Joint AACOM and AODME 2011 Annual Meeting

Osteopathic Medicine and Primary Care

Emerging Opportunities with Health Care Reform

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Presentation Objectives

- Provide an overview of the National Ambulatory Medical Care Survey (NAMCS) and its methodology
- Review NAMCS population-based data on osteopathic practice patterns, including patient sociodemographic and geographic characteristics, for January 2002 through December 2006
- Use these NAMCS data to make evidence-based recommendations for optimal integration of osteopathic physicians within the emerging health care reform environment
The Osteopathic Research Center

- The ORC is the leading center dedicated to osteopathic research
  - Cutting-edge basic science research on mechanisms of action of osteopathic manipulative medicine
  - Major clinical trials of osteopathic manipulative treatment funded by the National Institutes of Health to build an evidence base
  - Health services research and publications to inform government health policy and regulatory actions
  - Osteopathic Heritage Foundation and the National Institutes of Health have been main sponsors (~$20 million since 2002)

- Learn more about us and our mission to promote the osteopathic profession worldwide
  - [www.hsc.unt.edu/orc](http://www.hsc.unt.edu/orc)
Background

NATIONAL AMBULATORY MEDICAL CARE SURVEY AND STUDY METHODOLOGY
The National Ambulatory Medical Care Survey (NAMCS)

- Provides a representative sample of ambulatory medical care visits throughout the United States
- Data are collected and validated using quality checks at several stages in the survey process
- Provides substantial statistical power because of the number of visits surveyed
- Provides information on the process of medical care
- Conducted annually in the United States
NAMCS Sampling Frame
2002-2006

- Multistage probability sample
- Office-based physicians
- Principally engaged in patient care
- Non-federally employed
- Not in the specialties of anesthesiology, pathology, or radiology
### NAMCS Patient Record Form (2006)

**1. PATIENT INFORMATION**
- **a. Date of visit**
  - Month: [ ]
  - Day: [ ]
  - Year: [ ]
- **b. Sex**
  - Female: [ ]
  - Male: [ ]
- **c. Date of birth**
  - Month: [ ]
  - Day: [ ]
  - Year: [ ]
- **d. Ethnicity**
  - Hispanic/Latino: [ ]
  - Not Hispanic/Latino: [ ]
- **e. Tobacco use**
  - Never: [ ]
  - Current: [ ]
  - Former: [ ]
- **f. Race**
  - American Indian/Alaska Native: [ ]
  - Asian: [ ]
  - Black/African American: [ ]
  - Native Hawaiian/Other Pacific Islander: [ ]
  - White: [ ]

**2. INJURY/POISONING/ADVERSE EFFECT**
- **Is this visit related to any of the following?**
  - Unintentional injury/poisoning: [ ]
  - Intentional injury/poisoning: [ ]
  - Adverse effect of medical/surgical care or adverse effect of medicinal drug: [ ]
  - None of the above: [ ]
- **Is this visit related to any of the following?**
  - Work-related injury/illness: [ ]

**3. REASON FOR VISIT**
- **Patient's complaint/symptom(s) or other reason(s) for this visit**
  - [ ]

**4. CONTINUITY OF CARE**
- **a. Are you the patient's primary care physician/provider?**
  - Yes: [ ]
  - No: [ ]

**5. PROVIDER'S DIAGNOSIS FOR THIS VISIT**
- **a. As specifically as possible, list diagnoses related to this visit including chronic conditions.**
  - [ ]
  - [ ]

**6. VITAL SIGNS**
- **Height**: [ ]
- **Weight**: [ ]
- **Temperature**: [ ]
- **Blood pressure**: [ ]

**7. DIAGNOSTIC/SCREENING SERVICES**
- **Mark (X) all ordered or provided at this visit.**
  - CBC: [ ]
  - Electrolytes: [ ]
  - Glucose: [ ]
  - Hgb/Hct (glycated hemoglobin): [ ]
  - Lipid panel: [ ]
  - PSA (prostate specific antigen): [ ]
  - Other blood test: [ ]

