

AMERICAN ASSOCIATION OF COLLEGES OF OSTEOPATHIC MEDICINE

## The Future of Osteopathic Medical Education:

Physician Workforce Projections and the Response of U.S. Colleges of Osteopathic Medicine

Stephen C. Shannon, DO, MPH President and CEO, AACOM

Photo courtesy of PCOM.

Presentation to the Maryland Association of Osteopathic Physicians Ocean City, MD June 20, 2008

# Objectives—To Understand:

- The current projections of U.S. physician workforce supply.
- The factors influencing the need/demand for physician services.
- The factors influencing physician workforce supply.
- The developments in osteopathic medical education related to the physician workforce in the U.S.



# **Overview of Presentation**

- Background:
  - AACOM
  - Forces for Change
- Physician Workforce Issues
- Response of Medical Education
- Undergraduate OME Growth/Issues
- Graduate Medical Education
- Issues and Challenges
- Questions/Comments



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## What is **AACOM**?

- Founded in 1898 to lend support and assistance to osteopathic medical schools
- Association of all of the nation's accredited COMs
- Governed by the Board of Deans (all colleges represented on the Board)





# **AACOM's Mission**

The American Association of Colleges of Osteopathic Medicine promotes excellence in osteopathic medical education, in research and in service, and fosters innovation and quality among osteopathic colleges to improve the health of the American public.



# **Osteopathic Medical Schools**

#### **Private (19) Colleges of Osteopathic Medicine**

- Pacific Northwest University College of Osteopathic Medicine, Washington (PNWUCOM)
- Philadelphia College of Osteopathic Medicine (PCOM), Pennsylvania
  - **Georgia Campus–PCOM**
- Pikeville College School of Osteopathic Medicine (PCSOM), Kentucky
- Rocky Vista University College of Osteopathic Medicine, Colorado (RCUCOM)
- Touro College of Osteopathic Medicine – New York (TOUROCOM)

- Touro University College of Osteopathic Medicine (TUCOM-CA), California
  - TUCOM–Nevada Campus
- University of New England College of Osteopathic Medicine (UNECOM), Maine
- Edward Via Virginia College of Osteopathic Medicine (VCOM)
- Western University College of Osteopathic Medicine of the Pacific (Western U/COMP), California



# **Osteopathic Medical Schools**

#### **Private (19) Colleges of Osteopathic Medicine**

- A.T. Still University School of Osteopathic Medicine – Arizona (ATSU/SOMA)
- A.T. Still University of Health Sciences/Kirksville College of Osteopathic Medicine (ATSU/KCOM), Missouri
- Arizona College of Osteopathic Medicine of Midwestern University (AZCOM)
- Chicago College of Osteopathic Medicine of Midwestern University (CCOM), Illinois
- Des Moines University College of Osteopathic Medicine (DMU-COM), Iowa

- Kansas City University of Medicine and Biosciences – College of Osteopathic Medicine (KCUMB-COM), Missouri
- Lake Erie College of Osteopathic Medicine (LECOM), Pennsylvania
  - **LECOM–Bradenton Campus**
- Lincoln Memorial University Debusk College of Osteopathic Medicine (LMU-DCOM), Harrogate, Tennessee
- New York College of Osteopathic Medicine of New York Institute of Technology (NYCOM/NYIT)
- Nova Southeastern University College of Osteopathic Medicine (NSU-COM), Florida

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## **Osteopathic Medical Schools**

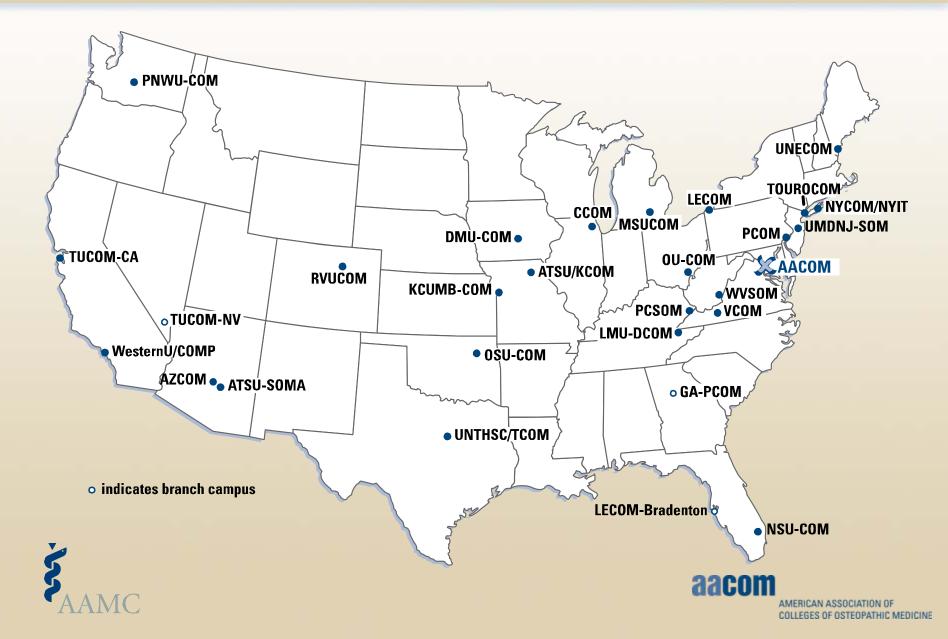
#### Public (6) Colleges of Osteopathic Medicine

- Michigan State University College of Osteopathic Medicine (MSUCOM)
- Ohio University College of Osteopathic Medicine (OUCOM)
- Oklahoma State University Center for Health Sciences – College of Osteopathic Medicine (OSU-COM)

- University of Medicine and Dentistry of New Jersey – School of Osteopathic Medicine (UMDNJ-SOM)
- University of North Texas Health Science Center at Fort Worth/Texas College of Osteopathic Medicine at Fort Worth (UNTHSC/TCOM)
- West Virginia School of Osteopathic Medicine (WVSOM)



## Location of AACOM Members



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# **Forces for Change**

- Aging population
- Chronic disease epidemic
- Rising expectations for evidence-based education/practice and quality
- Acceleration of technological change:
  - Molecular biology
  - Nanotechnology
  - Imaging
  - Robotics
  - Information technology



# **Forces for Change**

- Globalization
- Public-private innovation (medical home/minute clinics)
- Predictive health (targeting prevention)
- Shifting diversity of US population
- Politico-economic changes in US healthcare environment



# US Population Growth 2000-2050

- By 2025 a 20% increase in US population and a 75% increased in those > 65
- Total population 2000 282,125,000
- Total population 2050 419,854,000
  - Hispanic/Latino will grow from 12.6% to 24.4%
  - African-American will grow from 12.7% to 14.6%
  - Asian/PI will grow from 3.8% to 8.0%
  - Other non-White racial groups will grow from 2.5% to 5.3%



## In an environment....

- Without a US Health Care System
- Growing numbers of uninsured
- Lacking diversity in health care professions
- Maldistribution of healthcare resources
- Evidence and predictions of health workforce shortages

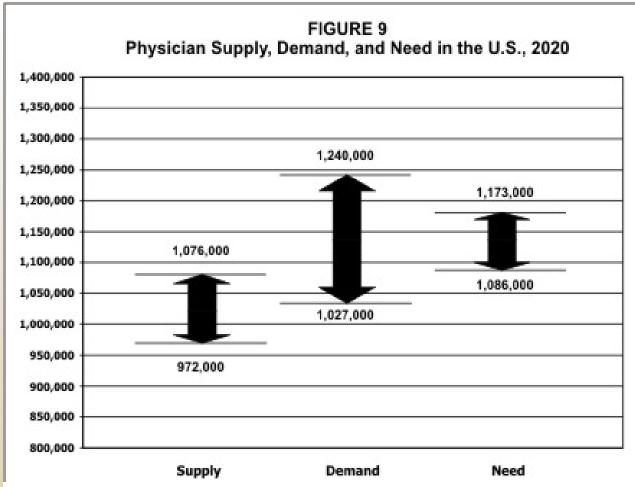


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# **Physician Workforce**

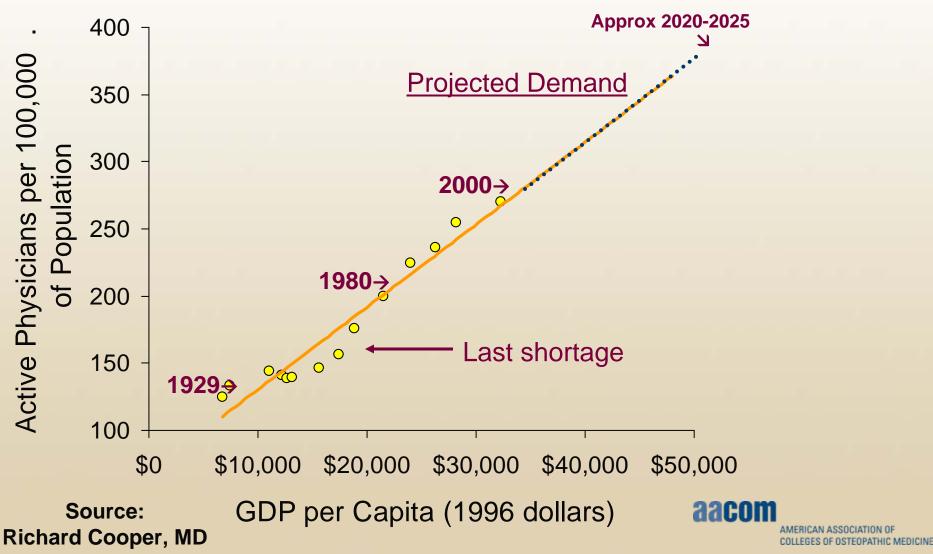


Source: *Sixteenth Report: Physician Workforce Policy Guidelines for the United States, 2000-2020* (January 2005), Council on Graduate Medical Education.



# Underlying Trends

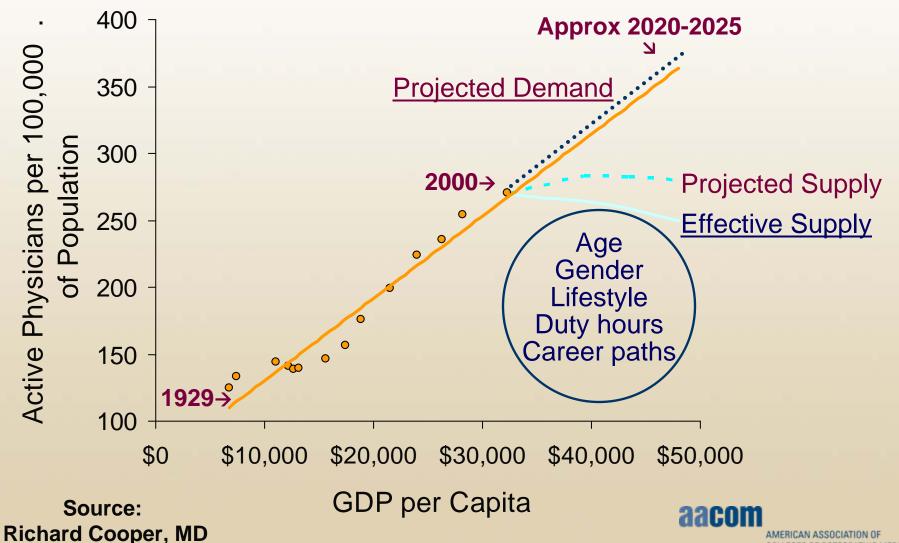
The demand for physicians results from economic and population growth



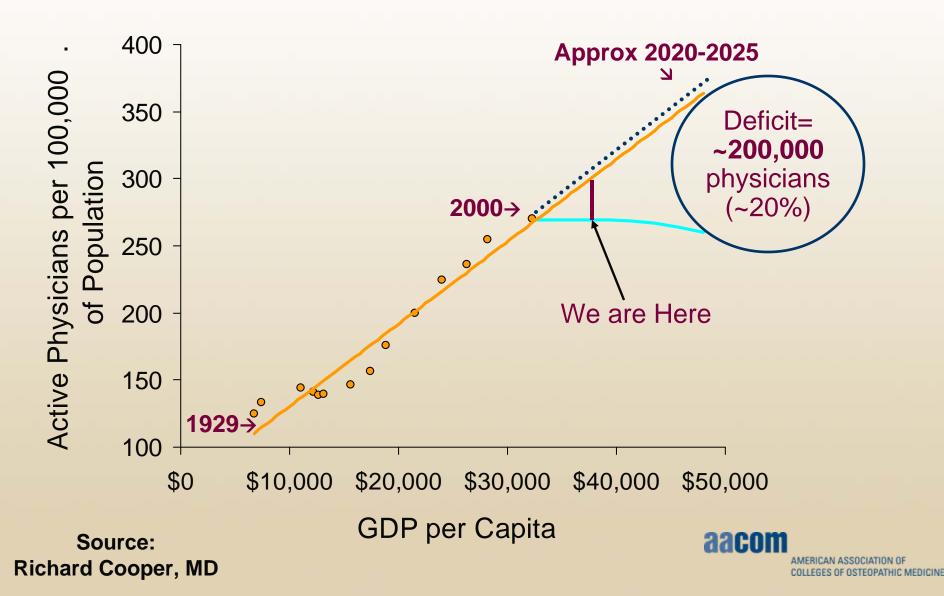
## But supply will not keep up with demand.



