2020 Rita M. Patel GME Leadership Conference

Sponsored by the University of Pittsburgh School of Medicine Center for Continuing Education in the Health Sciences and UPMC Medical Education

Thursday, February 20, 2020
University Club
123 University Place, Pittsburgh, PA 15260

Schedule of Events		
11:15AM-11:50AM	Registration & Lunch	Ballroom A (1st Floor)
12:00PM-12:10PM	Opening Remarks Speaker: Gregory Bump, MD	Ballroom A (1st Floor)
12:10PM-12:50PM	Oral Abstract Presentations	Ballroom A (1st Floor)
12:50PM-1:00PM	Break	
1:00PM-2:20PM	Concurrent Workshop I Getting it Right: Teaching Medical Error Disclosure	Conference Room A (3rd Floor)
2:20PM-2:30PM	Break	
2:30PM-3:50PM	Concurrent Workshop II The Future GME Workforce: Holistic Review of GME Applicants	Gold Room (2nd Floor)
3:50PM-4:00PM	Break	
4:00PM-5:30PM	Poster Abstract Presentations & Anniversary Celebration Speaker: Gregory Bump, MD	Ballroom B (2nd Floor)
4:30PM	Announcement of Frank J. Kroboth, MD Award Winner	Ballroom B (2nd Floor)
5:30PM	Adjournment	

Table of Contents

Conference Learning Objectives

- Educate UPMC ME program directors on holistic review of applications
- Teach medical error disclosure to GME learners
- Share local and regional GME research and educational resources through oral and poster abstract sessions

Target Audience

This program is designed for Program Directors, Department Chairs, Chief Residents and GME Leaders

Accreditation

In support of improving patient care, the University of Pittsburgh is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Physician (CME)

The University of Pittsburgh designates this live activity for a maximum of 5.0 *AMA PRA Category 1 Credits™.* Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Other Healthcare Professionals:

Other health care professionals will receive a certificate of attendance confirming the number of contact hours commensurate with the extent of participation in this activity.

Disclaimer Statement

The information presented at this CME program represents the views and opinions of the individual presenters, and does not constitute the opinion or endorsement of, or promotion by, the UPMC Center for Continuing Education in the Health Sciences, UPMC / University of Pittsburgh Medical Center or Affiliates and University of Pittsburgh School of Medicine. Reasonable efforts have been taken intending for educational subject matter to be presented in a balanced, unbiased fashion and in compliance with regulatory requirements. However, each program attendee must always use his/her own personal and professional judgment when considering further application of this information, particularly as it may relate to patient diagnostic or treatment decisions including, without limitation, FDA-approved uses and any off-label uses.

Faculty Disclosures

All individuals in a position to control the content of this education activity including members of the planning committee, speakers, presenters, authors, and/or content reviewers have disclosed all relevant financial relationships with any proprietary entity producing, marketing, re-selling, or distributing health care goods or services, used on, or consumed by, patients.

The following relevant relationships were disclosed:

Robert M. Arnold, MD is a board member for VitalTalk and Editor

Alicia Au, MD is a grant recipient from National Institute for Neurological Disorders and Stroke

Antoine Douaihy, MD provides grant research support for Alkermes

Antoine Douaihy, MD receives royalties for academic books for Springer, OUP and Pesi Medial and Publishing

Donald Middleton, MD is a consultant for Pfizer, Sanofi Pasteur, Merck and GlaxoSmithKline

Donald Middleton, MD is a member of the CE Speakers' Bureau for Seqirus and Pfizer

Mary Patricia Nowalk, PhD, RD is a grant recipient from Merck & Co., Inc.

No other planners, members of the planning committee, speakers, presenters, authors, content reviewers and/or anyone else in a position to control the content of this education activity have relevant financial relationships to disclose.

Course Planners

Julie B. McCausland, MD, MS
Associate Professor of Emergency Medicine and Medicine
University of Pittsburgh School of Medicine
Co-Chair, Professional Development Subcommittee
Program Director, UPMC Medical Education Transitional Year Residency

Melinda Hamilton, MD, MS
Associate Professor of Critical Care Medicine and Pediatrics
University of Pittsburgh School of Medicine
Co-Chair, Professional Development Subcommittee
Program Director, UPMC Medical Education Pediatric Critical Care Fellowship

Abstract Sessions: Oral Plenary & Poster Session

Melinda Hamilton, MD, MS (Abstract Team Leader)
Program Director, Pediatric Critical Care Fellowship
Associate Professor of CCM and Pediatrics
Co-Chair Professional Development Subcommittee

Miya Asato, MD
Program Director, Neurodevelopmental Disabilities Residency
Associate Program Director, Child Neurology
Associate Professor of Pediatrics & Psychiatry

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Director of Surgical Education
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Program Director, Psychiatry Residency
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Vice Chair, Medical and Resident Education
Associate Professor of Ophthalmology

Jackie Weaver-Agostoni, DO, MPH
Program Director, Shadyside Family Medicine Residency
Clinical Assistant Professor, Department of Family Medicine

Workshops

I: Getting it Right: Teaching Medical Error Disclosure

Amanda Brown, MD
Assistant Professor of Pediatrics, Supportive Care Program, Children's Hospital of Pittsburgh

Daniel E. Hall, MD, MDiv, MHSc, FACS
Medical Director, High Risk Populations and Outcomes, Wolff Center at UPMC, Associate Professor of Surgery, Anesthesiology and Perioperative Medicine, University of Pittsburgh, Faculty, Center for Bioethics and Health Law, University of Pittsburgh

Barbara Nightingale, MD
Medical Director of Latterman Family Health Center, Associate Program Director for the UPMC McKeesport Family Medicine Residency Program, Associate Program Director for the UMC Psychiatry and Family Medicine Residency Program

II: The Future GME Workforce: Holistic Review of GME Applicants

Alda Maria Gonzaga, MD, MS
Program Director, Combined Internal Medicine-Pediatrics Residency, Advisory Dean, University of Pittsburgh School of Medicine Office of Student Affairs, Associate Professor of Medicine and Pediatrics, Director, Progressive Evaluation and Referral Center (PERC)

Naudia Jonassaint, MD, MHS
Vice Chair of Medicine, Diversity and Inclusion

Giselle Hamad, MD
Professor of Surgery, Associate Residency Program Director, Director of Surgical Education

UPMC ME AIMS

- Train excellent physicians from diverse backgrounds in a model of patient-centered care, which builds a foundation of high value care, desirable clinical outcomes, and scientific knowledge that improves health.

- Build a supportive working and learning environment that helps physicians grow as role models for professionalism, caring and compassion.

- Create a model of professional development for residents, fellow, and faculty in graduate medical education that emphasizes expertise, leadership skills, scholarly achievement, and career advancement.

- Foster a culture that centers on the well-being of the individuals in our clinical and academic community.

- Serve the health needs of the diverse communities.

- Transform the health care system of tomorrow through innovation.

- Harness our integrated capabilities to deliver outstanding patient safety, quality, and value through graduate medical education at UPMC.

Mission Statement of the Professional Development Subcommittee of the UPMC ME Graduate Medical Education Committee

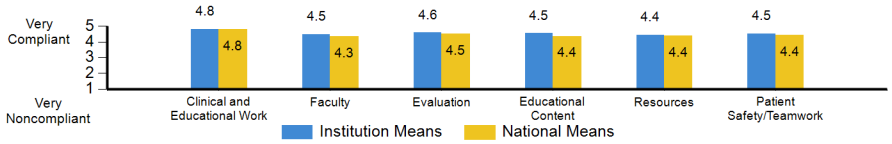
To advance the Graduate Medical Education Community through research, education, and innovation.

Survey taken: January 2019 - April 2019

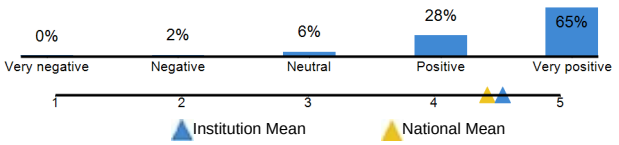
Programs Surveyed 132
Residents Responded 1604 / 1614
Response Rate 99%

418024 UPMC Medical Education - Aggregated Program Data

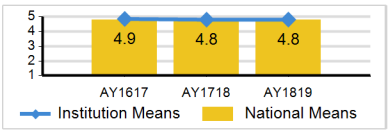
Institution Means at-a-glance



Residents' overall evaluation of the program



Clinical and Educational Work

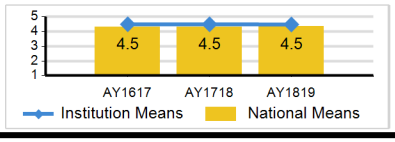


	% Program Compliant	Program Mean	% National Compliant	National Mean
80 hours	95%	4.7	94%	4.7
1 day free in 7	98%	4.8	97%	4.8
In-house call every 3rd night	100%	5.0	99%	5.0
14 hours free after 24 hours of in-house call	99%	4.9	99%	4.9
8 hours between clinical exp and ed work hours	99%	4.7	98%	4.7
Continuous hours scheduled	96%	4.7	96%	4.8

Reasons for exceeding clinical experience and education rules:

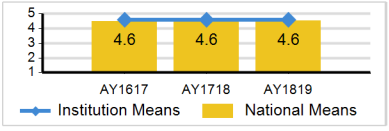
Patient needs	6%	Cover someone else's work	2%
Paperwork	8%	Night float	3%
Additional ed experience	2%	Schedule conflict	2%
		Other	2%

Faculty



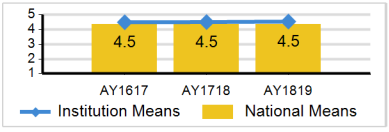
	% Program Compliant	Program Mean	% National Compliant	National Mean
Sufficient supervision	96%	4.5	92%	4.4
Appropriate level of supervision	98%	4.7	96%	4.6
Sufficient instruction	92%	4.4	86%	4.2
Faculty and staff interested in residency education	92%	4.4	86%	4.3
Faculty and staff create environment of inquiry	88%	4.3	80%	4.2

Evaluation



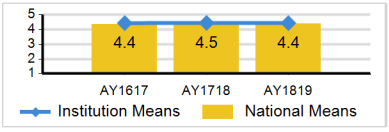
	% Program Compliant	Program Mean	% National Compliant	National Mean
Able to access evaluations	99%	5.0	99%	5.0
Opportunity to evaluate faculty members	99%	5.0	99%	5.0
Satisfied that evaluations of faculty are confidential	90%	4.4	86%	4.3
Opportunity to evaluate program	99%	4.9	98%	4.9
Satisfied that evaluations of program are confidential	91%	4.5	88%	4.4
Satisfied that program uses evaluations to improve	82%	4.2	76%	4.1
Satisfied with feedback after assignments	81%	4.2	73%	4.0

Educational Content



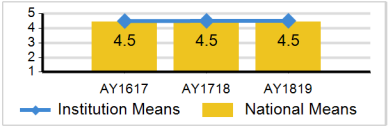
	% Program Compliant	Program Mean	% National Compliant	National Mean
Provided goals and objectives for assignments	97%	4.9	94%	4.8
Instructed how to manage fatigue	95%	4.8	91%	4.6
Satisfied with opportunities for scholarly activities	87%	4.4	77%	4.1
Appropriate balance between ed and other clinical demands	87%	4.4	81%	4.2
Education (not) compromised by excessive reliance on non-physician obligations	83%	4.3	76%	4.0
Supervisors delegate appropriately	99%	4.7	99%	4.6
Provided data about practice habits	78%	4.1	71%	3.9
See patients across variety of settings	98%	4.9	96%	4.9

Resources



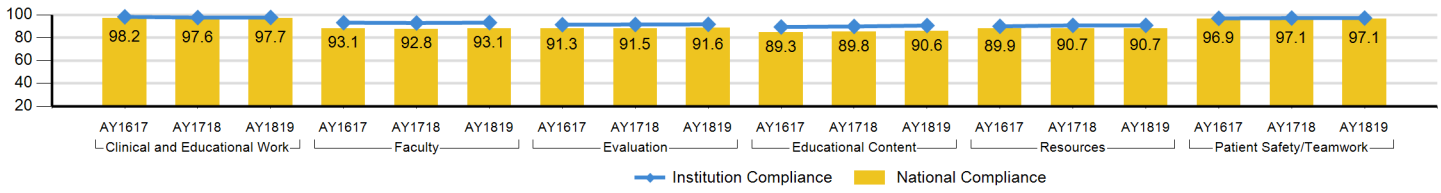
	% Program Compliant / % Yes*	Program Mean	% National Compliant / % Yes*	National Mean
Access to reference materials	99%	5.0	99%	5.0
Use electronic medical records in hospital*	100%	5.0	100%	5.0
Use electronic medical records in ambulatory setting*	99%	5.0	99%	5.0
Electronic medical records integrated across settings*	89%	4.6	87%	4.5
Electronic medical records effective	97%	4.1	95%	4.2
Provided a way to transition care when fatigued	85%	4.4	82%	4.3
Satisfied with process to deal with problems and concerns	87%	4.3	81%	4.2
Education (not) compromised by other trainees	90%	4.4	90%	4.5
Residents can raise concerns without fear	87%	4.4	82%	4.3

Patient Safety/Teamwork



	% Program Compliant	Program Mean	% National Compliant	National Mean
Tell patients of respective roles of faculty and residents	99%	4.6	99%	4.6
Culture reinforces patient safety responsibility	99%	4.6	99%	4.5
Participated in quality improvement	89%	4.6	87%	4.5
Information (not) lost during shift changes or patient transfers	97%	4.1	97%	4.0
Work in interprofessional teams	99%	4.8	99%	4.7
Effectively work in interprofessional teams	99%	4.5	99%	4.4

Total Percentage of Compliance by Category



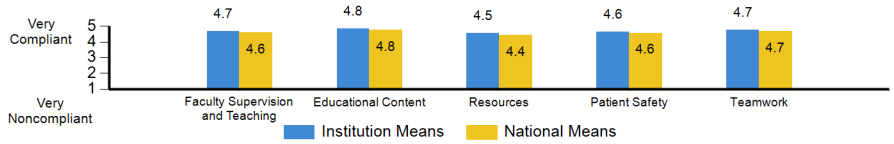
*Response options are Yes or No. These responses aren't included in the Program Means and aren't considered non-compliant responses.
Percentages may not add to 100% due to rounding.

Survey taken: January 2019 - April 2019

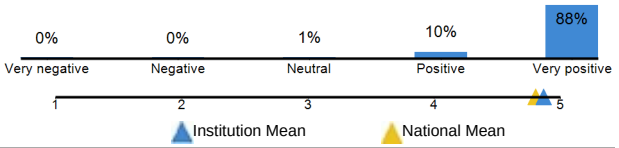
418024 UPMC Medical Education - Aggregated Program Data

Programs Surveyed 132
Faculty Responded 1515 / 1590
Response Rate 95%

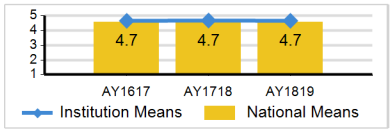
Institution Means at-a-glance



Faculty's overall evaluation of the program

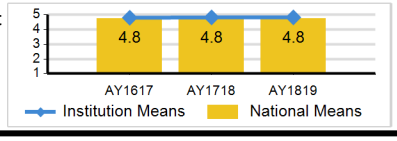


Faculty Supervision and Teaching



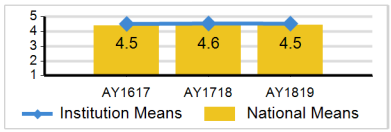
	% Program Compliant	Program Mean	% National Compliant	National Mean
Sufficient time to supervise residents/fellows	96%	4.7	96%	4.7
Residents/fellows seek supervisory guidance	95%	4.6	94%	4.6
Interest of faculty and Program Director in education	97%	4.8	97%	4.7
Rotation and educational assignment evaluation*	98%		99%	
Faculty performance evaluated*	99%		99%	
Faculty satisfied with personal performance feedback	92%	4.5	89%	4.4

Educational Content



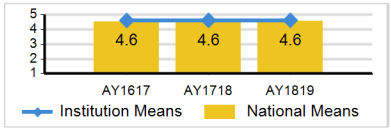
	% Program Compliant	Program Mean	% National Compliant	National Mean
Worked on scholarly project with residents/fellows*	77%		76%	
Residents/fellows see patients across a variety of settings*	99%		99%	
Residents/fellows receive education to manage fatigue*	100%		100%	
Effectiveness of graduating residents/fellows	98%	4.8	98%	4.7
Outcome achievement of graduating residents/fellows	100%	4.9	99%	4.9

Resources



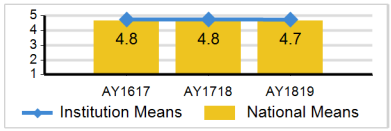
	% Program Compliant	Program Mean	% National Compliant	National Mean
Program provides a way for residents/fellows to transition care when fatigued*	100%		99%	
Residents/fellows workload exceeds capacity to do the work	100%	4.4	100%	4.3
Satisfied with faculty development to supervise and educate residents/fellows	97%	4.4	96%	4.2
Satisfied with process to deal with residents'/fellows' problems and concerns	96%	4.7	94%	4.6
Prevent excessive reliance on residents/fellows to fulfill non-physician obligations	99%	4.7	99%	4.5

Patient Safety



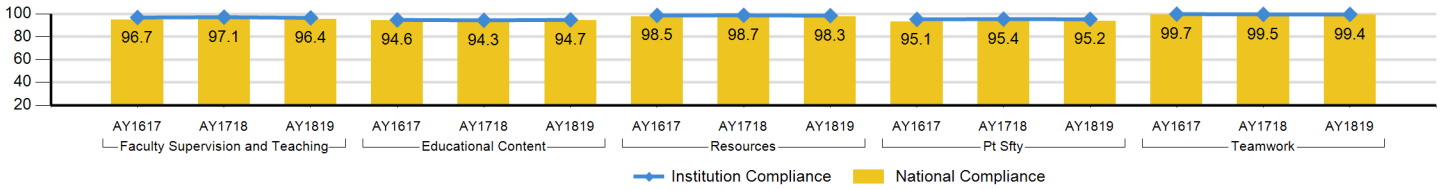
	% Program Compliant	Program Mean	% National Compliant	National Mean
Information not lost during shift changes or patient transfers	94%	4.3	93%	4.2
Tell patients of respective roles of faculty and residents/fellows	94%	4.7	93%	4.6
Culture reinforces patient safety responsibility	97%	4.7	97%	4.7
Residents/fellows participate in quality improvement or patient safety activities	96%	4.7	94%	4.7

Teamwork



	% Program Compliant	Program Mean	% National Compliant	National Mean
Residents/fellows communicate effectively when transferring clinical care	99%	4.8	98%	4.8
Residents/fellows effectively work in interprofessional teams	100%	4.7	100%	4.7
Program effective in teaching teamwork skills	100%	4.7	99%	4.6

Total Percentage of Compliance by Category



*Responses options are Yes or No. These responses are not included in the Program Means and are not considered non-compliant responses. Percentages may not add to 100% due to rounding.

Accreditation Council for Graduate Medical Education

401 North Michigan Avenue
Suite 2000
Chicago, IL 60611

Phone 312.755.5000
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www.acgme.org

6/25/2019

Gregory M Bump, MD
DIO; Associate Professor of Medicine
3600 Forbes Avenue
Forbes Tower - Plaza Level, Suite 140
Pittsburgh, PA 15213

Dear Dr. Bump,

The Institutional Review Committee (IRC), functioning in accordance with the policies and procedures of the Accreditation Council for Graduate Medical Education (ACGME), has reviewed the information submitted regarding the following institution:

UPMC Medical Education
Pittsburgh, PA

Institution: 8004100393

Based on the information available at its recent meeting, the Review Committee accredited the institution as follows:

Status: Continued Accreditation
Effective Date: 05/28/2019

AREAS NOT IN COMPLIANCE (Citations)
The Review Committee cited the following areas as not in substantial compliance with the ACGME's Institutional Requirements for Graduate Medical Education:

NEW CITATIONS

GMEC | Since: 05/28/2019 | Status: New

Structure for Educational Oversight, GMEC, Membership (Institutional Requirements I.B., I.B.1., I.B.1.a), I.B.1.a).(4))
A Sponsoring Institution with multiple ACGME-accredited programs must have a GMEC that includes at least the following voting members: a quality improvement or patient safety officer or designee. (Core)

The information provided to the Institutional Review Committee (“IRC”) does not demonstrate substantial compliance with the requirements. It is not apparent that the Graduate Medical Education Committee (“GMEC”) includes a quality improvement or patient safety officer or designee.

(Reviewer Materials (“RM”), Institutional Review Questionnaire (“IRQ”), Attachments—GMEC Membership List; GMEC Minutes)

GMEC | Since: 05/28/2019 | Status: New

Structure for Educational Oversight, GMEC, Meetings and Attendance (Institutional Requirement I.B.3.a))
Each meeting of the GMEC must include attendance by at least one resident/fellow member. (Core)

The information provided to the IRC does not demonstrate substantial compliance with the requirement. No voting resident/fellow member of the GMEC appears to have attended a GMEC meeting on May 9, 2018.

(RM, IRQ, Attachment—GMEC Minutes)

Concerns and Feedback | Since: 05/28/2019 | Status: New

The Learning and Working Environment (Institutional Requirement III.A)
The Sponsoring Institution and each of its ACGME-accredited programs must provide a learning and working environment in which residents/fellows have the opportunity to raise concerns and provide feedback without intimidation or retaliation, and in a confidential manner, as appropriate. (Core)

The information provided to the IRC does not demonstrate substantial compliance with the requirement. The site visitor reported that some Thoracic Surgery fellows consider institutional mechanisms to raise certain concerns to be ineffective because of the potential for retaliation in their program.

(Site Visit Report (“SVR”), pp. 17-19)

The ACGME must be notified of any major changes in the organization of the institution. When corresponding with the ACGME, please identify the institution by name and number as indicated above. Changes in participating sites and changes in leadership must be reported to the Review Committee using the ACGME Accreditation Data System (ADS).