**8. HEALTH EDUCATION**

**9. NON-MEDICATION TREATMENT**
- **Mark (X) all ordered or provided at this visit.**
  - Tobacco use/Exposure: [ ]
  - Weight reduction: [ ]

**10. MEDICATIONS & IMMUNIZATIONS**
- **Mark (X) all providers who ordered, supplied, administered, or continued the visit.**
  - [ ]

**11. PROVIDERS**
- **Mark (X) all that apply.**

**12. VISIT DISPOSITION**
- **Mark (X) all that apply.**
  - No follow-up planned: [ ]
  - Return to provider: [ ]
  - Refer to other provider: [ ]

**13. TIME SPENT WITH PROVIDER**
- **Minutes**: [ ]
Study Methodology

- Utilization of osteopathic physicians in the United States
  - Overall
  - Primary care (family medicine, general internal medicine, pediatrics)
- Utilization of osteopathic PCPs and practice patterns for patient visits involving common symptoms and medical conditions
- Primary study variables:
  - Patient sociodemographic characteristics
  - Patient visit context
  - Physician provider characteristics
  - Medical management
Study Results

UTILIZATION OF OSTEOPATHIC PHYSICIANS
Overall and Primary Care Visits

- 134,369 ambulatory medical care visits surveyed from 2002 through 2006
- Represent 4.57 billion ± 220 million visits
- Osteopathic physicians provided 11,426 visits, representing 336 million ± 30 million visits (7.3%)
- Osteopathic physicians provided 7,190 visits, representing 217 million ± 21 million visits for primary care services (9.7%)
Osteopathic Physicians
Primary Care Specialties

![Bar Chart]

<table>
<thead>
<tr>
<th>Physician Specialty</th>
<th>Total Visits (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCP Overall</td>
<td>9.7</td>
</tr>
<tr>
<td>Family Medicine</td>
<td>20.2</td>
</tr>
<tr>
<td>Internal Medicine</td>
<td>3.2</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>1.8</td>
</tr>
</tbody>
</table>
Osteopathic Physicians

PCP Specialties (ORs and 95% CIs vs MDs)
Study Results

SOCIODEMOGRAPHIC CHARACTERISTICS OF PATIENTS SEEN IN OSTEOPATHIC PRIMARY CARE
Osteopathic Physicians

Patients’ Age (ORs and 95% CIs vs MDs)

- <15: 0.25
- 15-24: 0.33
- 25-44: 0.45
- 45-64: 0.65
- 65-74: 0.76
- 75+: 0.89

ORs and 95% CIs vs MDs
Osteopathic Physicians

Patients’ Sex (ORs and 95% CIs vs. MDs)
Osteopathic Physicians

Patients’ Race (ORs and 95% CIs vs MDs)

White: 1.0
Black: 0.75 (0.55 to 0.91)
Other: 0.69 (0.43 to 0.95)
Osteopathic Physicians
Patients’ Ethnicity (ORs and 95% CIs vs MDs)
Osteopathic Physicians
Patients’ Region (ORs and 95% CIs vs MDs)
Osteopathic Physicians

Patients’ MSA Status (ORs and 95% CIs vs MDs)
Study Results

MEDICAL MANAGEMENT OF COMMON SYMPTOMS AND CONDITIONS (PCPs)
Tracer Symptoms and Conditions
Patient Visits & National Population Estimates

Visits
NPE (millions)

LBP    HA       DEP     NP    URI      HTN   DM
Osteopathic Physicians

LBP Management (ORs and 95% CIs vs MDs)

<table>
<thead>
<tr>
<th>Service</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuity</td>
<td>25.14 (6.48, 1.67)</td>
</tr>
<tr>
<td>Referral</td>
<td>0.62 (0.31, 0.16)</td>
</tr>
<tr>
<td>Drug Rx</td>
<td>0.77 (0.38, 0.19)</td>
</tr>
<tr>
<td>Counseling</td>
<td>47.10 (10.90, 2.52)</td>
</tr>
</tbody>
</table>
Low Back Pain