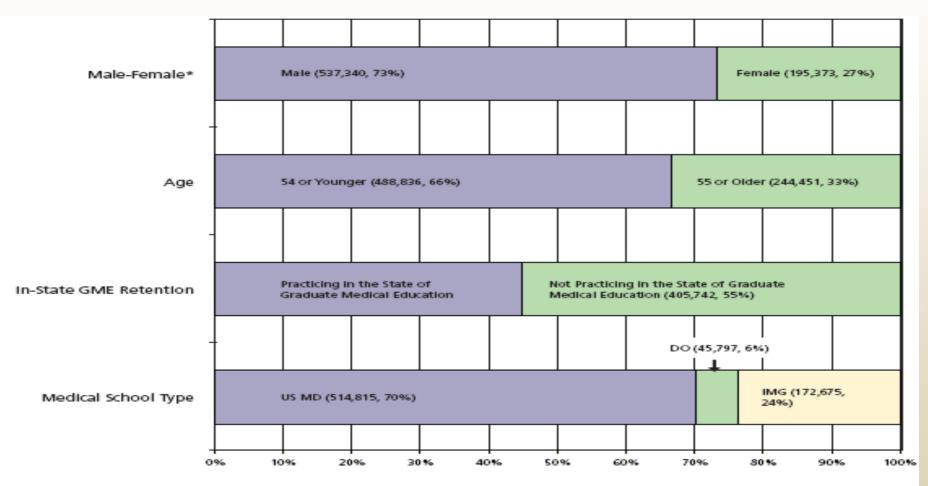
### And the "Effective Supply" will even be less.



# We are in the early stages of a period of deepening physician shortages.



## Active Physicians in the United States

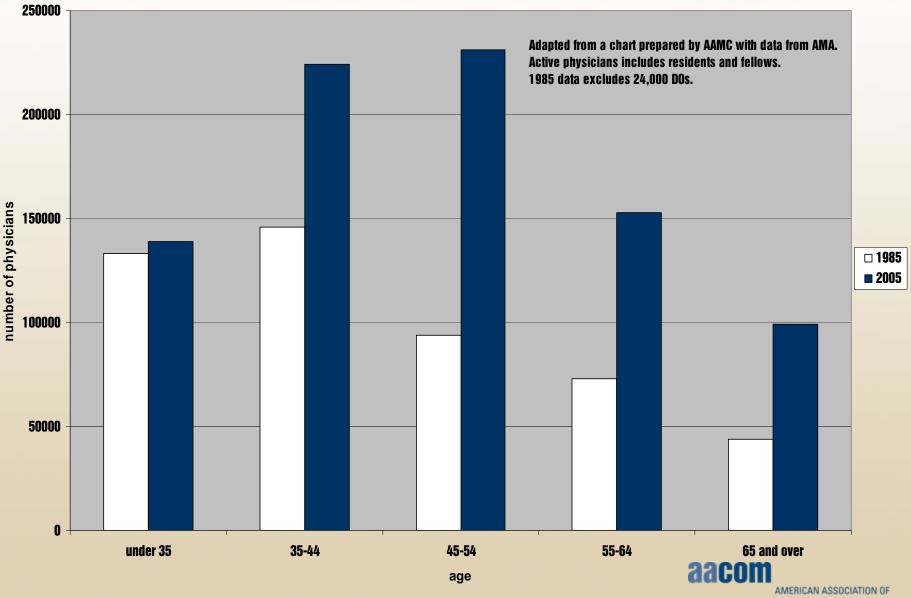


Source: AMA Physician Masterfile, January 2006.

\* Excludes 574 physicians whose sex is unknown.

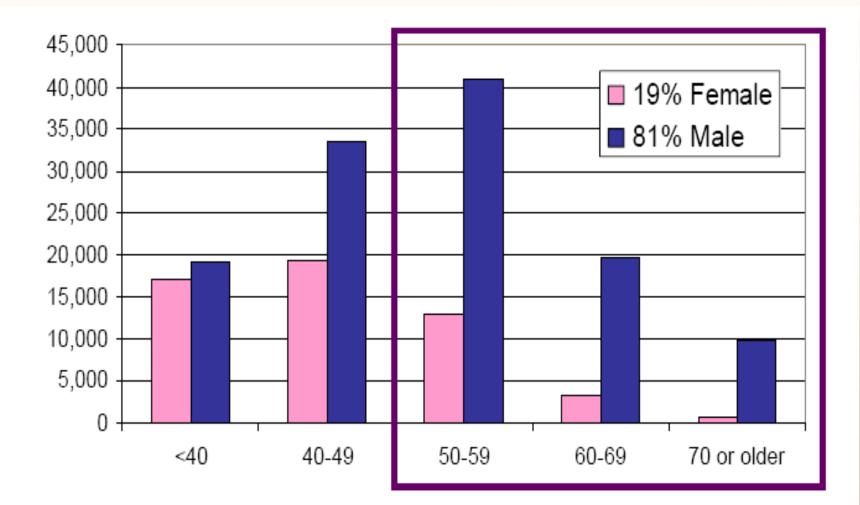


## **Physician Workforce**



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## Half of the Primary Care Workforce 50 Years or Older



2007 AMA Physician Masterfile Cleese Erikson, AAMC



## Recent Reports of Physician Shortages: Specialty Studies

- Allergy & Immunology (2000)
- Anesthesia (2003)
- Cardiology (2004)
- Child Psychiatry (2006)
- Critical Care Workforce (2006)
- Dermatology (2004)
- Emergency Medicine (2006)
- Endocrinology (2003)
- Family Medicine (2006)

- General Surgery (2008)
- Geriatric Medicine (2007)
- Medical Genetics (2004)
- Neurosurgery (2005)
- Oncology (2007)
- Pediatric Subspecialty (2008)
- Psychiatry (2003)
- Public Health (2007)
- Rheumatology (2007)



## Recent Reports of Physician Shortages: State Reports

- Alaska (2006)
- Arizona (2005)
- California (2004)
- Florida (2005)
- Georgia (2006)
- Hawaii (2008)
- **Idaho (2007)**
- **Iowa (2008)**
- Kentucky (2005)
- **Maryland (2008)**
- Massachusetts (2007)

- Michigan (2008)
- Mississippi (2003)
- Nevada (2006)
- New York (regional) (2007)
- North Carolina (2007)
- Oregon (2004)
- Texas (2002)
- Utah (2006)
- **Virginia** (2007)
- Wisconsin (2004)





# **Physician Workforce**

## AAMC Policy:

- 30% increase in medical school enrollment
- Elimination of the GME Cap
- Richard "Buzz" Cooper, MD:
  - Predicts 200,000+ physician shortage by 2020
  - Advocates 60 new medical schools
  - Advocates 10,000 new residency slots

Skeptics: David Goodman, MD, Dartmouth



# **Physician Workforce**

- Projections continue to show shortage
  - Absent GME growth FTE physicians drop after 2017 & 123,000 shortage 2025 (E.Salsberg, AAMC)
- Older physicians likely to retire earlier
- Younger physicians (especially females) likely to perform less clinical care
- MD schools likely to grow near 20% over next 10-15 years
- IMGs continuing to increase (driven by U.S. IMGs)
- GME expansion not sufficient to handle DO/MD growth
- Number of PAs/NPs growing rapidly



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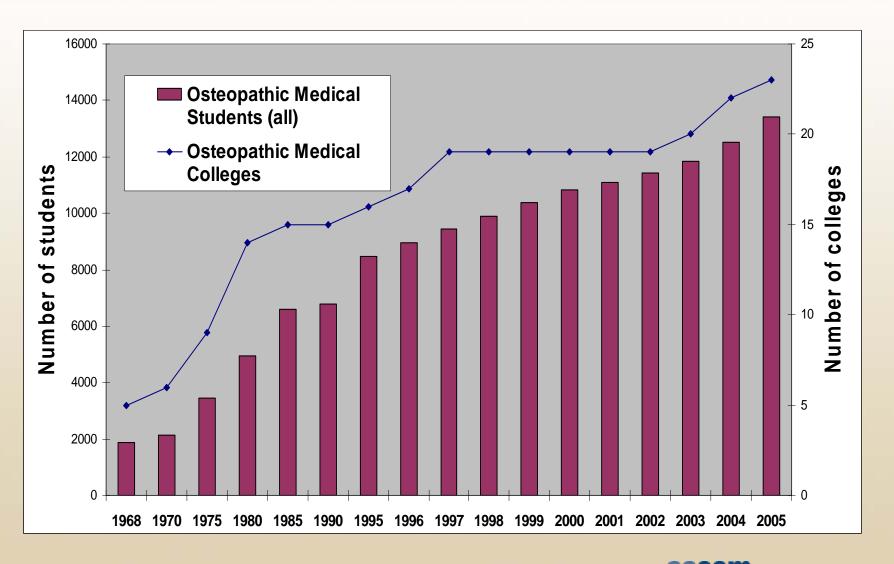


## **Osteopathic Medicine's Growth**

- In the last 25 years, osteopathic medical school numbers have grown from 14 to 25 colleges, with 3 branch campuses.
- The number of osteopathic college graduates have more than doubled to over 3000.
- With existing schools' planned growth the number of DO graduates will grow to over 5000 by 2015.



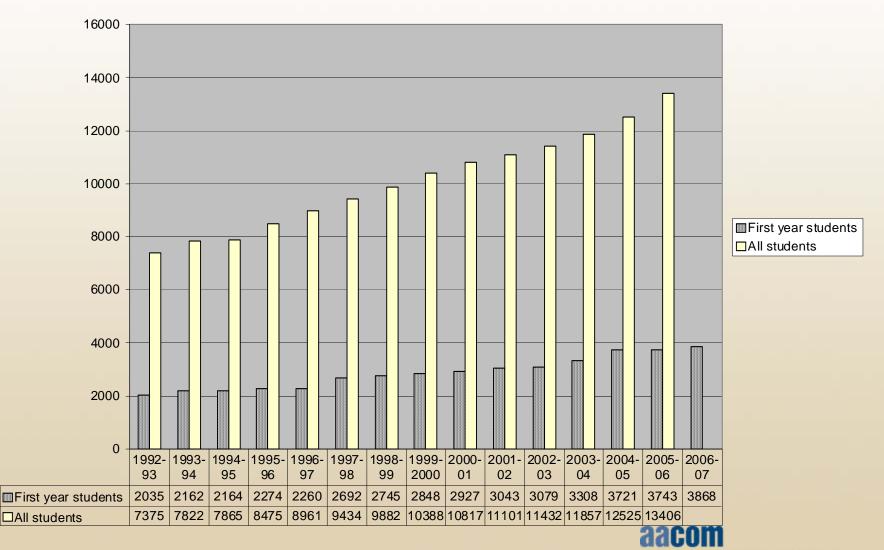
## **Osteopathic Medical Students and Colleges**



## **Osteopathic Medical Students**

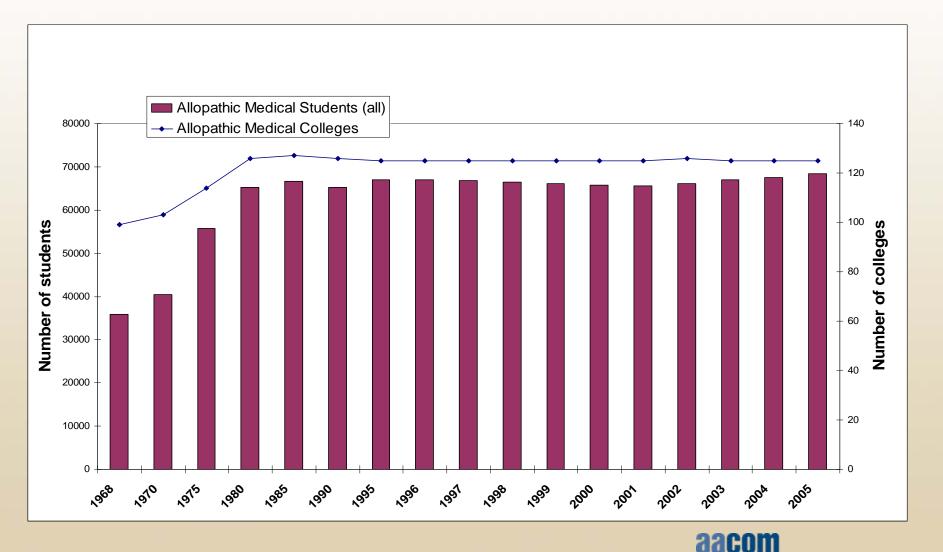
Source: Annual Report on Osteopathic Medical Education and AACOMAS data.

