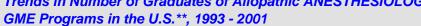
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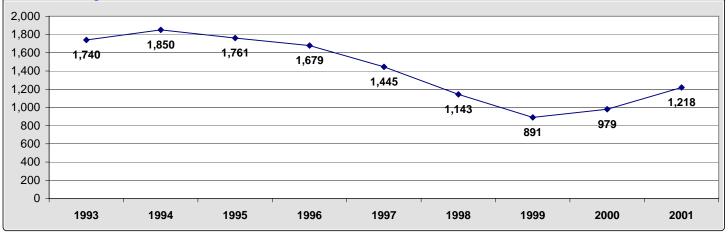


*Source: CHWS, Survey of Residents Completing

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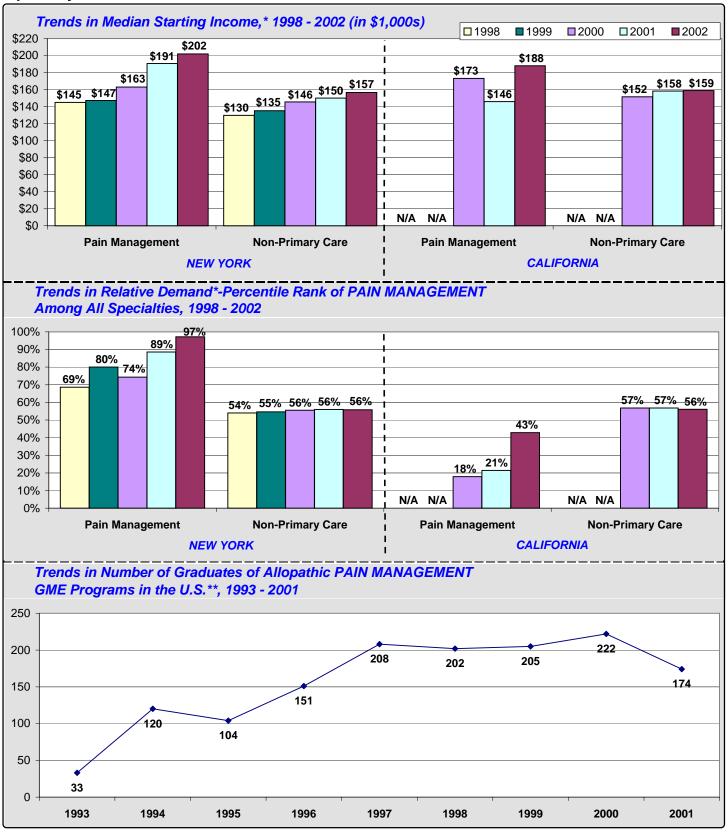




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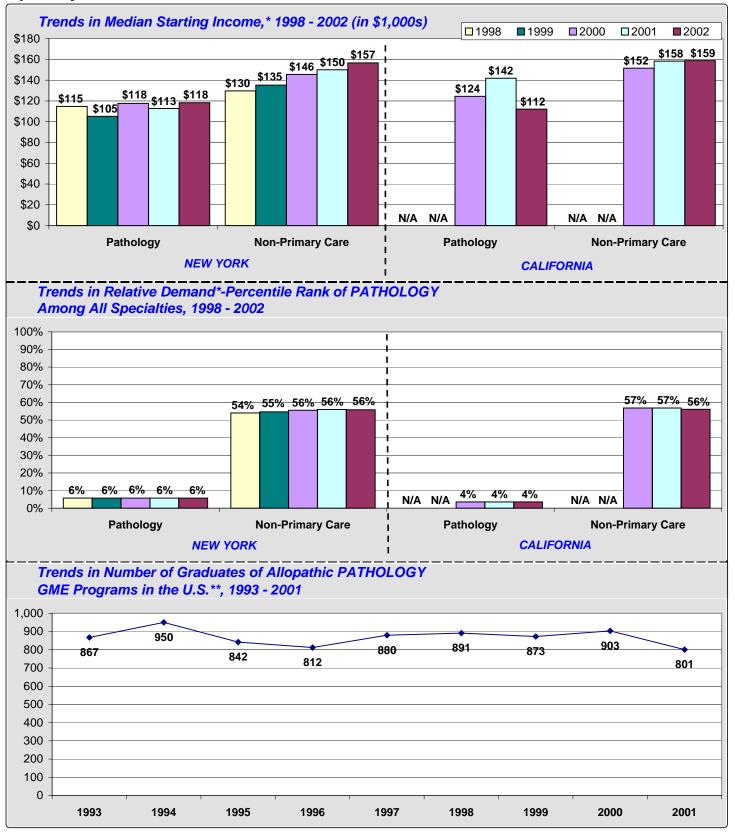
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Trends in Median Starting Income (in NY & CA), Relative Demand (in NY and CA), and Number of Graduates of Allopathic GME Programs (in the U.S.) for Individual Specialties Specialty: PAIN MANAGEMENT



