



Factors Effecting Subspecialty Choice Among Internal Medicine Graduates

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Based on Analysis Conducted for
the American College of Cardiology

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Overview

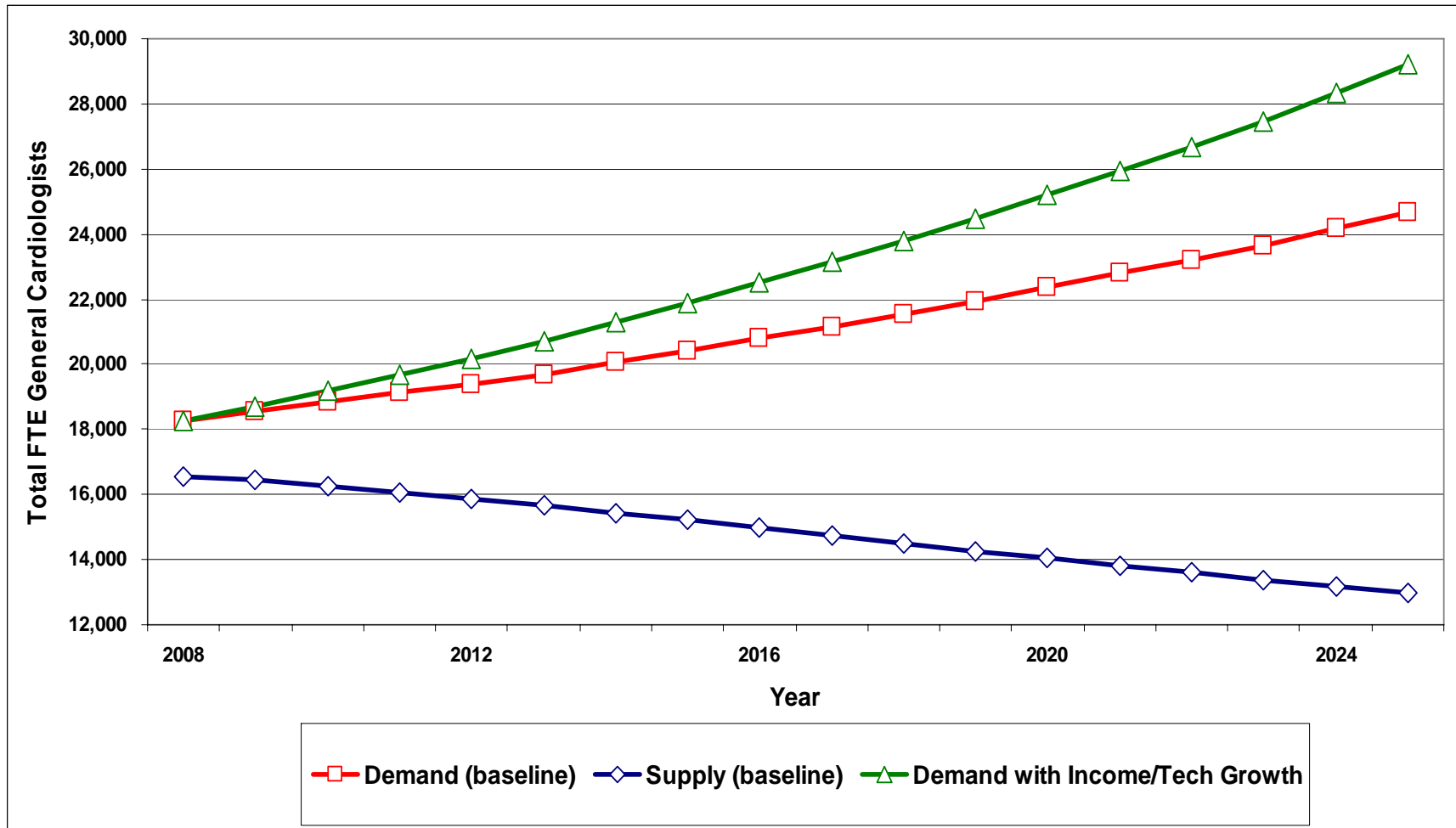
The Workforce Assessment conducted for the ACC addressed the following topics:

- Current Supply
- Current Demand
- Projections of Supply and Demand
- *Subspecialty Choice*
- Retirement and Part-time Work
- Practice Efficiency
- International Medical School Graduates (IMGs), Women, and Underrepresented Minority (URMs) in Cardiology

Background: The Current and Future Need for Cardiologists

- Along with other factors, the aging of the baby boomers is expected to substantially increase demand for cardiology services over the next 20 years.
- Current about 43% of general cardiologists are over 55, and thus, anticipated to retire within the next 20 years.
- As a result of these trends, the shortage of general cardiologists will increase from about 1,700 in 2008 to about 16,000 in 2025.