Class size -- first year and all students

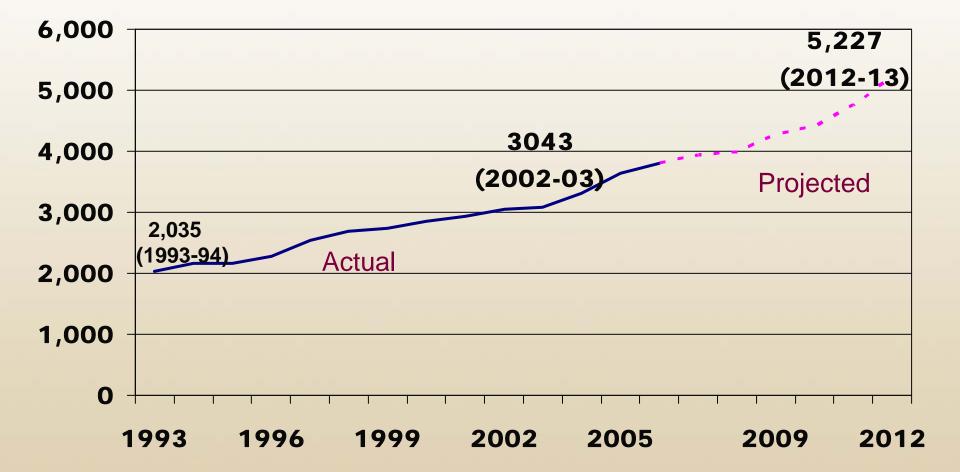


Number of stude

## **Allopathic Medical Students and Colleges**

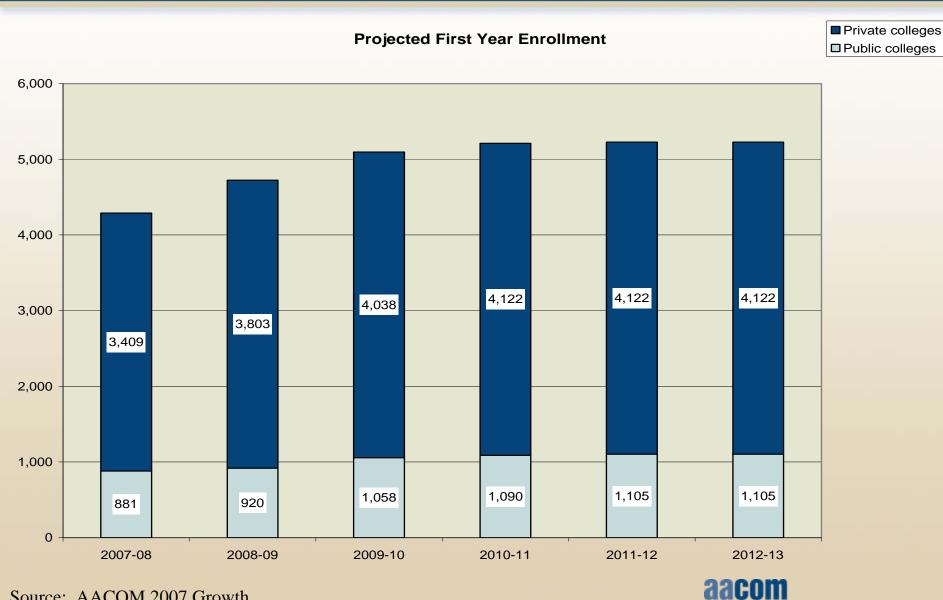


#### First-Year Enrollment in Osteopathic Medical Schools Expected to Surpass 5,000 by 2012



Source: 2007 AACOM Enrollment Survey: Preliminary Findings

#### First-Year Enrollment in Osteopathic Medical Schools, Private vs Public (2007-2013)



Source: AACOM 2007 Growth Survey, Tom Levitan, M.Ed.

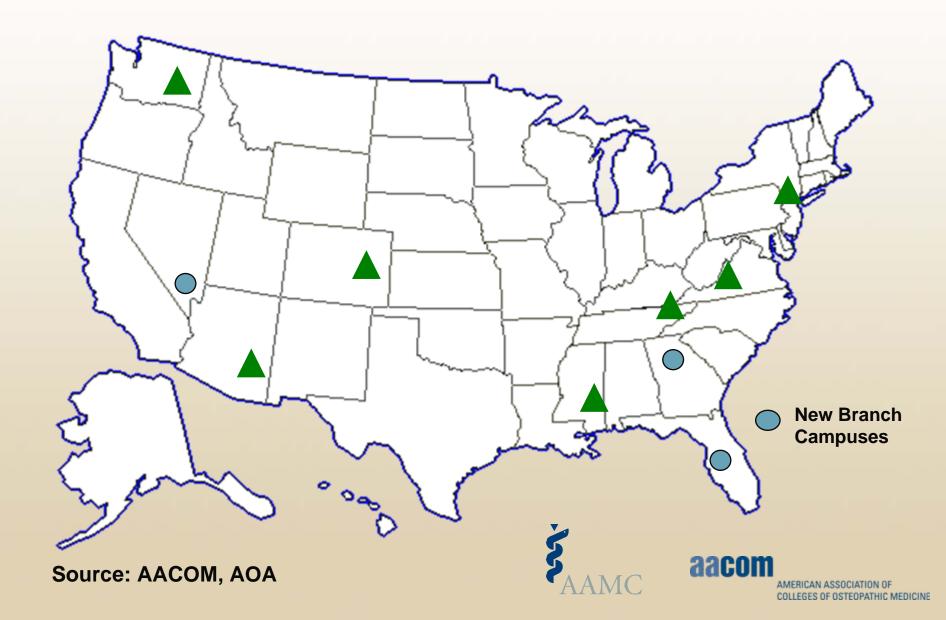
#### First-Year Enrollment in Osteopathic Medical Schools, Private vs Public (2007-2013)

|                  | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 |
|------------------|---------|---------|---------|---------|---------|---------|
| Public colleges  | 881     | 920     | 1058    | 1090    | 1105    | 1105    |
| Private colleges | 3409    | 3803    | 4038    | 4122    | 4122    | 4122    |
| Total            | 4290    | 4723    | 5096    | 5212    | 5227    | 5227    |

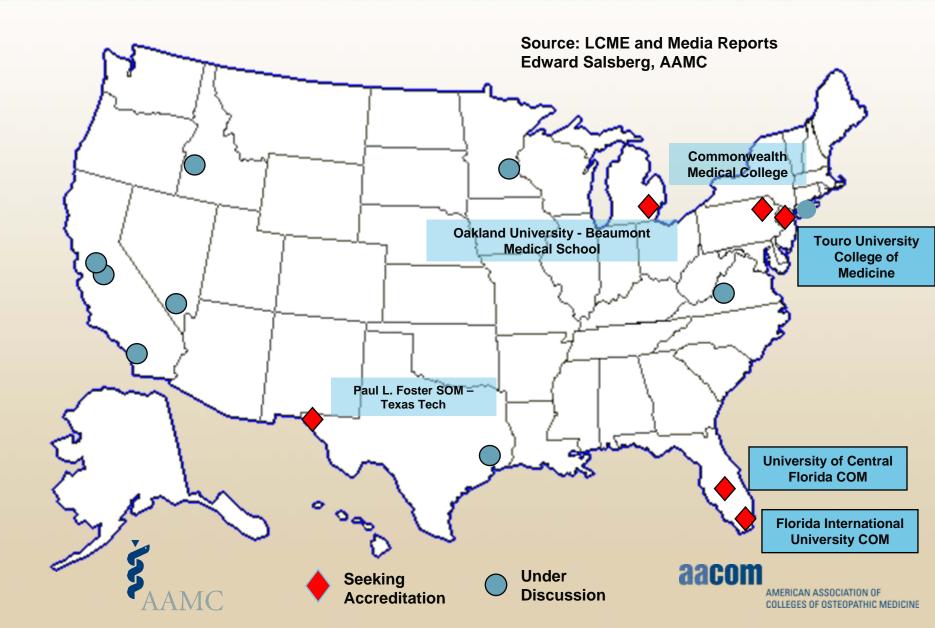
Source: AACOM 2007 Growth Survey, Tom Levitan, M.Ed.



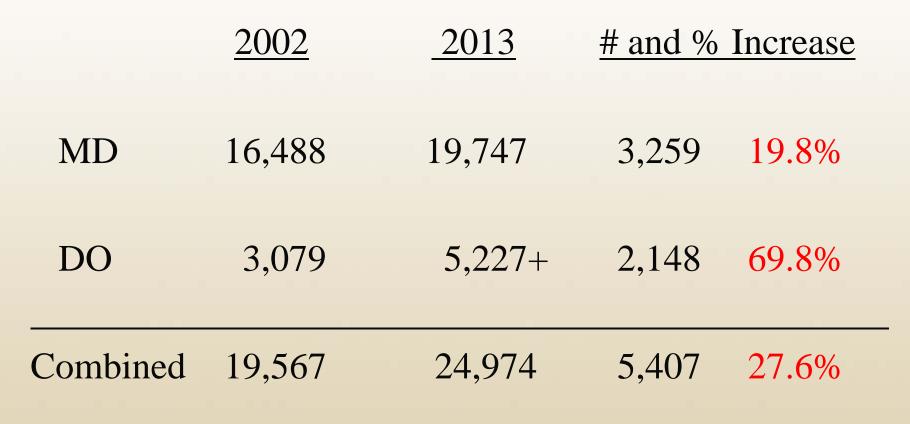
### Osteopathic Medical Schools: New Since 2000 or In Active Planning



### Number of New Medical Schools Seeking LCME Accreditation and Under Discussion Increased Significantly in the Past Year



### First-Year MD and DO Enrollment in 2013 Likely to Be 5,400 (27.%) Higher than in 2002



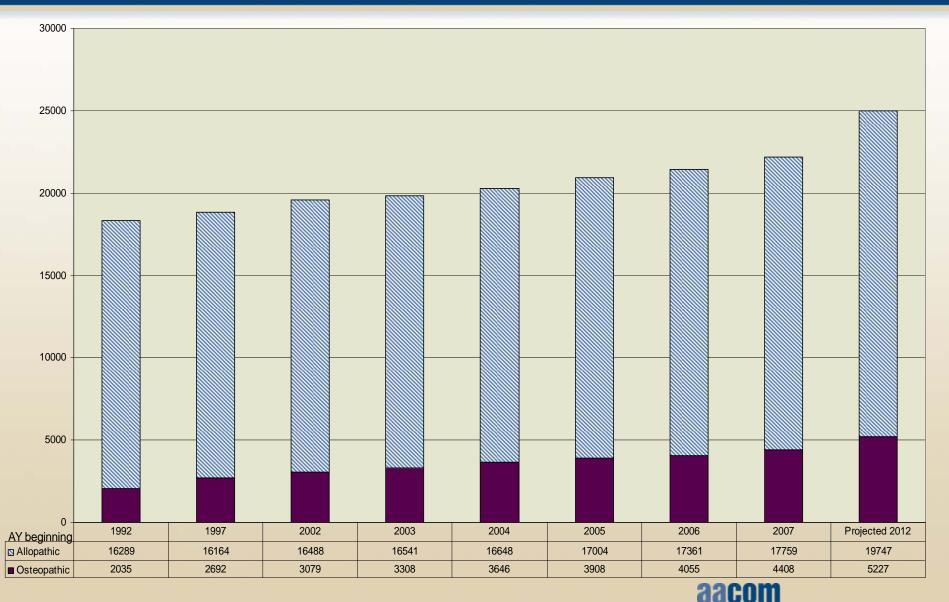
Source: 2007 AAMC Dean's Enrollment Survey: Preliminary Findings 2007 AACOM Enrollment Survey: Preliminary Findings