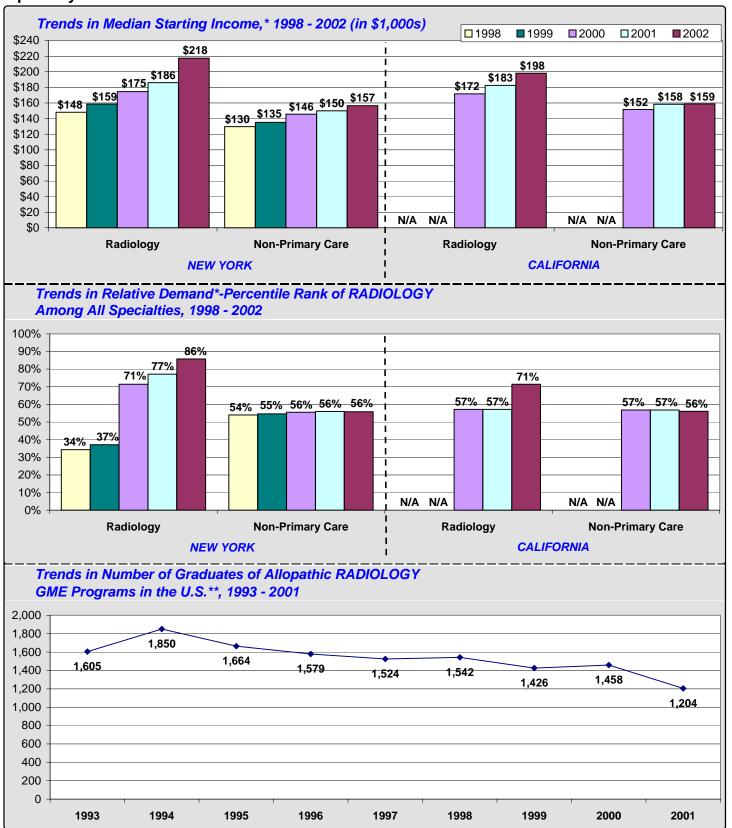
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Trends in Median Starting Income (in NY & CA), Relative Demand (in NY and CA), and Number of Graduates of Allopathic GME Programs (in the U.S.) for Individual Specialties Specialty: PATHOLOGY



*Source: CHWS, Survey of Residents Completing Training: in NY: 1998 - 2002, and in CA: 2000 - 2002.

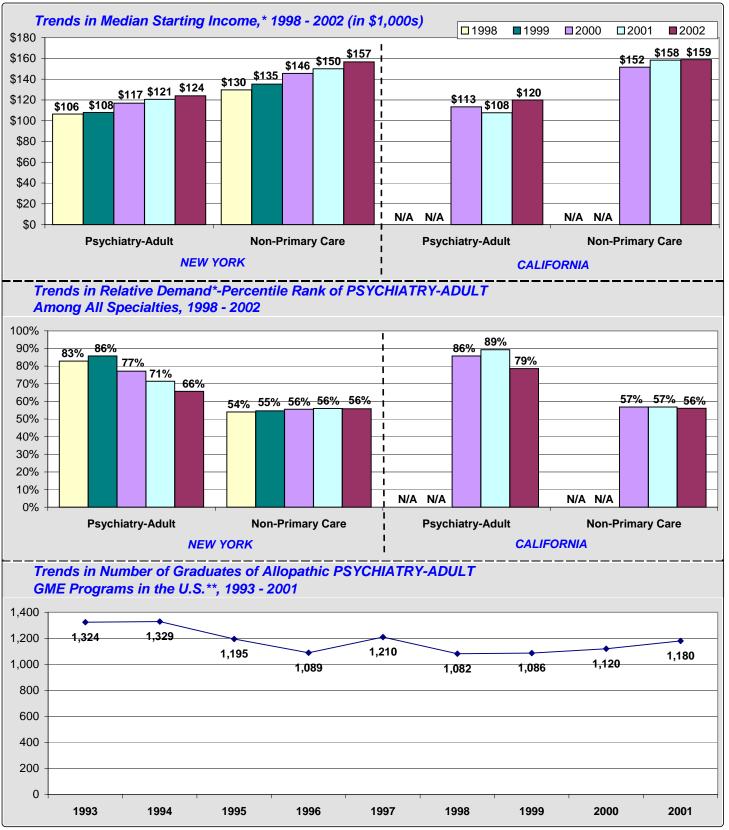
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*Source: CHWS, Survey of Residents Completing