Sincerely,

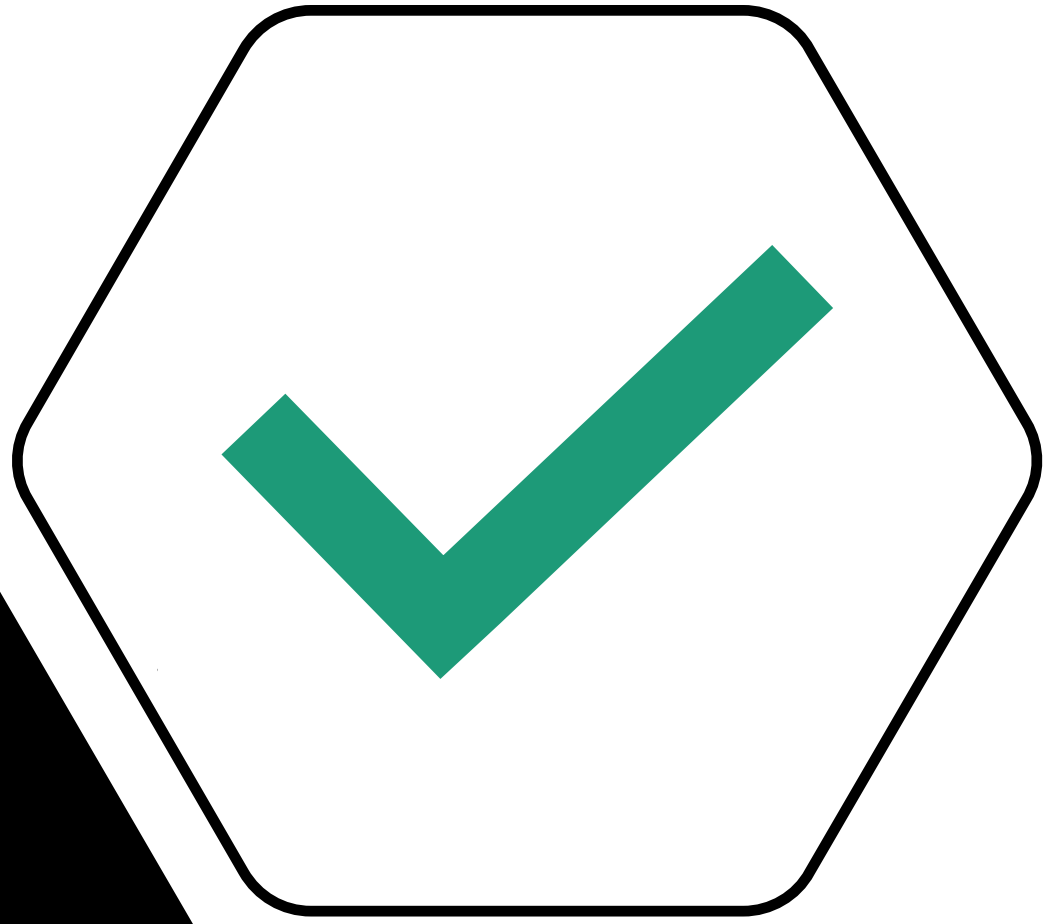
Olivia Orndorff, MSLIS
Associate Executive Director
Institutional Review Committee

oorndorff@acgme.org

Participating Site(s):

- Pittsburgh Poison Center
- Shriners Hospitals for Children (Erie)
- St Vincent Health Center
- Susquehanna Health System
- UPMC Altoona
- UPMC Children's Hospital of Pittsburgh
- UPMC Hamot
- UPMC Horizon
- UPMC Jameson Health
- UPMC Magee - Womens Hospital
- UPMC McKeesport
- UPMC Mercy
- UPMC Passavant
- UPMC Presbyterian Shadyside
- UPMC St Margaret
- UPMC Western Psychiatric Institute and Clinic
- Veterans Affairs Medical Center (Pittsburgh)

Getting it Right: Teaching Medical Error Disclosure



- Amanda W. Brown, MD, MS
- Daniel E. Hall, MD, Mdiv, MHSc, FACS
- Barbara Nightingale, MD
- Rita Patel GME Leadership Conference Workshop: February 20, 2020

- February 20, 2020

Conflict of Interest

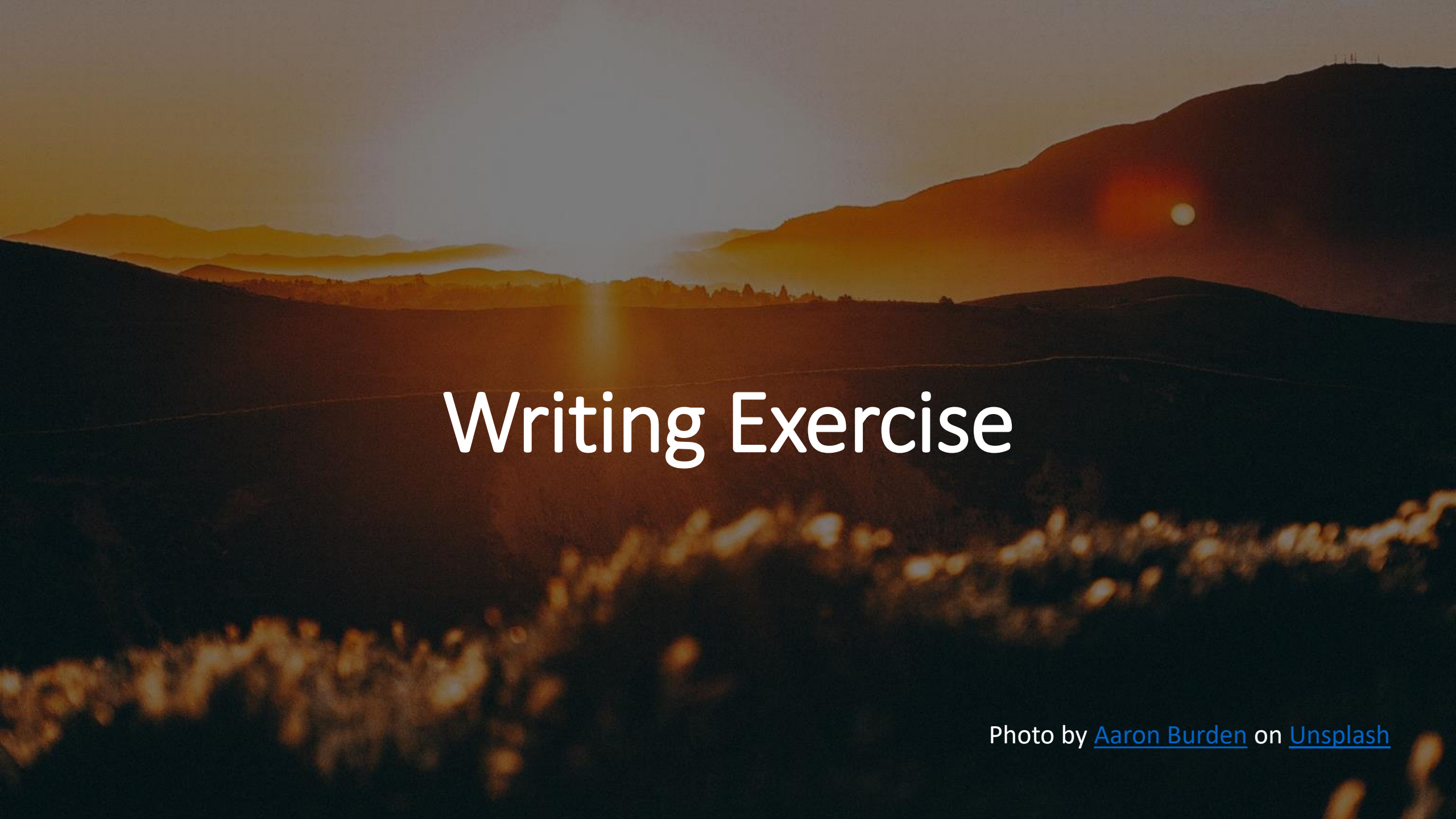
- I have no conflicts of interest to disclose.

Objectives

- By the end of this session, learners should be able to:
  - Identify two communication frameworks that can help clinicians disclose medical errors to patients/families
  - Apply these frameworks by practicing medical error disclosures in a small group setting
  - Develop strategies to adapt this curriculum to fit individual program needs

Session Outline

- Writing exercise
- Review of the literature
- Introduction to the ERROR and NURSE frameworks
- Case demonstration (See One)
- Small group practice (Do One)
- Bringing it back (Teach One)
- Legal/Risk Management



Writing Exercise

Photo by Aaron Burden on Unsplash

Writing Exercise

- Think about a medical error that you have been involved in either directly or indirectly in the past
- Answer these questions:
  - Was the error disclosed to the patient/family?
  - Who disclosed it?
  - If you disclosed the error, what was challenging about it?
  - If you disclosed the error, did you have any formal training on how to do it?

Photo by Florian Klauer on Unsplash

Background on Medical Errors and Error Disclosure

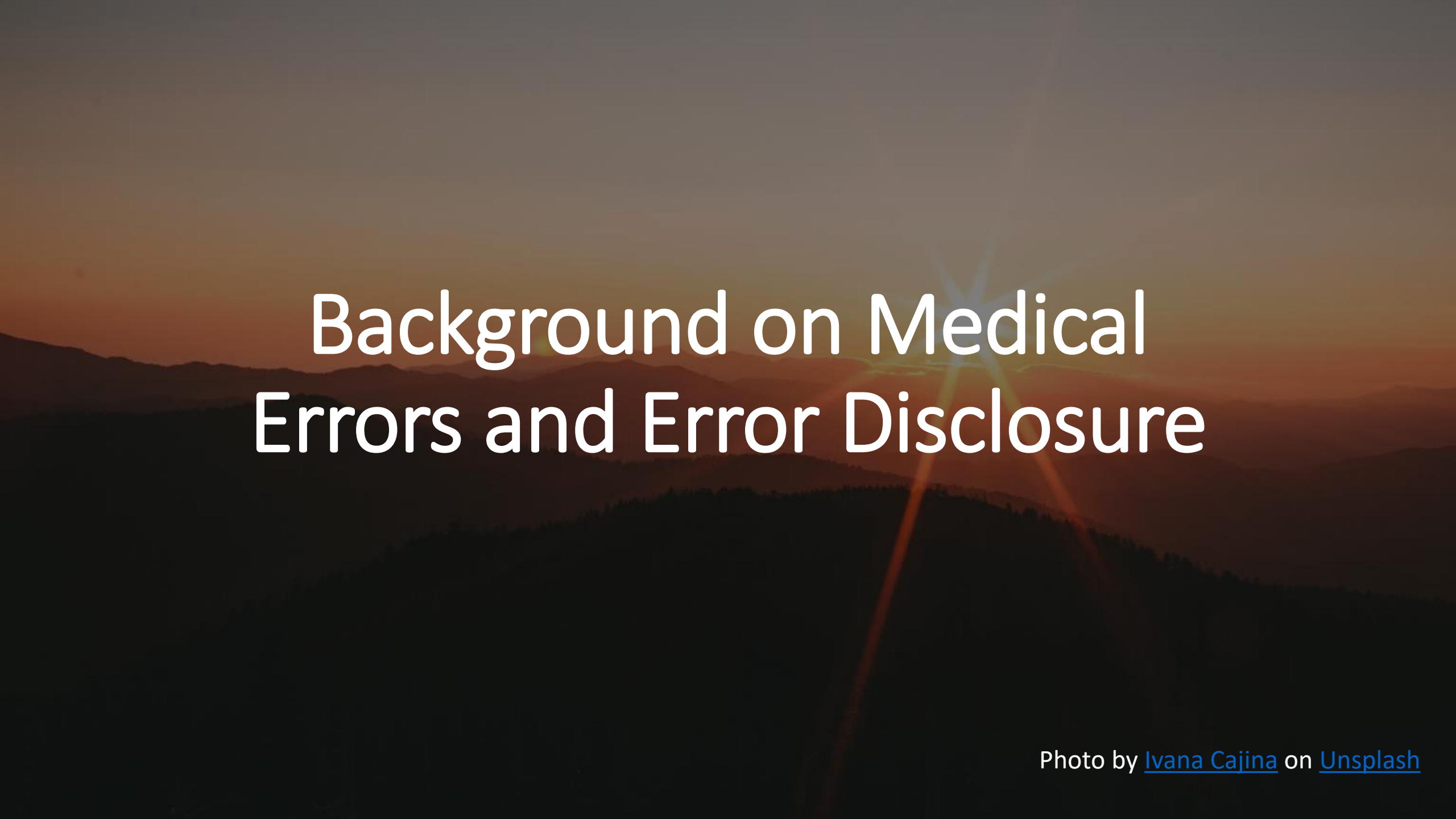
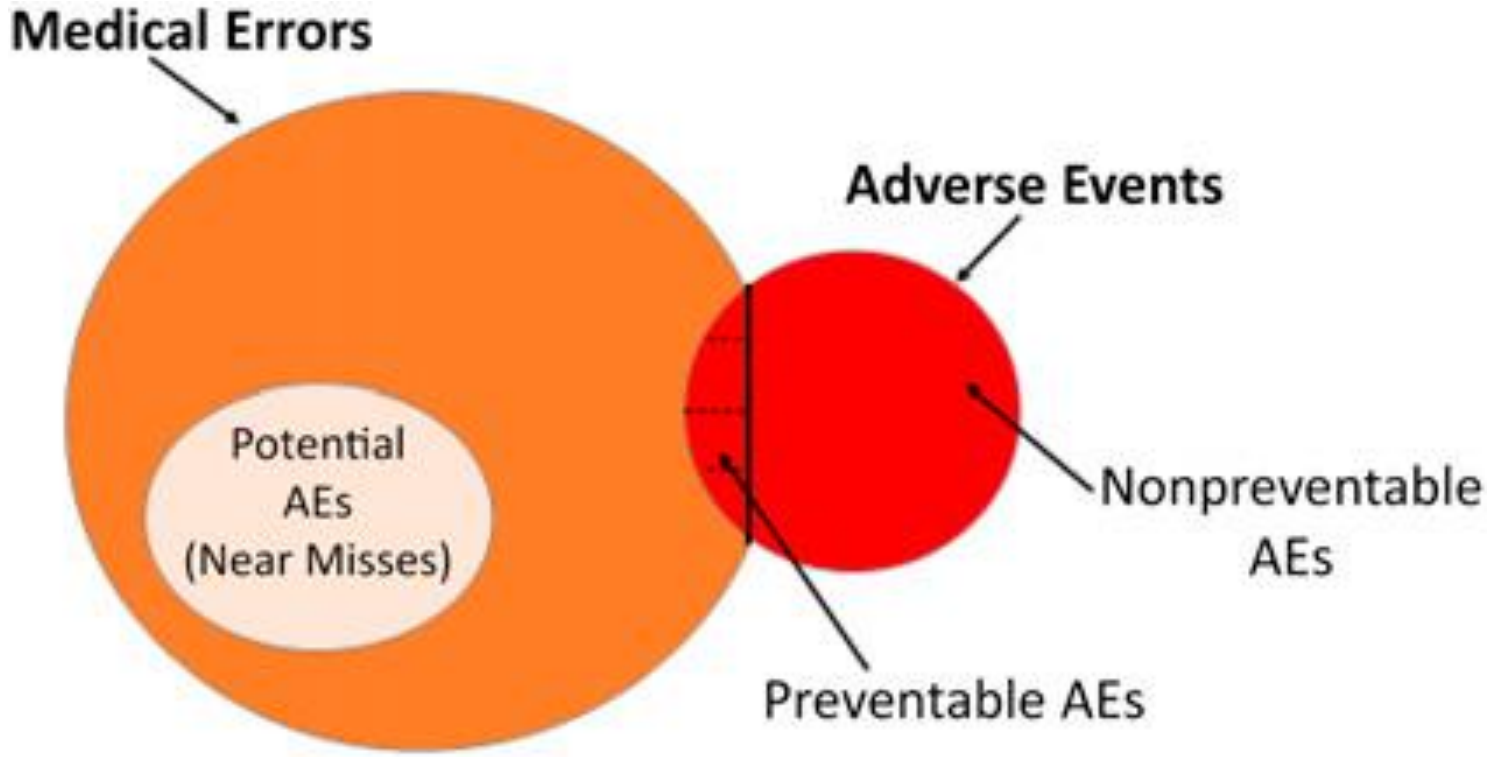


Photo by Ivana Cajina on Unsplash



Disclosure of Adverse Events in Pediatrics. *Pediatrics,* 2016

Medical Errors and Adverse Events

- What is the difference?
  - Medical errors may cause harm
  - Adverse events occur when medical care causes harm

Photo by Bill Oxford on Unsplash

What do we know about medical errors?

- 44,000 to 98,000 inpatient deaths occur each year due to medical errors in the United States
- Costs associated with preventable adverse events in the United States come to $17-$29 billion dollars each year
- Health care providers agree there is an ethical and moral obligation to inform patients and families when an error occurs

Institute of Medicine, 1998.

What challenges have you had in the past with disclosing medical errors?

Commonly Cited Barriers to Error Disclosure

- **Fear of litigation**
- Fear of mistrust and/or lack of rapport in future interactions
- Fear of disclosing an error when you were not directly responsible
- **Uncertainty about how to disclose medical errors**

Photo by Wesley Tingey on Unsplash

Fear of Litigation: What do we know?

- There is no evidence to suggest a causal relationship between error disclosure and litigation
  - One study looked at malpractice claims in perinatal injury:
    - 20% indicated they wanted more information
    - 24% indicated they perceived that there had been a cover-up/lack of honesty from physician
    - 32% believed the physician involved did not want to talk to them or answer their questions

Mazor et al, *Arch Intern Med,* 2004

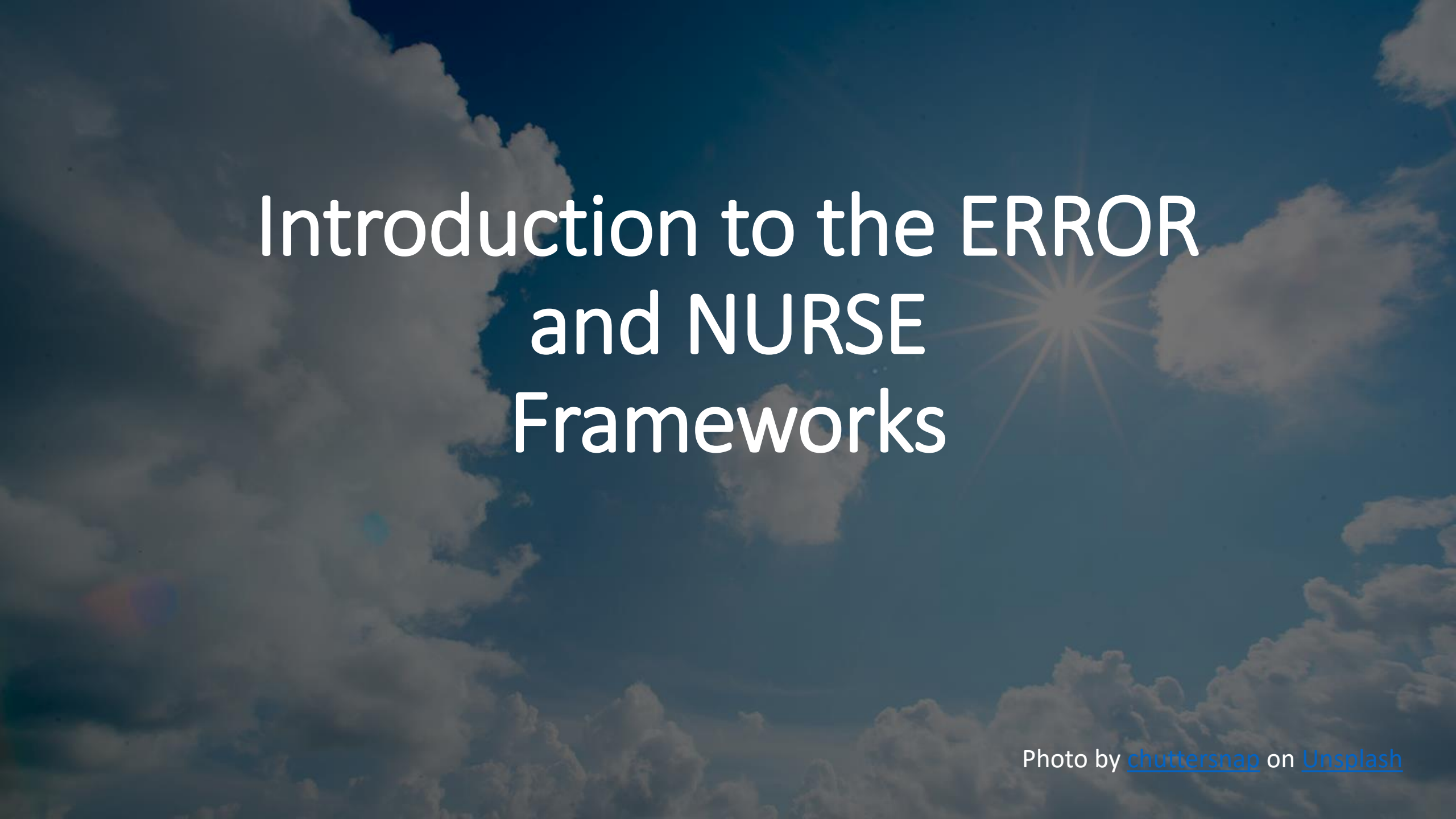
So what do our patients want from us?

Table 2. Comparison of Patient and Physician Attitudes About Medical Error Disclosure

Focus Group Themes	Patients' Attitudes	Physicians' Attitudes
Definition of error	Broad; includes deviations from standard of care, some nonpreventable adverse events, poor service quality, and deficient interpersonal skills of practitioners	Narrow; deviations from accepted standard of care only
What errors to disclose	All errors that cause harm	Errors that cause harm, except when harm is trivial, patient cannot understand error, or patient does not want to know about error
Disclose near misses?	Mixed	No
What information to disclose about error	Tell everything	Choose words carefully
How to disclose error	Truthfully and compassionately	Truthfully, objectively, professionally
Role of apology	Desirable	Concerned that apology creates a legal liability
Emotional impact of error	Upset, angry, scared	Upset that patient was harmed and about how error could impact career

Gallagher et al, *JAMA* 2003

Introduction to the ERROR and NURSE Frameworks



Prepare to disclose the error

- Ask a colleague to hold your pager/phone if possible
- Sit down with patient/family
- Check to make sure good time to talk
- Find a quiet location to discuss the news
- The “warning shot”

Disclose the error using the five ERROR steps

- **E**xplicit statement that an error occurred
- **R**eport what happened and why it occurred
- **R**espond to emotion (NURSE)
- **O**ffer an apology
- **R**ecurrence prevention

Node Simplified

Respond to emotion using NURSE statements

NURSE statement	Example
Naming	" I can see this is really surprising news."
Understanding	" I **can't** imagine how hard this must be for you."
Respecting	" I can see how hard you have been advocating for your son/daughter."
Supporting	"Our team is here to help you with this."
Exploring	"Tell me more…"

Let’s Practice…

- How might you respond when a patient’s family member says:
  - “ How did this happen?”
  - “You are supposed to be a top ten children’s hospital!”
  - “We’ve worked so hard to get him better and then this happens?”
  - “Should I get an attorney?”

See One: Case Demonstration

Case Demo and Debrief

- Please take good notes and write down specific words/phrases that you notice
- What SKILLS did you notice?

Do one…let’s practice

A Word About Role Play

- Let’s talk about role play for a moment
  - What makes it challenging?

Teach One: Bringing it Back

Checking In With Yourself

- Medical errors affect health care providers as well as patients
  - Clinicians may feel guilt, shame, isolation, etc.
  - This can be enhanced by negative reactions from peers
  - Many providers may have unmet emotional needs
  - Second victim syndrome
    - Kim Hiatt's story
    - UPMC Physicians for Physicians
      - Call 412-647-3669 to be connected to a peer

So How Do **You** Get Better at Error Disclosure (or any other skill for that matter)?

- Deliberate practice
  - Stepping outside your comfort zone
  - Getting specific feedback with the help of a coach or mentor
  - Practice these skills at first in low stakes situations
    - NURSE statements

A Word from Legal/Risk Management

What Questions Do You Have?

- References

  - Gallagher, et. al. Patients' and Physicians' Attitudes Regarding the Disclosure of Medical Errors. *JAMA.*2003;289:1001-1007.
  - Coffey, et. al. Parent Preferences for Medical Error Disclosure: A Qualitative Study. *Hospital Pediatrics.*2017;7:24-30.
  - Committee on Medical Liability and Risk Management, Disclosure of Adverse Events in Pediatrics. *Pediatrics.* 2016; 138:2-6.
  - Mazor, et. al. Communicating with Patients about Medical Errors. *Arch Intern Med.* 2004; 164(15):1690-1697.
  - Bonnema, et. al. Teaching error disclosure: Advanced communication skills training for residents. *Journal of Communication in Healthcare.*2012;5:51-55.
  - www.vitaltalk.org

Medical Error Disclosure References:

- Gallagher, et. al. Patients' and Physicians' Attitudes Regarding the Disclosure of Medical Errors. *JAMA.*2003;289:1001-1007.
- Coffey, et. al. Parent Preferences for Medical Error Disclosure: A Qualitative Study. *Hospital Pediatrics.*2017;7:24-30.
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- Mazor, et. al. Communicating with Patients about Medical Errors. *Arch Intern Med.* 2004; 164(15):1690-1697.
- Bonnema, et. al. Teaching error disclosure: Advanced communication skills training for residents. *Journal of Communication in Healthcare.*2012;5:51-55.
- Lin M, Famiglietti H. Closing the Disclosure Gap: Medical Errors in Pediatrics. *Pediatrics.* 2019; 143(4).
- www.vitaltalk.org

Medical Error Disclosure: The ERROR Framework

Prepare to disclose the error

- Minimize disruptions if possible
- Find a quiet and private place to discuss
- Sit down with patient/family
- Give a warning shot

Disclose the error using the five ERROR steps

- **E**xplicit statement than an error occurred
- **R**eport what happened and why it occurred (if known)
- **R**espond to emotion (NURSE statements)
- **O**ffer an apology
- **R**ecurrence prevention

Brown, MD, MS

Medical Error Disclosure: The ERROR Framework

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Brown, MD, MS

Respond to emotion using NURSE statements
(www.vitaltalk.org)

Naming: "I can see this is really surprising news."
Understanding: "I can't imagine how hard this must be for you."
Respecting: "I can see how hard you have been advocating for your daughter."
Supporting: "Our team is here to help you with this."
Exploring: "Tell me more."

Conclude the disclosure

Encourage questions
Review plan for next steps in care

Respond to emotion using NURSE statements
(www.vitaltalk.org)

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Conclude the disclosure

Encourage questions
Review plan for next steps in care

UPMC LIFE CHANGING MEDICINE

The Future GME Workforce: The Holistic Review of GME Applicants

Alda Maria Gonzaga, MD MS

Naudia Jonassaint, MD, MHS

Giselle Hamad, MD

Thank you

- Greg Bump
- Julie McCausland and PDD subcommittee
- All our mentors
- All of our trainees, who are the best teachers in this work
- All of you for attending
  - Especially our coordinators!