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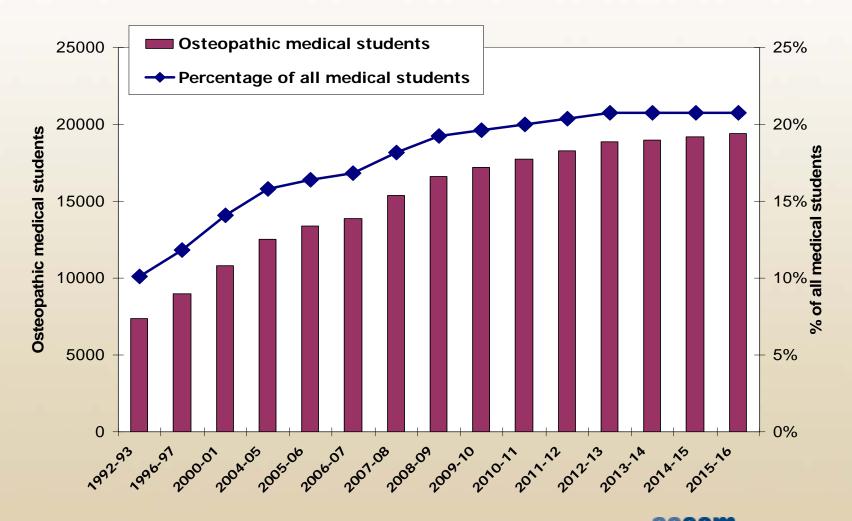
## US Medical School 1<sup>st</sup> Year Enrollment



## US Medical School 1<sup>st</sup> Year Enrollment

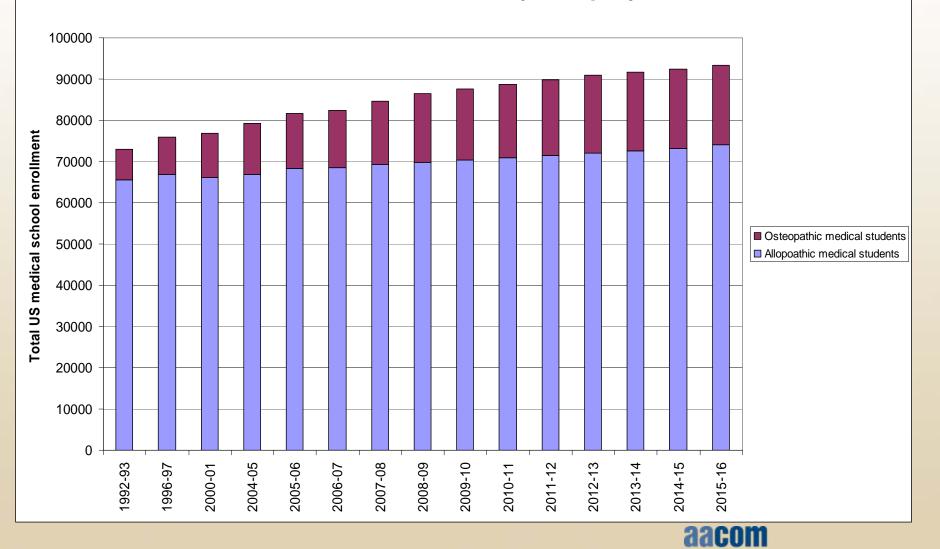


### Osteopathic Students as a Percent of All U.S. Medical Students



## **Osteopathic Medical Students**



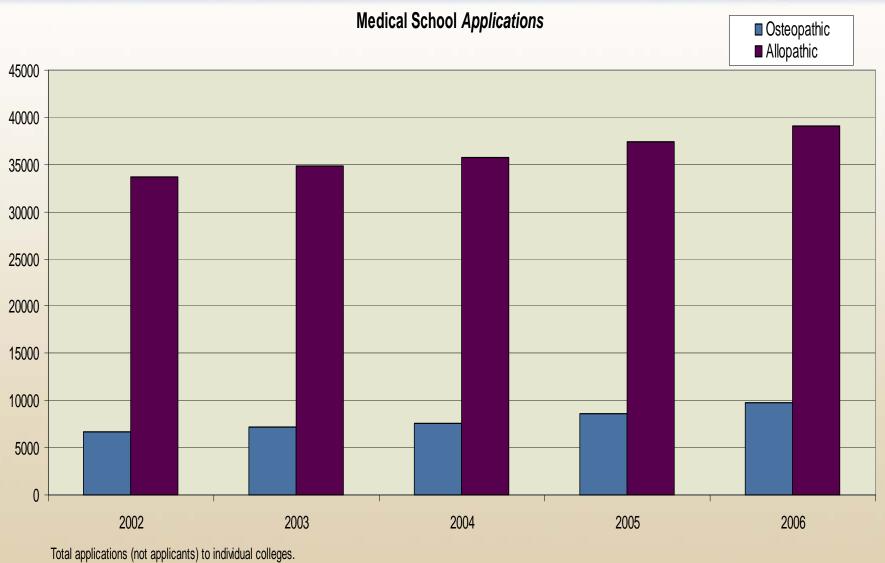


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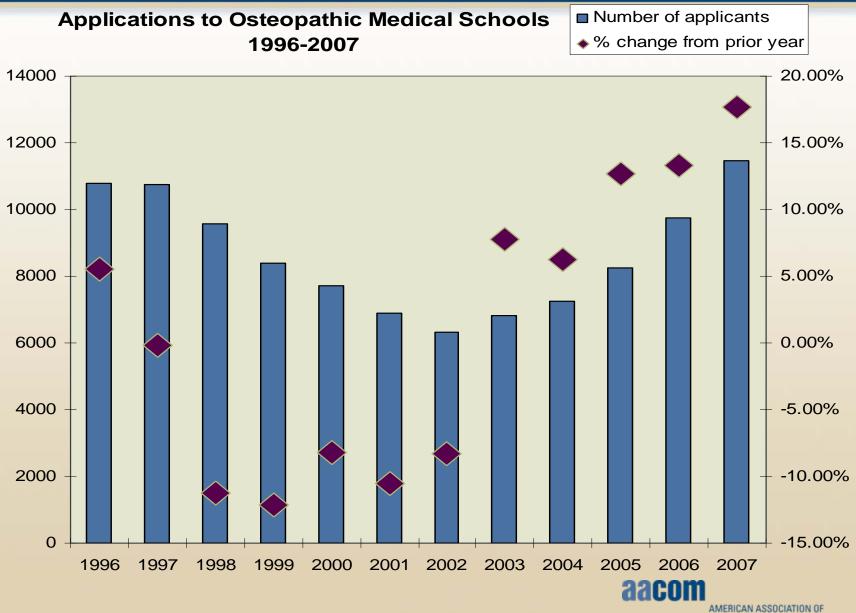


# **Medical School Applications**



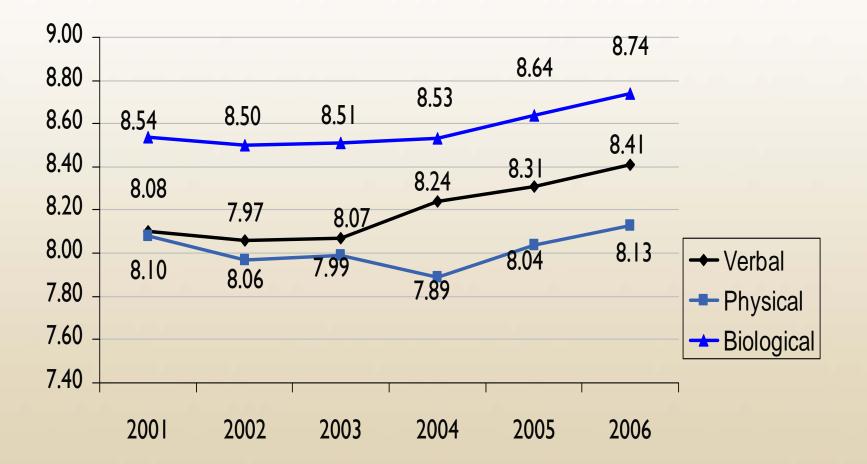


## **Medical School Applications**



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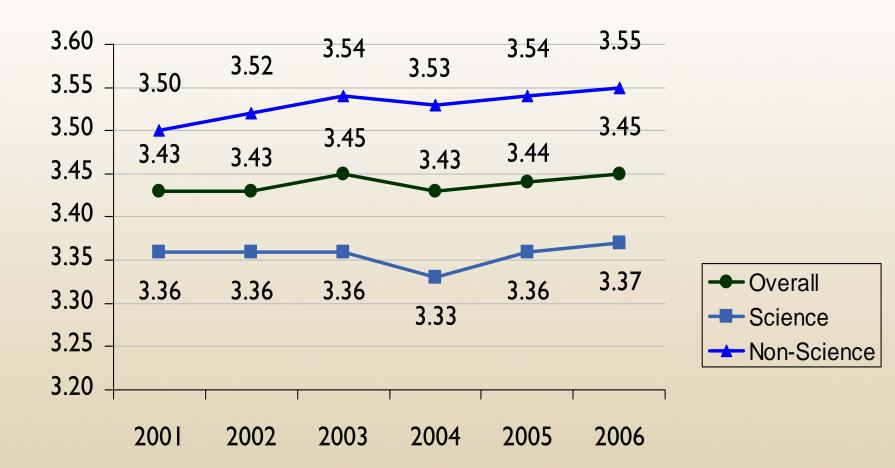
# **COM Matriculant Mean MCAT Scores**



Source: AACOM, Annual Osteopathic Medical School Questionnaires

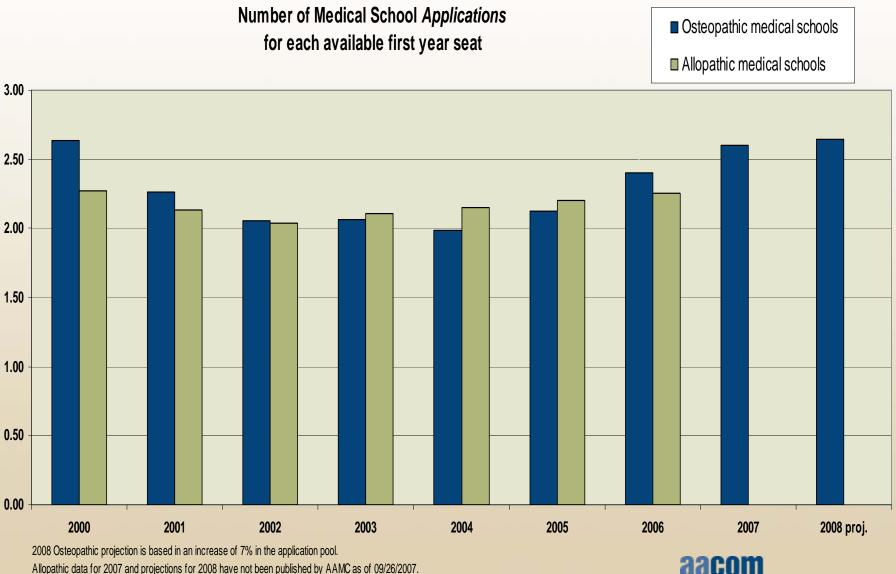


# **COM Matriculant Mean GPAs**



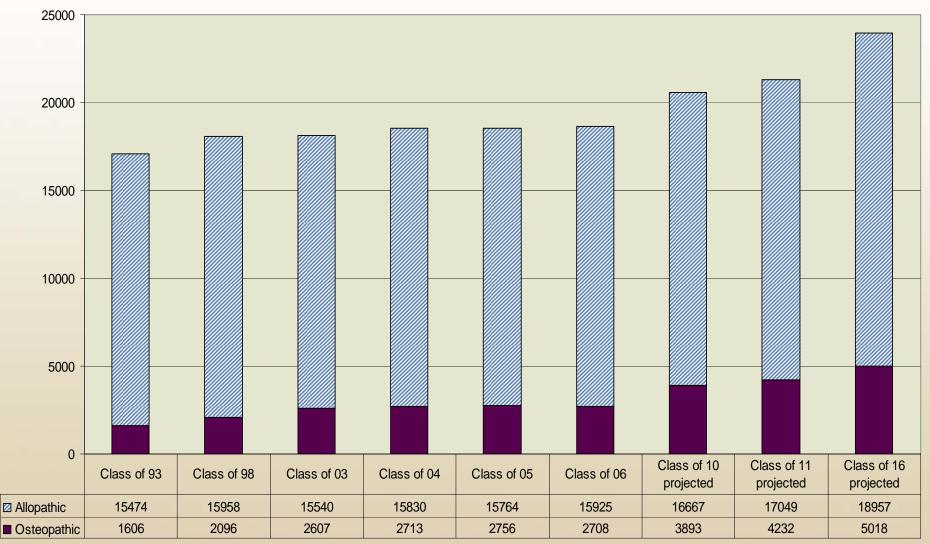
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## **Medical School Applications**



Allopathic data for 2007 and projections for 2008 have not been published by AAMC as of 09/26/2007.