Training : in NY: 1998 - 2002, and in CA: 2000 - 2002.

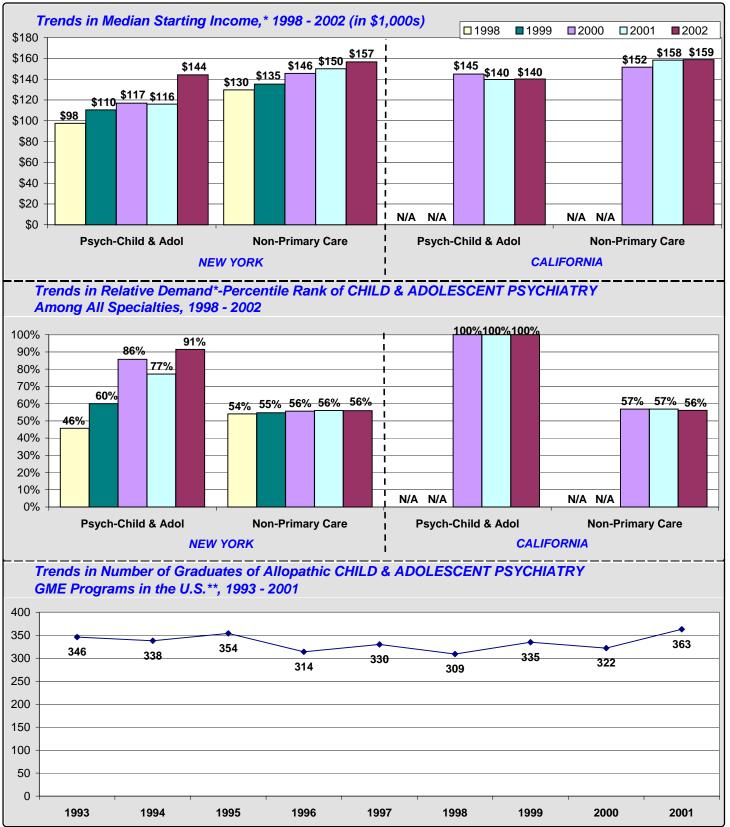
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*Source: CHWS, Survey of Residents Completing