UPMC LIFE CHANGING MEDICINE

Objectives

- Review of Gender Equity Commission's Report
- Explore the need for inclusive recruitment practices
- Review the data on the disparities in residency recruitment
- Selection Committee Training
- Applying these principles to rank lists
- Iterative process of holistic review

New ACGME Standards

- I.C. “The program, in partnership with its Sponsoring Institution, must engage in practices that focus on mission-driven, ongoing, systematic recruitment and retention of a diverse and inclusive workforce of residents, fellows (if present), faculty members, senior administrative staff members, and other relevant members of its academic community. (Core)”

Be Mission Driven

- Each program/department has its own mission
- Should be linked to the community it serves

Inclusive Recruitment Framework


Setting Diversity as a Priority
Seeking Out Candidates
Implementing Inclusive Recruitment Practices
Investing in Trainee Success
Building the Pipeline

Worksheet

Assess your department and program's commitment to diversity and inclusion

Culture of Inclusion

- Interactions with physician and non-physician staff members
- Interactions with patients
- Pictures on the wall
- People smiling and saying hello as you walk across the bridge

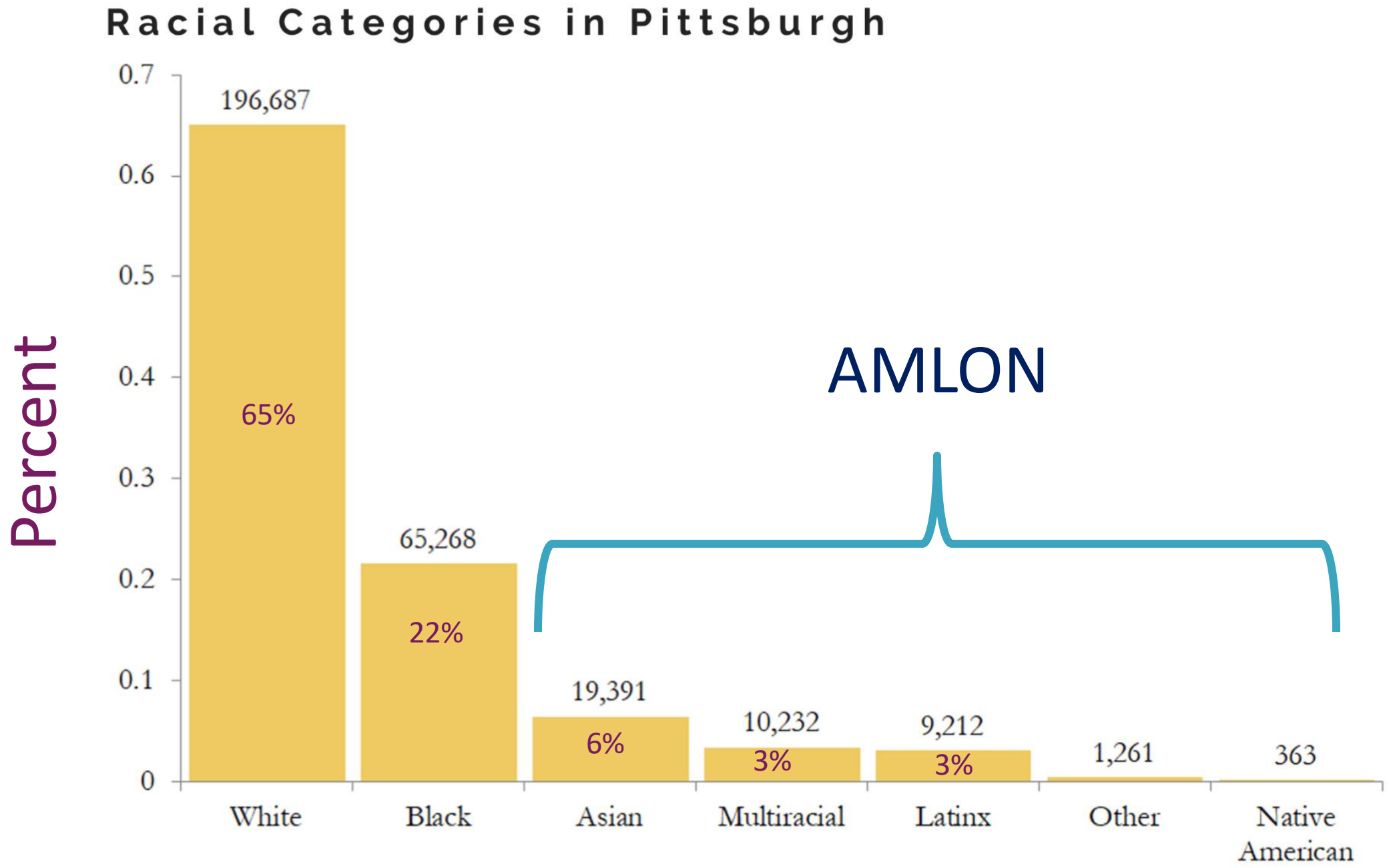
- Our medical school has 26% URM students
- But our graduate training programs have <10% URM trainees
  - They don't perceive UPMC having an inclusive work environment
  - Opportunity for intentional enhancement of an inclusive environment
- Missed opportunity to train outstanding physicians
  - We can do this!!

State of the City of Pittsburgh

- Pittsburgh called one of the most “livable” cities in the US
- Not true for everyone based on 2019 Pittsburgh's Inequality Across Gender and Race
  - By the City of Pittsburgh Gender Equity Commission

- Aim:
  - to examine 4 indicators of livability of Pittsburgh’s city residents:
    - health, income, employment, & education

https://apps.pittsburghpa.gov/redtail/images/7109_Pittsburgh's_Inequality_Across_Gender_and_Race_09_18_19.pdf



https://apps.pittsburghpa.gov/redtail/images/7109_Pittsburgh's_Inequality_Across_Gender_and_Race_09_18_19.pdf

Author's conclusions

- Pittsburgh is a livable city for white men
- Pittsburgh's livability for white women is similar to other cities
- **Pittsburgh is less livable for black men than other similar cities**
  - Especially when it comes to health and employment outcomes
- **Pittsburgh is the most unlivable city for black women**
  - Health – fetal death rates and outcomes
  - Maternal mortality due to stress and bias from providers
  - Death from all causes
  - Employment and income opportunities, educational opportunities

https://apps.pittsburghpa.gov/redtail/images/7109_Pittsburgh's_Inequality_Across_Gender_and_Race_09_18_19.pdf

Author's recommendations that city address:

1. Black women's maternal mortality
2. Black women's employment and poverty
3. Black men's occupational segregation
4. Black men's homicide
5. Black men's cancer and heart disease
6. College admission exams
7. College bound black girls
8. Police referrals in schools

https://apps.pittsburghpa.gov/redtail/images/7109_Pittsburgh's_Inequality_Across_Gender_and_Race_09_18_19.pdf

How can we address health disparities in Pittsburgh?

- Part of this is diversifying the physician workforce

- Why do we fall so short of the goal?

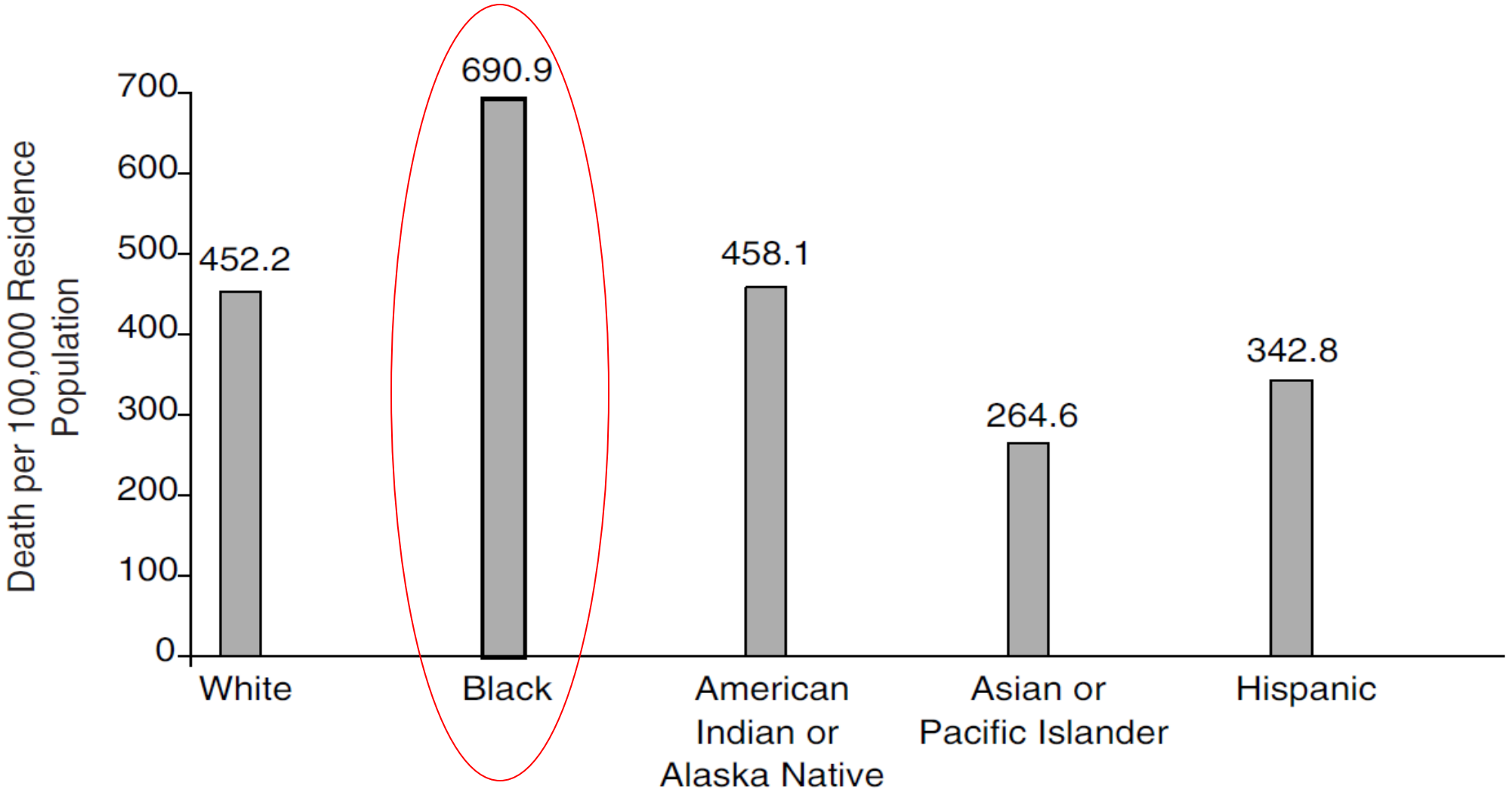
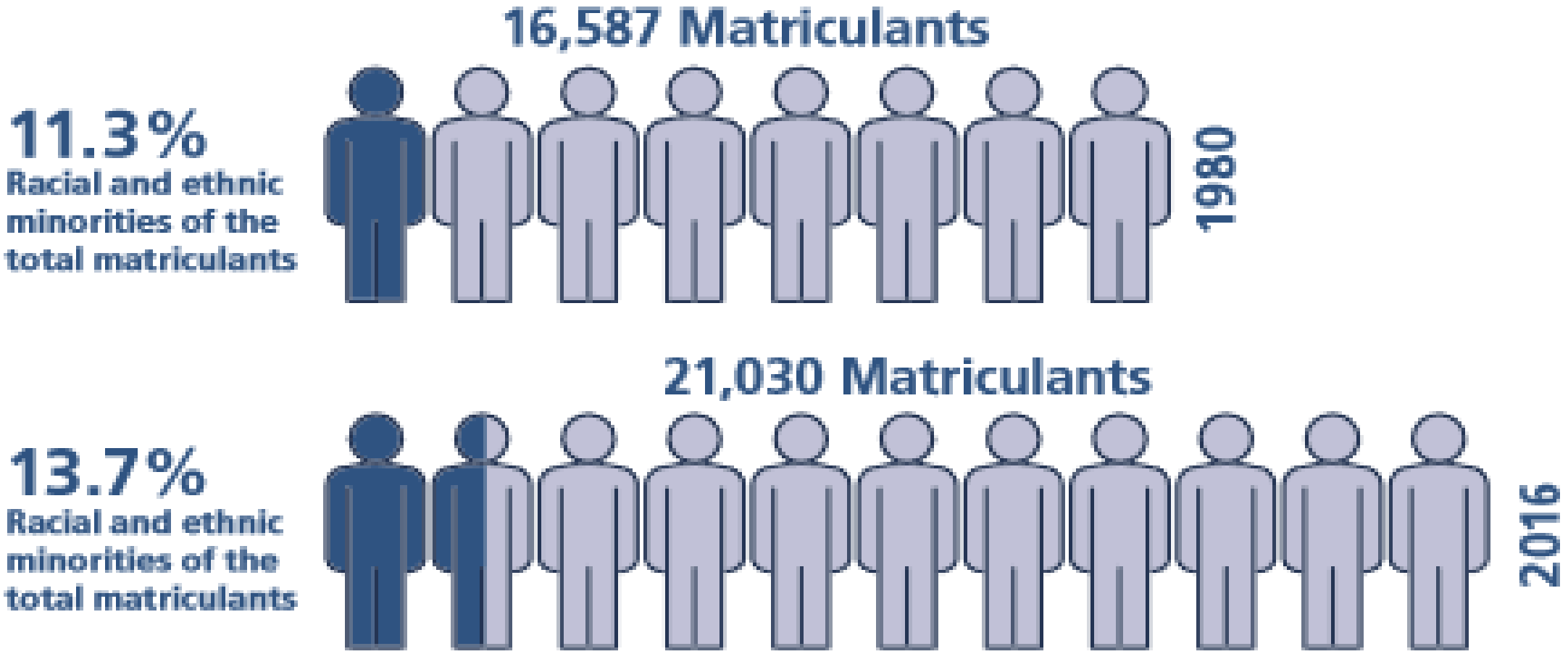
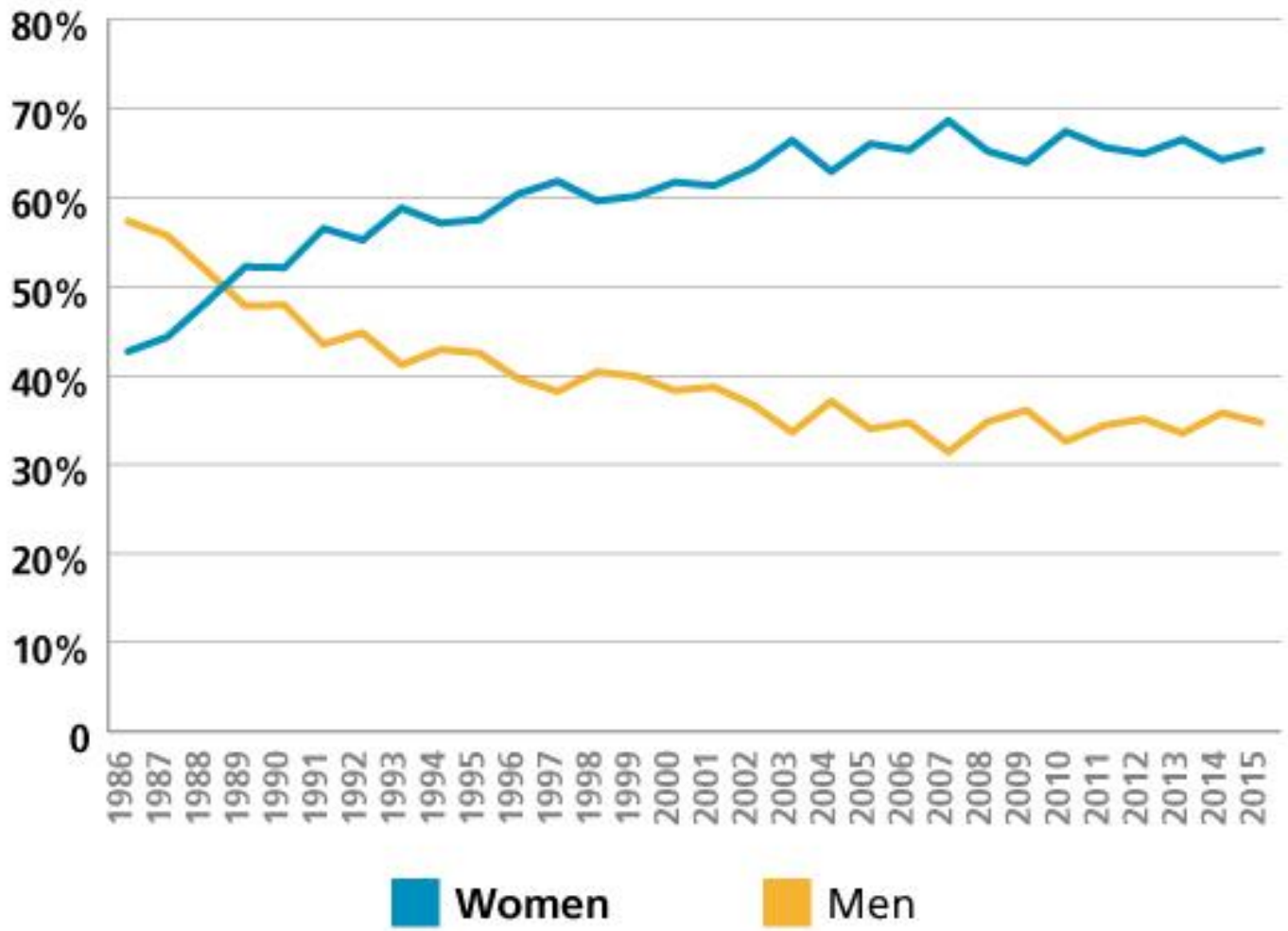


FIGURE 2-1 Age-adjusted death rates for all causes of death by race and Hispanic origin: United States, 1950-1998. SOURCE: Health, United States, 2000 (2001).

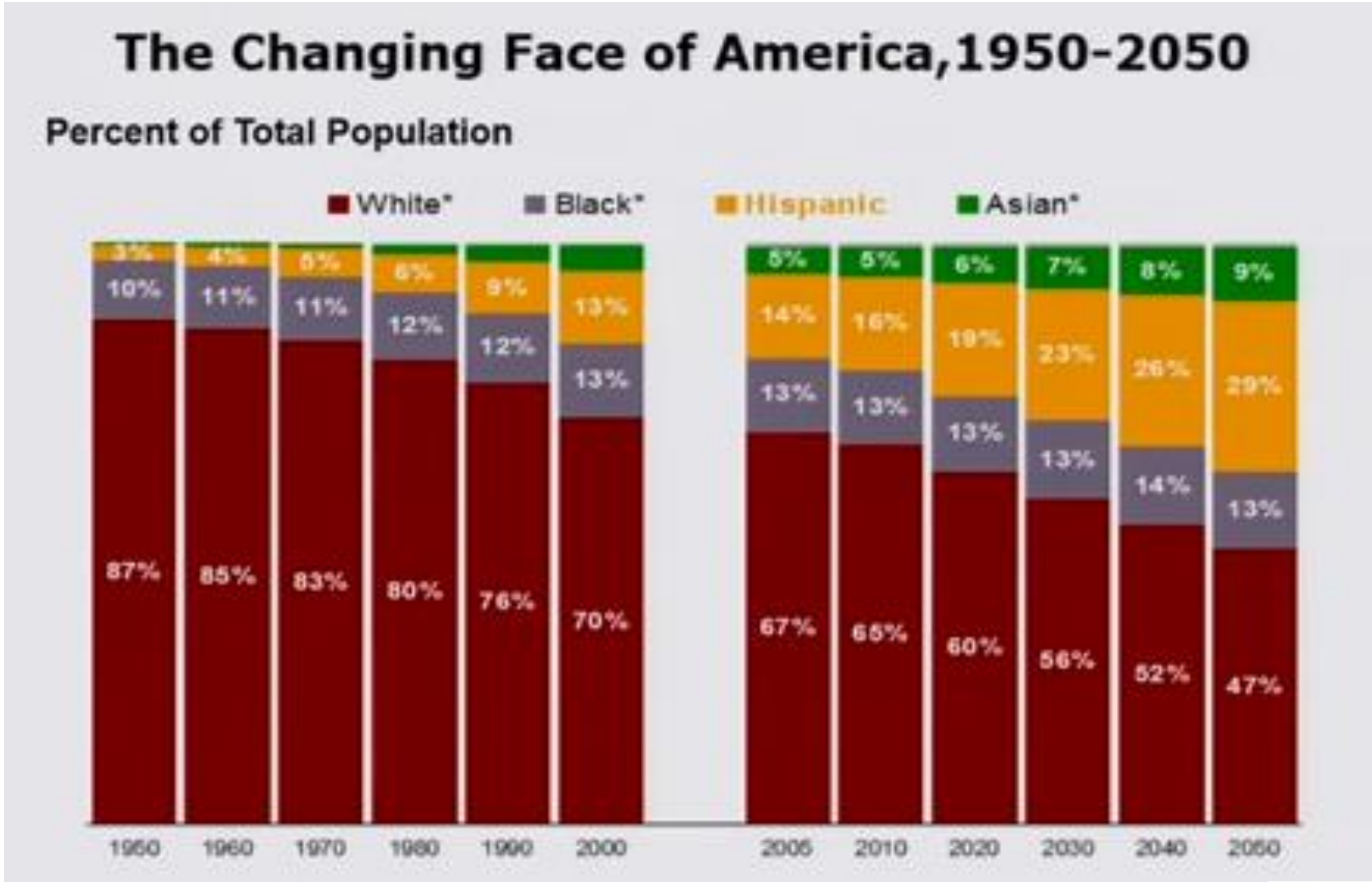
Figure 3. Increase in total U.S. medical school matriculants, 1980 to 2016.



Percentage of U.S. Medical School Black or African American Graduates by Sex, 1986–2015



The Changing Face of America,1950-2050




Setting Diversity as a Priority
Seeking Out Candidates
Implementing Inclusive Recruitment Practices
Investing in Trainee Success
Building the Pipeline

The Bias of the “Metrics” and how it impact application selection

Part of the problem is the pipeline

Do Racial and Ethnic Group Differences in Performance on the MCAT Exam Reflect Test Bias?

Dwight Davis, MD, J. Kevin Dorsey, MD, PhD, Ronald D. Franks, MD, Paul R. Sackett, PhD, Cynthia A. Searcy, PhD, and Xiaohui Zhao, PhD

Davis et al. Academic Medicine, Vol 88 (5), May 2013.

Table 1

MCAT Scores for 2009 Examinees and Undergraduate GPAs for Medical School Applicants to the 2010 Matriculating Class, Means and Standardized Mean Differences (*d*s) by Racial and Ethnic Group*

Data type	White, mean (SD)	Black, mean (SD)	Latino, mean (SD)	*d*†,‡ White–black	*d*†,‡ White–Latino
MCAT score§,¶					
Total score	26.3 (5.9)	20.0 (6.3)	21.6 (6.9)	*1.0*	*0.8*
Biological sciences	9.1 (2.4)	6.9 (2.6)	7.5 (2.8)	*0.9*	0.6
Physical sciences	8.5 (2.4)	6.6 (2.2)	7.1 (2.4)	*0.8*	0.6
Verbal reasoning	8.7 (2.2)	6.5 (2.5)	7.0 (2.7)	*0.9*	*0.8*
Undergraduate GPA**	3.6 (0.3)	3.3 (0.4)	3.4 (0.4)	*0.9*	0.5

* Individuals who self-identified as white alone were classified as white, individuals who self-identified as black alone or in combination with other races (including white) were classified as black, and individuals who self-identified as Latino alone or in combination with other races (including white) were classified as Latino.

Table 2

White–Black and White–Latino Standardized Mean Differences (*d*s) on Different Types of Admission and School Exams

Exams by type	*d**	
	White–Black	White–Latino
Graduate admission exams		
Medical College Admission Test (MCAT)	1.0†	0.8†
Graduate Record Examination (GRE)	1.3‡	0.7‡
Graduate Management Admission Test (GMAT)	1.0§	0.4§
Law School Admission Test (LSAT)	1.1§	0.9§
Undergraduate admission exams		
SAT Composite	1.1¶	0.8**
ACT Composite	1.0††	0.7††
K–12 measures		
Elementary school math samples	0.9‡‡	0.7‡‡
Elementary school verbal/reading samples	0.8‡‡	0.7‡‡
High school math samples	0.9‡‡	0.8‡‡
High school reading samples	0.8‡‡	0.7‡‡

Table 3

Comparison of Observed and Predicted Success Rates on Four Measures of Medical School Performance for White, Black, and Latino Medical Students Who Matriculated at MD-Granting U.S. Medical Schools From 2000 to 2004*,†

	White students						Black students					
					Difference¶						Difference¶	
Outcomes‡	N	Mean MCAT score	Observed success, %	Predicted§ success, %	Freq	%	N	Mean MCAT score	Observed success, %	Predicted§ success, %	Freq	%
Pass Step 1 on first attempt	49,072	30.3	96.0	95.8	133	0.3	5,955	24.7	80.9	83.1	−133	−2.2
Pass Step 1 eventually	49,072	30.3	99.6	99.6	17	0.0	5,955	24.7	98.0	98.3	−17	−0.3
Graduate in 4 years	46,590	30.1	88.9	88.1	371	0.8	5,653	24.4	71.0	77.5	−371	−6.6
Graduate in 5 years	46,590	30.1	95.6	95.2	193	0.4	5,653	24.4	86.1	89.5	−193	−3.4

What are we measuring?

