Gender Differences in Academic Hospital Medicine

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Outline

• History of Gender Differences in Medicine
• Hospitalist Movement
• Our Study
Women in the Workplace

• Women remain vastly underrepresented at the highest organizational levels – U.S. Bureau of Labor Statistics, 2011
  – 3.8% of Fortune 500 Chief Executive Officers
  – 90 of 535 (16.8%) of seats in U.S. Congress

Background

Figure 1: Women as a Percentage of Applicants to U.S. Medical Schools, 1965–2010

From AAMC Women in US Academic Medicine and Science: Statistics and Benchmarking Report
Background

Of the 136,887 full-time faculty at U.S. medical schools fully accredited by the LCME, 37% are women and 63% are men.

From AAMC Women in US Academic Medicine and Science: Statistics and Benchmarking Report
Background

Figure 3: A 10-Year Comparison of Women's Representation Among Full-time U.S. Medical School Faculty by Rank

From AAMC Women in US Academic Medicine and Science: Statistics and Benchmarking Report
## Distribution of Full Time Faculty

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Assistant Prof</th>
<th>Associate Prof</th>
<th>Professor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Medicine (MD)</td>
<td>47% (N=1,519)</td>
<td>41% (N=5,033)</td>
<td>30% (N=1,705)</td>
<td>16% (N=1,016)</td>
</tr>
</tbody>
</table>

From AAMC Women in US Academic Medicine and Science: Statistics and Benchmarking Report
Background

Figure 6: A Five-year Comparison of Women's Representation in Permanent Leadership Positions

- Division/Section Chiefs: 21% (2006) vs. 22% (2011)
- Associate/Vice Chairs: 19% (2006) vs. 22% (2011)
- Department Chairs: 11% (2006) vs. 14% (2011)
- Assistant Deans: 46% (2006) vs. 44% (2011)
- Associate Deans: 33% (2006) vs. 37% (2011)
- Senior Associate Deans: 26% (2006) vs. 32% (2011)
- Medical School Deans: 12% (2006) vs. 12% (2011)

From AAMC Women in US Academic Medicine and Science: Statistics and Benchmarking Report
The “Gender Gap” in Authorship of Academic Medical Literature — A 35-Year Perspective

Reshma Jagsi, M.D., D.Phil., Elizabeth A. Guancial, M.D., Cynthia Cooper Worobey, M.D., Lori E. Henault, M.P.H., Yuchiao Chang, Ph.D., Rebecca Starr, M.B.A., M.S.W., Nancy J. Tarbell, M.D., and Elaine M. Holub, M.D., M.P.H.

### Table 1. Representation of Female Physician-Investigators among First and Senior Authors of Published Original Research in Six U.S. Journals.

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<tbody>
<tr>
<td></td>
<td>number/total number (percent)</td>
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<tr>
<td>Overall</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>First author</td>
<td>58/982 (5.9)</td>
<td>67/810 (8.3)</td>
<td>137/814 (16.8)</td>
<td>169/614 (27.5)</td>
<td>178/607 (29.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Senior author</td>
<td>29/783 (3.7)</td>
<td>25/692 (3.6)</td>
<td>69/681 (10.1)</td>
<td>106/578 (18.3)</td>
<td>112/580 (19.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>NEJM</td>
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<tr>
<td>First author</td>
<td>8/188 (4.3)</td>
<td>14/117 (12.0)</td>
<td>23/143 (16.1)</td>
<td>23/110 (20.9)</td>
<td>13/92 (14.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Senior author</td>
<td>6/153 (3.9)</td>
<td>3/108 (2.8)</td>
<td>11/122 (9.0)</td>
<td>13/106 (12.3)</td>
<td>11/97 (11.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>JAMA</td>
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<tr>
<td>First author</td>
<td>13/227 (5.7)</td>
<td>7/151 (4.6)</td>
<td>25/125 (20.0)</td>
<td>26/121 (21.5)</td>
<td>30/113 (26.5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Senior author</td>
<td>5/173 (2.9)</td>
<td>3/128 (2.3)</td>
<td>13/102 (12.7)</td>
<td>19/115 (16.5)</td>
<td>16/118 (13.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Ann Intern Med</td>
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</tr>
<tr>
<td>First author</td>
<td>5/107 (4.7)</td>
<td>8/126 (6.3)</td>
<td>13/106 (12.3)</td>
<td>15/44 (34.1)</td>
<td>17/54 (31.5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Senior author</td>
<td>5/93 (5.4)</td>
<td>4/115 (3.5)</td>
<td>4/92 (4.3)</td>
<td>11/43 (25.6)</td>
<td>7/52 (13.5)</td>
<td>0.009</td>
</tr>
</tbody>
</table>
Why the differences?
Why the differences?

