ABMSCONFERENCE

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Certification's Impact on Practice and Performance: Research by Visiting Scholars

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ACHIEVING IMPROVEMENT THROUGH ASSESSMENT AND LEARNING. **TOGETHER.**

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Surgical Training

- Undergraduate Pre-Medical (4 years)
- Medical School (4 years)
- Surgical Training (5 years) → apprenticeship
- Fellowship (1 year) → mentorship

- Minimum Total: 14 years

Limitations Within Surgical Training

- Psychomotor skill assessment and acquisition
- Growing body of literature/knowledge
- Limited time to balance skill versus knowledge acquisition
- Administrative burden of practicing modern medicine

- Is there a way to make training more efficient?
- Ensure skills mastery (prior to performing on humans)?
- Assess proficiency in newer technique after completion of formal training?

Current State of Simulation and Skills Acquisition

- Mentorship based training currently
- Learning ’milestones’ to help standardize curriculum

- Heterogeneity of experience and training

Orthopaedic Certification

- Part 1 – written exam
- Part 2 – submission of own cases, oral examination

- Surgery simulation training demonstrating mastery?
- Does cadaveric training or simulation translate into operating skill?
- Can we reduce the training burden from 14 years after high school graduation?

- Currently still studying and acquiring data, but encouraged by early outcomes at University of Rochester and the Copernicus Initiative through the Arthroscopy Association of North America

How long is training really?

An analysis of orthopaedic job market trends in the United States over the past 30 years: is fellowship training now required?

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Background

- The majority of orthopaedic surgery residents elect additional subspecialty fellowship training.
- Purpose: Evaluate the impact of fellowship training on employment:
  - 30 years of orthopaedic job advertisements
    - academic centers
    - private practices
    - urban areas
    - rural areas

Hypothesis

- It was hypothesized that sub-specialty training is an important prerequisite for orthopaedic employment.

Methods

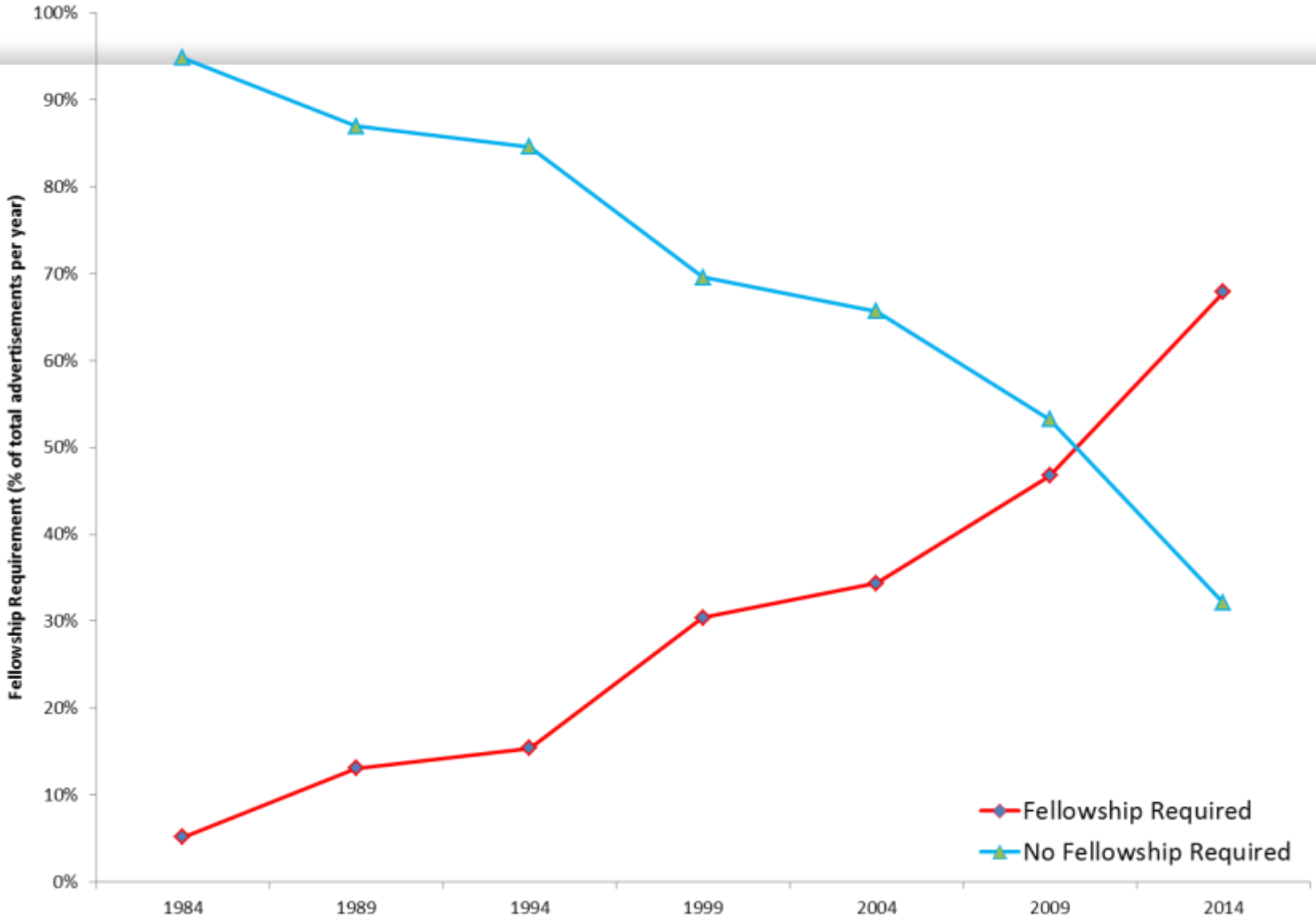
- Job advertisements in *The Journal of Bone and Joint Surgery* (*JBJS Am*) and *Orthopedics*
- Determined if fellowship training versus “generalist” (no subspecialty fellowship) positions
- Years 1984, 1989, 1994, 1999, 2004, 2009, and 2014.
- Jobs categorized as:
  - academic (defined by the requirement to teach medical students, residents, or fellows);
  - private practice;
  - rural (defined as population under 200,000);
  - urban.
- “General” orthopaedic surgery job postings were defined as job advertisements that did not require fellowship training.