## **US Medical School Graduates**

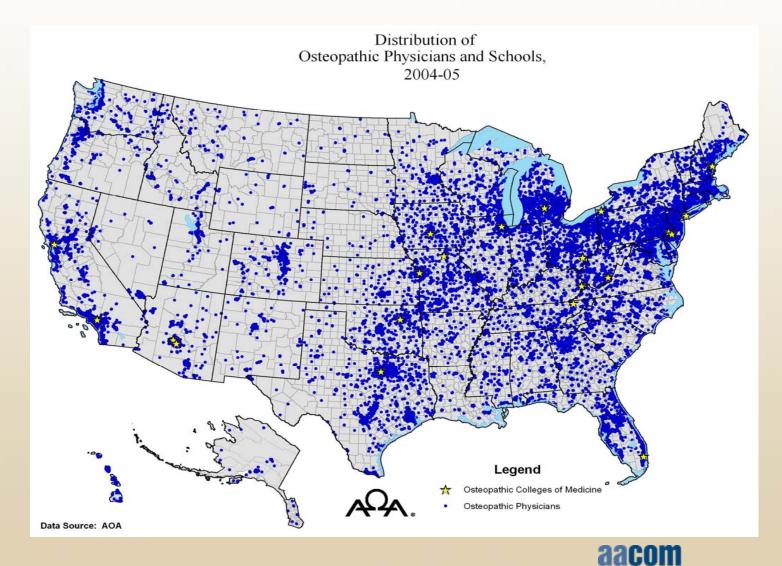


Graduation projections based on 96% of class entering four years prior.



## Distribution of Osteopathic Physicians and Schools

#### Data Source: AOA



# **Osteopathic Physicians**

- Number of DOs has increased 67% since 1990 to ~60,000.
- ~65% of DOs practice in primary care specialties.
  - family practice, internal medicine, obstetrics/gynecology and pediatrics.
- DOs represent nearly 6% of the total U.S. physicians.
  - ~15% of all military physicians.
- ~ 100 million patient visits annually are made to DOs.



## Active DOs by Specialty Category

| Specialty         | Number | Percentage |
|-------------------|--------|------------|
| Family Medicine   | 18,765 | 47.3       |
| Internal Medicine | 3,278  | 8.3        |
| Pediatrics        | 1,663  | 4.2        |
| OB/GYN            | 1,526  | 3.8        |
| OMT/OMM           | 448    | 1.1        |
| Non-primary Care  | 14,028 | 35.3       |
| Unknown           | 359    |            |
| Subtotal          | 40,067 | 100.0      |



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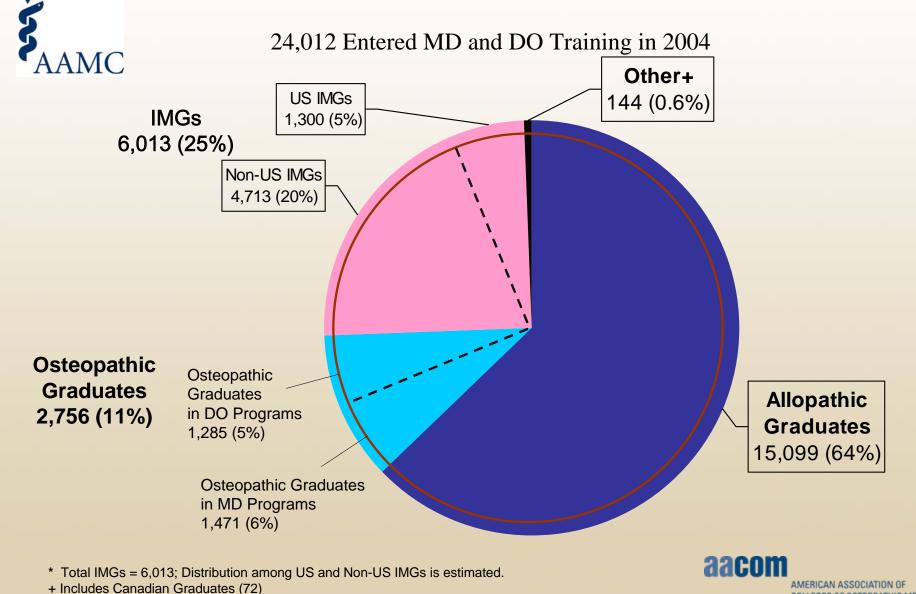
Several Tracks to Specialty:

1. PGY 1 Osteopathic Internship, then:

- Osteopathic Residency, or
- ACGME Residency
- 2. ACGME Residency



## Number and Source of Physicians Entering GME Training in 2004



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Source: AAMC GMETrack and AOA Master File

### The Number of IMGs Entering GME Has Increased More Than 25% Over The Past Decade

|                    | IMGs <u>Entering</u> GME* |   |
|--------------------|---------------------------|---|
| 1996-1997          | 5,379                     |   |
| 1997-1998          | 5,414                     | Sources: 1995/96 to 2002/03<br>data based on Form 246 |
| 1998-1999          | 5,371                     | filings as of Aug. 2004.                              |
| 1999-2000          | 5,905                     | 2003/04 to 2006/07 data are from AAMC GME Track.      |
| 2000-2001          | 6,097                     |   |
| 2001-2002          | 6,170                     |   |
| 2002-2003          | 6,208                     | AAMC  |
| 2003-2004          | 5,985                     |   |
| 2004-2005          | 6,338                     |   |
| 2005-              | 6,570                     |   |
| 2006               |                           |   |
| 2006-2007          | 6,802                     |   |
| Change 1996 – 2006 | +1423 (+26%)              | 300m  |

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Note: IMG numbers include Fifth Pathway

# *India and Pakistan Continue to be the Largest Sources of IMGs, but the Caribbean Islands*

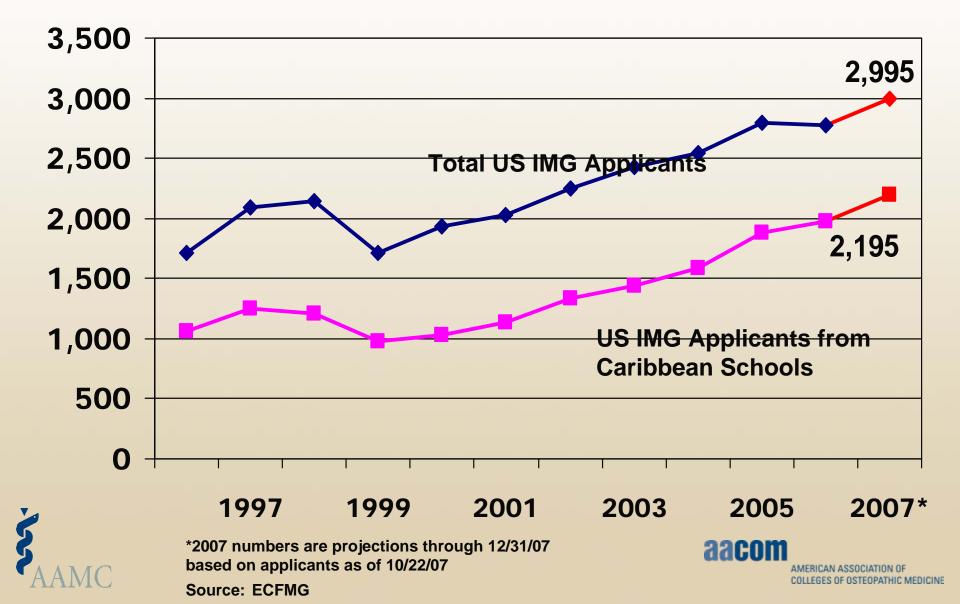
|                          | 2003  | 2004  | <u>2005</u> | <u>2006</u> |
|--------------------------|-------|-------|-------------|-------------|
| India                    | 1,442 | 1,578 | 1,627       | 1,621       |
| Pakistan                 | 475   | 440   | 476         | 392         |
| Grenada (St.<br>Georges) | 348   | 348   | 361         | 375         |
| Dominica (Ross)          | 312   | 323   | 377         | 360         |
| Netherland<br>Antilles   | 177   | 227   | 255         | 333         |
| Philippines              | 245   | 268   | 237         | 275         |
| China                    | 156   | 198   | 209         | 259         |
| Nigeria                  | 138   | 162   | 144         | 151         |
| Iran                     | 92    | 123   | 143         | 140         |
| Colombia                 | 95    | 133   | 129         | 115         |
| Mexico                   | 132   | 159   | 144         | 114         |



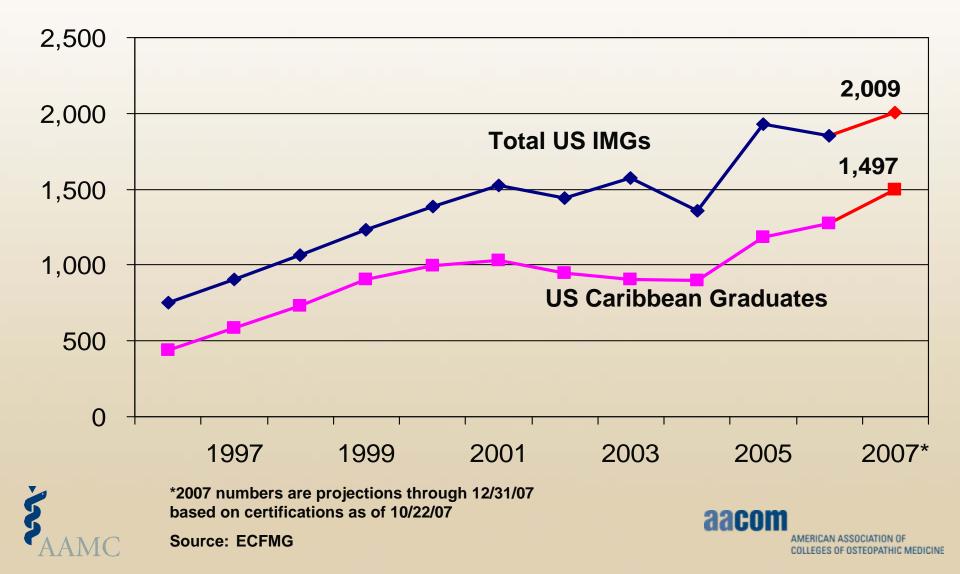
Note: IMG numbers do <u>not</u> include Fifth Pathway



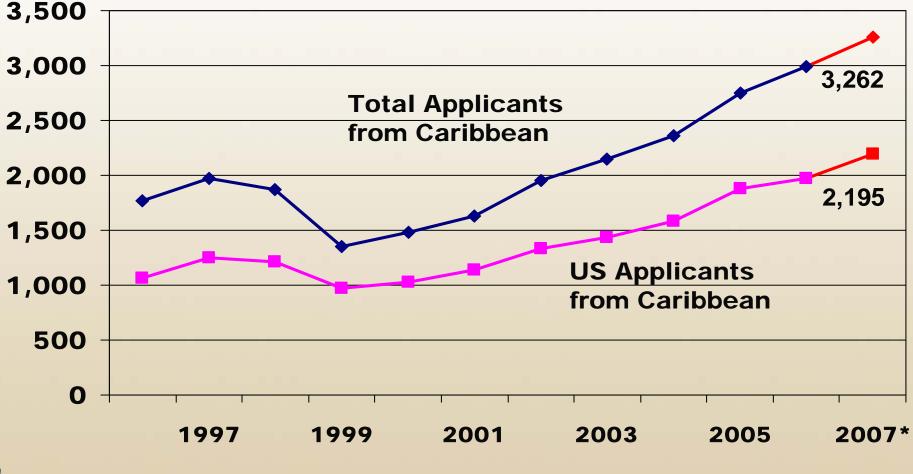
### New US IMG Applicants for ECFMG Certification are Approaching 3,000 Per Year



# US IMGs Certified by ECFMG May Reach 2,000 This Year



### Caribbean Schools are a Growing Path to American Medicine for Non-US Citizens





\*2007 numbers are projections through 12/31/07 based on applicants as of 10/22/07 Source: ECFMG

# **GME** Issues

- Less than half of DO grads entering osteopathic match
- Declining percentage of DOs entering osteopathic primary care programs
- Declining number of DOs choosing primary care programs ACGME or AOA