- Hypotheses published
  - Women publish fewer papers and secure fewer grants?
  - Women work fewer hours and spend time teaching and on patient care instead of research?
  - Inadequate mentorship?
  - Have more family responsibilities?
  - Discrimination?
  - Less motivation?

Kaplan et al. Sex Differences in Academic Advancement. NEJM. 1996
MOTIVATION

If there is a better reason to paddle, I don't know what it is.

Sitting in a 3.8-metre sea kayak and watching a four-metre great white approach you is a fairly tense experience.
Experiencing the Culture of Academic Medicine: Gender Matters, A National Study

• Pololi et al. JGIM 2012
• 4,578 Faculty surveyed related to advancement, engagement, feelings about workplace, etc.
• Women and men did NOT differ on levels of engagement, leadership aspirations
• Women not as confident about career advancement/inclusion
  – Self-efficacy
Relationships of Gender and Career Motivation

• Barnett et al. Academic Medicine 1998
• Relationships between both internal and external career-motivating factors and academic productivity
  – Do they differ for men and women?
• Women published less but difference couldn’t be accounted for by gender differences in career motivation
Quality of Work


• Women authored ~10% of abstracts and ~11% of total publications.

• Publication rate of abstracts higher 69.5% vs 52.4%, P = .00132

• Higher average impact factors

• No significant difference in mean number of citations per publication
Gender and Perceptions of Leadership Effectiveness

- Debate: ? “female leadership advantage”
- 99 independent samples from 95 studies
- When all leadership contexts are considered, men and women do NOT differ in perceived leadership effectiveness
Family Responsibilities?
— Women were more likely than men to have spouses or domestic partners who were employed full-time (85.6% vs 44.9%)
— Women spent 8.5 hours more per week on domestic activities
— Women were more likely to take time off during disruptions of usual childcare
Relation of Family Responsibilities and Gender to Productivity and Career Satisfaction

• Survey, 24 random med schools
• Women with children had fewer publications, slower self-perceived career progress, lower career satisfaction
• No significant difference for faculty w/o children
• Having children had little effect on faculty aspirations and goals.
Hospitalist Movement

• “Hospitalist” first coined in 1996
• Specialty has seen a huge increase in popularity

Figure. Membership of the Society of Hospital Medicine, 1997 through 2003.

Approaching Parity?

From: *The Hospitalist, March 2006*

**The Gender Factor**

Hospital medicine: a more inclusive specialty for women physicians?

by Gretchen Henkel

**Approaching Parity?**

Although SHM does not currently keep statistics on percentages of women in the organization, many hospitalist services point to increasing numbers of women in their departments. For instance, SHM Past President Robert Wachter, MD, FACP, director of the hospitalist group at the University of California, San Francisco, reports that 57% (12 out of 21) of the hospitalists in his group are women. This majority does not stem from deliberate recruiting on his part.

"I think hospital medicine is a very accessible profession for women on a number of levels," says Dr. Wellikson. "This is a young, growing, evolving field—as opposed to some of the more static fields in medicine, like orthopedics or thoracic surgery. One of the hallmarks of hospital medicine is creating true teams of health professionals. Women come in as equals, with good ideas, and I think this is mirrored on the SHM Board."

**Hospitalists Breaking the Mold?**

Those interviewed believe hospital medicine, as a new specialty, may have a chance to break the traditional molds established by more entrenched medical school specialties.