Statistics

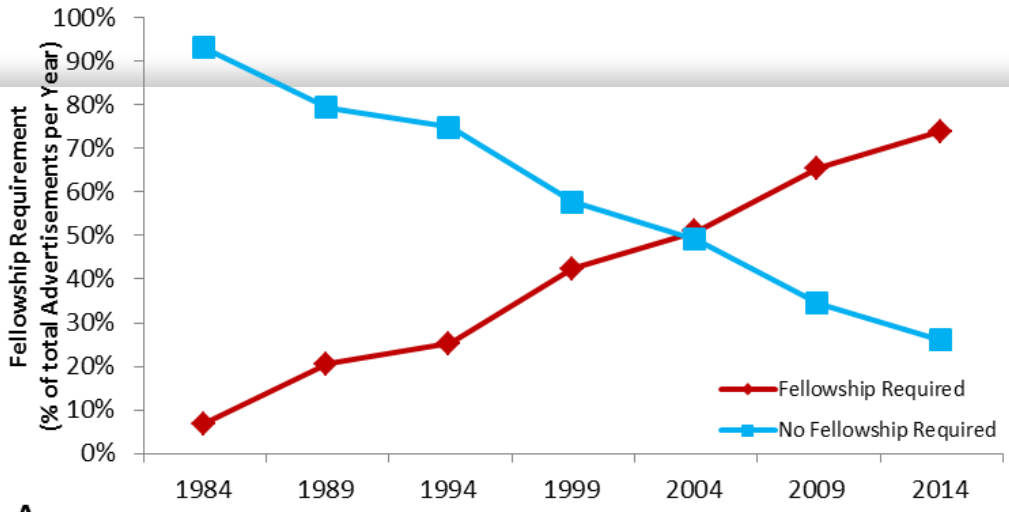
- Cochran Armitage trend test and Poisson regression modeling was utilized for statistical analysis.
- All analyses were performed in SAS Version 9.4,
- 0.05 significance level was used throughout analysis

- 4,720 job advertisements were analyzed.