Table 4

Factors Affecting the General Population Related to Academic Achievement Gaps Between Racial and Ethnic Groups*

Factors by type	% of individuals of same racial/ethnic group to whom factors apply		
	White	Black	Latino
Early environmental factors			
Children aged 0–17 living in poverty†	11	36	29
Children aged 0–17 living in food-insecure households (in which children are at risk of getting inadequate nutrition)‡	12	29	24
Children aged 0–17 in families where no parent has full-time, year-round employment†	27	50	39
Children aged 0–17 living in single-parent household‡	23	56	29
Children (at about age 2) attending low-quality day care†	27	75	63
Children aged 3–5 who are not read to every day by a family member‡,§	32	50	55
Children aged 1–5 with "elevated" blood lead levels (elevated defined by CDC)‡	1	4	**

K–12 educational factors			
Third-grade students who changed schools three times or more since first grade[¶]	13	27	25
Eighth-grade students whose teachers have four years or less of experience as elementary or secondary school teachers[‡]	20	28	30
Eighth-grade math students whose teachers left before the end of the school year[‡]	28	52	44
Eighth-grade math students whose teachers have neither an undergraduate major nor minor in math[‡]	40	45	44
Students in grades K–12 whose parents did not report volunteering or serving on a committee at their child's school[‡,§]	52	68	72
Students aged 12–18 who reported that street gangs were present at school[‡]	17	37	38

Racial Bias in Using USMLE Step 1 Scores to Grant Internal Medicine Residency Interviews

Michael B. Edmond, MD, MPH, Jennifer L. Deschenes, MS, Maia Eckler, MS, and Richard P. Wenzel, MD, MSc

Table 1

Numbers of Applicants Who Would Not Have Been Interviewed at an Internal Medicine Residency Program Based on Incremental Increases in Cutoff Scores for USMLE Step 1*

USMLE Step 1 Cutoff Score	Applicants Rejected No. (%)		Odds Ratio (CI_{95}) for Rejection
	African American (n = 47)	Non–African American (n = 626)	
<180	3 (6.4)	8 (1.3)	5.2 (1.1–22.8)
<185	7 (14.9)	36 (5.7)	2.9 (1.1–7.3)
<190	17 (36.2)	53 (8.5)	6.1 (3.0–12.4)
<195	22 (46.8)	82 (13.1)	5.8 (3.0–11.3)
<200	25 (53.2)	126 (20.1)	4.5 (2.4–8.6)
<205	27 (57.4)	163 (26.0)	3.8 (2.0–7.3)
<210	32 (68.1)	214 (34.2)	4.1 (2.1–8.1)
<215	38 (80.9)	277 (44.2)	5.3 (2.4–12.0)

*The data are based on a cohort of 673 applicants to one internal medicine residency program, 2000. The mean USMLE Step 1 score for African-American applicants was 200, the mean score for non–African-American applicants was 216.

Selection Criteria for Residency: Results of a National Program Directors Survey

Marianne Green, MD, Paul Jones, MD, and John X. Thomas, Jr., PhD

Table 2

Rankings of the Importance of Academic Selection Criteria from a National Survey of Residency Program Directors, 2006

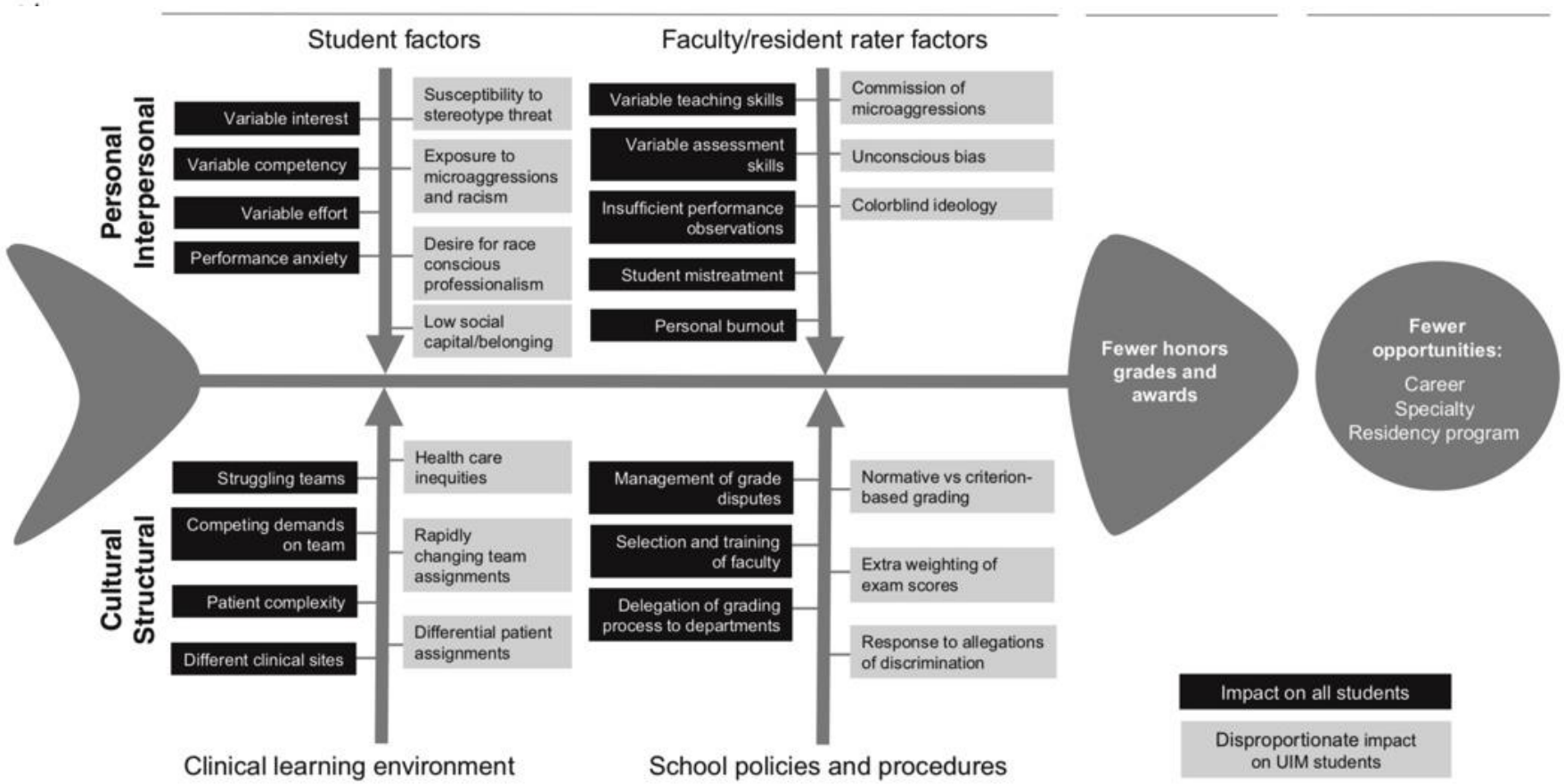
Academic criteria	Rank	Statistically different from rank(s)*
Grades in required clerkships	1	2–14
USMLE Step 1 score	2	5–14
Grades in senior electives in specialty	3	6–14
Number of honors grades	4	6–14
USMLE Step 2 score	5	7–14
USMLE Step 2 Clinical Skills pass	6	8–14
Class rank	7	10–14
Membership in Alpha Omega Alpha	8	10–14
Medical school reputation	9	11–14
Medical school academic awards	10	12–14
Grades in other senior electives	11	14
Grades in preclinical courses	12	14
Published medical school research	13	N/A
Research experience while in medical school	14	N/A

* To illustrate statistical differences that exist when comparing all other selection criteria, this column indicates the ranks that are statistically different from the criteria listed in each row.

Green, M et al. Selection Criteria for Residency: Results of a National Program Directors Survey Academic Medicine 84(3); 362-367, March 2009

How Small Differences in Assessed Clinical Performance Amplify to Large Differences in Grades and Awards: A Cascade With Serious Consequences for Students Underrepresented in Medicine

Arianne Teherani, PhD, Karen E. Hauer, MD, PhD, Alicia Fernandez, MD, Talmadge E. King Jr, MD, and Catherine Lucey, MD



Teherani et al. Acad Med. 2018;93:1286–1292.

UPMC LIFE CHANGING MEDICINE

Core Clerkship Grading: The Illusion of Objectivity

Karen E. Hauer, MD, PhD, and Catherine R. Lucey, MD

Abstract

Core clerkship grading creates multiple challenges that produce high stress for medical students, interfere with learning, and create inequitable learning environments. Students and faculty alike succumb to the illusion of objectivity—that quantitative ratings converted to grades convey accurate measures of the complexity of clinical performance.

Clerkship grading is the first high-stakes assessment within medical school and occurs just as students are newly immersed full-time in an environment in which patient care supersedes their needs as learners. Students earning high marks situate themselves to earn entry into competitive residency programs and selective specialties. However, there is no commonly accepted standard for how to assign clerkship grades, and the process is vulnerable to imprecision and bias. Rewarding learners for the speed with which they adapt inherently favors students who bring advantages acquired before medical school and discounts the goal of all learners achieving competence.

The authors propose that, rather than focusing on assigning core clerkship grades, assessment of student performance should incorporate expert judgment of learning progress. Competency-based medical education is predicated on the articulation of stepwise expectations for learners, with the support and time allocated for each learner to meet those expectations. Concurrently, students should ideally review their own performance data with coaches to self-assess areas of relative strength and areas for further growth. Eliminating grades in favor of competency-based assessment for learning holds promise to engage learners in developing essential patient care and teamwork skills and to foster their development of lifelong learning habits.

Hauer KE, Lucey CR, Academic Medicine 94(4), April 2019, 469-472.

Practical Actions

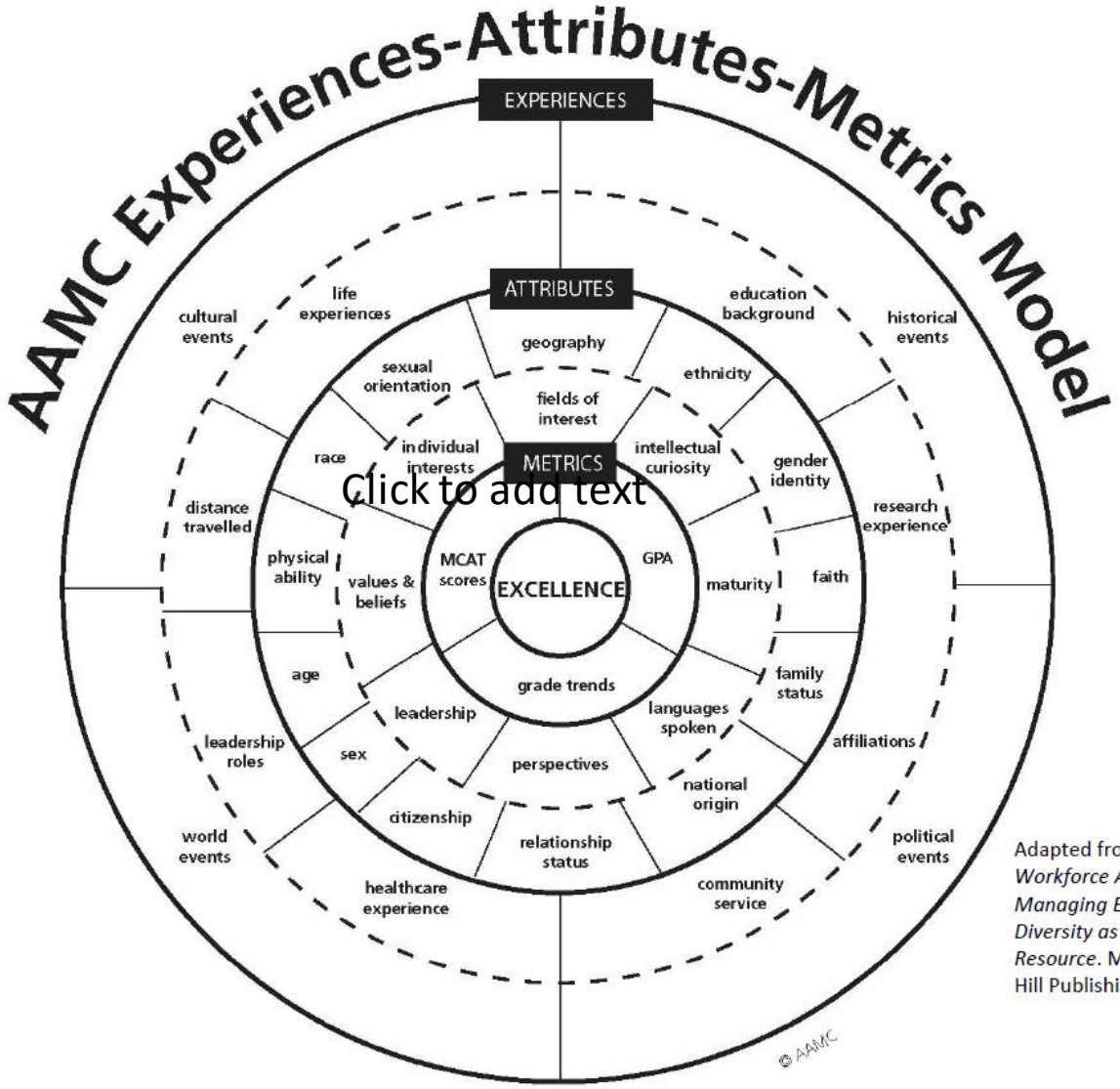
#1 Take the Harvard Implicit Bias Test and have your screeners and interviewers do the same

#2 Devote yourself by understanding the value

#3 Utilize Test Scores to Screen in not out

#4 Screen URM applicants and hand screen applications

#5 Holistic Review of Applications



Click to add text

Adapted from *Workforce America: Managing Employee Diversity as a Vital Resource*. McGraw Hill Publishing, 1990.

https://store.aamc.org/roadmap-to-diversity-integrating-holistic-review-practices-into-medical-school-admission-processes-pdf.html

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#6 Create a vision for each of your applicants


Setting Diversity as a Priority
Seeking Out Candidates
Implementing Inclusive Recruitment Practices
Investing in Trainee Success
Building the Pipeline

Prior to start of recruitment season

- Who will interview your applicants?
- Make diversity and explicit priority
- Implicit bias training

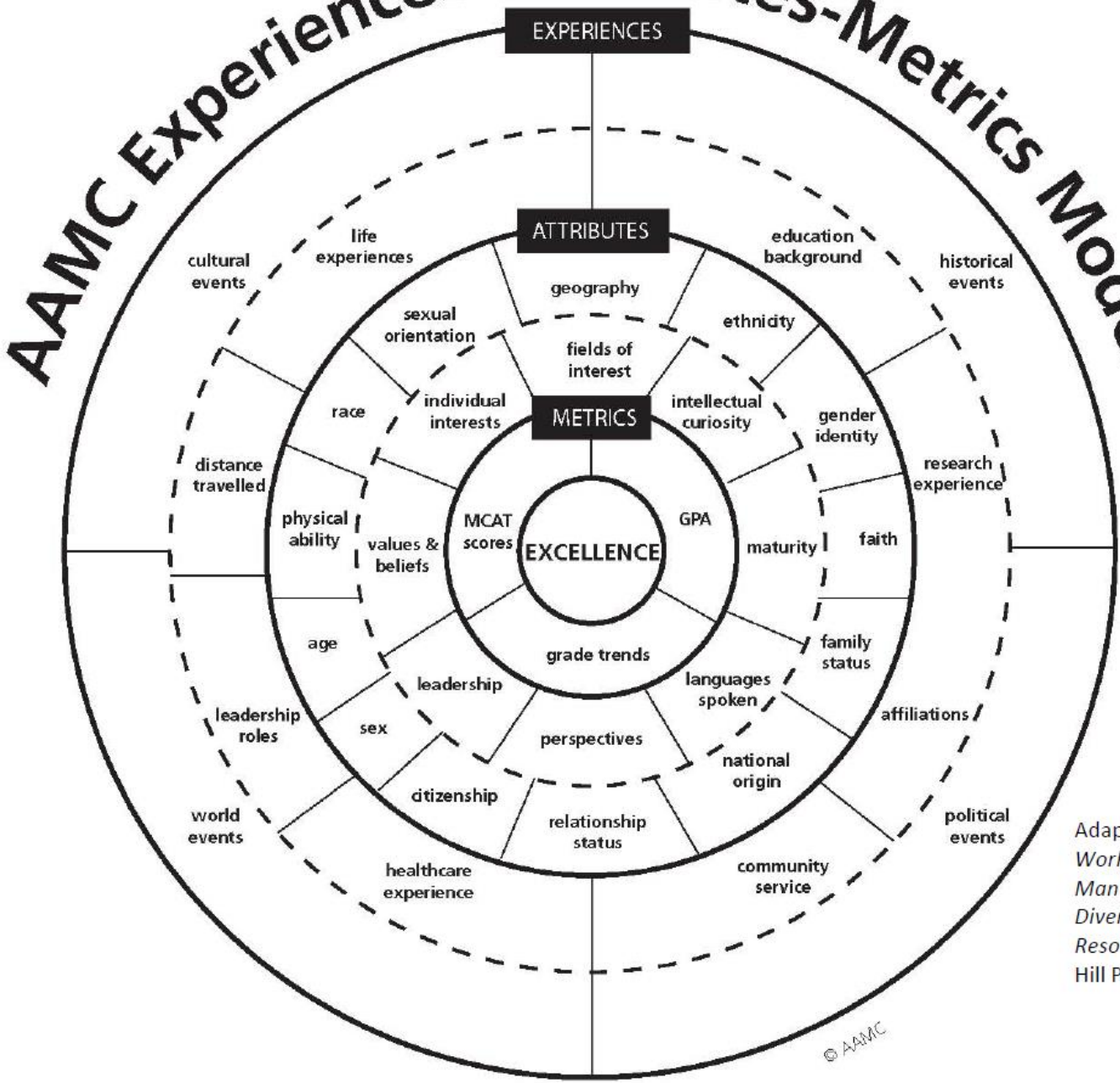
Holistic Review

- Flexible
- Highly-individualized process
- Balanced consideration is given to the multiple ways in which applicants may prepare for & demonstrate suitability as medical students and future physicians

- Experiences
  - The path the applicant has traveled
    - Educational background
    - Employment history
    - Health issues/caring for sick family
- Attributes:
  - Applicant's skills and abilities at time of entry
    - Personal characteristics
      - Processional characteristics
  - Demographics
- Metrics
  - Quantitative assessments
    - GPA
    - MCAT

https://store.aamc.org/roadmap-to-diversity-integrating-holistic-review-practices-into-medical-school-admission-processes-pdf.html

AAMC Experiences-Attributes-Metrics Model



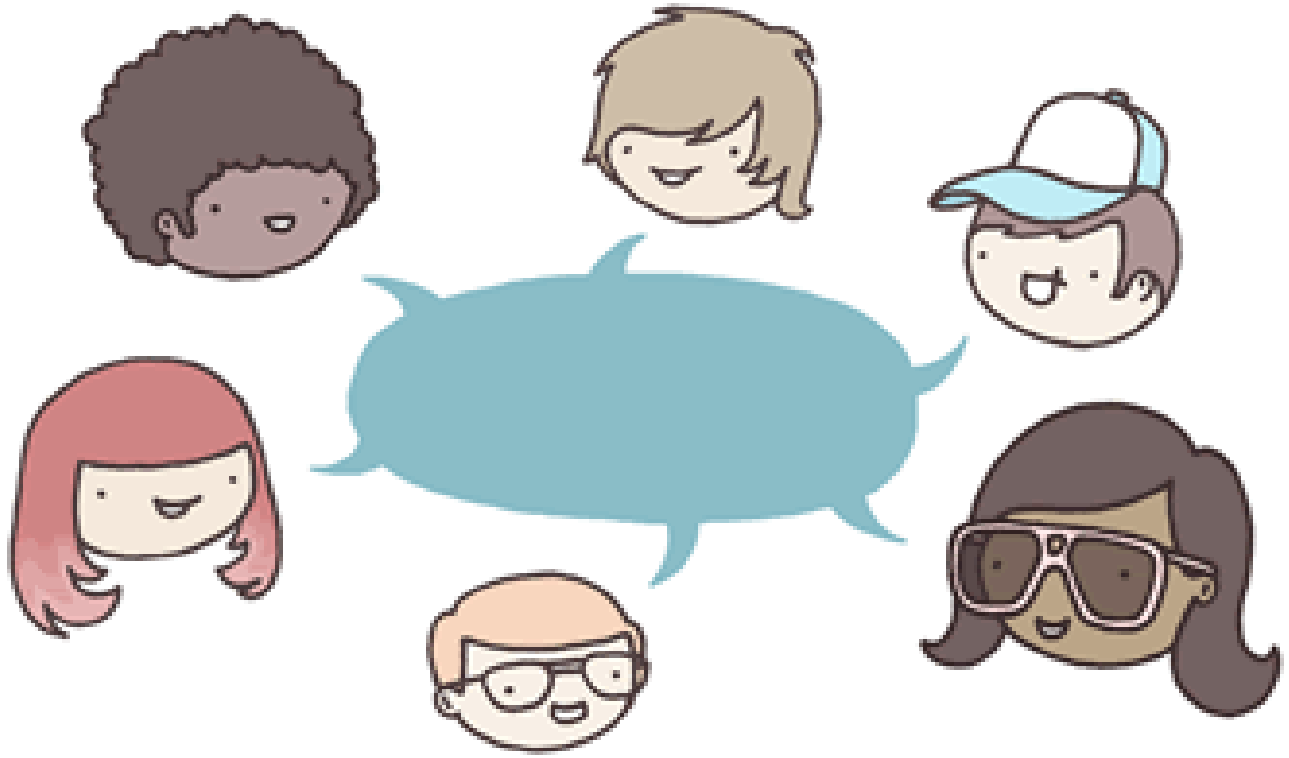
Adapted from *Workforce America: Managing Employee Diversity as a Vital Resource*. McGraw Hill Publishing, 1990.

How and When to do This

- The earlier the holistic review of applicants, the more effective it is
- 3 Stages of recruitment process:
  - Initial screening (usually the LEAST holistic)
    - Assess *Preparedness* (how can a student demonstrate preparedness?)
  - Interviewing
    - Structured or semi-structured interview conducted by more two or more interviewers is most reliable and valid
  - Selecting for admission
    - Most likely place to employ fullest holistic review methods

How to be Inclusive While Making Your Rank List

Let’s Practice!



Review the sample applicants as if in a selection committee meeting

Debrief of Breakout Session

UPMC LIFE CHANGING MEDICINE


Setting Diversity as a Priority
Seeking Out Candidates
Implementing Inclusive Recruitment Practices
Investing in Trainee Success
Building the Pipeline

Investing in Your Trainees

- Mentoring!
  - Guidance on the hierarchy and conventions of medicine
  - Validate and support through
    - Microaggressions/discrimination
    - Diversity tax
    - Surplus visibility
- Early board preparation plans if indicated
- Enhance inclusive work environment

UPMC LIFE CHANGING MEDICINE


Setting Diversity as a Priority
Seeking Out Candidates
Implementing Inclusive Recruitment Practices
Investing in Trainee Success
Building the Pipeline

Expanding the Pool of Candidates

- Faculty pipeline
  - Your trainees – tell them over and over again that you would like them to stay
  - Talk about them to your departmental leaders
- Trainee pipeline
  - UPSOM and national SNMA, LMSA
- Local schools

Discussion

Discussion

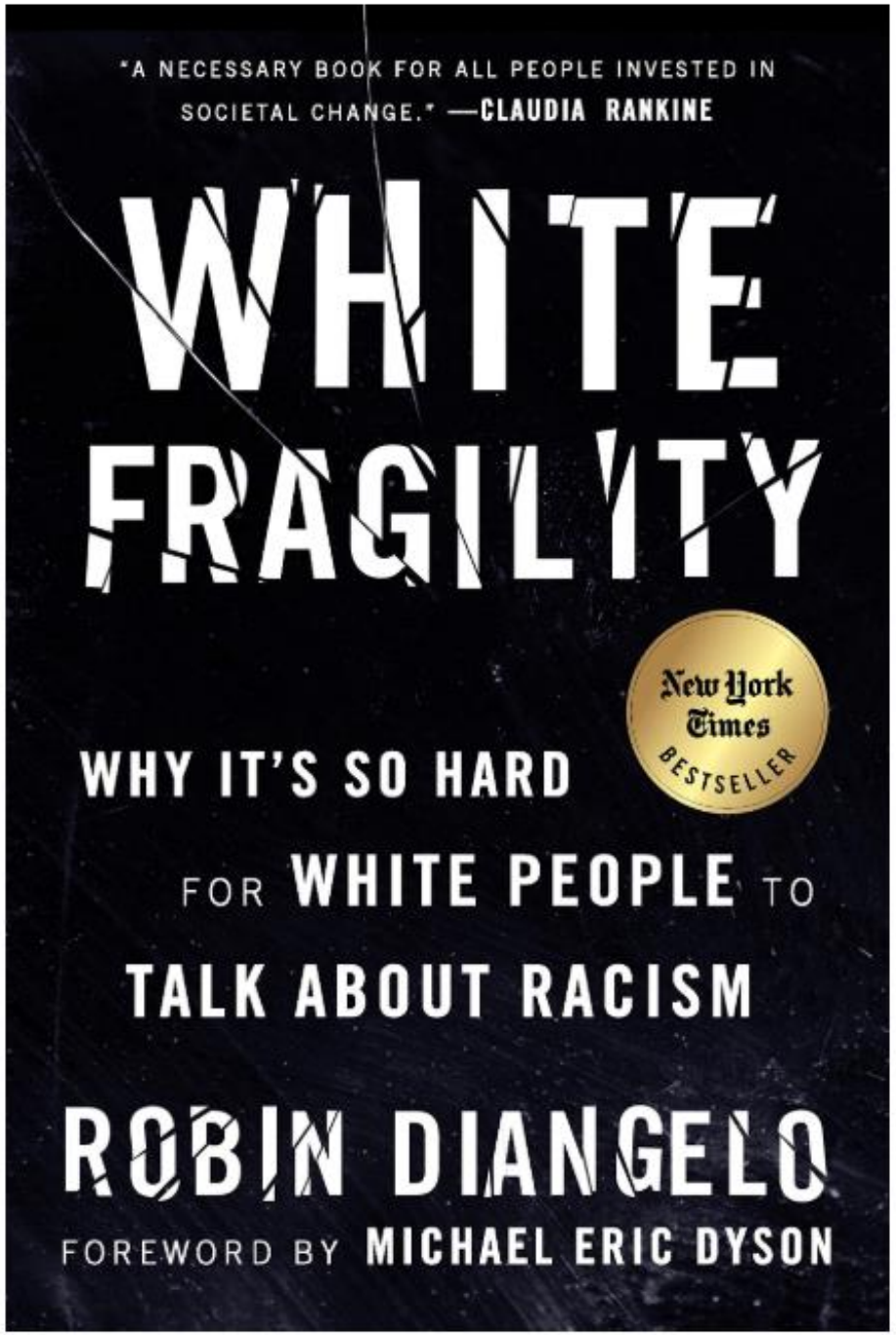
- Applicant pool is so big, I can't not use metrics
- No URMs apply
- They are not as competitive
- They all wash out
- Step 3 and Certification Exam pass rates
- Chair is not supportive
- Pittsburgh
  - Highlight the pros – strength of training, low cost of living, with networking can access a very cool circle of minority professionals

Make a commitment

- Write at least 1 thing that you will do to address the new ACGME standard on diversity of trainee cohort

Care to broaden your perspective?