Supply and Demand for General Cardiologists: 2008-2025



Economic Theory: What Motivates IM Graduates to Pursue Cardiology vs. Other IM Paths?

- Economic theory tells us that individuals maximize their utility subject to budget constraints.
- The utility that an IM graduate receives from a particular practice path is a function of:
 - Income;
 - Practice demands; and
 - Intellectual content of the path.

Economic Theory: What Motivates IM Graduates to Pursue Cardiology vs. Other IM Paths?

- Years of training following completion of IM training is a measure of the cost of obtaining a particular path.
- Females tend to practice fewer hours during their professional career, therefore they will have lower long-run earnings associated with each IM path.

Focus Groups/Interview Findings

- Focus groups/interviews were conducted with cardiology program directors, cardiology fellows, and internal medicine residents to assess factors influencing the specialty choice decision.
- In the focus groups/interviews cardiology fellows rarely cited compensation as a factor in their choice of specialty; however many indicated compensation was an important factor in their choice of practice setting.

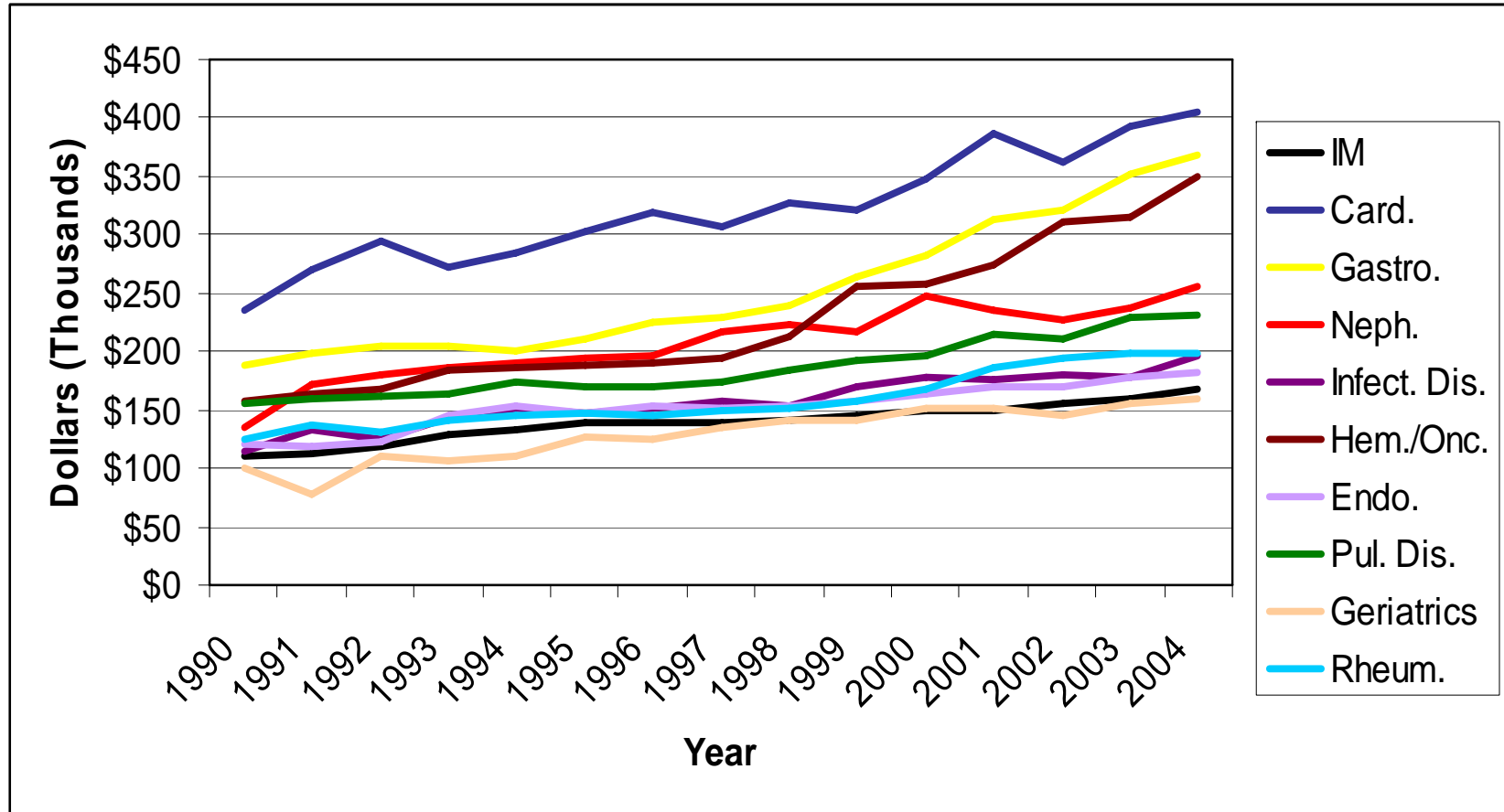
Focus Groups/Interviews Findings

- Work-life balance is very important to both male and female cardiology fellows who participated in the focus groups/interviews.
- Many cardiology fellows indicated they had initially been discouraged from cardiology because of the long hours and call demands.
- The cardiology fellows are looking for practice opportunities with work-life balance, such as working in a larger practice where call time is shared and practice management duties are limited.