Time Spent with Patients  No. of Drugs Prescribed

<table>
<thead>
<tr>
<th>Model</th>
<th>MD</th>
<th>DO</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>P = .02</td>
<td>P = .03</td>
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</tbody>
</table>

P = NS
Headache

Time Spent with Patients  No. of Drugs Prescribed

<table>
<thead>
<tr>
<th>Model</th>
<th>A (including imputed times)</th>
<th>A (only non-imputed times)</th>
<th>B (including imputed times)</th>
<th>B (only non-imputed times)</th>
<th>C (including imputed times)</th>
<th>C (only non-imputed times)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD</td>
<td>P = NS</td>
<td>P = NS</td>
<td>P = NS</td>
<td>P = NS</td>
<td>P = NS</td>
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<tr>
<td>DO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Model

MD DO

P = NS

Model

MD DO

P = NS

Model
Depression
Time Spent with Patients   No. of Drugs Prescribed

Model

P = NS

A (including imputed times)   A (only non-imputed times)   B (including imputed times)   B (only non-imputed times)   C (including imputed times)   C (only non-imputed times)

MD DO

P = NS

A   B   C

Model
Neck Pain

Time Spent with Patients   No. of Drugs Prescribed

<table>
<thead>
<tr>
<th>Model</th>
<th>MD (including imputed times)</th>
<th>MD (only non-imputed times)</th>
<th>DO (including imputed times)</th>
<th>DO (only non-imputed times)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20</td>
<td>15</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>B</td>
<td>22</td>
<td>18</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>C</td>
<td>24</td>
<td>20</td>
<td>22</td>
<td>17</td>
</tr>
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</table>

Model P = NS

The Osteopathic Research Center
Where Science Meets Practice
Osteopathic Physicians

Disease Management Visits

<table>
<thead>
<tr>
<th>Disease</th>
<th>Primary Care Visits (%)</th>
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<tbody>
<tr>
<td>URI</td>
<td>9.8</td>
</tr>
<tr>
<td>Hypertension Disease</td>
<td>8.6</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>12.7</td>
</tr>
</tbody>
</table>

Where Science Meets Practice
Upper Respiratory Infection

Time Spent with Patients  No. of Drugs Prescribed

<table>
<thead>
<tr>
<th>Model</th>
<th>MD</th>
<th>DO</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (including imputed times)</td>
<td>15 ± 1</td>
<td>20 ± 2</td>
</tr>
<tr>
<td>A (only non-imputed times)</td>
<td>13 ± 1</td>
<td>17 ± 2</td>
</tr>
<tr>
<td>B (including imputed times)</td>
<td>16 ± 1</td>
<td>21 ± 2</td>
</tr>
<tr>
<td>B (only non-imputed times)</td>
<td>14 ± 1</td>
<td>18 ± 2</td>
</tr>
<tr>
<td>C (including imputed times)</td>
<td>17 ± 1</td>
<td>22 ± 2</td>
</tr>
<tr>
<td>C (only non-imputed times)</td>
<td>15 ± 1</td>
<td>19 ± 2</td>
</tr>
</tbody>
</table>

P = NS

P = <.001

P = .01

P = .01
Hypertension

Time Spent with Patients  No. of Drugs Prescribed

Model

\[ \text{MD DO} \]

\[ P = \text{NS} \]

A (including imputed times)  A (only non-imputed times)  B (including imputed times)  B (only non-imputed times)  C (including imputed times)  C (only non-imputed times)

\[ \text{Model} \]

\[ \text{MD DO} \]

\[ P = \text{NS} \]
Diabetes Mellitus

Time Spent with Patients    No of Drugs Prescribed

<table>
<thead>
<tr>
<th>Model</th>
<th>MD (including imputed times)</th>
<th>MD (only non-imputed times)</th>
<th>DO (including imputed times)</th>
<th>DO (only non-imputed times)</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>15</td>
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<td>12</td>
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<tr>
<td>B</td>
<td>20</td>
<td>15</td>
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<td>17</td>
</tr>
<tr>
<td>C</td>
<td>25</td>
<td>20</td>
<td>25</td>
<td>20</td>
</tr>
</tbody>
</table>