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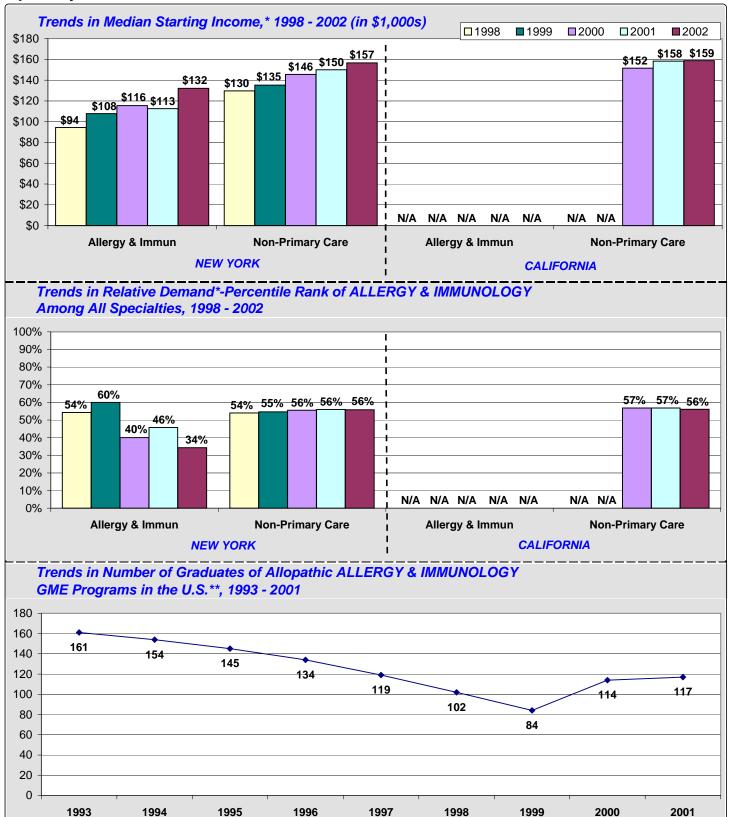
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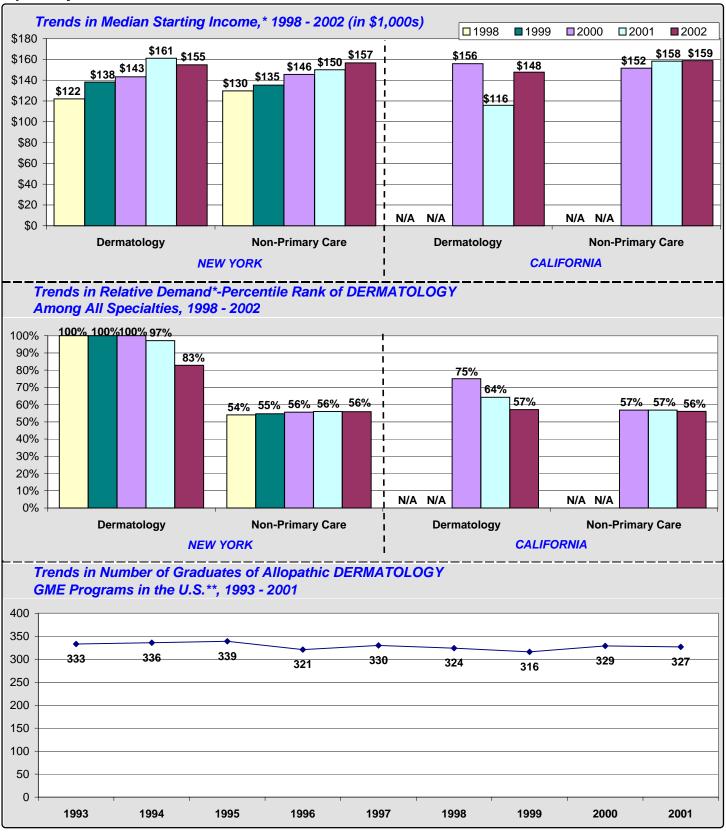
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*Source: CHWS, Survey of Residents Completing

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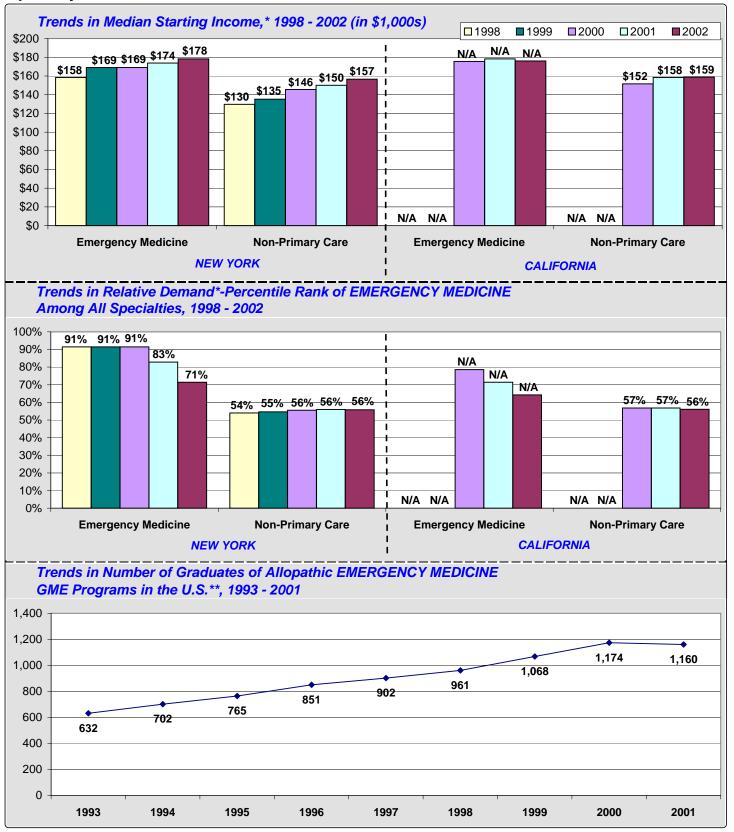
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*Source: CHWS, Survey of Residents Completing

