UPDATE IN BEST PRACTICES IN MEDICAL EDUCATION

Kathryn Berlacher, MD, MS, FACC
University of Pittsburgh Medical Center
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Things I want to do…
But don’t have time for!

WASHINGTON, DC
FRI • SAT • SUN
MARCH 17 – 19, 2017
UPDATE IN
BEST PRACTICES IN
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What Hot (and practical) in Med Ed Now

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UPDATE IN BEST PRACTICES IN MEDICAL EDUCATION

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Learning Objectives

• In 20 minutes you will be able to:
  
  – Define “best practices” in medical education and name one theory upon which they are built
  
  – Name 2 recent best practices of medical education
  
  – Identify one new way you can stay up to date on these best practices
What is a ‘Best Practice’?

A technique or methodology that, through experience and research, has proven to reliably lead to a desired result.
“A technique or methodology that, through experience and research, has proven to reliably lead to a desired result…”

Does that definition fit medical education?
Upon what is medical education built?
Knowles’ Principles of Andragogy

**Self Direction**
Adults want a say in the learning process

**Immediately Applicable**
Adults don’t learn something because it might be useful in the future

**Experiential**
No sitting around listening to lectures

**Real Life**
It is very hard to remember “stuff” without real-life application

Role of Teacher in Andragogy

“Teacher” (Resident, Attending, PD, Course Director)
- is NOT the owner or provider of knowledge
- IS the facilitator of knowledge
Learner stage should not be ignored!

Best Practice in Medical Education:  
a commitment to using the knowledge, methodology and technology at one's disposal to ensure success in medical training.
Good News…

You are probably already doing some best practices!

• Sending your team an article based on a patient you saw together that day
• Case Based Conferences
• Competency Based Evaluations
I know how to define best practice in medical education.

GIVE ME AN UPDATE!!
What’s Hot Now?

• Interactive teaching and learning
  – How and when to use simulation
  – Inclusion in procedural training

• Burnout
  – Prevalence and identification
  – Prevention and treatment
Does Simulation-Based Training Improve Procedural Skills of Beginners in Interventional Cardiology?—A Stratified Randomized Study

Voelker et al. 2015
A new framework for teaching procedures?

### Cognitive phase
- **Learn**
  - Learning about procedure via reading, videos and online training
    - Cognitive skills test
- **See**
  - Demonstration by instructor
    - Nonverbal demonstration of skill
    - Demonstration of individual steps with verbal description

### Psychomotor phase
- **Practice**
  - Formative assessment on simulator
    - Deliberate practice
- **Prove**
  - Summative assessment on simulator
    - Mastery learning
    - Competency-based assessment and feedback
- **Do**
  - Performance on human
    - Direct supervision
    - Performance-based assessment and feedback
- **Maintain**
  - Maintenance of skill through clinical practice supplemented by simulation as needed
    - Procedure logs
    - Individual continuous quality improvement
    - Maintenance of certification

Sawyer et al. Acad Med. 2015
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Residents/fellows, ages 27–40 (n = 1,489)</th>
<th>Population, college graduates, ages 27–40 (n = 992)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Burnout index, no. (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional exhaustion: high score</td>
<td>557 (37.6)</td>
<td>260 (26.4)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Depersonalization: high score</td>
<td>528 (35.7)</td>
<td>164 (16.6)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Burned out</td>
<td>739 (50.0)</td>
<td>310 (31.4)</td>
<td>&lt;.0001</td>
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<tr>
<td><strong>Screened positive for depression, no. (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>753 (50.7)</td>
<td>406 (41.1)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td><strong>Suicidal ideation in the last 12 months, no. (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>120 (8.1)</td>
<td>86 (8.7)</td>
<td>.58</td>
</tr>
<tr>
<td><strong>Quality of life, mean (standard deviation)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>6.8 (2.0)</td>
<td>7.0 (1.9)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Mental</td>
<td>6.5 (2.1)</td>
<td>6.8 (2.0)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Physical</td>
<td>5.7 (2.2)</td>
<td>6.5 (2.0)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Emotional</td>
<td>6.3 (2.2)</td>
<td>6.6 (2.1)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td><strong>Fatigue, mean (standard deviation)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.9 (2.4)</td>
<td>5.7 (2.2)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>
Physician Well-Being

The ACGME is committed to addressing physician well-being for individuals and as it relates to the clinical learning environment. The creation of a learning environment with a culture of respect and accountability for physician well-being is crucial to the ability of those working in it to deliver the safest, best possible care to patients. The ACGME is focusing on five key areas to support its ongoing commitment to physician well-being: Resources, Education, Influence, Research, and Collaboration.