## AOA Match Results (2008 pre-scramble)

## Family Medicine

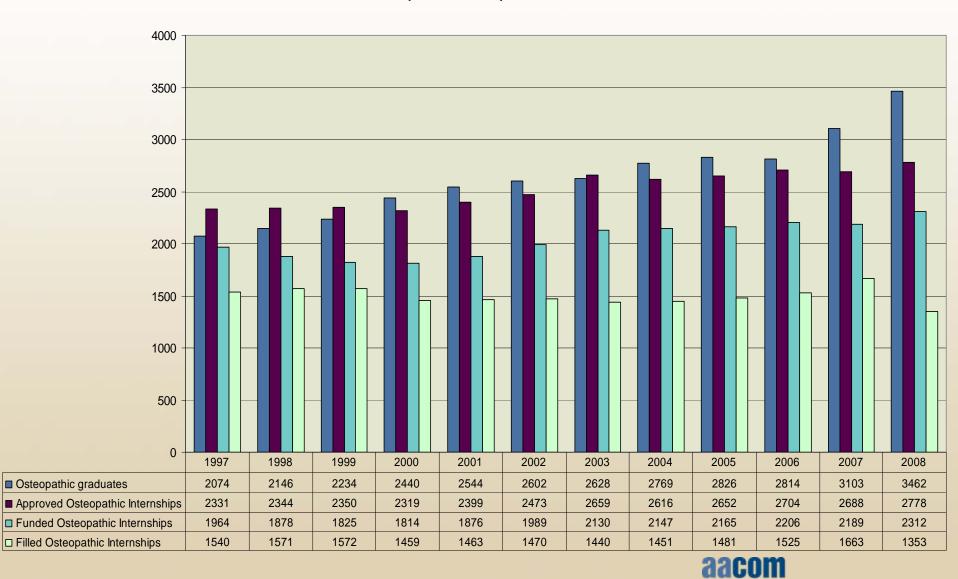
Matched:24444%Positions:554

All AOA (funded) PositionsMatched:135359%Positions:2312



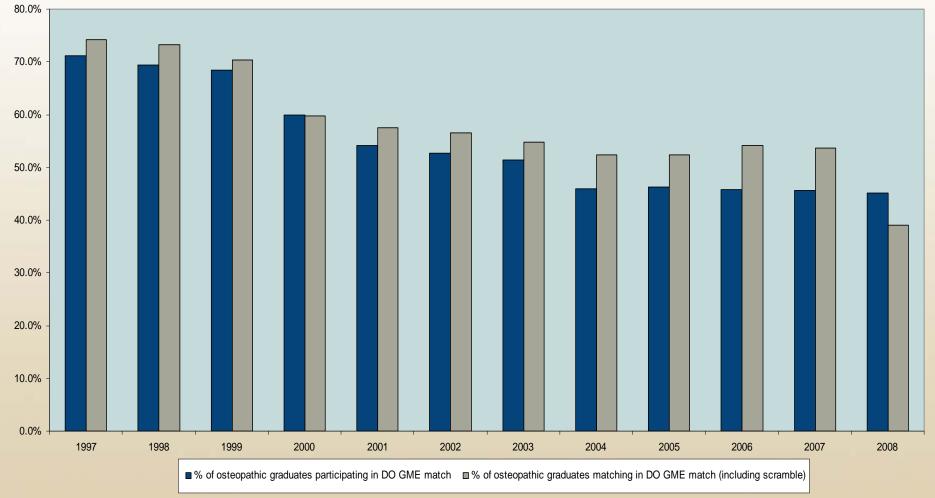
## **Osteopathic Internships--Overview**

**Osteopathic Internships -- Overview** 



## DO Graduates (% OGME)

Percentage of DO Graduates Participating in and Matching in Osteopathic GME (including scramble)

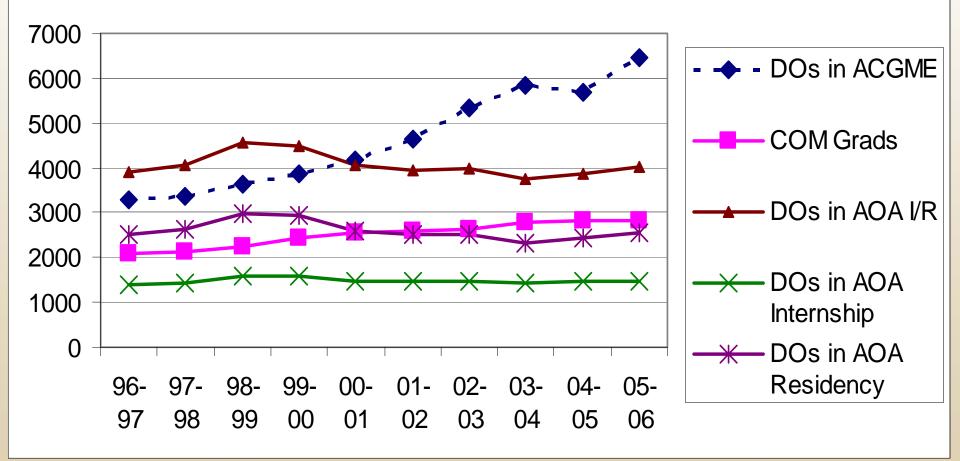


Post-match scramble included for 1997-2007; post-match scramble not included for 2008.



## **DOs and Graduate Medical Education**

### **DOs in Training - AOA and ACGME Comparison**



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# **DOs in ACGME Programs**

#### 2005-2006

### Two-Thirds of DOs in ACGME Programs are in:

| Program:              | # DO | (% DO)  |
|-----------------------|------|---------|
|                       |      |         |
| Family Medicine       | 1341 | (14.3%) |
| Internal Medicine     | 1173 | (5.4%)  |
| Pediatrics            | 565  | (7.1%)  |
| Anesthesiology        | 512  | (10.7%) |
| Emergency Medicine    | 364  | (8.6%)  |
| Obstetrics/Gynecology | 358  | (7.6%)  |
| TOTAL                 | 4671 |         |

JAMA, Sep 6, 2006



## **DOs in ACGME Programs**

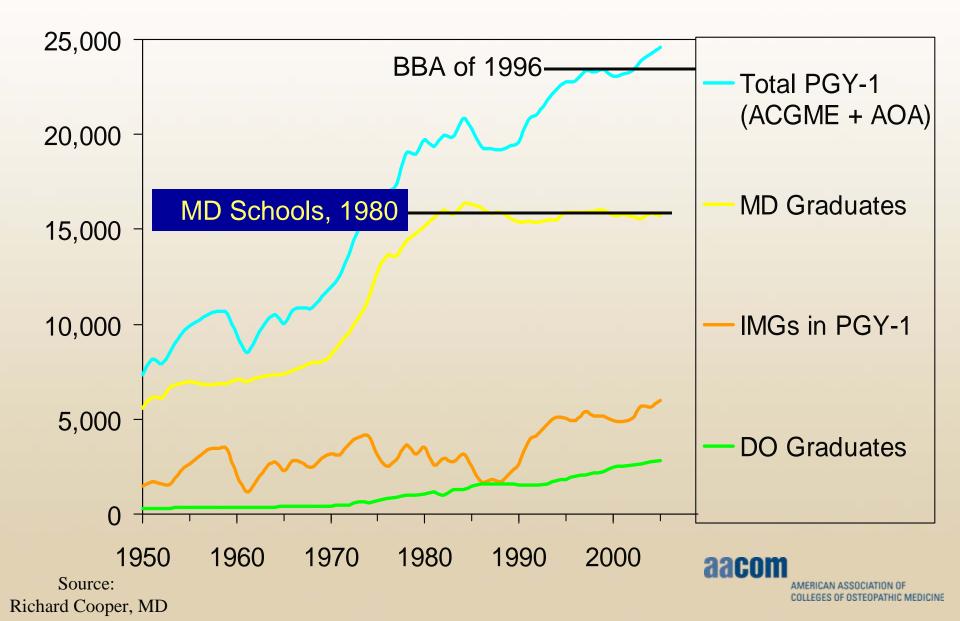
2005-2006

## ACGME Total Residents: 103,106 US MD Grads: 68,578 (66.5%) IMGs: 27,636 (26.8%) DOs: 6,474 (6.3%) Canadian: 386 (0.4%)

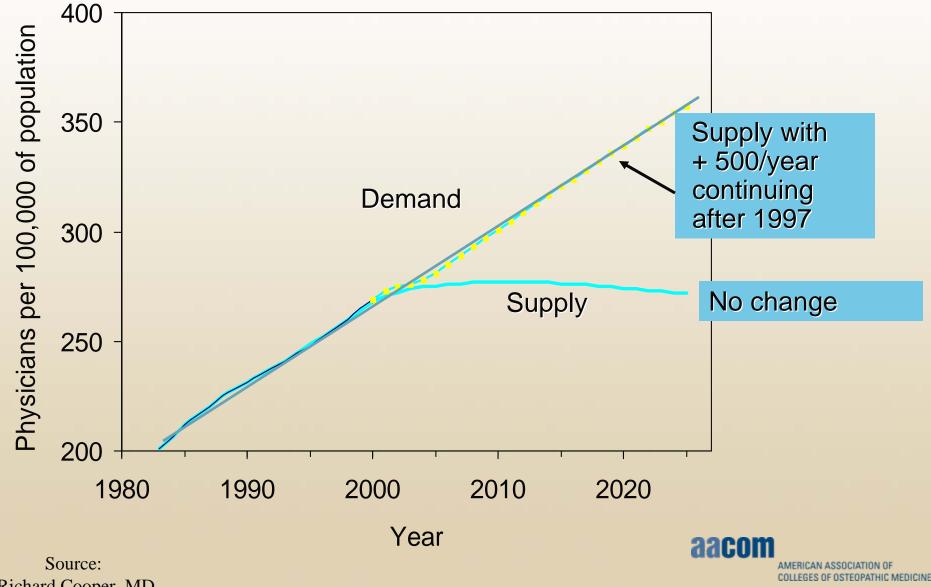
JAMA, Sep 6, 2006



### **GENESIS OF THE PROBLEM:** Failure to sustain growth in GME

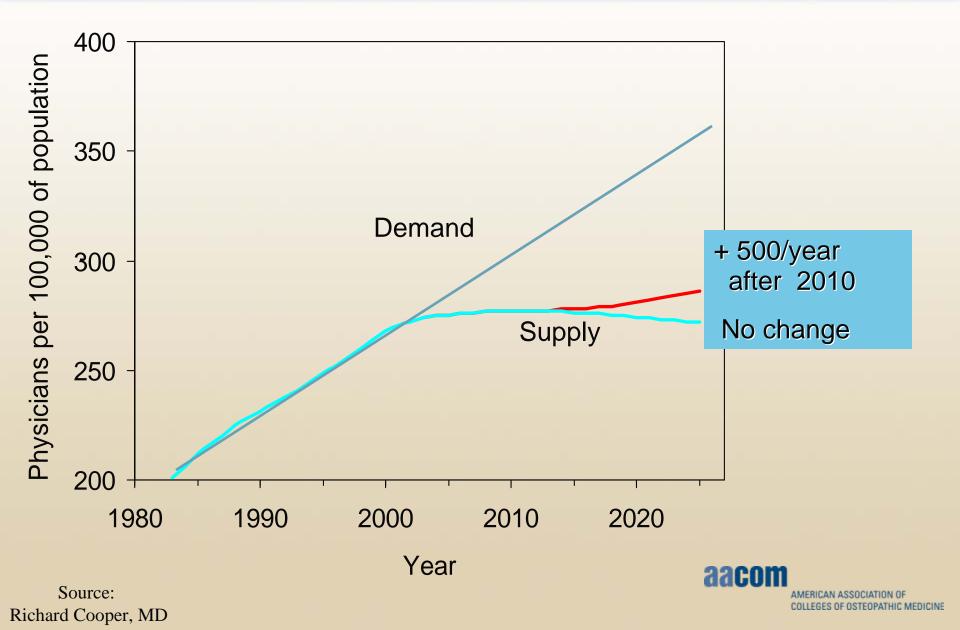


Had residency programs continued to expand after 1997 at 500/year, the US would not now be facing severe shortages.