We recommend reading:



UPMC LIFE CHANGING MEDICINE

The End

Toolkit for "The Broad Impact of Unconscious Bias" Workshop

Alda Maria Gonzaga, MD

Naudia Jonassaint, MD

Giselle Hamad, MD

Increasing GME Diversity:

1. Gonzaga AM, Appiah-Pippim JA, Onumah C, Yialamas M. A framework for inclusive GME recruitment strategies: meeting the ACGME standard for a diverse and inclusive workforce. E-publication ahead of print in *Academic Medicine* November 5, 2019. *Access at* https://journals.lww.com/academicmedicine/Abstract/publishahead/A_Framework_for_Inclusive_Graduate_Medical.97391.aspx
2. McDade WA. Increasing Graduate Medical Education Diversity and Inclusion. *JGME*. 2019; 11:736-738.

To read/learn more about Unconscious Bias and how to counter it:

1. Implicit Association Tests: https://implicit.harvard.edu/implicit/takeatest.html
2. Banaji & Greenwald. Blindspot: Hidden Biases of Good People. 2013 Bantam.
    a. This is a book written by the Harvard social scientists who developed the Implicit Association Tests
3. Thiederman S. The Diversity and Inclusion Handbook. 2012. Walk the Talk company
4. Brooks KC. A Silent Curriculum. *JAMA* 2015; 313: 1909-10.

To read about the lived experiences of physicians of diverse backgrounds:

1. Blackstock U. Why Black Doctors Like Me are Leaving Faculty Positions in Academic Medical Centers. *STAT*. January 16, 2020. Access at https://www.statnews.com/2020/01/16/black-doctors-leaving-faculty-positions-academic-medical-centers/
2. Gupta R. Slaves. *Annals of Internal Medicine* 2016; 165; 671-2.
3. Liebschutz JM et al. In the Minority: Black Physicians in Residency and Their Experiences. *Journal of the National Medical Association* 2006; 98:1441-8.
4. Nunez-Smith M et al. Impact of Race on Professional Lives of Physicians of African Descent. *Annals of Internal Medicine* 2007; 145:45-51.
5. Nwando Olayiwola J. Racism in Medicine: Shifting the Power. *Annals of Family Medicine* 2016; 14:267-9.
6. Pololi L et al. Race, Disadvantage and Faculty Experiences in Academic Medicine. *Journal of General Internal Medicine* 2010; 25:1363-9.
7. Tweedy. Black Man In a White Coat. 2015. Picador.

Articles for Faculty Development on Supporting Residents in the face of overt discrimination:

1. Acosta & Ackerman-Barger. Breaking the Silence: Time to Talk About Race and Racism. *Academic Medicine* 2017; 92: 285-288.
2. Reynolds KL, et al. When a Family Requests a White Doctor. *Pediatrics* 2015; 136:381-6.
3. Shankar M, et al. Approaches for Residents to Address Problematic Patient Behavior: Before, During, and After the Clinical Encounter. *JGME* 2019; 11: 371-374.
4. Whitgob E et al. The Discriminatory Patient and Family: Strategies to Address Discrimination Towards Trainees. *Academic Medicine* 2016; 91: S64-9.GME

To read about Mentoring across Differences:

1. Braddock & Tong. *Mentoring URM students, residents, and faculty.* In Mentoring in Academic Medicine. 2010. ACP Press.

Diversity in GME Worksheet

A. Assess the Strengths and Challenges of: Your Department and Program

Mission:

Is the Diversity Mission clearly identified? Yes ☐ No ☐

How high of a priority is diversity? 1(low) ☐ 2 ☐ 3 ☐ 4 ☐ 5(high)☐

Culture:

How inclusive is your department? 1(low) ☐ 2 ☐ 3 ☐ 4 ☐ 5 (high)☐

Partners:

Resources at your institution

With whom can you partner to increase diversity?

Metrics:

Assess Your Program's Track Record

In the past recruitment season, how many URM applicants applied to your program?

How many interviewed at your program?

In the past 3 intern classes, how many URM physicians have been recruited:

2018-2019
2017-2018
2016-2017

Areas for Improvement:

What are the areas for improvement in your department?

What are the areas for improvement in your program?

Barriers:

What are the barriers in your department?

B. Next steps – Make an Action Plan!

Set 3 goals for yourself:

1._____
2._____
3._____

AAMC
Tomorrow's Doctors, Tomorrow's Cures®

AAMC Holistic Review Project

Achieving Improved Learning and Workforce Outcomes through Admissions

What is the AAMC Holistic Review Project?

Medicine is becoming increasingly interdisciplinary, collaborative, and technology-enabled, just as our society is growing more diverse, multicultural, and globally interconnected. Effectively responding to this changing landscape requires changing how we think about medical school admissions, as well as the full educational and career development continuums. To that end, the AAMC Holistic Review Project's goal is to support excellence in admissions while also widening the lens through which we view applicants in order to maximize the benefits of holistic admissions across the full spectrum of education and development. It does so by assisting medical schools in establishing, implementing, and evaluating mission-driven, student diversity-related policies, processes, and practices that help build a physician workforce capable of and committed to improving the health of all.

About the Project

The Holistic Review Project, established in 2007, was originally designed to develop admissions tools and resources that medical schools can use to create and sustain diversity. Over time, the project has evolved into a catalyst for thinking about and conducting admissions differently.

In this next phase, the Holistic Review Project places holistic admissions within the full context of the medical education and career development continuums, firmly situating the work within the diversity and excellence paradigm. Understanding that expertise lies in the field, the greatest emphasis continues to be on deepening and expanding engagement and collaborations with constituents.

Moving Forward

The Holistic Review Project is building on its existing work, identifying new opportunities and areas for refinement, and working in collaboration with the MCAT® exam staff, AMCAS®, the Admissions Initiative, and other relevant AAMC projects. With a unique focus on mission- and evidence-based admission, the project's goals are to

- collect, analyze, and disseminate baseline and outcome data;
- sustain and expand efforts to engage new and current audiences;
- build and implement an infrastructure for an active community of practice;
- develop scaled efficiencies in holistic review admissions practices and process; and
- continue to monitor and help schools interpret the legal landscape.

Expanded Project Focus

Attaining the full benefits of holistic admissions requires expanding the project's focus and aligning its work with all points along the medical education and the career development continuums. To that end, the next phase of the project will be guided by a new constituent advisory committee, which has identified three principle areas of focus: sustaining an inclusive learning environment, institutional alignment, and legal and policy leadership. The *2013 AAMC Admissions Survey,* which was recently completed by medical school admissions officers, well provide a baseline for future project work as well as other AAMC-admissions efforts.

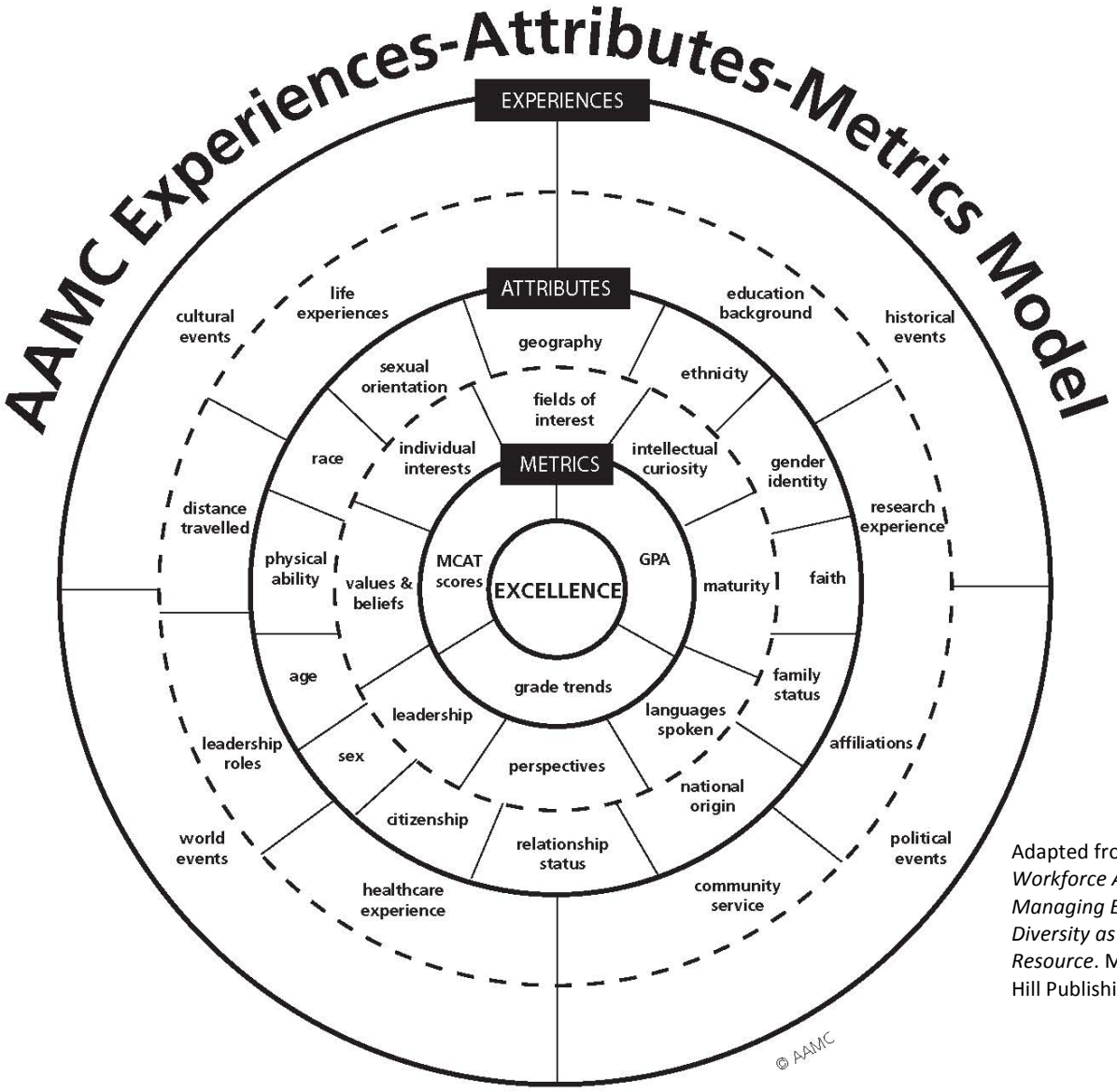
Association of
American Medical Colleges

What is holistic review?

Holistic review is a flexible, individualized way of assessing an applicant's capabilities by which balanced consideration is given to experiences, attributes, and academic metrics (E-A-M) and, when considered in combination, how the individual might contribute value as a medical student and future physician. Holistic admissions

- provides a mechanism for aligning admissions with institutional mission and
- facilitates identifying a broadly diverse student body, which contributes to an enriched learning environment for all students and a better prepared physician workforce

An integrated holistic admissions process incorporates *four core principles* at each stage: screening, interview, and selection. These four core principles emphasize the importance of giving individualized consideration to every applicant and provide operational guidance to ensure that admissions processes and criteria are both mission- and evidence-based, promote diversity, and use a balance of Experiences, Attributes, and Academic Metrics (see the AAMC E-A-M Model below).



Adapted from *Workforce America: Managing Employee Diversity as a Vital Resource*. McGraw Hill Publishing, 1990.

The AAMC Experiences-Attributes-Metrics Model is a central focus of the Holistic Review Project. The E-A-M model broadens the lens through which admission committee members can view applicants to recognize the varying dimensions and contexts that shape each candidate's identity. It is not meant to be a complete representation of all dimensions of an individual, nor is it intended to serve as a modified checklist. Schools have found it to be a helpful point of reference when assessing their admissions policies and practices.

For more information about the project or to access available tools and resources: https://www.aamc.org/initiatives/holisticreview/.

Selection Committee Exercise

"Medical" Residency Applicant
Frank Eklund
Medical School: UPSOM
Undergraduate: University of Pgh
Graduate: Master of Health Administration from University of Pgh

Experiences	Attributes	Metrics
Free clinic student coordinator	Overcame troubled childhood in Chicago	Step 1: 198 Step 2: 220 Step 2 CS: pass
Volunteered at Indian Health Service for year before medical school	Witnessed grandmother die from ESRD requiring HD --> gives him purpose to pursue "family medicine"	Surgery – satisfactory (S) Pediatrics – S Obgyn – high pass (HP) IM – HP FM – HP Psych – S Neuro – S
Patient Care tech at extended care facility	Worked full time while in school; often choosing positions in healthcare sector that would support his ultimate career goal (15 year journey)	No honors or awards in medical school
Debate Club coach – trained inner city high school students in competitive speech and policy debate	**LORs/MSPE** – a leader, hardworking, great medical knowledge, conscientious, stellar patient rapport, formed trusting relationships with patients of all backgrounds, "stands out among students", excellent written and verbal communication skills. Described as someone who will be an outstanding resident. MSPE: ranked in 3rd quartile & is a "very good candidate"	No publications

"Surgical" Residency Applicant

Jane Ramirez
US Citizen
Medical School: UPSOM
Undergraduate: University of Pgh
Graduate: Master of Health Administration from University of Pgh

Experiences	Attributes	Metrics
immigrated from Colombia at the age of 10; witnessed the civil war, terrorism, and regional violence	Fluent in Spanish; Basic Portuguese	Step 1: 219 Step 2: 231 Step 2 CS: pass
Volunteered at heart camp for 1 week	Personal Statement: Detailed, task-oriented; understands that practice is what leads to mastery, looks for challenges, is relentless,	Surgery – high pass (HP) Pediatrics – satisfactory (S) Obgyn – HP IM – HP FM – S Psych – S Neuro – S
Hurricane Maria relief fund - taught dance workshops to raise funds	**LORs-** flawless English, exemplary performance on surgery, took full advantage of all OR experiences, an energetic and active person, commitment to underserved communities	No honors or awards in medical school
Tutor for high school students	**MSPE** – took a year off between MS3-4 when her mother was diagnosed and treatment for heart disease. Did engage in counseling. Ranked in 3rd quartile, "very good candidate"	Research – in plastics department on several projects 3 publications: Ann Otol Rhinol Laryngol,, Plast Reconstr Surg., Trauma Surg Acute Care Open.
Mentored Latinx pre-med college students		

ACADEMIC MEDICINE
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A Framework for Inclusive Graduate Medical Education Recruitment Strategies: Meeting the ACGME Standard for a Diverse and Inclusive Workforce

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Abstract

To help address health care disparities and promote higher quality, culturally sensitive care in the United States, the Accreditation Council for Graduate Medical Education and other governing bodies propose cultivating a more diverse physician workforce. In addition, improved training and patient outcomes have been demonstrated for diverse care teams. However, prioritizing graduate medical education (GME) diversity and inclusion efforts can be challenging and unidimensional diversity initiatives typically result in failure.

Little literature exists regarding actionable steps to promote diversity in GME. Building on existing literature and the authors' experiences at different institutions, the authors propose a 5-point inclusive recruitment framework for diversifying GME training programs. This article details each of the 5 steps of the framework, which begins with strong institutional support by setting diversity as a priority. Forming a cycle, the other four steps are seeking out candidates, implementing inclusive recruitment practices, investing in trainee success, and building the pipeline. Practical strategies for each step and recommendations for measurable outcomes for continued support for this work are provided. The proposed framework may better equip colleagues and leaders in academic medicine to prioritize and effectively promote diversity and inclusion in GME at their respective institutions.

Health disparities exist in every area of medicine, many of which are related to race and ethnicity. Exacerbating current racial and ethnic health disparities are the low numbers of physicians from underrepresented in medicine (UIM) backgrounds.[1] The diversity of the physician workforce has become an area of scrutiny in both the Liaison Committee on Medical Education (LCME) and Accreditation Council for Graduate Medical Education (ACGME) accreditation processes. To provide high quality, culturally responsive care for all patients with the goal of eliminating health disparities, the ACGME's new standard on diversity proposes that programs systematically cultivate a more diverse health care workforce.[2] Furthermore, all graduate education medical (GME) programs are being asked to detail what their institution and individual program are doing to meet this standard in their annual program update to the ACGME. The focus on this standard has created much needed urgency to have all leaders in GME advocate for and work toward diversifying the health care workforce with the ultimate aspirational goal being elimination of racial health care disparities.

Diversity in the health care workforce promotes more culturally responsive care, improves access to high quality health care for underserved populations, and broadens research agendas,[3] all components necessary to eliminate health care disparities. A study has shown that physicians of racial minorities are more likely to care for sicker minority patients.[4] In addition, minority patients are more likely to choose a physician of their own race/ethnicity and this concordance has been shown to increase the likelihood of minority patients seeking needed health care,[5–8] thus creating opportunities for health promotion and addressing chronic health care needs. Graduates of U.S. medical schools with a higher percentage of UIM students are better prepared to care for a diverse patient population, especially if they perceived a positive climate for interracial interactions that allows for perspective sharing between individuals of diverse backgrounds.[9]

Furthermore, given the data on improved training and patient outcomes from diverse teams,[10] accreditation bodies,[2,11] medical schools, and hospitals are prioritizing diversity and inclusion efforts.

The goal of medical education is to create a workforce that meets the needs of our population. A diverse workforce does just that. GME educators must partner with undergraduate medical education (UME) colleagues, medical schools, and hospitals to optimize recruitment and retention of UIM physicians. To our knowledge, the existing literature on recruitment and retention of GME trainees from diverse backgrounds is sparse; there has been more written with regard to recruitment of medical students.[12–19] A unidimensional diversity initiative typically results in failure,[20] and significant barriers to achieving diversity may exist, including the lack of prioritization of diversity by leadership, the challenge of developing or enhancing an institutional culture of inclusion, the challenge of modifying current recruitment practices to improve diversity overall, and mitigating selection committee members' implicit biases during trainee recruitment. Also, the push for increasing numbers of trainees, without addressing an environment of support and inclusion (or lack thereof), will lead to minimal, if any, long term change at a given program or institution.[21]

In this article, we propose a 5-point actionable framework (Figure 1) for diversifying GME training programs by focusing on resident recruitment and trainee success, while underscoring the importance of mandates from both the affiliated medical school and hospital that make a top priority of diversity and inclusion efforts. Our framework draws on the work of previous researchers at UME and GME levels and includes our own practical strategies for implementation of each step. We will highlight opportunities for GME to collaborate with UME on diversity efforts. While this framework focuses primarily on GME recruitment, concurrent

recruitment, retention, and promotion of UIM faculty and administrators is critical[22] but beyond the scope of this article.

Setting Diversity as a Priority

In order to maximize success, departmental leadership's prioritization of a culture of diversity and inclusion while increasing the number of UIM trainees is necessary.[23,24] Examining departmental and residency data regarding faculty and trainee race/ethnicity and benchmarking it against national means is often necessary to get not only a commitment from departmental leaders, but also the necessary resources, to support UIM recruitment efforts.[23]

An in-depth look at enhancing the department's culture of diversity and inclusion should occur concurrently with initial recruitment efforts, with the end goal being a supportive, nurturing, and inclusive experience for current and future UIM trainees. A complete assessment of the current culture should be conducted by a team of at least two individuals.[25] The culture of a program is built on past experiences, and the beliefs and actions the department has taken to address diversity and inclusion.

There are several possible approaches to assessing a department's existing commitment to diversity. The Association of American Medical Colleges (AAMC) outlines a 4-step process: reflective questioning regarding relevant criteria, data collection to gather qualitative and quantitative indicators of the institution's diversity and inclusion, synthesis and analysis to identify strengths and opportunities for development, and leveraging findings to translate the assessment into outcomes through communications with stakeholders and change agents.[25]

Seeking Out Candidates

An initial, and year-round, inclusive recruitment effort must include seeking out outstanding UIM candidates. Attending regional and national meetings of student-run organizations that focus on the needs and concerns of UIM medical students—such as the Student National Medical Association (SNMA), which supports black students, and Latino Medical Student Association (LMSA)—is often a high-yield strategy for both demonstrating an ongoing commitment to diversity and recruiting candidates from diverse backgrounds. Other opportunities include attending annual residency fairs at historically black medicals schools, such as the one held every spring at Howard University College of Medicine.

Candidates also scrutinize a program's (and department's) website for signs of diversity and inclusion. Including a statement of diversity as a valuable part of the program's mission is key, e.g., "The mission of the Pediatric Residency Program at UPMC [University of Pittsburgh Medical Center] Children's Hospital of Pittsburgh is to educate and support a group of diverse residents in an environment of innovation, collaboration, and discovery."[26] Of similar importance is including a commitment to diversity as a key descriptor of the program "We have a cohesive, supportive, and hard-working group of residents from diverse backgrounds who are devoted to patient care and to one another."[27] Furthermore, including links to diversity and inclusion webpages at the program, department, and institution level demonstrate a sincere and high priority commitment. Such webpages can be used to highlight current successes and provide evidence of an institution's commitment to diversity and inclusion.

Implementing Inclusive Recruitment Practices

In order to recruit and match a more diverse residency class, programs should maximize chances of success by inviting a more diverse group of applicants to interview. In this section we will review the racial bias that has historically existed in standardized tests and subjective clerkships grades. We will then introduce holistic review and other inclusive strategies such as faculty development in mitigating implicit bias and making an authentic commitment to nurturing a diverse residency class.

Bias in standardized tests and clerkship grades

Most residency programs receive a high number of applications that have historically been most easily sorted in Electronic Residency Application Service (ERAS) by United States Medical Licensing Examination (USMLE) scores (Step 1 typically). This screening technique results in bias against UIM students, who, as a group, have been shown to perform worse on standardized tests, such as the 10 to 20 point differential noted for white vs. black USMLE Step 1 test takers.[28–32] Other studies have shown that on average UIM and female students perform below the level of their white, male counterparts on standardized exams,[29–31] which have only been shown to predict future licensure/certification exam pass rates,[30,32] not performance in training. Focusing on an applicant's grades in clinical rotations may not be the answer to how to fairly and equitably select residents since clinical performance evaluations are subject to the implicit bias of attending and resident evaluators, and racial disparities in grades have been reported.[33] Furthermore, some clinical rotations have an end of the rotation standardized test as a major contributor to the final grade. The ideal strategy is to have a holistic review of all applications where the screening criteria and emphasis are not based on test scores and grades alone. In addition, the program director or even a subgroup of the selection committee can individually

review UIM candidates by their self-identified race/ethnicity in ERAS, using the same universal criteria as for non-UIM candidates.[34] While not surprising given the disparities noted above, racial disparities in induction to the Alpha Omega Alpha (AOA) Society have also been reported,[35] and therefore referencing AOA membership is not an inclusive way to choose applicants to interview.

The argument that that there are "just too many applicants" to review fully is a symptom of a system that does not value diversity enough to dedicate resources to equitably review all candidates in the applicant pool. Approaches to allocate appropriate resources to support faculty members of the intern selection committee to do this administrative work may include blocking clinic for 1 or 2 days, training administrative staff to do a first pass of the candidates, and/or asking members of the diversity and inclusion committee to volunteer their time to review applications.

Therefore, a department would invest in the resources (faculty or administrative staff time) needed to evaluate all candidates in the pool using a universal set of criteria, including elements obtained via holistic review (elaborated upon in the next section) of the candidate's experiences and attributes, in addition to their performance on metrics.

Holistic review

The AAMC has recommended the strategy of holistic review of an entire applicant pool to increase diversity in a trainee class. Holistic review is a flexible, highly individualized process by which balanced consideration is given to the candidates' experiences, attributes, and academic accomplishments (e.g., metrics).[14]

With the overreliance on easy-to-filter metrics such as USMLE scores and AOA status, program directors may never review a talented UIM student's application before filling all their interview slots, despite that student being equally qualified to be an excellent physician.