“We’re inventing this entire thing [the hospital medicine specialty] as we go along, so we have not had time to develop an ‘old boys’ network,’” quips Dr. Wachter. “The hope is that if you start a field now, it will not develop along those lines. As we look at those holding leadership roles at individual hospitals and in the society, you find that talented people rise to the top. If you start with a neutral playing field without the tradition and history of the smoke-filled room, it turns out that people sort out on their skills and their interests.”
Hospitalists

• Why might the field of hospital medicine attract women physicians?
  – Flexible scheduling
  – Mix of research/clinical care/teaching
  – Team based approaches
    • Quality improvement
Hospitalists

- Relatively young group
- Rather equal composition (though limited data and depends on the source)
- More clinically based work/research/QI
- Most without major grant funding
MGMA 2011 Survey (2010 Data)

The bar chart compares the distribution of male and female in academic and non-academic settings.

- **Academic**
  - Female: 60%
  - Male: 40%

- **Non-Academic**
  - Female: 80%
  - Male: 20%
Academic Hospitalists

- Academic Hospitalist MGMA
- Academic IM Hospitalist MGMA
- IM Hospitalist Reid et. al

Female
Male
Mentorship, Productivity, and Promotion Among Academic Hospitalists

Mark B. Reid, MD\textsuperscript{1,2}, Gregory J. Misky, MD\textsuperscript{2}, Rebecca A. Harrison, MD\textsuperscript{3}, Brad Sharpe, MD\textsuperscript{4}, Andrew Auerbach, MD, MPH\textsuperscript{4}, and Jeffrey J. Glasheen, MD\textsuperscript{2}

\textsuperscript{1}Denver Health Medical Center, Denver, CO, USA; \textsuperscript{2}University of Colorado Denver, Denver, CO, USA; \textsuperscript{3}Health & Science University, Portland, OR, USA; \textsuperscript{4}University of California, San Francisco, San Francisco, CA, USA.

Table 1. Demographics $N=266$ Respondents (Unless Otherwise Specified)

<table>
<thead>
<tr>
<th>Gender, N (%)</th>
<th>Male</th>
<th>140 (53%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>126 (47%)</td>
</tr>
<tr>
<td>Age</td>
<td>≤30</td>
<td>26 (10%)</td>
</tr>
<tr>
<td></td>
<td>31–40</td>
<td>185 (70%)</td>
</tr>
<tr>
<td></td>
<td>41–50</td>
<td>47 (18%)</td>
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<tr>
<td></td>
<td>&gt;50</td>
<td>5 (2%)</td>
</tr>
<tr>
<td>Years as a hospitalist (N=265)</td>
<td>&lt;1</td>
<td>32 (12%)</td>
</tr>
<tr>
<td></td>
<td>1–2</td>
<td>66 (25%)</td>
</tr>
<tr>
<td></td>
<td>3–4</td>
<td>65 (25%)</td>
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<tr>
<td></td>
<td>5–6</td>
<td>43 (16%)</td>
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<tr>
<td></td>
<td>7–8</td>
<td>18 (7%)</td>
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<tr>
<td></td>
<td>9–10</td>
<td>16 (6%)</td>
</tr>
<tr>
<td></td>
<td>&gt;10</td>
<td>25 (9%)</td>
</tr>
<tr>
<td>Academic rank</td>
<td>Instructor</td>
<td>86 (33%)</td>
</tr>
<tr>
<td></td>
<td>Assistant professor</td>
<td>139 (53%)</td>
</tr>
<tr>
<td></td>
<td>Associate professor</td>
<td>27 (10%)</td>
</tr>
<tr>
<td></td>
<td>Professor</td>
<td>11 (4%)</td>
</tr>
<tr>
<td></td>
<td>Adjunct faculty</td>
<td>1 (0.1%)</td>
</tr>
</tbody>
</table>
Purpose

• To determine whether gender differences exist in
  – Leadership roles
  – Academic productivity
  – National speaking opportunities
Methods

• Gender determination of:
  – First and last authors in Journal of Hospital Medicine and Journal of General Internal Medicine from 2006 to 2012
  – Speakers at the Society of Hospital Medicine and Society of General Internal Medicine national meetings from 2006-2012
  – Academic Hospitalist Division/Section Heads
Statistical Methods