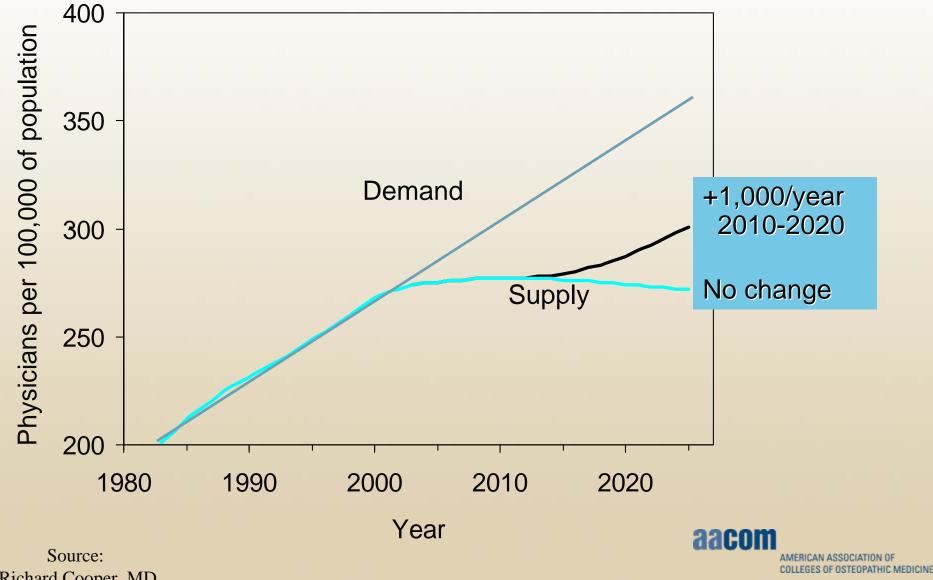


Richard Cooper, MD

# But increasing residency positions by 500 per year starting in 2010 will not close the gap.

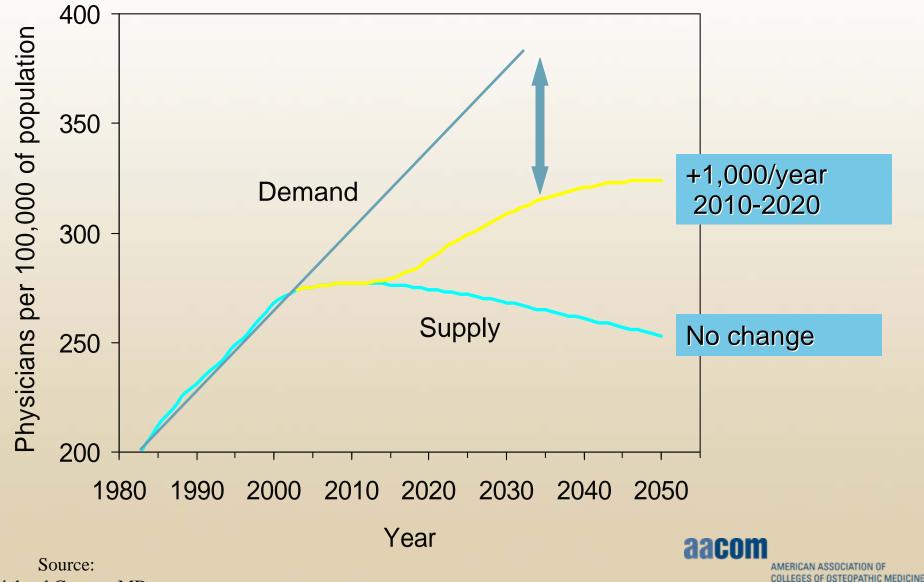


#### Nor even will increasing residency positions by 10,000 over ten years starting in 2010



Richard Cooper, MD

#### ...and the gap will continue for decades.



Richard Cooper, MD

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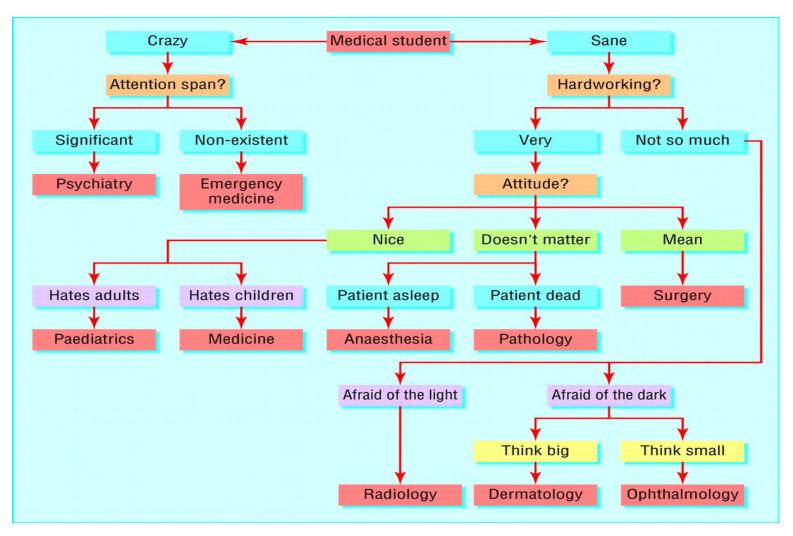
#### Osteopathic Medicine: A Profession in Transition

- Regional to National
- Separate Hospital system gone
- Separate GME system changing
- Separate health care system to integrated systems and practices
  - Primary care under challenge
- OMM Specialization
- Private to public
- Implementing a research mission and culture

P P I F I I I I I

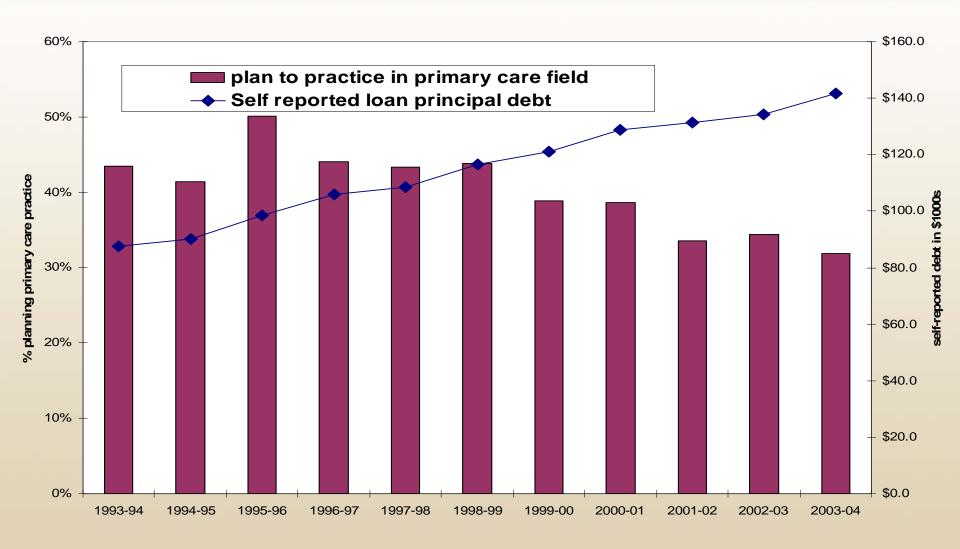
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### **Determinants of Specialty Choice?**



Veysman, B. BMJ 2005;331:1529

#### **Primary Care Practice Plans & Educational Debt**



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### Medical Student Debt Level (2006)

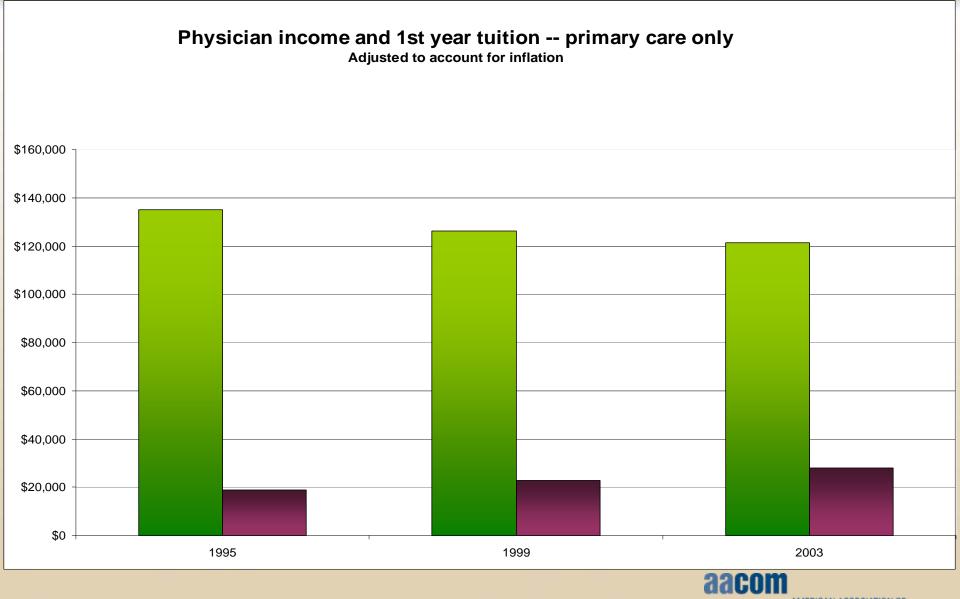
DO Graduates: \$154,000 average debt
 \$134,000 Public Schools
 \$160,000 Private Schools

MD Graduates: \$113,000 average debt
 2/3's attending public institutions
 \$160,000 Private Schools

Source: AACOM and AAMC 2006 Graduate Survey



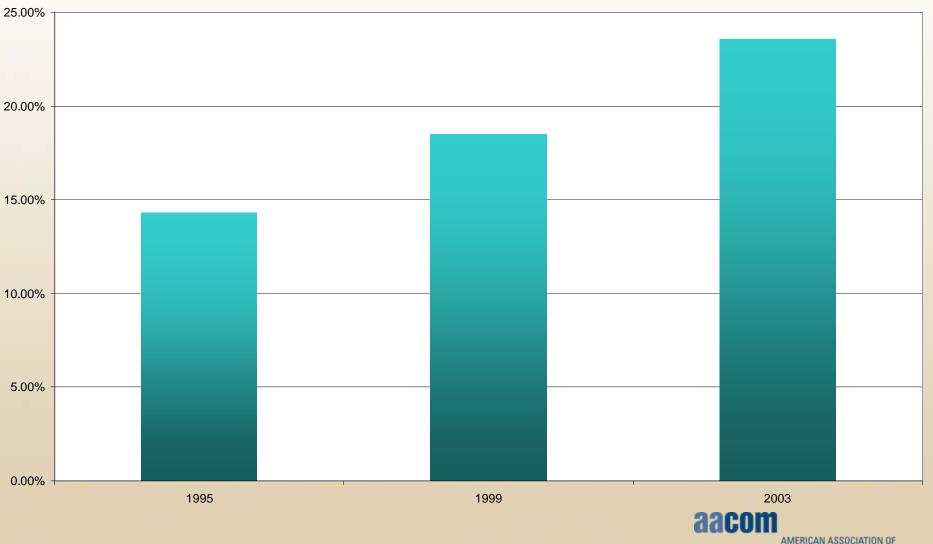
### **Physician Income & Educational Debt**



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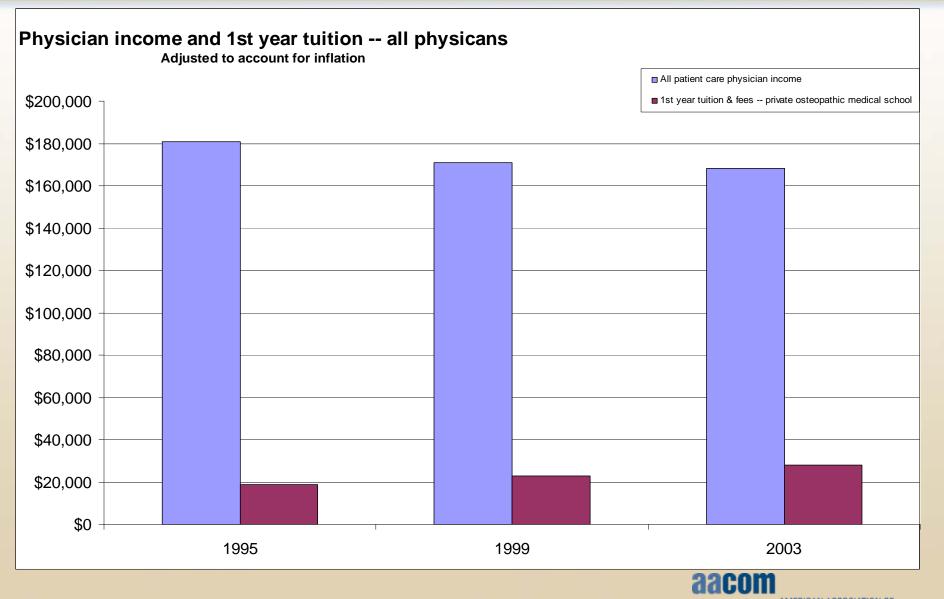
### **Physician Income & Educational Debt**

1st year tuition as % of primary care physican income constant \$s adjusted for inflation



COLLEGES OF OSTEOPATHIC MEDICINE

# Physician Income & Educational Debt



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## **Crisis in Primary Care**