The "experiences" domain considers the path that applicants have taken to get this point, including their hometown (inner city, suburban, or rural; e.g., did the applicant spend summers working on his/her family farm rather than engaging in other activities?), educational background and geographic distance traveled for their educational pursuits, employment history, and past research and/or clinical experiences. The "attributes" category includes the personal and professional characteristics that have contributed to an applicant's achievements, and includes communication skills, leadership, intellectual curiosity, and resilience. This category also includes other formative characteristics or experiences such as languages spoken, socioeconomic status, and demographic attributes that shape identity (e.g., race, ethnicity, and gender). For instance, volunteer activities listed in the curriculum vitae give information about an applicant's commitment to service and their willingness to take on leadership roles.

Program directors and selection committee members can find experiences and attributes described in the opening section of the Medical Student Performance Evaluation (MSPE), letters of recommendations, and an applicant's personal statement. Application reviewers will need to be careful to monitor for gender and racial bias in the adjectives used to describe applicants in their MSPEs and letters of recommendation.[36] One solution we have used to mitigate this type of bias is to have the same application reviewer(s) review every application from a specific school(s), i.e., one reviewer would review all the application materials for students applying from Harvard University, George Washington University, and University of Pittsburgh. By being

more familiar with the school, opportunities available at the school, the MSPE letter, and letter writers, the reviewer may be able to recognize subtle bias more readily.

Ideally, a program director and selection committee would balance these three categories equally, and therefore give less, rather than all, weight to metrics if the applicant has overcome familial hardships and/or actively volunteered in the community during medical school. Sometimes this balance may mean the program be willing to take on some additional coaching and mentorship (e.g., with an applicant with a USMLE score of 190, but who has held numerous positions of leadership while in medical school and has excellent reviews on her communication and teamwork skills in her clerkship evaluations). These young physicians typically thrive once they match into a program willing to invest in their success and support them during their training with strong mentorship. Tracking the number of UIM applicants, invites, interviews, matches, and future careers over time can provide data about how well holistic review is working.

The data from medical schools that incorporate many elements of holistic review show that they have successfully increased their class diversity compared with those schools who did not.[37] This has also been the experience of several residency programs across the country, including UPMC.[38,39]

Additional inclusive recruitment practices

Beyond holistic review, there are other strategies that internal medicine residency programs have included as part of an inclusive recruitment strategy: training faculty interviewers and members of the intern selection committee on implicit bias, ensuring a diverse group of faculty participate in candidate interviews and as selection committee members, expressing a genuine

and authentic commitment to the success of each resident during the recruitment day, conducting structured interviews, and blinding interviewers to applicants' academic metrics.[40]

Interviewer implicit racial, ethnic, or gender bias may lead to less favorable rating of a (discordant) candidate's interview and can affect the candidate's perception of a program if they sense the interviewer's bias.[41,42] UIM candidates may perceive a paucity of verbal and non-verbal indicators of comfort or friendliness due to the implicit bias of the interviewer as reflective of the culture of inclusiveness at that program. Implicit bias training would ideally be led by an experienced and/or trained faculty member in the topic. The AAMC[43] and the consulting firm Cook Ross[44] specifically provide Train the Trainer sessions to meet this need.[45] The Ohio State University College of Medicine (OSUCOM) medical school admissions committee implemented a training session led by a Cook Ross trained faculty member.[12] The session was preceded by the request that all faculty members completed 3 implicit association tests on race, gender, and sexual orientation, which are available on a free website run out of Harvard University.[46] After testing, 67% of survey respondents thought testing may help reduce bias and 48% were conscious of their individual bias when interviewing.[12] In the following year, OSUCOM noticed an increase (although not statistically significant) in the matriculation of applicants from groups underrepresented in medicine.[12]

Diversity of interviewers and selection committee members should be carefully considered to diffuse the concentration of a single type of implicit bias. Groups that may have less implicit bias include residents, younger faculty, women, and UIM faculty.[47] In addition to training and inviting diverse faculty members to conduct interviews,[48,49] including a visual reminder of strategies to mitigate implicit bias in the interview packet may help faculty to be mindful and use such strategies during the interview.[50]

During the interview day, we advise that the program director state clearly that the program and department are committed to diversity and inclusion, and how that manifests through a commitment to the success of each resident trainee. Detailing specific interventions (e.g., board preparation programs, bystander training for faculty to support residents if they experience overt discrimination and microaggressions from patients and staff, faculty development for mentoring across differences) strengthens the message that the program has a deep and sustained commitment to diversifying its make-up.

Structured interviews, including multiple mini-interviews, that incorporate behavioral and situational questions and rubrics for interview evaluation can mitigate bias and help counteract personality and ability inferences. They also are better able to predict residency performance and have higher validity than traditional interviews.[51] Despite this, as few as approximately 30% of residency programs may be using structured interviews.[49,52] Interview validity improves if questions are based on analysis of what the job, in this case medical residency training, entails and reliability increases when structured and anchored ranking scales are used.[49,52] The AAMC's Best Practices for Conducting Residency Program Interviews guide details steps to develop behavioral and situational interview questions and corresponding competency assessment rating scales.[53]

Investing in Trainee Success

Programs and departments must prioritize diversity and inclusion year-round. Many programs confront the pitfalls that come with focusing on recruitment without change in the culture: trainees experiencing discrimination and microaggressions, leading to stereotype threat, leading to burnout and possibly attrition.[54] It is key to have programs in place to support all residents: board preparation programs, programs to support finding mentors of similar backgrounds, early

research mentor pairing to get them involved in research projects, career development counseling, and guidance in professional identity formation.[55]

Furthermore, we recommend resident and faculty be trained in bystander interventions for overtly discriminatory actions or microaggressions on the part of patients and/or staff.[56,57] Faculty should also receive faculty development on mentoring across differences.[58,59] Outcomes measures for this domain include research productivity (poster/oral presentations), matching in top fellowship programs and jobs, and leadership positions during and after training.

Building the Pipeline

Building the pipeline, in its broadest sense, means increasing the number of people from one's community who are nurtured academically and socially not only to pursue careers in science and medicine, but also to be competitive candidates and successful students, trainees, and physicians.[60] Building the pipeline and investing in future UIM trainees will help alleviate what some leaders in academic medicine consider the "zero sum game" of competing against each other for a small pool of applicants.[61]

For the program and department at the initial stages of addressing diversity and inclusion, a realistic place to begin is at the medical school level.[62] UIM medical students are known to have higher medical school attrition rates and report less supportive social and learning environments[63]so intentional efforts to support and develop UIM students may be helpful. Intentional efforts may include advising and mentoring UIM students and hosting developmental events such as the Building the Next Generation of Academic Medicine Career Development Regional Conference or local interview preparation workshops geared towards UIM students.[63,64] Minority medical student organizations are underutilized but valuable resources.[15] Residency programs can specifically partner with local chapters of student-led organizations that support

UIM students such as SNMA, LMSA, White Coats for Black Lives, and others, to mentor, showcase their field and inclusion efforts, and recruit future residents from within their institution.[15] This has been a successful strategy at the UME level,[15] and the GME level.[65,66] We encourage program leadership, and/or representatives from the local GME community, to attend the regional and national meetings of SNMA and LMSA to showcase their institution's programs and commitment to diversity and inclusion.

For the program and department at more advanced stages of diversity and inclusion work, residency faculty and trainees, together with UME and affiliated medical school students, can partner with local elementary school, high schools, and colleges to expose UIM students to careers in medicine.[22,67–69] If your medical school has a summer program for students of UIM backgrounds, that may be another opportunity where residency faculty and trainees can provide mentorship and make connections with potential future physicians.[69] Likewise, explicit efforts to recruit and develop fellows and faculty from within one's training programs is another way to build the pipeline of future UIM physicians.[22] Concurrent attention to UIM faculty recruitment and retention practices is necessary and the coordination of diversity and inclusion efforts across the academic health center may prove to be effective in building and fortifying the UIM pipeline.[22]

Concluding Remarks

Diversity and inclusion. Health disparities. Health equity. The time is now to link these initiatives together to improve education, patient care, and the health of our communities. A diverse health care workforce is a key component to eliminate health care disparities, so much so that the ACGME has created a standard for all GME training programs to meet in this regard. We have outlined a 5-point framework to create sustainable diversity and inclusive recruitment

practices. There must be a commitment not only to increasing the diversity of training programs but also to implementing mentoring and career development programs key to trainee success. Formal implicit bias training, including holistic review of applications, for interviewers and intern selection committee members will be needed to ensure the recruitment of a diverse residency class. Once we have succeeded in enhancing the culture of diversity and inclusion, we must sustain it and celebrate it to ensure long-term success.

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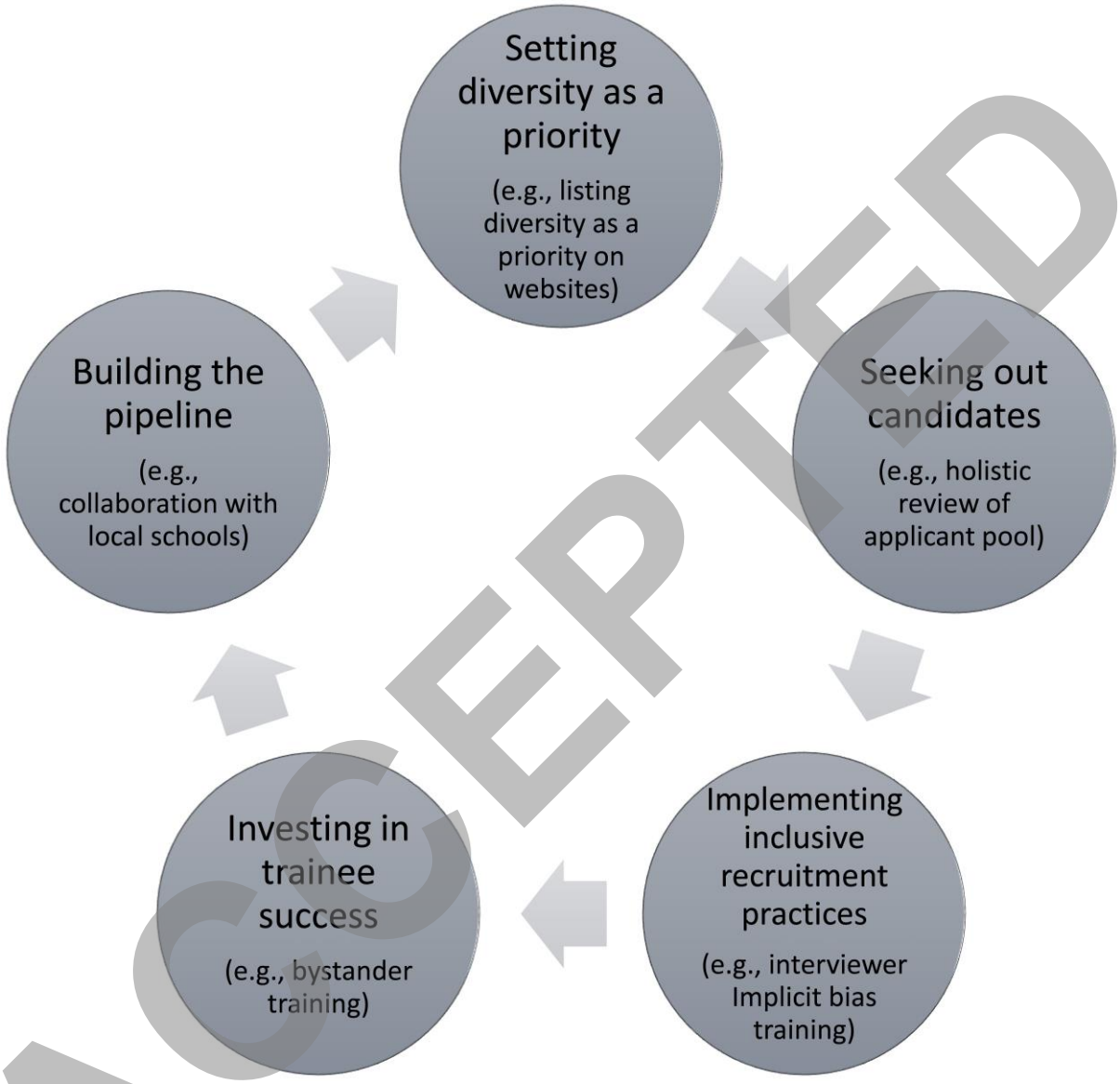
Figure Legend

Figure 1

Framework to address the Accreditation Council for Graduate Medical Education standard on creating a diverse and inclusive workforce focusing on trainee recruitment five key steps, with examples.

Figure 1



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ABSTRACT BOOK

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Rita M. Patel GME Leadership Conference
10,000 Hours Deliberate Practice for GME Excellence
February 20, 2020

Oral Abstract Presentations

#	Abstract title	Main Author (s)
O1	A Report of gender bias and sexual harassment in current plastic surgery training: a national survey	Chen, W
O2	Back to the Future: Evolution & Impact of Nocturnal Educational Opportunities for Pediatric Residents	Sharp, E.
O3	Delivering Serious News in Pediatric Emergency Medicine (PEM): A Formal Communication Course for Physicians	Zuckerbraun, N.

Poster Abstract Presentations

#	Abstract title	Main Author (s)
P1	The Required Ophthalmology Clinical Rotation Provides UPSOM Students with a Foundation in Eye Related Diagnosis and Management	Bowers, E.
P2	A Game-Show Based Curriculum for Teaching Principles of Reproductive Infectious Disease	Butler, S.
P3	Coalition of Residents and Fellows of Color (C-ROC)	Carroll, P.
P4	Clinical Supervisor: A Supervisory Rotation in Ambulatory Med-Peds	Dakroub, A.
P5	The Value of a Social Wellness Committee in Plastic Surgery Residency	David, J.
P6	Case Based Questions for Teaching ED Pharmacotherapy	Eichenberger, D.
P7	3AM Ortho: The Asynchronous Curriculum	Ferderber, J
P8	Teaching the Screening, Brief Intervention, and Referral to Treatment (SBIRT) Approach for Substance Use Disorders on the Consultation-Liaison Psychiatry Service	Fishman, D.
P9	A Nurse-Resident Shadowing Project to Improve Interprofessional Care	Georgeson, A.
P10	The treatment of Chronic HCV in an outpatient, Primary care setting	Krueger, J.
P11	Increasing Knowledge and Comfort in Intimate Partner Violence Screening among Internal Medicine Interns	Kyle, J.
P12	Gender Bias in Letters of Recommendations in Obstetrics and Gynecology	Lang, S.
P13	Clinic First: Resident, Faculty and Staff Perspectives on Transforming a Family Medicine Residency Model of Care	Lin, L.
P14	Psych E-Consult: a novel method for timely electronic psychiatric evaluation	Lu, J.
P15	Admission Medication Reconciliation Improvement Project	Lubin, F.
P16	Fellow Dinners: An approach to Mentoring and Wellness	Lunoe, MM.
P17	Improving Human Papilloma Virus Vaccination Rates by Entire Primary Care Medical Home Involvement	McGaffey, A.
P18	Application of a Custom 3D Vaginal Model for Sacrocolpopexy Mesh Fixation	Melnyk, A.
P19	The Ophthalmology Mini-Elective Gives Vision to Pre-Clinical Medical Students	Mortensen, P.

P20	Use of Chart-Stimulated Recall as an Educational Tool to Explore Uncertainty in Medical Decision Making Among Senior Internal Medicine Residents	Mutter, M.
P21	Exploration of Uncertainty in Medical Decision-Making and the Growth Mindset Among Senior Internal Medicine Residents	Mutter, M.
P22	The Development of Novel Low-Cost, High Impact Models: Can Simulation Survive in Plastic Surgery Education	Ng-Glazier, J.
P23	Effect of an online critical care curriculum on critical care knowledge across medical specialties	Nobile, J.
P24	Neuroradiology Fellow Remediation: A National Survey	Ouyang, T.
P25	Development of a Mobile Application to Optimize Parenteral Nutrition in Pediatric Patients	Rakkar, J.
P26	First Job and Promotion: Is there an Internal Bias in Academic Plastic Surgery Employment	Roy, E.
P27	Research Productivity During Residency and its Influence on a Career in Academic Plastic Surgery	Roy, E.
P28	Increasing Resident Screening for Food Insecurity	Srinivasan, S.
P29	Increasing Resident Awareness of the 4th Trimester	Srinivasan, S.
P30	Implementation of a Text-Messaged-Based End-of-Shift Evaluation Tool in Emergency Medicine Residency	Tobias, A
P31	Characteristics and Academic Productivity Among Pediatric Plastic Surgeons in the United States	Williams, A
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Oral Abstract Presentations

O1

Title: **A REPORT OF GENDER BIAS AND SEXUAL HARASSMENT IN CURRENT PLASTIC SURGERY TRAINING: A NATIONAL SURVEY**

Authors: Wendy Chen, MD, MS [1] and Benjamin K. Schilling, MS [2]; Debra A. Bourne, MD [1]; Sara Myers, MD, MS [3]; Carolyn Delacruz, MD [1]

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Introduction: "Gender bias…remains the…greatest deterrent to women achieving their full potential in…the medical profession and is a barrier throughout professional life …-- Council on GME." Sexual misconduct in medicine persists. Maintaining professionalism in training is essential to prevent negative impacts of bias and misconduct.

Hypothesis: We hypothesize gender bias and sexual misconduct disproportionately affect female trainees in negative ways, including career goals.

Methods: A national survey of current plastic surgery trainees (2018-2019) was conducted using previously validated sexual harassment surveys (Veterans Affairs, 1998; Cook 1996) and adapted for relevance to plastic surgery. Respondents were queried about their experiences with workplace sexual bias, discrimination, harassment, assault, and coercion; personal impact; and reporting practices. Analyses included Chi-squared, logistic regression, and ANOVA. Significance accepted at $p<0.05$.

Results: A total of 211 responses were analyzed (115 female, 88 male, 8 deferred). Average age was 30.7years. Races included Caucasian (n-114), Asian/Pacific Islander (n=34), Other (n=26), and deferred (n=11). Respondents included interns (n=30), residents (n=123), chief residents (n=23), fellows (n=24), and unknown (n=11).

The feeling of hindrance to career advancement based on gender was significant, females responding in the affirmative by 10-fold relative to men ($p<0.00$). This significance increased with age for women ($p=0.00$). Women feel significantly less comfortable challenging gender inequality ($p<0.00$). There is no significance across the training levels ($p=0.30$) or race ($p=0.67$). Gender bias/inequality has disproportionally diminishing effect with respect to women's career goals/ambition ($p<0.00$).

Women experienced harassment as jokes ($p=0.00$) and comments about their body/sexuality ($p=0.01$). Perpetrators included attending physicians (30%), other trainees (37%), nurses/ancillary staff (21%), patients/families (11%), and medical students (3%). Most common reasons to not report included futility (38%) and fear/distrust (20%). 47% of respondents reported ≥2 symptoms of depression/anxiety, with women experiencing at least three, significantly higher than men ($p=0.01$).

Conclusions: Gender bias and sexual misconduct negatively affects female trainees' attitudes towards their career. Women experience sexual harassment from various members of the hospital community, especially from physicians. Trainees report a culture non-conducive to reporting. Female trainees experience negative mental health consequences as a result of this environment.

Significance: Awareness of these findings is highly relevant to training programs, for guiding changes and discussions surrounding workplace culture.

Grant Support: none

O2

BACK TO THE FUTURE: EVOLUTION & IMPACT OF NOTURNAL EDUCATIONAL OPPORTUNITIES FOR PEDIATRIC RESIDENTS

Sharp E[1], Guillen D[1], Garrison J[2], Polak C[2]

[1]Department of Pediatrics, UPMC Children's Hospital of Pittsburgh

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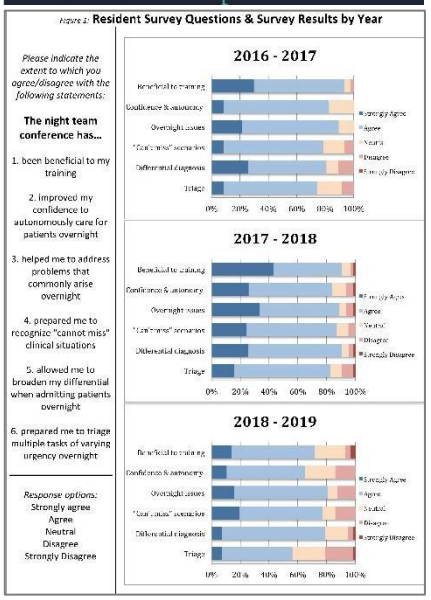
Needs & Objectives: Many residency programs transitioned to a night float model in response to the duty hour restrictions adopted by the ACGME in 2003. After noting decreased resident attendance at didactics with this system, our institution established nocturnal educational opportunities. These teaching initiatives have evolved significantly over time; however, resident perception of their impact has not been evaluated. Our primary objective was to evaluate resident perception of an evening curriculum focused on acute management of common overnight issues. Our secondary objective was to determine how nocturnal education has evolved and to elucidate factors contributing to highest educational impact.

Description (including settings and participants): We interviewed 15 former pediatric chief residents on their recollection of formal and/or informal teaching overnight from 2000–2019 to create a timeline. We surveyed pediatric residents on their perception of the evening conference for three consecutive academic years. Surveys were composed of Likert-style questions *(fig 1)*. Statistical tests of significance were performed using chi-squared test of independence.

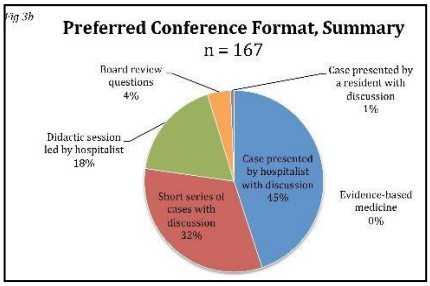
Evaluation: 15 chief residents contributed to the timeline *(fig 2)*. 169 out of 346 residents (49%) responded during the survey period (2016–2019) *(table 1)*. Our residency transitioned to night float in 2003. The evening conference was created in 2012 but was cancelled in 2015 due to negative resident feedback. In 2016, the conference was redesigned with a focus on the management of clinical scenarios residents are likely to encounter overnight. Feedback one year after this change was exceedingly positive; 93% of residents felt that the evening conference was beneficial to their training *(fig 1)*. The most preferred conference format was case discussion facilitated by a hospitalist *(fig 3)*. There was no significant difference in preferred format across years (p = .796).



Discussion: The evening conference has evolved in response to duty-hour regulations, resident feedback, and changes in the residency program itself. Our data shows that an evening curriculum focused on acute management of overnight issues is perceived as a positive learning experience by residents. Sessions orchestrated by hospitalist attendings were preferred. This may represent an opportunity for junior faculty to hone their teaching and embrace an educational role in academic environments. Further studies are needed to determine the optimal format of this conference and whether the content translates into lasting knowledge.

Table 1: Resident Survey Responses by Year and Post-Graduate Year

	2016-2017			2017-2018			2018-2019			Total		
	Responses	# Residents	Response Rate	Responses	# Residents	Response Rate	Responses	# Residents	Response Rate	Responses	# Residents	Response Rate
PGY-1	23	38	61%	27	41	66%	25	39	64%	75	118	64%
PGY-2	11	33	33%	20	40	50%	17	38	45%	48	111	43%
PGY-3	14	35	40%	17	28	61%	14	36	39%	45	99	45%
PGY-4	0	6	0%	0	6	0%	1	6	17%	1	18	6%
Total	48	112	43%	64	115	56%	57	119	48%	169	346	49%



O3

Delivering Serious News in Pediatric Emergency Medicine (PEM): A Formal Communication Course for Physicians

Authors: Zuckerbraun NS[1], Lunoe MM[1], Hamilton M[1,2], Maurer SH[1], Choi S[1], Brown AW[1], Arnold RM[3] and Emlet LL[2,4]

Affiliations: Department of Pediatrics[1], Department of Critical Care Medicine[2], Department of Medicine[3], Department of Emergency Medicine,[4] University of Pittsburgh School of Medicine

Introduction: Formal training for PEM physicians in delivering serious news (DSN) is limited. Skillful delivery of serious news is essential for patients and families, and lack of these skills can be a source of significant physician stress. The study objective is to assess the efficacy of a formal DSN communication course for PEM physicians.

Hypothesis: A formal communication course will improve PEM physicians' perceived preparedness, skills and stress in DSN.

Methods: A 4-hour simulation course was designed for PEM physicians using an evidence-based structured method to teach DSN. Three cases were developed to address common, challenging PEM scenarios (new cancer diagnosis, child abuse evaluation and life-threatening injury). Simulated actors were trained to portray parents. The course, held annually since 2018, consisted of short lectures on specific skills, skill demonstrations and small group, real-time feedback by trained faculty facilitators during interaction with parent-actors. A standardized pre and post-course survey was developed and administered to first time participants to assess previous experience, perceived ability and stress with DSN. Demographics and training level were collected. Paired pre and post-course survey responses were compared with McNemar's test.

Results: 23 physicians participated (12 fellows, 11 faculty); 57% female. The pre and post-survey response rate was 23/23 (100%). Participants report DSN two times per month (median=2.0, IQR 2-5) and delivering news of patient death one time in the past 12 months (median =1, IQR 0-2). Pre-course, 61% of participants report previous formal training and 17% report using a structured plan for DSN. The proportion of participants that felt prepared to DSN increased from 35% to 96% ($p<0.001$). The proportion of participants that felt good or very good about their ability to deal with family emotions after DSN increased from 44% to 96% ($p<0.001$). The proportion of participants that felt highly stressed about DSN in the future decreased from 48% to 13% ($p<0.01$).