Analysis of Advertised Orthopaedic Surgery Jobs

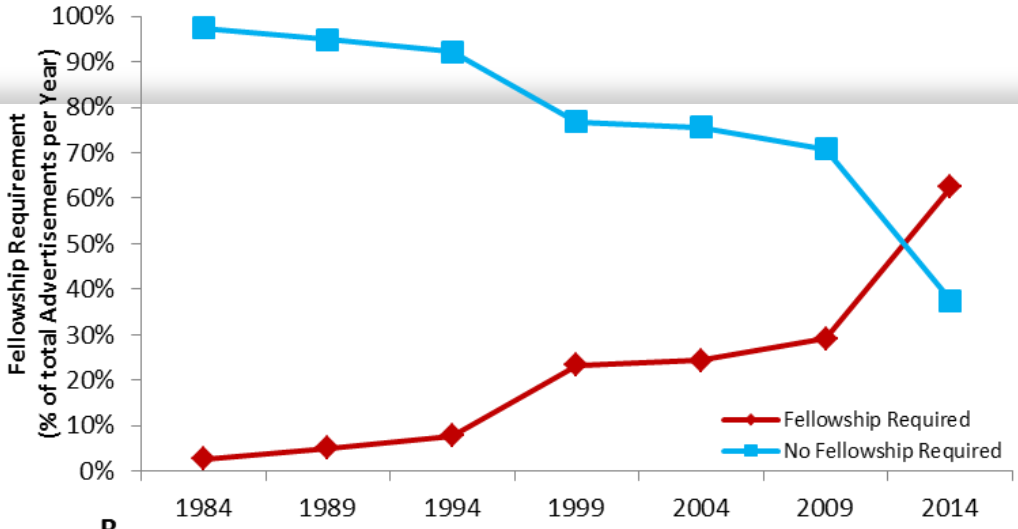


Urban Job Trends



A

Rural Job Trends



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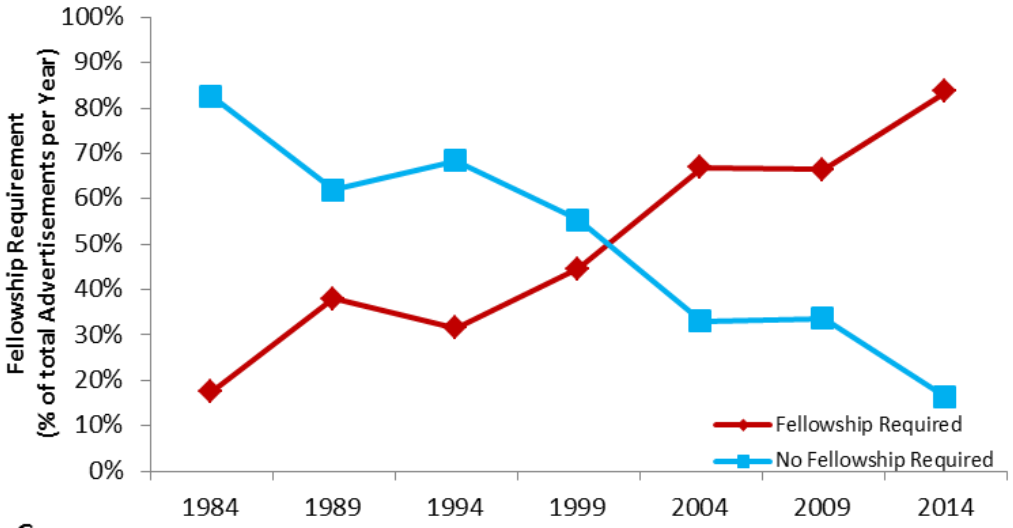
Academic Institution Job Trends



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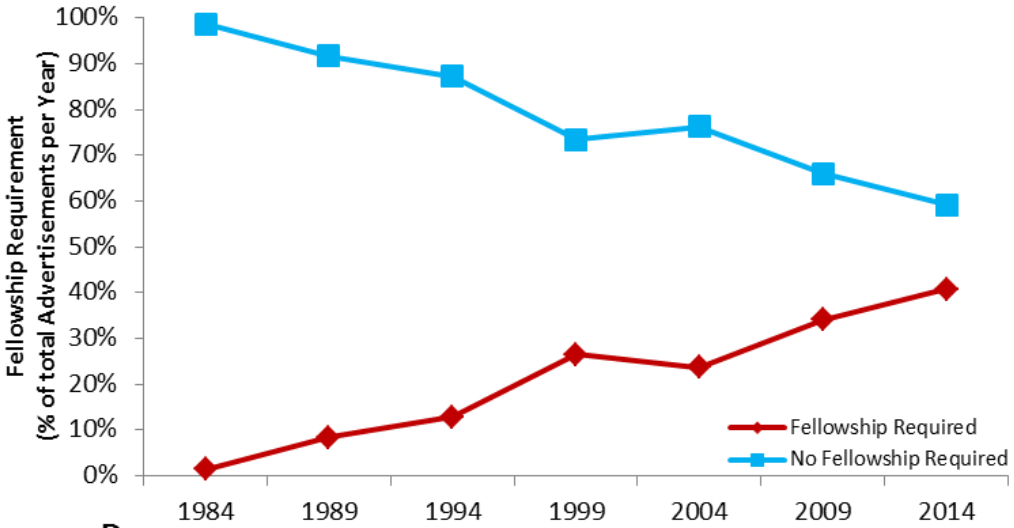
Private Practice Job Trends



D

Discussion

- Orthopaedic surgery fellowship training has financial implications regarding potential career earnings and opportunity cost. (Gaskill et al JBJS 2009)
- Data from the American Board of Orthopaedic Surgery (ABOS) Part 2 certifying examination database, “generalists” decreased from 44.2% to 28.7% from 1990 to 2006 (Horst et al JBJS 2015)
    - 2003 to 2013, fellowship trained applicants taking ABOS part 2 increased from 76% to 90%.

Limitations

- Only two sources of orthopaedic surgery job advertisements
  - Our analysis allows for consistent comparative methodology over the 30-year study period in two long standing general orthopaedic journals.
- Online advertisements were not as prevalent in 1984 and would complicate analysis of trends over the study period.
- Furthermore, we did not delineate non-academic positions into private groups versus hospital employed, but we speculate these followed the overall trends seen.

Reasons for increased training

- Limited clinical duty hours during residency
- Advertisement and marketing forces emphasizing super-sub-specialty care
- Multi-specialty orthopaedic groups (not just academic models)
- Greater complexity of orthopaedic procedures being performed

The reasons for increased orthopaedic training are likely multi-factorial, including limited clinical duty hours during orthop

Take Home Points

- Over the past 30 years, there was a trend towards fellowship now being required as part of the advertised orthopaedic jobs available to orthopaedic residency graduates

- Potential Solution: Simulation Training! (more to come…)

Acknowledgments

- American Board of Orthopaedic Surgery
- American Board of Medical Specialties