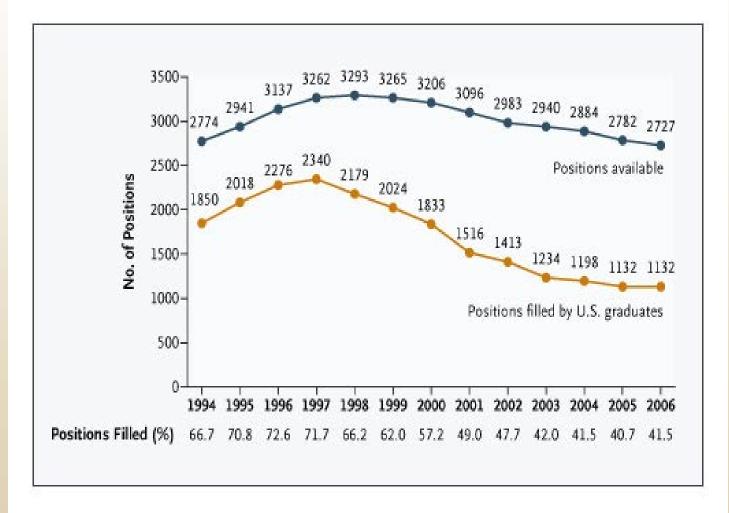


Volume 355:861-864 August 31, 2006 Number 9

### **Primary Care — Will It Survive?** *Thomas Bodenheimer, M.D.*



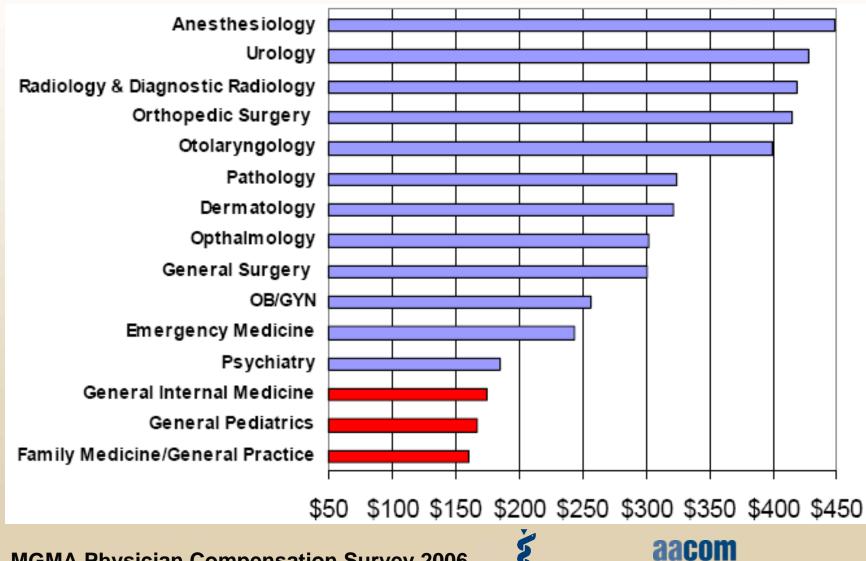
#### Family Medicine Residency Positions and Number Filled by U.S. Medical School Graduates (Bodenheimer, NEJM: 355, 861-864)





#### Primary Care Income Far Less than most Other Specialties

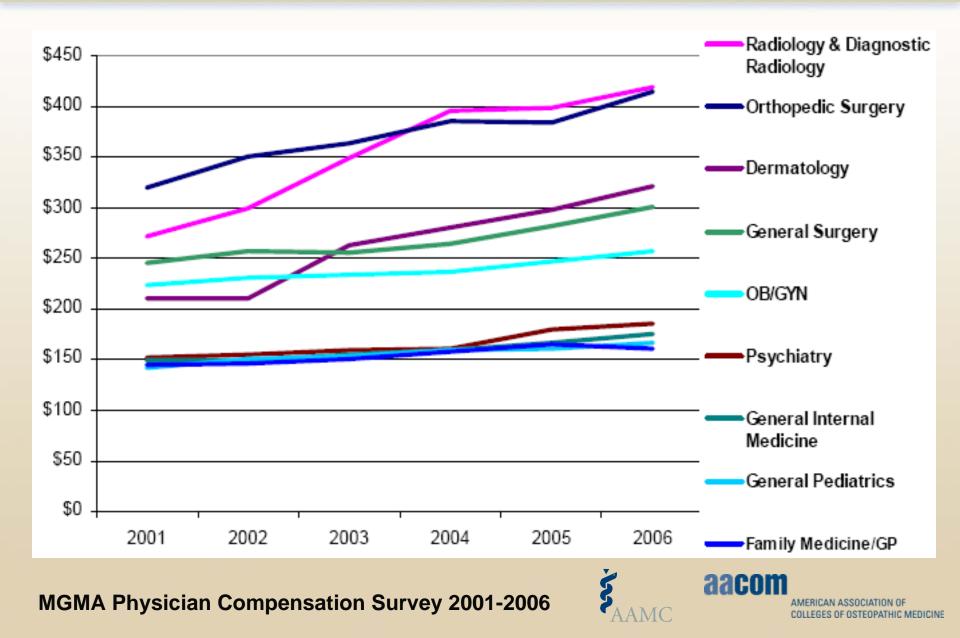
(Median Salary by Specialty, in Thousands of Dollars)



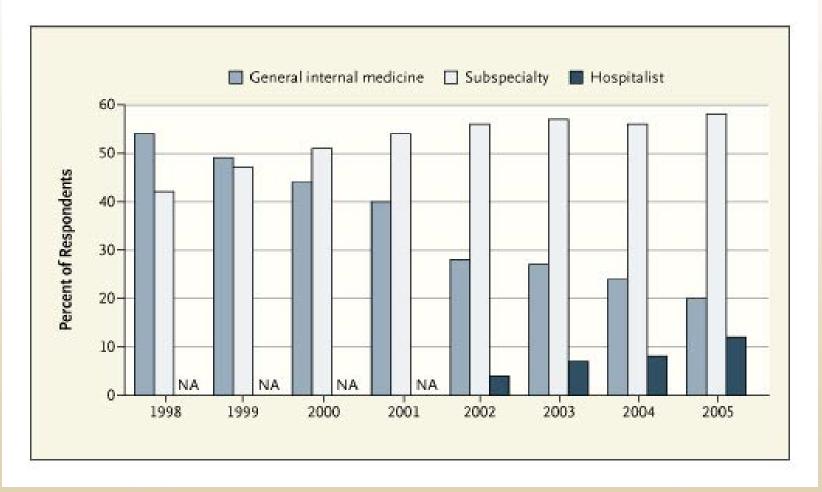
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**MGMA Physician Compensation Survey 2006** 

#### ...and Differences Between Primary Care and Other Specialties Is Growing (Median Salary by Specialty in Thousands of Dollars)

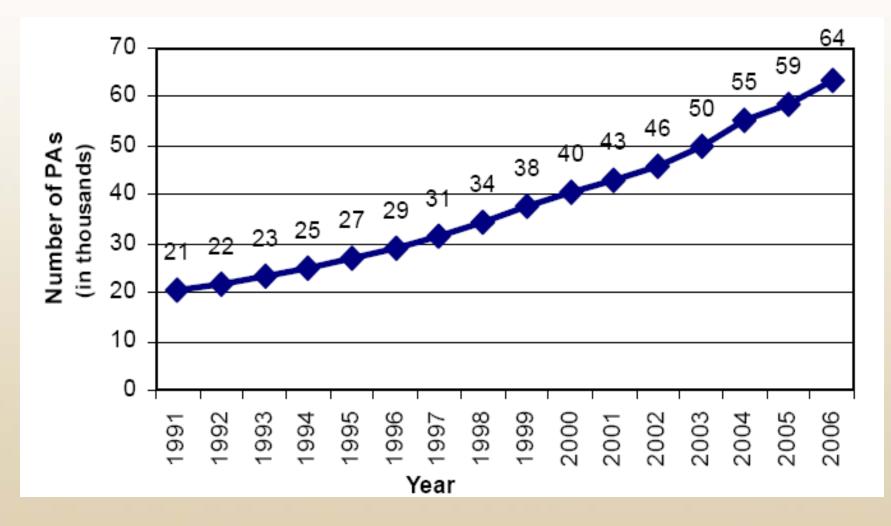


#### Third-Year IM Residents Choosing Career as Generalists, Subspecialists and Hospitalists (Bodenheimer, NEJM: 355, 861-864)



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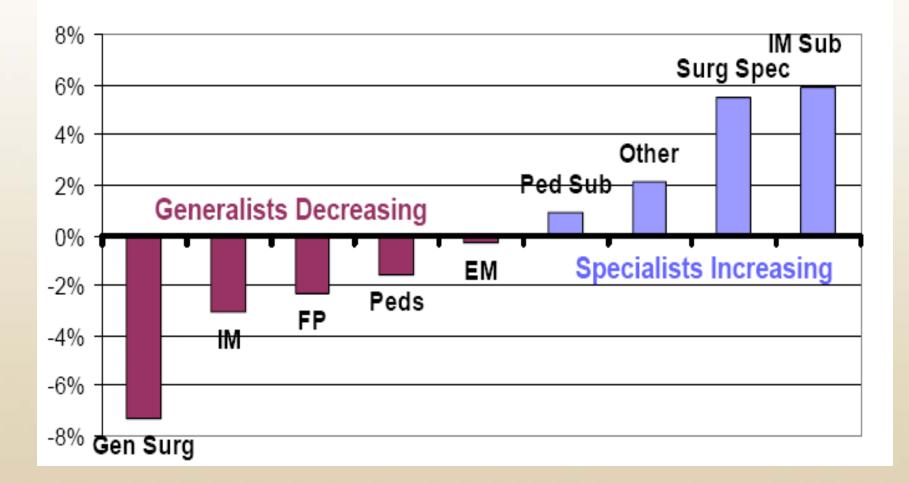
#### Clinically Active PAs Have Nearly Tripled in the last 15 Years (in thousands)



Source: American Academy of Physician Assistants and AAMC



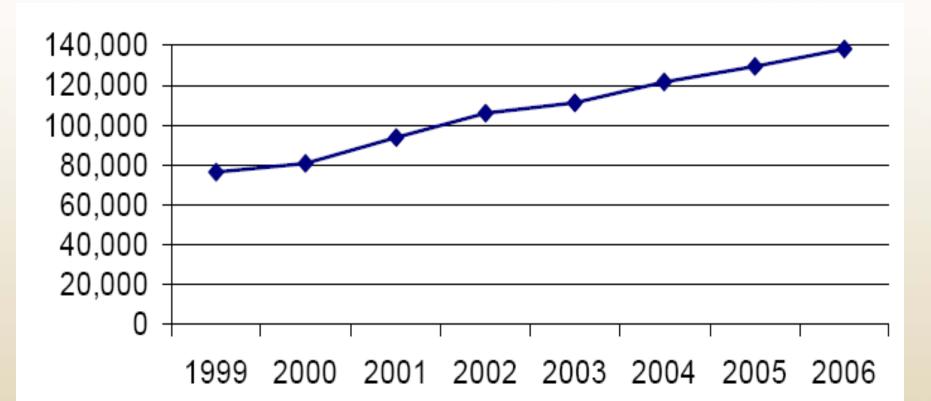
#### Over Last 15 Years, Percentage of PAs Going into Generalist Specialties Decreased While Sub-specialists Increased



Source: American Academy of Physician Assistants and AAMC



#### The Number of Licensed NPs Increased by 80 Percent Between 1999 and 2006



Note: Represents sum of all NPs licensed in all states; it is estimated that an unduplicated count would reduce these numbers by 10%.

Source: Linda J Pearson, <u>The Pearson Report: A National Overview of Nurse Practitioner Legislation and</u> Healthcare, Published annually in The American Journal for Nurse Practitioners (AJNP)



### **Issues for Osteopathic Medical Education**

- Growth: Need and capacity
- Clinical training (volunteer faculty system)
- Development of a research culture
- Study/Validation of OP & P/OMM
- Shifting specialty interest of students
- Will primary care focus survive?
- OMM Specialization
- Resources
- Recognition



- Educating students for a changing world
- Chronic disease epidemic
- Demographic shifts
- Health care system changes



- Preserving patient-physician relationship
- Improved quality of care
- Prevention
- Team-based practice



- Technological advances
- Growing the research and evidencebased culture
- Professionalism
- For-profit medical education



Workforce issues:
Physician shortages
Under represented minorities
Geographic distribution
Appropriate specialty mix
Changing role of other health professions



# **Questions/Comments**

The American Association of Colleges of Osteopathic Medicine promotes excellence in osteopathic medical education, in research and in service, and fosters innovation and quality among osteopathic colleges to improve the health of the American public. – AACOM Mission Statement