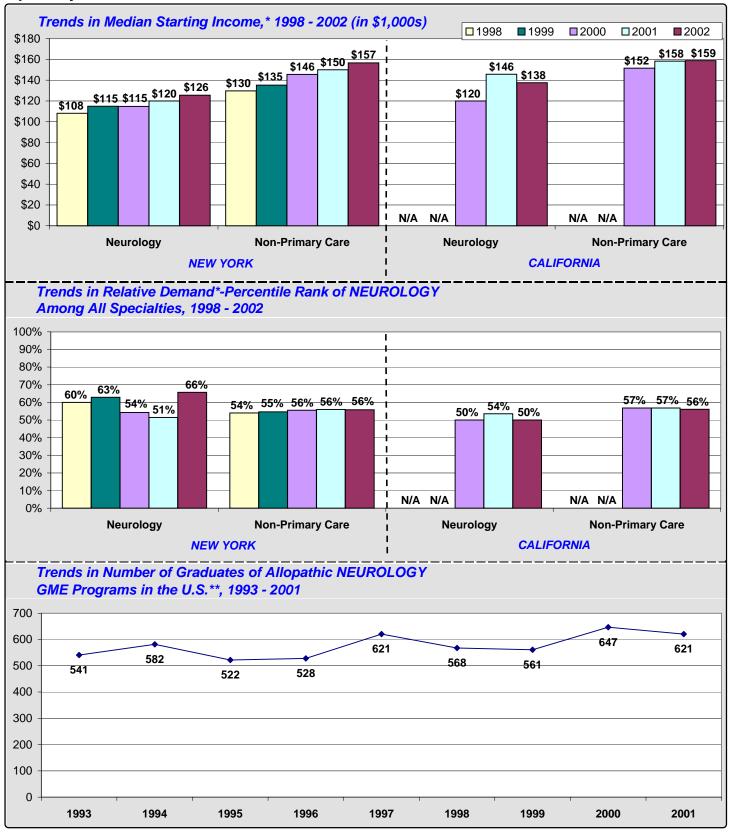
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*Source: CHWS, Survey of Residents Completing Training: in NY: 1998 - 2002, and in CA: 2000 - 2002.

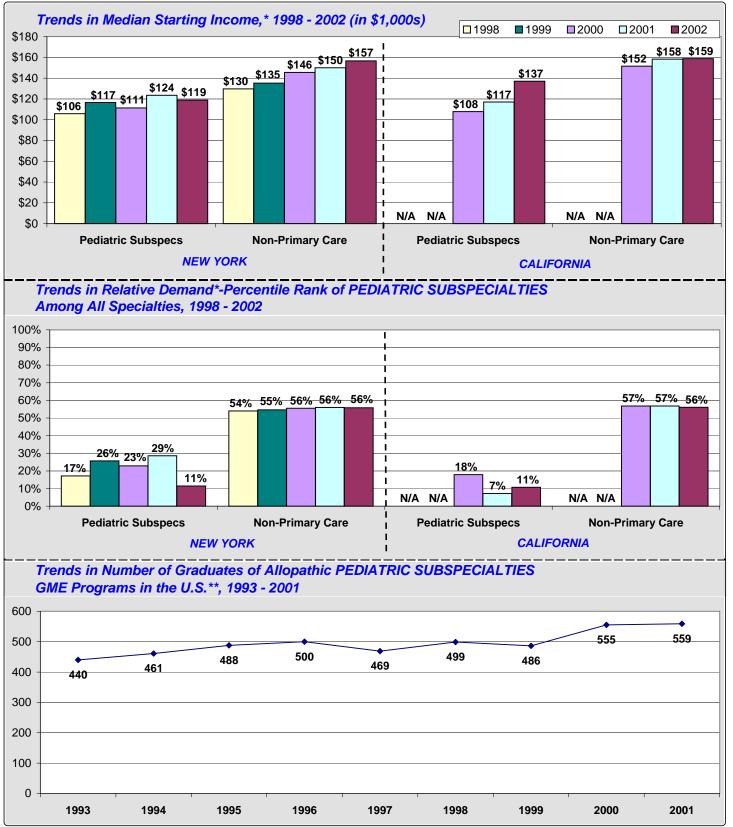
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*Source: CHWS, Survey of Residents Completing