Conclusions: PEM fellow and faculty physicians reported infrequent prior formal training or use of a structured method for DSN. A formal, simulated case-based course with introduction of a structured method with real-time feedback from trained faculty facilitators improved PEM physicians' perceived ability and anticipated stress to DSN.

Significance: Teaching DSN skills to PEM physicians has the potential to improve patient care and physician wellness. Future investigation will assess skill retention and physician satisfaction.

Support: Department of Pediatrics, Office of Faculty Development Education Innovation Grant (PI Zuckerbraun); Division of Pediatric Emergency Medicine

Poster Abstract Presentations

P1

Title: The Required Ophthalmology Clinical Rotation Provides UPSOM Students with a Foundation in Eye Related Diagnosis and Management

Authors: Bowers E[1], Enzor R[2], Yadav S[1], Waxman E[2]

Affiliations: [1]University of Pittsburgh School of Medicine, [2]University of Pittsburgh Medical Center Department of Ophthalmology

Need and Objectives: Medical school clerkship requirements vary significantly between institutions. Ophthalmology is not a mandatory rotation at many medical schools across the country making exposure difficult for many students. The University of Pittsburgh School of Medicine (UPSOM) demonstrates a commitment to training students in the basics of ophthalmology through a required week-long rotation during the one-month Specialty Care Clerkship.

This rotation trains students in ophthalmic terminology, common diseases, pathophysiology, treatment, and physical exam techniques. The goal is to provide students with the skills and confidence to perform rudimentary eye examinations as non-ophthalmologic providers.

Setting and participants: UPSOM students spend five days seeing patients in clinic, on call, and in the operating room at Mercy Hospital, the Veterans Affairs Hospital, and/or UPMC Presbyterian.

Description: Students become familiar with ophthalmic equipment, terminology, clinical diagnosis, and management by shadowing a resident in clinic. Students advance their skills by gathering histories, practicing with the slit lamp, and presenting patients. Students take one night-call with an ophthalmology resident and spend one half-day in the operating room. Additionally, students attend lectures covering a variety of common eye diseases. Lectures are not required, but highly encouraged, as is reading *Basic Ophthalmology: Essentials for Medical Students*. Students are evaluated through the Specialty Care Clerkship in-house exam which includes ENT, Emergency Medicine and Ophthalmology material. They are also graded clinically on a 5-point scale by their resident.

Evaluation: Student feedback was collected at the end of the clerkship. Using a 5-point Likert scale, 100% of students rated the quality of lectures “outstanding” or “very good,” and 83% of students strongly agreed or agreed with the statement “overall teaching in clinical setting was good quality” (n = 64). The average clinical score for ophthalmology and total clerkship exam score over the past 6 months was 4.5/5 with a SD of 0.5 and 78.1% with a SD of 8.1% (N = 64), respectively.

Discussion/reflection/lessons learned: A basic understanding and evaluation of the eye is useful for all future physicians. The required ophthalmology rotation aims to position students to address patients’ basic ophthalmic complaints as non-ophthalmologic providers. From positive student feedback as well as generally high clinical and exam scores, the UPSOM ophthalmology clerkship appears to be an effective course. In the future, it would be interesting to see if completing the encouraged reading and attending the lectures significantly affects the ophthalmology portion of the final exam or final ophthalmology clinical grade.

P2

Title: A Game-Show Based Curriculum for Teaching Principles of Reproductive Infectious Disease (GBS PRIDE Trial)

Authors: Butler S,[1] Runge M,[2] Milad M2

Affiliations: [1] Department of Obstetrics and Gynecology, University of Pittsburgh, [2] Department of Obstetrics and Gynecology, Northwestern University

Introduction: Reproductive infectious disease (RID) is a burgeoning area and responses to disease outbreaks that portend obstetric and/or gynecologic morbidity require responses from obstetrician/gynecologists (OBGYN) with sound RID training. Though RID is a fundamental component of OBGYN, limited formal curriculum exists in residency programs and current literature suggests that OBGYN residents have a low awareness and familiarity with basic RID principles. Game-show based teaching interventions have been shown to lead to better long-term retention and improved ability to transfer knowledge through combining incentive elements of game design with effective learning strategies. The objective of this study is to evaluate whether a Jeopardy game-show based curriculum improves OBGYN residents' confidence in and understanding of RID, clinical sequelae of sexually transmitted diseases (STDs), and management of their long-term consequences.

Hypothesis: The Jeopardy curriculum group will have higher post-test scores when compared to the traditional curriculum group.

Methods: OBGYN residents were randomized to either a Jeopardy educational intervention plus a traditional didactic-based curriculum or traditional didactic-based curriculum alone. All participants completed confidence and knowledge-based pre- and post-tests. A retrospective power calculation was conducted using G*Power 3.1. The Shapiro-Wilk test was applied to assess data normality. For nonparametric data, the Mann-Whitney U test and Wilcoxon matched-pairs signed-rank test were utilized. All data was analyzed using STATA 15.1.

Results: 38 residents were randomized to a Jeopardy game show-based educational intervention (n=19) or to traditional didactic-based curriculum (n=19). Pre-test median scores were similar between both groups (48.5 vs 51.4, p=0.091). The Jeopardy group's median post-test scores improved (48.5 vs 62.8, <p=0.001). The traditional group saw a minimal increase in their median post-test scores (51.4 vs 54.2, p=0.773). The Jeopardy group had significantly higher post-test median scores and confidence scores than the traditional group (62.8 vs 54.2, p=0.002).

Conclusions: A game-show based curriculum improves OBGYN residents' confidence and retention of knowledge regarding RID, clinical sequelae of STDs, and management of their long-term consequences.

Significance: Gamification of clinical topics is an effective tool in resident teaching.

Support: Educational grant from Northwestern University.

P3

Title: Coalition of Residents and Fellows of Color (C-ROC)

Authors: Carroll P[1], Salahuddin D[1,2], Ufomata E[3]
Affiliations: [1]Department of Psychiatry, University of Pittsburgh, [2]Department of Family Medicine, McKeesport, University of Pittsburgh, [3]Department of Internal Medicine, University of Pittsburgh

Needs and objectives: Significant disparities persist in society, whereby historically marginalized minorities often endure worse health outcomes than their White counterparts. These disparities are exemplified through a recent report released by the City of Pittsburgh's Gender Equity Commission which showed Black residents in Pittsburgh suffer from comparatively worse outcomes in health, income, employment, and education than Black residents in similar cities. It is well documented that a diverse healthcare workforce reflective of the racial diversity of the population it serves results in improved patient outcomes and decreased mistrust between patient and provider. Thus, one way to address the aforementioned disparities in Pittsburgh is by increasing the number of underrepresented minority (URM) physicians. Historically, physicians who identify as URMs (Black, Latinx, and Native American) have been hesitant to remain at UPMC following their training. Additionally, URM medical students selecting residency programs have expressed reluctance to training in Pittsburgh. We sought to collaborate with the UPMC Center for Engagement and Inclusion to build an internal support system for URM residents and fellows. We hypothesize that such supports would promote a more inclusive training environment, and ultimately increase the sense of community among URM residents/fellows to support UPMC's efforts to recruit and retain the best talent while simultaneously better meeting the needs of the community.

Setting and participants: Initiated throughout the UPMC system, across departments. Participants include any resident/fellow self-identifying as URM choosing to participate.

Description: The Coalition of Residents and Fellows of Color (C-ROC) is an employee resource group founded in the fall of 2018 to serve URM residents/fellows at UPMC. This program was developed by and for URM residents/fellows with the mission to positively influence the UPMC training environment. Emphasis was made on four areas of focus: networking, mentorship, community service, and fostering social connections.

Evaluation: Surveys and bi-annual meetings with C-ROC members to evaluate satisfaction with efforts made and to determine future directions for the program.

Discussion: We intend to collect data on how the implementation of this group has affected URM residents/fellows in both their careers and social encounters and to assess if the presence of this program increases retention of URM physicians. We also intend to evaluate URM medical student attitudes towards UPMC residency programs following the implementation of C-ROC and to assess if the program increases recruitment of URMs.

Support: UPMC Center for Engagement and Inclusion

P4

Title: *Clinic Supervisor*: A Supervisory Rotation in Ambulatory Med-Peds.

Authors: Dakroub A, Gonzaga A, Mieczkowski A
Departments of Internal Medicine and Pediatrics, University of Pittsburgh

Needs/Objective:

Supervisory experiences for residents in the outpatient setting are limited. Our objective was to design, implement, and evaluate a supervisory ambulatory rotation for Med-Peds residents.

Setting/Participants:

The Med-Peds Clinic Supervisor Rotation was designed as a mandatory outpatient rotation for all 3rd and 4th year Med Peds residents, to be based out of the Turtle Creek UPMC Primary Care Clinic, our continuity clinical site.

Description:

Our novel clinic supervisory rotation was developed and is currently piloted as an one-month required ambulatory experience comprising direct care continuity clinic experience, direct care outpatient "selective" experiences selected by the resident, and majority of time served as the clinic supervisor during resident clinic

Tasks as clinic supervisor include: pre-clinic huddle with clinic staff, the option to lead pre-clinic conference, coordinating and facilitating medical student education, helping precept interns in the clinic, managing clinic flow, responding to acute tasks/patient needs, helping with paperwork, and developing an individual QI project.

Two half days per week are spent in direct-care continuity clinic where residents will see their own panel of patients in parallel to a core faculty preceptor who is also having their own clinic.

Prior to the rotation starting, the resident will submit educational/development goals that will serve as a focus for the resident during the rotation. These will also serve as the substance for a one-hour exit-interview upon completion.

Evaluation

We hope that this rotation improves resident self-efficacy, efficiency, and ability to effectively work within the constructs of primary care. We additionally hope that this rotation helps residents further develop their leadership skills as an educator and supervisor. We also intend for this rotation to improve resident agency and ownership regarding their primary care experience within the constructs of the Med-Peds continuity clinic at Turtle Creek.

Discussion

We are in the pilot phase. We are planning a full analysis after one year of academic implementation, in 2021. Thus far we have identified enthusiasm from residents and clinic staff.

P5

Title: The Value of a Social Wellness Committee in Plastic Surgery Residency

Authors: David J, Farber S, Joseph W, Moroni E, Ng-glazier J, Losee J, Nguyen V

Affiliation: Department of Plastic Surgery, University of Pittsburgh Medical Center

Introduction - Residency training requires a significant investment of physical and emotional resources, and mounting evidence suggests a link to the constellation of symptoms including chronic stress, fatigue, and lack of interest or personal investment in work, collectively referred to as 'burnout.' Resident burnout rates as high as 78% have been reported, and contribute to medical errors, impaired quality of care, depression, and even suicide[1-6]. However, despite increased awareness and the implementation of broad policies by governing bodies such as the ACGME, there remains room for improvement at the level of individual programs to encourage and create quality initiatives and research in this area[7,8]. Trainees overwhelmingly feel that wellness should be a priority for residency programs, and this consistently ranks as one of the most important factors considered by applicants during the Match process[9,10]. We now know that strong associations exist between resident burnout and social-relatedness. However, interventions aimed at encouraging physical health and coping skills are both lacking and notoriously difficult to assess. Here, we outline the design and preliminary findings of a longitudinal study for assessing the efficacy of a structured wellness initiative for alleviating burnout in our plastic surgery residency program.

Hypothesis – The integration of our Social Wellness Committee (SWC) will improve resident social capital scores and subjective well-being.

Methods – A 40-item survey was administered to residents in our program (n=20) prior to SWC implementation, consisting of 1) a recently described, resident-specific assessment tool of social capital developed and validated by a multi-center cohort of training programs[11], and 2) a survey assessing perspectives on a number of factors related to resident wellness and social support initiatives in plastic surgery training. The survey will be repeated at the end of the year.

Results –25% of residents reported having experienced high levels of burn-out during residency, with junior residents (PGY1-3) reporting significantly decreased levels of burnout ($p<0.03$) and higher psychological/social well-being ($p<0.05$) than seniors (PGY4-6). The majority (75%) of residents favor the implementation of a SWC.

Conclusions – Current patterns of resident burnout in our program are consistent with those in the literature[12]. Residents believe that wellness support by their training program is important, and feel that a structured SWC could improve symptoms of burn-out.

Significance – This study will serve as a novel framework for developing, integrating, and studying the impact and efficacy of social wellness initiatives aimed at alleviating burnout during residency training.

Research/Grant Support – None

Title: **Case Based Questions For Teaching ED Pharmacotherapy**

Authors: Eichenberger D[1], Pollock, G[1]

Affiliation: [1]Department of Emergency Medicine, University of Pittsburgh Medical Center

Needs and objectives - Pharmacotherapy is integral to the practice of Emergency Medicine (EM). In our program, pharmacotherapy was primarily taught informally and via experiential learning. We aimed to introduce a formal pharmacotherapy curriculum as part of our didactic time using a series of case-based question sets that mirrored our educational blocks. In addition to the education component, this intervention provided our administration a means to assess the specific EM ACGME pharmacology milestone that is otherwise difficult to assess based on currently available clinical and knowledge based assessments.

Setting and participants - Our innovation was applied across our 48 resident 3 year EM residency program; the 32 1st and 2nd year residents were assessed for outcomes. Our goals were to provide residents with effective education without increasing the burden of time required, and yield information for tracking the pharmacology ACGME milestone. We scheduled our concise intervention within the regular agenda of educational conference using downtime.

Description - We implemented a series of quizzes containing approximately ten multiple choice questions each, illustrated through clinical vignettes. Questions were written using the ABEM model of practice topics and were reviewed by faculty physicians and an ED pharmacist. Quizzes were administered monthly in conjunction with each educational block followed by a period of review and discussion for further teaching.

Table 1

Likert Scale Score	Corresponding assessment of statement
1	Strongly Agree
2	Agree
3	Slightly Agree
4	Neither Agree nor Disagree
5	Slightly Disagree
6	Disagree
7	Strongly Disagree

Evaluation - We conducted resident pre and post intervention surveys of knowledge and satisfaction; 30 of 32 residents completed both. The survey instrument was a seven point Likert scale (see table). Our primary outcome was response to “I am confident in my overall knowledge of ED pharmacotherapy”. This received a pre-intervention score of 3.7 and a post score of 2.6. Self-assessed knowledge improvement scored a 2.2 on post intervention analysis. Resident satisfaction in curriculum improved from 3.8 prior to intervention to 3.1.

Discussion / reflection / lessons learned -As discussed above, we had improvement in our primary outcome of self-assessed resident learning. This intervention was an easy to implement curriculum that would be generalizable across EM programs looking at options for teaching pharmacotherapy, or improve resident pharmacology knowledge assessment. Based on resident feedback we plan to add expanded explanations with references for enhanced teaching. This was a pilot study; we would like to see if the effects become more pronounced after completing a full curriculum cycle. We would also like to study what effect our innovation has on resident performance on the in-service exam.

P7

***Title*:** **3AM Ortho: The Asynchronous Curriculum**

***Authors*:** Ferderber JS[1], Dorfsman ML[2], Brown EL[3]

***Affiliation(s)*:** [1]Department of Emergency Medicine, UPMC
[2]Professor of Emergency Medicine, UPMC, Presbyterian Hospital; Program Director, University of Pittsburgh Residency in Emergency Medicine
[3]Clinical Assistant Professor of Emergency Medicine, UPMC, Mercy Hospital and St. Clair Hospital

Needs and objectives – Medical education is constantly evolving and adapting to better serve the needs of learners. Recently the Emergency Medicine (EM) residency at the University of Pittsburgh Medical Center (UPMC) decided to remove a two-hour conference held once monthly in response to resident feedback. In lieu of this, we attempted to provide residents with a monthly high-yield learning tool for which they could complete in an asynchronous fashion in return for conference credit.

Setting and participants – The asynchronous curriculum was administered to PGY-2 and PGY-3 EM residents at UPMC. This was administered to augment the current educational curriculum.

Description – A survey was done during the prior academic year to establish the topic that residents believe would be most useful to their learning and future clinical practice. An orthopedic curriculum was then drafted and approved by the residency leadership. It was divided into a total of 12 units that were to be covered throughout the year. Each topic was distributed in a PowerPoint format in order to highlight the visual nature of this particular topic. Assessment forms were then completed by the residents each month corresponding to a particular unit. The asynchronous nature of the curriculum allowed residents' flexibility to learn at their own pace and complete the assessments at their convenience.

Evaluation – Participating residents provided feedback via anonymous survey after completion of 6 months of the curriculum (20 respondents). On a five-point scale, the residents' comfort level with orthopedics pre- and mid-curriculum was 2.6 and 4.2, respectively. Overall, positive feedback was received regarding the PowerPoint format (4.7/5), with 100% of residents recommending continuation of this curriculum in future academic years.

Discussion – Based on this experience, we believe we created a high-yield educational tool that can be utilized by residents during their training and post-training careers. Additional high-yield topics can be constructed in future years to further augment residents' learning. It should be noted that this curriculum was tailored to emergency medicine providers and thus might not be as beneficial to learners from other clinical specialties. Continued development in asynchronous content can contribute to resident education and wellness for future generations.

P8

Title: Teaching the Screening, Brief Intervention, and Referral to Treatment (SBIRT) Approach for Substance Use Disorders on the Consultation-Liaison Psychiatry Service

Authors: Fishman DO[1], Peterson R[1], Faeder, M[1], Douaihy A[1], Landolina M[2], Nowalk A[2], Gopalan P[1],
Affiliations: [1]Department of Psychiatry, University of Pittsburgh, [2]School of Pharmacy, University of Pittsburgh

Needs and Objectives: Patients with substance use disorders are frequently encountered on the Consultation-Liaison (CL) Psychiatry Service, yet remain among trainees' most complex and challenging encounters. A learning initiative was incorporated to supplement substance use disorder education received on other services. Screening, Brief Intervention, and Referral to Treatment (SBIRT) is a validated approach to address these patients' substance use in an effective and efficient manner. Extremely relevant to a busy clinical service, SBIRT emphasizes screening for substance use without stigma, briefly utilizing motivational interviewing and other skills to build towards behavior change, and connecting patients with appropriate aftercare.

Settings and Participants: Participants were five blocks of second-year residents (n=15) on their CL Psychiatry rotation, trained from September 2018 through September 2019.

Description: Using online modules, in-person didactics, and peer role-playing exercises, trainees on the CL Psychiatry Service were trained in the psychotherapeutic, pharmacologic, and other patient-centered considerations of promoting recovery from substance use while on a busy inpatient service. The Effective Brief Intervention Virtual Training Program encompassing the online portion included modules composed of skill development exercises with standardized patients interwoven throughout lectures. Following the electronic segment, residents practiced clinically relevant skills by role-playing vignettes specifically adjusted to simulate inpatient consultation-liaison and integrated care patient encounters. Throughout their CL rotation, residents have opportunities to observe and perform SBIRT with previously SBIRT-trained attending psychiatrists.

Discussion: Pretest and posttest data compiled from the residents were compared via Likert scales assessing knowledge, competence, and attitude. Substance use screening and intervention knowledge increased across all four core knowledge domains. Perceived competence in working with patients using substances increased in all 13 measured areas. Attitudes and perceptions on working with patients using substances improved in 11 of 13 areas. The vast majority (93%) of residents found the training to be relevant to their careers and for substance use treatment. The majority (60%) of residents were very satisfied or satisfied with the training experience.

Support: Grant from the Substance Abuse and Mental Health Services Administration

P9

Title: A Nurse-Resident Shadowing Project to Improve Interprofessional Care

Authors: Georgeson A[1], Nowalk A[1], Szymusiak J[1,2]

Affiliations: 1. Department of Pediatrics, 2. Department of Internal Medicine

Background: Research has shown that nurses and residents often do not understand each other's roles. Some residents believe that nurses' roles are to just follow physician's orders. This mindset affects interprofessional collaboration and can potentially put patient safety at risk due to poor communication.

Objective: A nurse-resident shadowing program was created to 1) improve collaboration, 2) improve understanding between the two professions, and 3) improve communication.

Methods: Pediatric interns during their orientation of the 2018-2019 and 2019-2020 academic years participated in the shadowing experience. Interns shadowed nurses on the medical floors of the Children's Hospital of Pittsburgh. The shadowing experience occurred during a two-hour period and was followed by a one-hour facilitated debriefing session afterwards for all the interns and several participating nurses. Two validated interprofessional scales were used as a pre- and post-shadowing survey on the day of the event

Results: 54 pediatric interns participated in the study over the two year period. Of the 20 likert questions included on the survey, 11 showed statistical significance. These 11 questions included questions related to respect for the nursing profession, understanding various nursing abilities, and understanding nursing day-to-day workflow. Qualitative questions were also asked on the survey and responses included the themes listed above, but participants also described learning ways to improve their communication with nurses and their efficiency of care.

Discussion

This study demonstrated that this shadowing experience can be an effective way to teach new interns basic principles of interdisciplinary care. Performing this intervention during intern's orientation represents an ideal time to learn these concepts prior to beginning patient care and was more feasible to implement at this time. This intervention is an easily applicable project for residents in other departments, specialties, and institutions.

P10

Title: **The treatment of chronic HCV in an outpatient, primary care setting**

Author(s): Krueger J[1], Taylor A[2]

Affiliation(s):
[1]University of Pittsburgh Medical Center (UPMC) – St. Margaret Family Medicine Residency Program
[2]University of Pittsburgh School of Pharmacy

Background: There are an estimated 3.5 million people living with hepatitis C infection in the United States. Although curable with medication, chronic hepatitis C virus (HCV) remains the primary cause of cirrhosis, hepatocellular carcinoma, and liver transplantation in the United States.

Over the last few years, the management of chronic HCV has changed dramatically. Medication regimens are simpler, easier to tolerate, and associated with less adverse side effects. Primary care physicians, rather than liver specialists, are capable and particularly suited to manage and treat this curable disease.

The University of Pittsburgh Medical Center (UPMC) - St. Margaret is a hub for medical trainees, with both Family Medicine and Pharmacy residency training programs.

Over the past two years, we have developed a collaborative, resident-driven model for the treatment of chronic HCV for use within our outpatient primary care clinics. Our model identifies patients who are candidates for treatment within primary care and screens out patients who are either poor candidates or who will require a higher level of care/referral (e.g. decompensated cirrhosis). Treatment algorithms are based on published recommendations from AASLD/IDSA.

Purpose: Using our standardized model, we hope to show that the management and treatment of chronic HCV in primary care is faster, safe, and as efficacious as a subspecialty referral.

Methods: Over two years, we identified 146 clinic patients with chronic HCV: 59 were treated by a primary care resident provider, 18 were referred/treated by Hepatology, and 45 patients were evaluated for treatment, but ineligible. Although there were 24 patients still awaiting evaluation for treatment, only the 122 patients who were evaluated (1/2017-12/2019) were included in our study.

As part of the study, we abstracted variables of interest from each patient's Electronic Medical Record (EMR), including but not limited to: patient demographics, means of acquisition, and self-reported readiness for treatment, as well as hepatic function, treatment course, and viral load response.

Our primary outcome is cure rate; secondary outcomes include: time to treatment, patient-reported side effects, and the occurrence of serious adverse events. Basic parametric and nonparametric statistical tests will be performed, including frequency distributions, cross-contingency tables, and percentile estimations.

Results/Conclusions: To be determined. We expect to have our project complete in mid-January

P11

Title: **Increasing Knowledge and Comfort in Intimate Partner Violence Screening among Internal Medicine Interns**

Authors: Kyle JR, Buranosky R, McNeil MA
Affiliation: Department of Medicine, Division of General Internal Medicine

Introduction:
Intimate Partner Violence (IPV) is underrecognized in primary care despite guidelines recommendations to screen all female patients. Failure to screen is often due to surmountable barriers including personal discomfort, knowledge deficits, or resource unawareness. The objective of our study was to increase intern knowledge, comfort, and screening rates through a combined didactic and communication skills curriculum.

Hypothesis:
We hypothesized that a combined didactic-skill development curriculum would increase intern knowledge, comfort, and IPV screening rates.

Methods:
The curriculum was presented to internal medicine interns. Participants completed a pre-survey of comfort, opinion, knowledge, and demographic questions. Curriculum didactic explored definitions, power-control dynamics, screening guidelines, health impacts, and documentation. During skill development, interns brainstormed word choice for screening and response with facilitator feedback. Two simulated patient cases were completed with supportive coaching and performance feedback. Residents were invited to complete a post-survey four weeks post-curriculum. Comfort and opinion questions were measured on a seven-point Likert scale and analyzed using Wilcoxon signed-rank test. Knowledge-based questions were true-false and multiple choice and analyzed using McNemar's test.

Results:
Forty interns completed the curriculum January-October 2019. Twenty-nine interns completed both pre- and post-surveys (72%). Interns demonstrated statistically significant increases on all measures of self-perceived knowledge and comfort. Important areas of improvement included increases in self-reported compliance with guideline-based screening recommendations (mean 2.8 to 4.24), ability to identify patients eligible for screening (mean 3.52 to 5.69), comfort discussing IPV with patients (mean 3.52 to 5.3), and ability to make referrals within the community (mean 3.05 to 4.86) ($p<0.01$). Interns demonstrated statistically significant improvement in recognizing IPV perpetrator characteristics and understanding high danger situations ($p<0.05$).