Overview of Methods - Quantitative Model

- A multivariate logit model was estimated to assess the influence of characteristics of the specialty and the physician on subspecialty choice among internal medicine program graduates.
- Data: All IM graduates in the AMA Masterfile for 1991 to 2004.
- Independent Variables:
 - Specialty characteristics: median compensation, training requirements, available positions.
 - Physician characteristics: gender, regional location, Doctor of Osteopathy, International Medical School Graduate (IMGs), Historically Black College or University [HBCU] graduate

Median Compensation by Specialty



Based on MGMA Survey Data for 1990-2004.

Additional Years of Training Requirements

Subspecialty	Additional Training Year Requirements
Internal Medicine	0
Geriatrics	1
Nephrology, Hematology/Oncology, Endocrinology, Rheumatology, Pulmonary Disease, Infectious Disease	2
Cardiology	3
Gastroenterology	2 for graduates prior to 1998, 3 for graduates after 1998

Model Results

Variable	Coefficient Estimate	Standard Error
Compensation	0.127 **	0.056
Male * Comp	1.110 *	0.034
IMG * Comp	-0.560 **	0.027
HBCU * Comp	0.209 **	0.213
Yrs of Training	-0.042	0.039
Male * Train Yrs	-0.033 **	0.012
IMG * Train Yrs	0.106 **	0.011
HBCU * Train Yrs	-0.365 **	0.082

* Significantly different from zero at 95% confidence.

** Significantly different from zero at 99% confidence.

Impact of Compensation

- Quantitative analysis of specialty choice finds that compensation is an important factor in specialty choice.
 - Males are more sensitive relative compensation levels than females.
 - U.S. Medical School graduates are more sensitive to compensation than IMGs.
 - Graduates of HBCU are more sensitive than non-HBCU graduates.