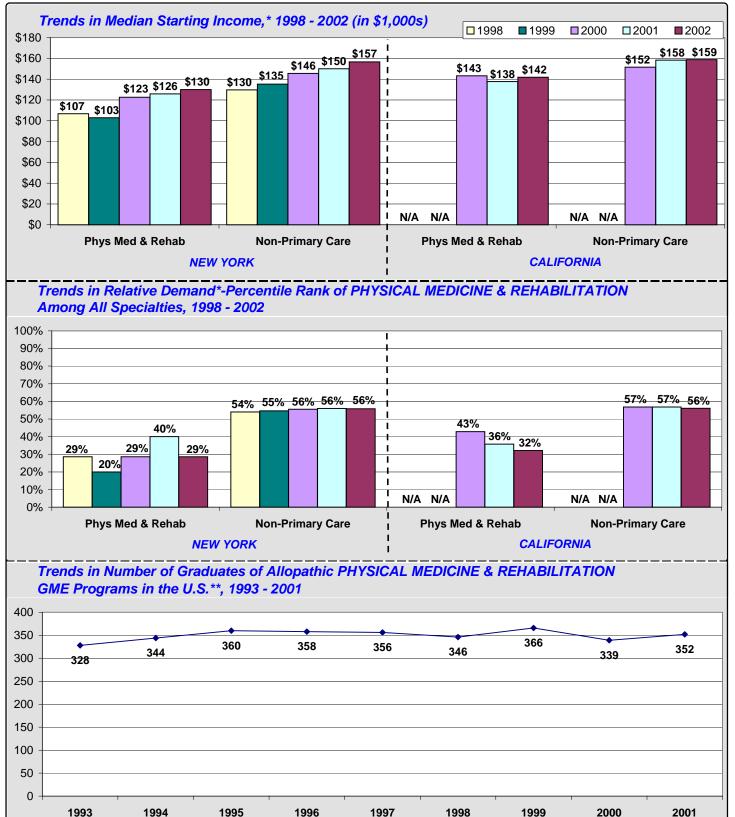
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Trends in Median Starting Income (in NY & CA), Relative Demand (in NY and CA), and Number of Graduates of Allopathic GME Programs (in the U.S.) for Individual Specialties Specialty: PEDIATRIC SUBSPECIALTIES



*Source: CHWS, Survey of Residents Completing Training: in NY: 1998 - 2002, and in CA: 2000 - 2002.

Trends in Median Starting Income (in NY & CA), Relative Demand (in NY and CA), and Number of Graduates of Allopathic GME Programs (in the U.S.) for Individual Specialties Specialty: PHYSICAL MEDICINE & REHABILITATION



*Source: CHWS, Survey of Residents Completing

Training: in NY: 1998 - 2002, and in CA: 2000 - 2002.

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 (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 the 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 & 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 practice in New York in 2002 is 26% (i.e., family practice had a relative rank equal to or better than 26% of the 35 specialties that were ranked), and the percentile rank of obstetrics & gynecology was 52%, this *does not* imply that demand for ob/gyn was twice as strong as for family practice. The scale is only ordinal.

To measure demand by specialty and develop a ranking of specialties based on demand, a composite demand score was computed by taking a weighted average of the ranks (i.e., where each specialty stood among all specialties) scored by each specialty on each variable used to measure demand (or demand indicator). 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 is 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 also is 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 (neurosurgery) ranked #1 and the specialty with the highest percentage of respondents reporting difficulty (plastic 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 (general anesthesiology) ranked #1 and the specialty with the highest percentage of respondents reporting difficulty (thoracic surgery) ranked #35.
- ✓ <u>offrs</u>: 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 where respondents received the most job offers (gastroenterology) ranked #1 and the specialty where respondents received the fewest job offers (pathology) 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 where respondents gave the most positive assessment of the regional job market (general anesthesiology) ranked #1 and the specialty where respondents gave the least positive assessment of the regional job market (thoracic surgery) ranked #35.
- ✓ <u>nat_mrkt</u>: 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 where respondents gave the most positive assessment of the national job market (child & adolescent psychiatry) ranked #1 and the specialty where respondents gave the least positive assessment of the national job market (thoracic surgery) ranked #35.
- ✓ inc_trnd: 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 (critical care medicine) ranked #1 and the specialty where respondents gave the least positive assessment of the national job market (neurosurgery) ranked #35.