P = NS

P = NS
Limitations of NAMCS Data

Data address the *processes* of health care, not *outcomes*

Patient visit data are limited to those items on the NAMCS Patient Record Form

Missing data for age, sex, race (17 to 27%), ethnicity (19 to 28%), and time spent with patients (12 to 24%)
  - NAMCS performs imputation for such missing data

Results based on less than 30 observations or with a relative standard error greater than 30% may be statistically unreliable

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1 NAMCS. *Micro-Data File Documentation, 2002-2006*
EVIDENCE-BASED RECOMMENDATIONS (MODIFIED SWOT ANALYSIS) AND IMPLICATIONS
Strengths of Osteopathic Medicine

- Strong core of patients who seek osteopathic physicians
- Cohesion within the osteopathic profession
- Impressive growth in number of colleges of osteopathic medicine and class sizes
- Recognition for cost efficiencies in training medical students
- Recognition for primary care
- Recognition for “holistic care”
Weakness of Osteopathic Medicine

Lack of Public Awareness\textsuperscript{1,2}

- Lack of awareness of osteopathic medicine
  - 46% to 50% awareness in the general population based on the Osteopathic Survey of Health Care in America in 2000
  - The factors most strongly associated with awareness of osteopathic physicians were:
    - College education (rate ratio [RR], 1.86; 95% confidence interval [CI], 1.43-2.40)
    - 60 or more years of age (RR, 1.52; 95% CI, 1.15-2.01)
    - Midwest residence (RR, 1.39; 95% CI, 1.05-1.84)
  - Racial and ethnic minorities were less likely to be aware of osteopathic physicians than Whites (RR, 0.54; 95% CI, 0.38-0.76)

\textsuperscript{1}Licciardone JC et al. J Am Osteopath Assoc 2001;101:374-85; \textsuperscript{2}Licciardone JC. J Am Osteopath Assoc 2003;103:281-9
Weakness of Osteopathic Medicine
Utilization by Sociodemographic Factors

- Groups with significant underutilization of osteopathic primary care physicians in NAMCS (2002-2006)
  - Younger age
  - Older age
  - Blacks
  - Hispanics

- Groups with significantly lower awareness of osteopathic physicians in OSTEOSURV (2000)\(^1\)
  - Younger age
  - Blacks
  - Hispanics

- Underrepresented minority students in medicine (2004)
  - Osteopathic schools\(^2\), 8.2 %
  - Allopathic schools\(^3\), 13.9%

\(^1\)Licciardone JC. *J Am Osteopath Assoc* 2003;103:281-9;  \(^2\)AACOM, 2007;  \(^3\)AAMC, 2004
Weakness of Osteopathic Medicine
Utilization by Geographic Factors

- Groups with significant underutilization of osteopathic primary care physicians with regard to residence in NAMCS (2002-2006)
  - South
  - West
- Osteopathic medicine’s historical roots in the Midwest in the 19th century, with expansion to the Northeast during most of the 20th century

Threats to Osteopathic Medicine
Decreasing Use of OMT\(^1\)

- Decreasing use of OMT over time
  - Family medicine, 18%
  - Others (non-OMM), 7%

- Factors associated with OMT use:
  - Family medicine practice (↑)
  - Solo practice (↑)
  - Year of graduation (↓)
  - Allopathic residency (↓)

\(^1\)Johnson SM et al. *Acad Med* 2001;76:821-8
Patient-Centered Medical Care
An Opportunity for Osteopathic Medicine

- Patient-centered health care\(^1\): Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions
- Redesign health care processes in accordance with the following rules\(^1\):
  - Care based on continuous healing relationships
  - Customization based on patient needs and values
  - The patient as the source of control
  - Shared knowledge and the free flow of information
  - Evidence-based decision making
  - Safety as a system property
  - The need for transparency
  - Anticipation of needs
  - Continuous decrease in waste
  - Cooperation among clinicians

\(^1\)Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*, 2001
Health Care Reform
Major Unprecedented Opportunities?