Read CEO Thomas J. Nasca’s recent Letter to the Community

“We need to protect the workforce that protects our patients.”
— Tim Brigham, MD, PhD
Senior Vice President, Education

Read more An Interview with Dr. Brigham about the ACGME’s commitment to improving physician well-being.
Are these Med Ed?

Work Activities and Compensation of Male and Female Cardiologists

Reshma Jagal, MD, DPas, Cathie Biga, RN, Athena Poppas, MD, George P. Rodgers, MD, Mary N. Walski, Patrick J. White, MPh, Colleen McKenzie, MSstat, Joseph Sasso, PhD, Phillip J. Schulte, PhD, Pamela S. Dou

ABSTRACT

BACKGROUND Much remains unknown about experiences, including working activities and pay, of women in cardiology, which is a predominantly male specialty.

OBJECTIVES The goal of this study was to describe the working activities and pay of female cardiologists compared with their male colleagues and to determine whether sex differences in compensation exist after accounting for differences in work activities and other characteristics.

METHODS The personal, job, and practice characteristics of a national sample of practicing cardiologists were described according to sex. We applied the Peters-Belson technique and multivariate regression analysis to evaluate whether gender differences in compensation existed after accounting for differences in other measured characteristics. The study used 2013 data reported by practicing cardiologists to MedAviax, a subscription-based service provider to cardiologists. Data regarding cardiologists from 161 U.S. practices were included, and the study sample included 2,679 subjects (229 women and 2,450 men).

RESULTS Women were more likely to be specialized in general/noninvasive cardiology (53.1% vs. 28.2%), and a lower proportion (11.4% vs. 39.3%) reported an interventional subspecialty compared with men. Job characteristics that differed according to sex included the proportion of working full-time (79.9% vs. 90.0%; p < 0.001), the mean number of patients per week (29.2 vs. 35.1), and the mean number of procedures performed per month (22.9 vs. 34.1). Women reported lower median annual gross compensation ($217,000 vs. $269,000) and lower median annual net compensation ($172,000 vs. $225,000). After accounting for differences in work activities and other characteristics, women continued to report lower compensation compared with men.

AHA Scientific Statement

Evolution of Critical Care Cardiology: Transformation of the Cardiovascular Intensive Care Unit and the Emerging Need for New Medical Staffing and Training Models

A Scientific Statement From the American Heart Association

David A. Morrow, MD, MPH, FAHA, Chair; James C. Fang, MD, FAHA; Dan J. Finiel, MD; Christopher B. Granger, MD, FAHA; Jason N. Kaiz, MD, MHS; Frederick G. Kushner, MD, FAHA; Jeffrey T. Kusin, MD; Jose Lopez-Sendon, MD; Dorothea McAreavey, MD; Brahmane Nallamothu, MD, MPH, FAHA; Robert Lec Page II, MPH, FAHA; Joseph E. Parrillo, MD; Pamela N. Peterson, MD, MPH, FAHA; Chris Winkelmann, RN, PhD, on behalf of the American Heart Association Council on Cardiopulmonary, Critical Care, Perioperative and Resuscitation, Council on Clinical Cardiology, Council on Cardiovascular Nursing, and Council on Quality of Care and Outcomes Research

Critical care, defined as the diagnosis and management of life-threatening conditions that require close or constant attention by a group of specially trained health professionals, is integral to the practice of cardiovascular medicine. The indicated that outcomes are better when critical care is provided by specially trained providers in a dedicated intensive care unit (ICU). In this context, evolution of critical care in the contemporary cardiac ICU
I can name two current best practices in medical education.

WHAT’S COMING NEXT???
What May Be Hot…

• Multimodal delivery of content and learning
  – Social media, podcasts, video conferencing, screencasts
• Simulation implementation and medical gaming
• Grit and resiliency
• Health care advocacy, diversity, social justice
Medical students in Syracuse combine for video to blast Trump policies
The best way to predict the future is to create it.

- Abraham Lincoln
Hmmm. That seems like a lot to keep up with.

HOW CAN I STAY HOT?
How to Stay Hot

• Get involved
  – ACC, ACGME, APDIM, GME
• Expand your horizons
  – Read one med ed journal article per month
• Use social media
  – Twitter, search for #meded, follow people in this room!
• Listen to podcasts
  – Keylime, The Teaching Course, Emcrit
• Delegate!!
  – Use APDs, faculty, fellows, journal clubs
Best Practices in Medical Education

• **Define it:** the use of knowledge and methods based on adult learning principles to achieve success in training a diverse and evolving medical workforce

• **Give 2 examples:** simulation integration, burnout identification
  — BONUS – Blended learning, gaming, grit, advocacy

• **Name one way to stay uptodate:** network, explore, delegate
Resources

- www.bmj.com; www.heart.org; www.acc.org
- https://cft.vanderbilt.edu(guides-sub-pages/blooms-taxonomy/