• Compared by Chi-Square
Comparison of Gender For First and Last Authors for JHM and JGIM

Peer-reviewed Publications, 2006 to 2012

- All Authors: N=2360
  - Male: 58%, Female: 42%
  - p = <.0001

- Original Research: N=1092
  - Male: 52%, Female: 48%
  - p = 0.3035

- Hospital Medicine: N=526
  - Male: 67%, Female: 33%
  - p = <.0001

- General Internal Medicine: N=916
  - Male: 53%, Female: 47%
  - p = 0.0744

- All Authors: N=1636
  - Male: 71%, Female: 29%
  - p = <.0001

- Original Research: N=823
  - Male: 69%, Female: 31%
  - p = <.0001

- Hospital Medicine: N=304
  - Male: 80%
  - Female: 20%
  - p = <.0001

- General Internal Medicine: N=649
  - Male: 65%
  - Female: 35%
  - p = <.0001
Adult Hospitalist, First Authors for JHM and JGIM

- All categories (N=472)
- Original Research (N=181)
- Editorial (N=44)
- Review (N=49)
- Clinical Vignette (N=13)
- Letter to the Editor (N=17)
- Brief Report (N=22)
- Other (N=146)

- Male
- Female
Adult Hospitalist, Last Authors for JHM and JGIM

- All categories (N=275)
- Original Research (N=105)
- Editorial (N=20)
- Review (N=26)
- Clinical Vignette (N=23)
- Letter to the Editor (N=8)
- Brief Report (N=8)
- Other (N=85)

- Male
- Female
GIM (Non-hospitalist),
Last Authors for JHM and JGIM

- All categories (N=649)
  - Original Research (N=357)
  - Editorial (N=57)
  - Review (N=37)
  - Clinical Vignette (N=24)
  - Letter to the Editor (N=16)
  - Brief Report (N=28)
  - Other (N=130)

Male
Female
Comparison of Gender For Speakers

Hospital Medicine and General Internal Medicine Conference Talks, 2006 to 2012

- All Speakers: 62% Male (N=1424), 38% Female
- Hospital Medicine: 72% Male (N=620), 28% Female
- General Internal Medicine: 49% Male (N=589), 51% Female

Significance levels:
- All Speakers: p < .0001
- Hospital Medicine: p < .0001
- General Internal Medicine: p = 0.6504
Featured/Plenary Speakers

- Adult Hospitalist (N=54)
- GIM (N=49)

- Male
- Female
Leadership

- 229 Hospitals surveyed in total
  - 43 Hospitals with either no hospital medicine division or hospitalist program not run by a hospitalist
    - 36 without a Division of Hospital Medicine
  - 186 Hospitals with a Hospital Medicine Division directed by a hospitalist (81%)
Comparison of Gender For Division/Section Heads of Hospital Medicine

Hospital Medicine Division Leadership

- All Hospitals:
  - Male: 78% (N=186)
  - Female: 22%
  - p < .0001

- Teaching Hospitals:
  - Male: 79% (N=179)
  - Female: 21%
  - p < .0001
Limitations

• Only two journals reviewed
  – Selected for higher likelihood of including publications by Hospitalists

• Job title determinations determined via internet searches, websites, conference pamphlets, and information provided on publications

• Exact gender composition of academic hospitalists not known
Conclusions

• Despite Hospital Medicine being a newer field with a younger cohort of physicians, disparities persist for women in academic productivity and leadership roles
Future Directions

DIRECTION

The great thing in the world is not so much where we stand, as in what direction we are moving.

~Oliver Holmes
A special thanks to:

• Richard K. Albert, MD

• Collaborators:
  – Maria G. Frank, MD
  – Angela Keniston MSPH
  – Smitha R. Chadaga, MD
  – Anna Munoa, MD
  – Zuzanna Czernik, MD
  – Marisa Echaniz, MD
  – Jennifer Griffith, MD
  – David Mintzer, MD
  – Jeffrey Spence, MD
  – Barbara Statland, MD
  – Pedro Teixeira, MD
  – Jeff Zoucha, MD
Questions?

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