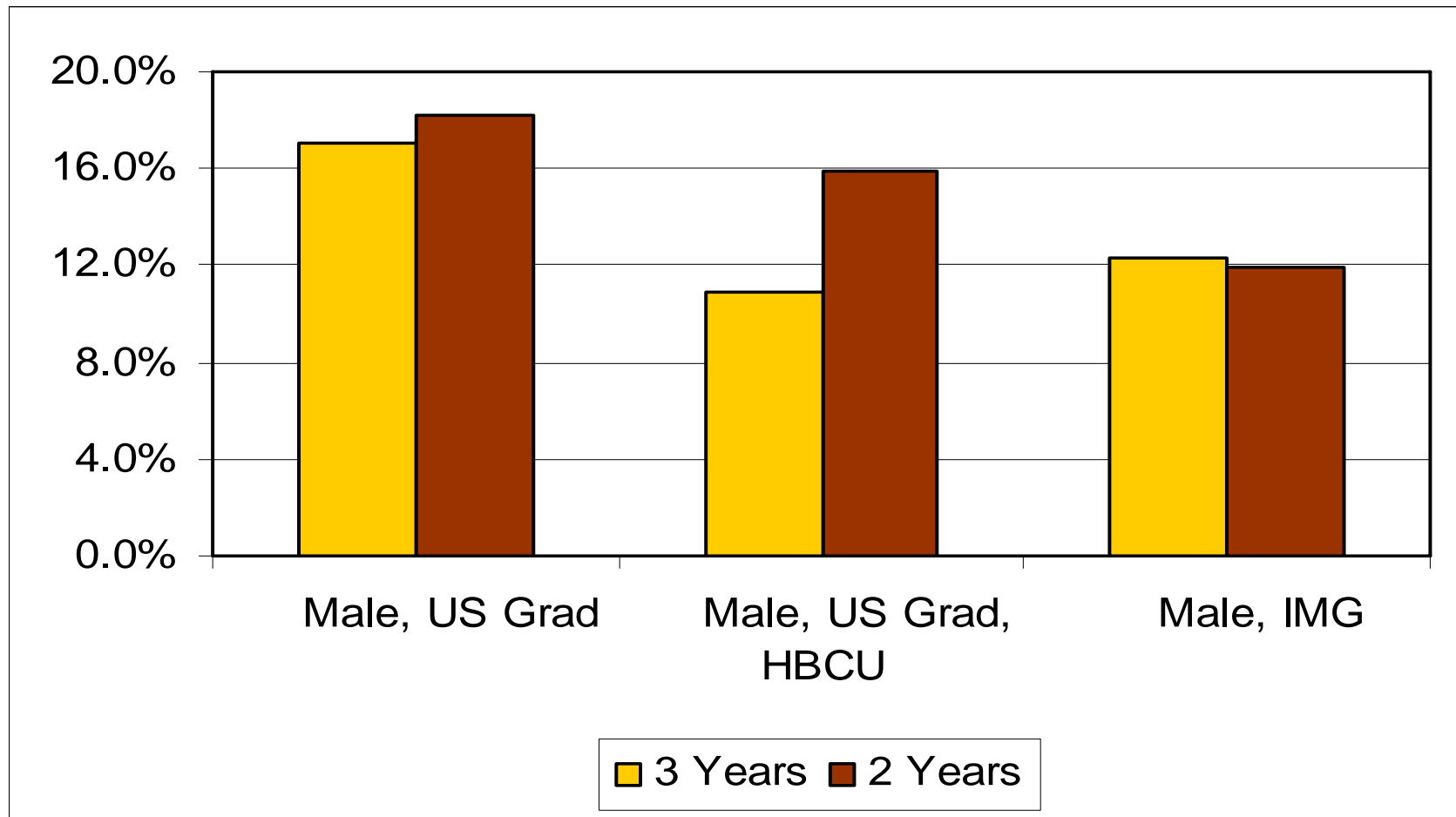
Estimated Compensation Elasticities

Demographic	Elasticity
Male, U.S. Grad	2.53
Female, U.S. Grad	0.29
Male, IMG	1.46
Male, U.S. Grad, HBCU	3.19

Impact of Length of Training

- In the quantitative model, length of training was an important factor in specialty choice.
 - Graduates of HBCU are particularly sensitive.
 - Length of training was less important to women than men.
 - IMGs were more likely to choose specialties with longer training.

Impact of Training Length on Share of IM Graduates Choosing Cardiology



Subspecialty Choice: URM

- Multivariate modeling indicates that IM residents who attended HBCU are more sensitive to compensation and length of training relative to others when they make their specialty choice decisions. This results in HBCU graduates being more likely to remain in primary care than their counterparts.
- In focus groups, cardiology program directors had few formal programs for attracting URM.
- Efforts to reduce the burden of longer training time may help attract HBCU graduates to cardiology and other IM subspecialties.

Areas for Further Study

- Improve measure of race/ethnicity
- Assess role of mentorship, scholarships, and other incentive programs
- Include measures of practice characteristics in the model:
 - typical requirements for on-call hours
 - degree of control over schedule