- May be an unexpected boon for osteopathic medicine
- Health care reform may provide universal or near-universal coverage in the coming years
  - Estimated 30 million newly covered persons
- Many of these newly covered persons would be in the sociodemographic groups which historically have underutilized osteopathic physicians
- The demand for primary care services among these newly covered persons may be enormous
- Osteopathic medicine may be ideally positioned if it adopts a “focused differentiation” strategy
Threats to Osteopathic Medicine
Training of DOs in Allopathic Residencies

- Large percentage of osteopathic medical graduates train in MD residencies
  - Potential loss of “osteopathic identity”
  - Greater competition for residency positions in the next decade as MD student enrollments rise

1Brotherton S et al. JAMA 2005;294:1075-82; 2Shannon S. AAMC, 3Cohen J. AAMC Reporter 2005
The Coming Graduate Medical Education Crisis

- Osteopathic medical schools are acknowledged for graduate output
- However, there is a looming crisis with the recent growth in osteopathic and allopathic medical school enrollments and anticipated competition for Accreditation Council for Graduate Medicine Education (ACGME) postdoctoral programs\(^1\)
- Jordan Cohen has suggested that leaders within osteopathic and allopathic medicine collaborate to establish pathways for both professions to prosper in these challenging times\(^2\)
- Meyer and Price proposed in 1993 that osteopathic medicine establish such lines of communication, including the federal government, to facilitate development of a national policy for primary care\(^3\)

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A “Focused Differentiation”
Strategy for Osteopathic Medicine

- Based on Porter’s generic competitive strategies matrix\(^1\)
- First proposed during the Louisa Burns Memorial Lecture in 2005\(^2\)

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1. Porter ME. *Competitive Strategy*, 1980;
Osteopathic Medicine’s “Pediatric Primary-Care Paradox”

<table>
<thead>
<tr>
<th>First Generation Effects</th>
<th>Second Generation Effects</th>
<th>Third Generation Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased awareness of osteopathic physicians among young adults</td>
<td>Increased awareness of osteopathic primary care services among young and middle-aged adults</td>
<td>Increased utilization of osteopathic primary care services among minors, young, middle-aged, and older adults</td>
</tr>
<tr>
<td>Increased utilization of osteopathic primary care services among minors and young adults</td>
<td>Increased utilization of osteopathic primary care services among young and middle-aged adults</td>
<td>Increased awareness of osteopathic primary care services among young, middle-aged, and older adults</td>
</tr>
</tbody>
</table>

Current Status

- Low awareness of osteopathic physicians among young adults
- Low utilization of osteopathic primary care services among minors (i.e., pediatric patients)

Resolution

- Increased utilization of osteopathic primary care services among minors, young, middle-aged, and older adults
- Increased awareness of osteopathic primary care services among young, middle-aged, and older adults
Conclusions

- Health care reform may provide an unparalleled opportunity for growth of osteopathic medicine
  - Up to 30 million persons may enter the health care system in need of primary care services
  - Osteopathic medicine can capitalize by adopting a “focused differentiation” strategy to compete within this market sector and by addressing its “pediatric primary-care paradox”

- Osteopathic medicine must address internal weaknesses and external threats to take full advantage of these opportunities
  - Lack of public awareness, underutilization in sociodemographic market segments and in geographic regions
  - Looming graduate medical education crisis

- The osteopathic profession must act nimbly and strategically to seize opportunities afforded by health care reform
The Osteopathic Heritage Foundation provided funding for the project that enabled analyses of the NAMCS data that served as the basis for this presentation.