SUMMARY OF RANKS ON DEMAND INDICATORS IN NEW YORK, 2002

SUMMARY OF RANK			DICATC		10nn, 20	02	Median	Overall	Percentile
Specialty	diff	chpln	offrs*	reg_mrkt	nat_mrkt	inc_trnd*	Rank	Rank	Rank**
Family Practice	27	23	25	21	18	32	25.0	27	26%
Internal Med-General	34	28	31	27	25	24	27.5	29	20%
Pediatrics-General	28	24	32	28	30	29	29.0	30	17%
IM & Peds (Comb)	26	17	24	23	24	34	24.0	25	31%
Ob/Gyn	20	11	18	17	19	23	18.5	18	51%
Cardiology	7	7	4	4	8	9	7.0	5	89%
Critical Care Med	22	32	28	14	22	1	22.0	23	37%
Endocrinology	25	29	17	12	12	33	21.0	19	49%
Gastroenterology	8	8	1	8	3	5	5.0	2	97%
Geriatrics	29	21	22	24	20	20	21.5	21	43%
Hematology/Onc	13	16	11	15	10	10	11.0	9	77%
Infectious Disease	14	25	21	22	16	21	21.0	19	49%
Nephrology	19	19	9	16	7	28	17.5	16	57%
Pulmonary Disease	18	22	5	19	27	17	17.5	16	57%
Rheumatology	23	31	19	20	17	27	21.5	21	43%
Surgery-General	30	26	27	31	28	11	27.0	28	23%
Neurosurgery	1	3	2	29	21	35	12.0	10	74%
Ophthalmology	24	30	29	32	32	8	29.0	30	17%
Orthopedic Surgery	11	20	8	18	23	15	15.0	15	60%
Otolaryngology	9	13	12	13	15	16	13.0	11	71%
Plastic Surgery	35	34	34	34	34	3	34.0	35	3%
Thoracic Surgery	32	35	30	35	35	22	31.0	32	11%
Urology	5	2	7	11	9	14	8.0	7	83%
Anesthesiology-Gen	2	1	13	1	2	6	4.0	1	100%
Pain Management	4	4	16	7	6	2	5.0	2	97%
Pathology	33	27	35	33	33	26	33.0	34	6%
Radiology	6	5	10	9	13	4	7.5	6	86%
Psychiatry-Adult	10	9	20	3	5	19	14.5	13	66%
Psych-Child & Adol	15	10	6	5	1	7	6.5	4	91%
Allergy & Immun	21	18	26	30	26	13	23.5	24	34%
Dermatology	12	14	3	2	4	18	8.0	7	83%
Emergency Medicine	3	6	15	6	11	30	13.0	11	71%
Neurology	16	15	14	10	14	25	14.5	13	66%
Pediatric Subspecs	17	12	33	25	31	31	31.0	32	11%
Phys Med & Rehab	31	33	23	26	29	12	24.5	26	29%

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

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

The following example illustrates how the demand score was calculated for family practice in New York in 2002:

Median Rank_{FP} = median(diff, chpln, offrs, offrs, reg_mrkt, nat_mrkt, inc_trnd, inc_trnd)

Median Rank_{FP} = median(27, 23, 25, 25, 21, 18, 32, 32)

Median Rank_{FP} = 25.0^{***}

***With a median rank of 25.0 family practice ranked 27 out of 35 specialties. The percentile rank is computed as:

 $% rank_{FP} = \{ 1 - (Rank_{FP} / #specs) + (1 / #specs) \}$ where "#specs" is the

number of specialties being ranked. In New York in 2002, there were 35 specialties being ranked, so the percentile rank of family practice is:

 $% \operatorname{rank_{FP}} = \{ 1 - (27 / 35) + (1 / 35) \} \simeq 26\%.$

APPENDIX B. 2002 NYS Resident Exit Survey Instrument

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are COMPLETING in 2002 (select only one)	additional fell	are ENTERING
0		Allergy and Immunology
Ο		Anesthesiology (General)
0		Anesthesiology–Pain Management
0		Other Anesthesiology Subspecialty–specify:
0		Dermatology
0		Emergency Medicine
Ο		Family Practice
Ο		Internal Medicine (General)
		Cardiology
Ο		Critical Care Medicine
0		Endocrinology and Metabolism
0		Gastroenterology
0		Geriatrics
0		Hematology/Oncology
0		Infectious Disease
0		Nephrology
0		Pulmonary Disease/CCM
0		Rheumatology
0		Other Internal Medicine Subspecialty–specify:
0		Internal Medicine and Pediatrics (Combined)
Ο		
		Obstetrics and Gynecology (General)
		Obstetrics and Gynecology (Subspecialty)–specify:
		Pathology (General)
		Pathology (Subspecialty)–specify:
		Pediatrics (General)
		Pediatrics (Subspecialty)–specify:
		Physical Medicine and Rehabilitation
		Preventive Medicine/Public Health/Occupational Medicine
		Child and Adolescent Psychiatry
		Neurological Surgery
		Ophthalmology
		Orthopedic Surgery
		Otolaryngology
		Plastic Surgery
\bigcirc		Other Surgical Subspecialty–specify:

12. What do you expect to be doing after completion of your current training program? **Primary Activity** (mark only one)

- O Patient Care/Clinical Practice (in Non-Training position) O Temporarily Out of Medicine O Additional Subspecialty Training or Fellowship

 - O Other (specify):

- O Chief Resident
- O Teaching/Research (in Non-Training position)
- O Undecided/Don't know yet

C. FUTURE PLANS

D. PRACTICE PLANS If you are going into Patient Care

13. In your upcoming position, how many hours per week you expect to spend in each of the following activities. None 1–9 10–19 20–29 30–39 40–49 50–59 60+



14. Where is the location of your primary activity after completing your current training position?

○ Same City/County as Current Training

- Same Region within New York State—but Different City/County
- O Other Area within New York State
- O Other State
- O Outside of U.S.
- O Don't know yet

15. If you are going on for additional training/fellowship, please answer the following:

A. Why are you subspecializing/continuing training? (mark all that apply)

- \bigcirc To further your medical education
- \bigcirc Unable to find a job you are happy with
- O Unable to find <u>any</u> job
- \bigcirc To stay in the U.S. (i.e., due to visa status)
- O Other (specify):___
- O Question does not apply

B. If you are leaving the state to continue your training, do you plan to return to NY to practice when your training is complete?

○ Yes ○ Don't know yet

- O No O Question does not apply
- 16. Do you have an obligation or visa requirement to work in a federally designated Health Professional Shortage Area?

17. If you are planning to enter or considered entering patient care/clinical practice:

- A. Have you actively searched for a job?
 - O yes
 - O No, not yet
 - O No, I will be self-employed
- B. Have you been offered a job?
 - Yes, and I have accepted an offer
 Yes, but I declined the offer(s) and am still searching (Skip to Question #28)
 - No, but I have not actively searched yet (Skip to Question #28)
 - No, I have not yet been offered any practice position (Skip to Question #28)

(If you are <u>not</u> going into Patient Care/Clinical Practice after completing your current training— <u>Skip to Part E.</u>)

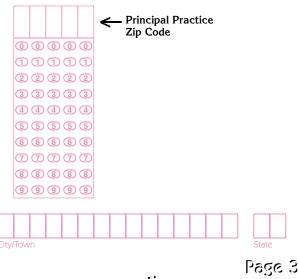
18.	Which best describes the type of Patient
	Care Practice you will be entering?

Principal <u>Practice</u> <u>Setting</u> (mark only one)	Secondary <u>Practice</u> <u>Setting(s)</u> (mark all that apply)
0	
0	
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0	
0	OHospital—Inpatient
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0	OHMO
0	ONursing Home
0	O Military
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19. What level of ownership will you have in your upcoming practice?

- None, I will be an employee
- None currently, but I may have the option to become a partner in the future
- O I will be a partner, but will not have any capital invested in the practice
- I will be an owner/partner (i.e., will have capital invested and own a financial stake in the practice)

20. What is the zip code of the principal practice address at which you will be working (if zip is unknown, please give city/town and state)?



continue . . .