Conclusions:
A combined didactic-communication skills curriculum significantly improved intern IPV-specific comfort and self-reported screening practices. Improvement in knowledge was also demonstrated, but likely limited by high intern knowledge pre-curriculum and question wording that suggested a most appropriate answer. Further analysis will reveal if screening and documentation increased through chart review of eligible patients.

Significance:
This curriculum is feasible and easily transferrable to other programs interested in increasing resident comfort with IPV screening through skill development.

Research/Grant Support:
Thomas H Nimick, Jr. Competitive Research Fund
University of Pittsburgh Division of General Internal Medicine

P12

Title: Gender Bias in Letters of Recommendation in Obstetrics & Gynecology

Authors: Lang S, Brucha D, Parviainen K
Affiliation: University of Pittsburgh Medical Center Magee-Women's Hospital, Department of Obstetrics, Gynecology & Reproductive Sciences. Pittsburgh, PA, USA

Background: Recruitment of males and underrepresented minorities is critically important for diversity. LoR was identified in the 2018 NRMP Program Director Survey as the 2nd most important factor. The presence of gender bias in LoR could impact resident selection.

Methods: Applications to the UPMC ObGyn residency were reviewed and demographics recorded in a de-identified manner for applicants and writers. LoRs were de-identified and de-gendered. The letters were blindly read, and term frequency of an established dictionary of adjectives (agentic, communal, ability, standout, grindstone, etc.) was collected.

Results: 76 applicants (53 female, 23 male) were included, totaling 251 letters. No differences in average Step 1 score existed, but females scored higher Step 2 score ($P < 0.01$). Males had shorter LoRs than female applicants ($P < 0.005$). Female LoRs were more likely to contain grindstone adjectives ($P < 0.05$) and reference AOA status ($P=0.001$), but no other significant gender based differences in adjectives were identified. Males were more likely to have LoRs with male authors (64% vs 36%). Males were more likely to have letters written by Full Professors (25% vs 15%); but females were more likely to have letters written by Division chiefs (8% vs 2%) or Chairs (25% vs 21%).

Discussion: LoRs for male applicants were shorter, contain less grindstone adjectives and less likely be written by Division Chiefs or Chairs than females suggesting a possible component of underlying gender bias warranting further investigation.

P13

Title: Clinic First: Resident, Faculty, and Staff Perspectives on Transforming a Family Medicine Residency Model of Care

Authors: Lin LY[1,2], Nightingale BS[1,2], Conti TD[1]

Affiliations: 1. Department of Family Medicine 2. Department of Psychiatry

Needs and Objectives: Primary care residency programs face barriers to continuity of care and team-based care due to challenges in balancing residency scheduling with the demands of a busy ambulatory clinic. Clinic First (CF) is a model created by the University of California, San Francisco Center for Excellence in Primary Care that focuses on improving primary care ambulatory training and building high-performing residency clinics. This study examines how implementing two key CF principles (increasing continuity of care and building stable teams) impacts resident, faculty, and staff experience in an urban underserved family medicine (FM) residency program.

Setting and Participants: CF initiatives were initiated at Latterman Family Health Center (LFHC) in July 2018. 21 FM PGY1-3 residents and 5 FM-psychiatry PGY 1-5 residents, 14 faculty members, 18 LFHC office staff participated in an anonymous survey in December 2019.

Description: CF initiatives included assigning residents to a set 3-year rotation schedule, 1 of 4 colored teams, and set continuity clinic days for each colored team. Additionally, several nurse and medical assistant roles, such as reconciling medications and pending health maintenance tasks, were optimized. We assessed perception of continuity of care, scheduling, and team-based care.

Evaluation: 81% of residents (n=21), 86% faculty members (n=12), and 67% staff members (n=12) completed the survey. For the faculty and staff members who were present at LFHC since implementation of CF, the majority agreed that the CF model has been a positive change at LFHC. The majority of residents reported liking having set yearly rotation schedule and full days in clinic. 76% of residents agreed that they have continuity of care with their panel of patients. Residents, faculty, and staff overwhelmingly preferred team-based care. Interestingly, despite having set yearly schedules and continuity clinic days, only 57% residents reported that clinic schedule was predictable.

Discussion: CF provided a platform for initiating changes at LFHC by restructuring resident scheduling and shifting to team-based care. This initial evaluation from residents, faculty, staff at LFHC showed positive improvement in continuity of care, resident scheduling, and team-based care. We plan to design further quality improvement initiatives based on CF principles to enhance resident learning and clinic functioning at LFHC.

Support: American Board of Family Medicine- Clinic First Collaborative

P14

Title: Psych E-consult: a novel method for timely electronic psychiatric evaluation

Authors: Lu J, Hassan S, Hedayati D, McGuire P

Affiliations: Family Medicine and Psychiatry departments, Department of Family Medicine

Needs and objectives:
A shortage of mental health providers and an increasing need for psychiatric services has led to significant access issues. During one 12-month survey, only 41% of adults with acute mental illness received mental health treatment; 22.8% were treated by a general medical provider. Education for primary care physicians (PCPs) in diagnosis and management of psychiatric care is variable. Due to the need for more psychiatric education and access, family medicine/psychiatry dual track residents piloted "Psychiatric E-consultation" in 2017 to provide timely psychiatric consultation to family medicine residents and faculty.

Setting and participants:
Participants were residents and faculty of UPMC St. Margaret family medicine department from July 2017-present.

Description:
Residents and faculty could trigger a Psych E-consult by opening a telephone encounter within EPIC. The body of the telephone encounter contained the clinical question. The encounter was routed to the Psych E-consult pool, which included the family medicine/psych residents (PGY3-PGY5) and the integrated attending psychiatrist. Pool members took turns covering consults, with usual consultation response within 24 hours. Completing these consults required reviewing prior notes, problem lists, scanned documents and medication history. Consultants replied to the PCP by restating the clinical question, citing issues that may need further clarification or work-up, and providing brief summaries of evidence based on the specific clinical topics. The consultant made recommendations to the PCP for further assessment, appropriate treatment modalities and level of care, and medication options.

Evaluation:
To date, 191 consults have been sent to Psych E-consult. 85% have been answered within 24 hours, with 24% answered in 6 hours. Most common questions were regarding medication management (79%) and diagnostic issues (44%). Consults involved a wide range of diagnoses, including depressive disorders (58%), bipolar disorder (28%), ADHD (23%), and substance use (17%). Most frequently, recommendations to the PCP involved adding (37%) or changing a medication (17%), referring for a full evaluation with the behavioral health team (44%).
For each consult, the provider requesting the consult was sent a follow-up survey. Of 77 responses, 92% agreed or strongly agreed that e-consult had improved the care plan of their patient. Further, 96% of survey responders agreed or strongly agreed that their knowledge of behavioral health issues had increased due to the consult.

P15

Title: Admission Medication Reconciliation Improvement Project

Authors: Lubin, FJ[1], Morcheid, R[2], Uprety, S[1], Pan, J[1], Kashiwagi, T[1], Akunne, U[1], Bai, K[1]
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Background: Each year, adverse drug events (ADE) account for nearly 700,000 emergency department visits and 100,000 hospitalizations. Nearly 5% of hospitalized patients experience an ADE, making them one of the most common types of inpatient errors. Transition of care is a well-documented source of preventable medication errors.

Methods: This was a single center prospective observational study performed at a community teaching hospital. After institutional approval, patients admitted through the Emergency Department to general medicine floors from June to November 2019 were randomly selected within 24 hours of admission. Admission information was collected to identify correlation of errors with origin prior to admission, healthcare worker completing the admission medication list (AML), or the admission service. Each patient was interviewed, and medication history was obtained from patient, electronic medical record (EMR), family members/care taker to obtain the Final Medication List (FML). This FML was compared to the last documented AML in the EMR prior to medication reconciliation. Discrepancies between FML and AML were evaluated. The number of errors were analyzed by type of error (omission, commission, or composite of wrong dose, frequency, or brand) and severity of errors (insignificant, significant, serious or life-threatening) as an estimation of risk of injury due to medication errors.

Results: We interviewed 127 patients. The majority were admitted from home (92%). The AML was accurate 35.4% of the time with 91 significant errors and 76 serious errors. Out of the 127 patients interviewed 34% had significant or serious medication errors. There was no clear correlation between the medical service caring for the patient or the healthcare worker that obtained the AML and the significant or serious errors. However, there was a statistical significant difference between the patients admitted from home and long term acute care and the number of significant or serious errors (81 vs 9 respectively).

Conclusion: Our study confirms that most of hospital admission medication reconciliation is not performed appropriately. In the current electronic medical records, the admission medication list is used as the template to complete the medication list at hospital discharge. It is not unusual to see event reports of the wrong medication being given or prescribed at hospital discharge. This has been proven time and time again to lead to an increase number of medication errors and hospital readmissions. Despite this clear evidence, it is our belief that not enough importance and resources are directed to improve the system.

P16

Fellow Dinners: An Approach to Mentoring and Wellness

Authors: Lunoe MM, Zuckerbraun NS
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Needs and Objectives: Informal mentoring is an important part of development for physicians in their final years of training. While formal didactics focus on clinical practice, important career topics such as finding a first job and coping with poor patient outcomes are not typically covered. The Fellow Dinner program aimed to promote faculty-fellow relationships and mentoring while covering topics not addressed in formal curriculum by hosting fellows at faculty homes.

Setting and Participants: Participants were Pediatric Emergency Medicine Fellows at Children's hospital of Pittsburgh. The fellowship accepts 3 fellows annually in to a 3-year program. Since program implementation, the division has had a total of 9 fellows yearly and 27 faculty members.

Description: Faculty and fellows met semi-annually at a faculty member's home to share a meal and conversation. Topics for a 3-year curriculum, held during the 2016-2019 academic years, included: Coping with Death and Dying, Tips on Testifying, Work-Life Balance/Integration, Finding and Starting your First Attending Job, Delivering Difficult Feedback and Identifying and Mitigating Burnout. Faculty provided an introduction to the topic and facilitated an open discussion. Fellows were encouraged to explore issues they had experienced as fellows or anticipated as faculty. Faculty shared evidence-based approaches as well as their own experiences.

Evaluation: Fellows (n=18) were surveyed via an anonymous electronic survey through Qualtrics. The response rate was 72% (13/18), with 42% current fellows and 58% recent graduates. Fellows rated sessions and educational goals on a 4-point Likert Scale. The majority of fellows found each session to have Moderate to High Value. For educational goals, 100% of fellows found that Fellow Dinners provided High Value for Fellow/Faculty interaction, while the majority also found the sessions provided Moderate or High Value in Filling Gaps in Education (90%), Engaging Faculty in Fellow Education (89%) and Covering Wellness Topics (78%).

The majority of fellows (69%) rated the frequency of Fellow Dinners as "Just Right" with the remaining participants (31%) ranking "Not Enough", requesting 4 dinners per year.

Discussion: The Fellow Dinner program in Pediatric Emergency Medicine effectively increased Fellow and Faculty interaction and covered topics not adequately covered in formal didactics. Fellow participants found value in these sessions. Future plans include guest speakers and continuing to modify curriculum to fit the needs of current fellows and faculty.

P17

Title: Improving Human Papilloma Virus Vaccination Rates by Entire Primary Care Medical Home Involvement

Authors: Castelli G[1], McGaffey A[1], Lin CJ[2], Nowalk MP[2], Middleton DB[1,2]

Affiliations: [1]University of Pittsburgh Medical Center St Margaret Family Medicine Residency, [2]Department of Family Medicine, University of Pittsburgh School of Medicine

Introduction: To realize cancer prevention potential, we pursued a quality improvement project to improve human papillomavirus (HPV) vaccinations for 9-26 year-old patients during calendar year 2018. Our clinic's rates were compared with 2017 National Immunization Survey-Teen (NIS-Teen) 13-17-year-old HPV vaccination rates.

Hypothesis: Protection from HPV infection would increase with multi-strategy interventions to improve HPV vaccination uptake.

Setting/participants: Family medicine residency office located in a lower income neighborhood with12 family medicine and 2 PharmD residents, 1 fellow, 6 faculty, and clinical staff. All HPV vaccination-eligible patients aged 9-26 years, with ≥1 practice visit in 2018 were included.

Design: Pre-post study

Methods: We used multiple clinician-driven provider-, patient-, and system-oriented strategies. Provider strategies included a presumptive recommendation, "You are due for HPV vaccine today," and vaccination review following notification of a Children's Hospital of Pittsburgh emergency department visit. Patient strategies: health literate patient education materials; rotating creative seasonal/monthly HPV posters; PharmD phone-, text-, and post card outreach to eligible patients; immediate sensory incentives – hitting a large gong and small prizes (fidget spinners, bling rings, play putty, etc.) for any HPV vaccination; contact information for a return vaccination visit which qualified a vaccinated patient for a biweekly $50 retail gift card lottery. Office systems: standing order protocol and daily review of scheduled patients' vaccination status.

Results: 2018 ages 11-26 years: 795 patients (67% female, 74% African American, 67.8% Medicaid)

Age group	HPV initiation			HPV completion (2 or 3 dose)		
	Total N=633	Females N=445	Males N=188	Total N=497	Females N=365	Males N=132
11-26 yrs.	79.6%	83.5%	71.8%	62.5%	68.5%	50.4%
11-12 yrs.	81.2%	82.9%	79.6%	29.4%	35.6%	22.7%
13-17 yrs.	92.5%	91.0%	94.1%	76.9%	78.7%	75.0%
National 13-17 yrs.	65.5%	68.6%	62.6%	48.6%	53.1%	44.3%
18-26 yrs.	75.2%	81.9%	55.2%	63.1%	69.5%	44.0%

Conclusions: Favorable age-eligible and 13-17 year-old HPV vaccine uptake compared to national rates occurred with entire health center clinician involvement and multi-component strategies.

Significance: HPV vaccination and cancer prevention campaigns could benefit from multiple strategies for patients and learner/providers.

Research/grant support: Fine Award, Jewish Healthcare Foundation

P18

Title: Application of a Custom 3D Vaginal Model for Sacrocolpopexy Mesh Fixation

Authors: Melnyk A[1], Sassani J[1], Moalli P[1], Sinex D[2], Bonidie M[1]

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Needs and objectives – Surgical trainees and experts learning new surgical platforms need access to high fidelity surgical simulation. Simulation that utilizes real surgical equipment and replicates tissue dynamic and material properties is the gold standard. To improve our own simulation, we developed a 3D vaginal model to use with our available OR tools including Senhance robotics and the ALLY uterine positioning system (ALLY).

Setting and participants – Urogynecology fellows and attendings were included to practice sacrocolpopexy mesh fixation using this new model at UPMC.

Description – Axial pelvic MRI scans were used with 3D software to obtain real-time vaginal geometries, which were used to create a 3D printed vaginal mold made of polylactic acid filament. A solution made of polyvinyl alcohol (PVA) and deionized water was transferred to the mold and processed to a texture that simulated vaginal material properties. PVA gel vaginal models were maintained in a moist environment to preserve mechanical integrity. Vaginal models were then attached to the ALLY. Once OR setup was complete, mesh was introduced and the surgeon practiced sacrocolpopexy mesh fixation to the model. By repositioning the ALLY, the vagina was manipulated to any angle without additional assistance. Almost all aspects of the procedure were replicated in this model except for tissue dissection.

Evaluation – Both trainees and experts benefited from this high fidelity simulator. Fellows practiced their technique sewing and positioning the mesh in both laparoscopy and robotics. Surgical experts were able to practice using new Senhance robotic technology. As this was a pilot study of feasibility for a new model, formal evaluation is ongoing.

Discussion / reflection / lessons learned – This model requires access to 3D printing and the preliminary materials, but once made, this model can be reused numerous times. This simulation also requires access to mesh, a surgical system, and the ALLY, though it also works with a physical assistant if the ALLY is not available. Its reusability with multiple learners at various levels makes it an ideal high fidelity model.

Online resource URL (optional): 6 minute video will be available

Support – NIH/NICHD R01 HD083383 Grant Funding

P19

Title: The Ophthalmology Mini-Elective Gives Vision to Pre-Clinical Medical Students

Authors: Mortensen P[1], Enzor R[1], Keppel K[2], Williamson R[1], Waxman E[1]
Affiliations: [1]Department of Ophthalmology, University of Pittsburgh, [2]Transitional Year, University of Pittsburgh

Needs and Objectives: Ophthalmology education during the preclinical years of medical school is limited. The University of Pittsburgh School of Medicine offers "mini-elective" courses to preclinical medical students in various disciplines. Given the need for increased exposure to ophthalmology during the preclinical years, we have developed such a course to provide instruction to interested preclinical medical students in the basics of clinical ophthalmology.

Setting and Participants: Participants included first and second year medical students from the University of Pittsburgh School of Medicine who electively enrolled in our course from 2015 to 2019. 28 pre-elective surveys and 21 post-elective surveys were received. 14 knowledge-based pre-tests and post-tests were received during the 2019 mini-elective.

Description: We created a mini-elective course consisting of four 2-hour sessions held weekly for four consecutive weeks followed by a one-on-one experience with an ophthalmologist in the operating room. The first three sessions began with 30-60 minutes of lecture, with the remainder of the session devoted to hands-on learning in small groups, during which medical students learned the ophthalmologic physical examination. The fourth session instead concluded with a wet lab surgical experience. Surveys were distributed at the beginning and end of the course to assess participants' goals for the course and monitor course feedback. In 2019, knowledge-based pre-tests and post-tests were also administered to assess participant learning.

Evaluation: Based on our surveys, participants reported feeling more comfortable with the ophthalmologic history and physical examination and felt that their knowledge of ophthalmology had significantly improved. In post-survey feedback, learners consistently mentioned the hands-on experiences, including small groups focused on exam skills and the wet lab, as positive elements of our course. In 2019, our pre-tests and post-tests showed a dramatic improvement in learners' ophthalmology knowledge.

Discussion/Reflection/Lessons Learned: We believe that the Ophthalmology Mini-Elective accomplishes its stated goals given participants' reports of increased comfort with the ophthalmology history and physical examination as well as pre- and post-tests demonstrating a significantly increased knowledge base in ophthalmology. A benefit of our Ophthalmology Mini-Elective is the generalizability for other medical schools, since required resources include a limited number of volunteers, a small lecture space with PowerPoint capabilities, and an ophthalmology clinic with several clinic rooms for small group sessions.

P20

Title: Use of Chart-Stimulated Recall as an Educational Tool to Explore Uncertainty in Medical Decision Making Among Senior Internal Medicine Residents

Authors: Mutter, M[1], Yecies, E[1,2] and DiNardo, D[1,2]
Affiliations: [1]University of Pittsburgh School of Medicine, [2]VA Pittsburgh Healthcare System

Needs and objectives: Errors in medical decision making have been linked to adverse events and patient harm, particularly when diagnostic or therapeutic uncertainty exists. Guided reflection has been identified as a promising tool for improving diagnostic decision making, including the approach to uncertainty. Therefore, we sought to determine whether reflection about a patient case with another physician through Chart-Stimulated Recall (CSR, a method that pairs patient chart review with an oral interview component) is a valuable educational tool to promote reflection about uncertainty in medical decision making.

Setting and Participants: We implemented a reflection exercise with all PGY-2 and PGY-3 internal medicine (IM) residents on a night float rotation at the University of Pittsburgh Medical Center (UPMC) over a 6-month period; each resident participated in one reflection exercise over the course of his or her night float rotation.

Description: Prior to initiation of the study, we developed a CSR interview guide and conducted pilot interviews with residents to further refine the interview guide and reflection questions. We then implemented the reflection exercise with eligible participants from February to September 2019. For the exercise, participants were instructed to select one new patient admission from the evening prior to the session in which there was uncertainty in their medical decision making. Faculty interviewers then guided each resident through a reflection exercise, using the interview guide and a printed history and physical exam, to explore the nature of, contributors to, and sequelae of the uncertainty in each case.

Evaluation: 91% of eligible residents participated in the study (41/45 residents). Participants completed a feedback survey 1-2 weeks after the exercise, which consisted of Likert scale and open-ended questions. 60% of residents agreed/strongly agreed that the opportunity to think aloud was valuable and 87% of residents felt comfortable discussing uncertainty. Narrative comments noted the value of reflection/retrospection. Suggestions for improvement included consideration of a change of time for the exercise, incorporation of more teaching, and provision of feedback.

Discussion/Reflection/Lessons Learned: Reflection is an important method to improve the decision-making process, which can ultimately lead to improved patient care. Our study on chart-stimulated recall as a means of reflection noted both benefits of and challenges to such an intervention. Implementation of such an exercise should consider the optimal timing of a reflection exercise, as well as the opportunity to provide residents with feedback on their decision-making process.

Support: The Competitive Research Fund of Shadyside Hospital, UPMC Clinical Center for Medical Decision-Making

P21

Title: Exploration of Uncertainty in Medical Decision-Making and the Growth Mindset Among Senior Internal Medicine Residents

Authors: Mutter, M[1], Yecies, E[1,2], and DiNardo, D[1,2]
Affiliations: [1]University of Pittsburgh School of Medicine**,** [2]VA Pittsburgh Healthcare System

Introduction: Errors in medical decision making have been linked to adverse events and patient harm, particularly when diagnostic or therapeutic uncertainty exists. Prior research has attempted to categorize uncertainty and to associate physicians' tolerance of uncertainty with various factors such as patient-provider communication and diagnostic testing. In this study, we sought to determine senior internal medicine (IM) residents' reactions to uncertainty and the association of tolerance of uncertainty with the perceived ability to change one's own intelligence level, or the "growth mindset."

Hypothesis: Residents will have moderate comfort with uncertainty and have a growth mindset. Greater tolerance of uncertainty will be associated with a growth mindset.

Methods: We conducted a study to explore uncertainty in medical decision-making with senior IM residents at the University of Pittsburgh Medical Center in 2019. Participants completed a demographic survey, a Physicians' Reactions to Uncertainty (PRU) scale, and a Revised Implicit Theories of Intelligence or "growth mindset" scale. Spearman's rho was calculated as a measure of association between scores on the two scales and the Wilcoxon rank sum test was used to compare associations between demographic characteristics and scores on the PRU and "growth mindset" scales.

Results: Between February and September 2019, 41 out of 45 eligible residents participated in the study. Residents had a moderate overall "anxiety due to uncertainty" (average 18.4/27), though did demonstrate less "reluctance to disclose uncertainty to patients" (average 19.1/24) and more "reluctance to disclose mistakes to physicians" (average 4.73/10). Residents scored an average of 2.6 out of 6.0 on the "growth mindset" scale, with scores less than 3.3 suggestive of a growth mindset. No association was found between age, gender and level of training on tolerance of uncertainty or having a growth mindset and no association was found between greater tolerance of uncertainty and having a growth mindset

Conclusions: Our results demonstrate that residents had a moderate comfort level with uncertainty overall, though the ideal amount of uncertainty to provide optimal patient care is unknown. In addition, relatively lower scores on the "reluctance to disclose mistakes to physicians" sub-scale suggest a greater need for educational efforts in error disclosure in order to ultimately reduce adverse events.

Significance: Uncertainty in medicine is ubiquitous; our study adds to the growing body of literature on uncertainty in medical decision-making and suggest a continued need to optimize trainee comfort with uncertainty and ultimately patient care.

Research / Grant Support: The Competitive Research Fund of Shadyside Hospital, UPMC Clinical Center for Medical Decision-Making

P22

Title: The Development of Novel Low-Cost, High impact Models: Can Simulation Survive in Plastic Surgery Education?

Authors: Ng-Glazier J[1], Gusenoff J[1]
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INTRODUCTION/HYPOTHESIS: Studies suggest that integration of a formal simulation is beneficial to surgical trainees, but its role has not been well defined in plastic surgery. We hypothesized that a formal simulation curriculum to address areas of clinical deficiency would greatly enhance current plastic surgery resident education.
METHODS: Residents at a large ACGME-accredited plastic surgery program identified several topics of technical deficiency in their current educational structure. A multi-session curriculum spanning 6 months (July 2018-January 2019) was developed to address these topics, each supplemented by electronically accessible material. Using low cost materials, four models were created to target skills in breast surgery marking, ultrasound guided aspiration and injection, safe buttock augmentation, and pinning/drilling across hand and joint fractures. Improvement in knowledge, comfort of technical skill after each session, quality of models, supplemental materials, and overall resident satisfaction were measured immediately after each session and compared via paired t-test, α=0.05.
RESULTS: 24 residents (100% participation) identified clinical deficiencies in the following: preoperative breast markings, use of ultrasound for bedside procedures, comfort with gluteal fat injection, and pinning fractures. Utilizing a scale of 1-10, average post-simulation knowledge and skill comfort doubled for all sessions, including breast markings (4.32 → 7.00, $p<0.01$), ultrasound-guided aspiration of abscess, seroma, upper extremity nerve blocks, gluteal fat injection (3.65 → 7.25, $p<0.01$), and drilling/pinning hand and joint fractures (3.15 → 6.56, $p<0.01$). Satisfaction ratings were 8.64, 9.13, and 9.25, respectively. Stratification by training year indicated greater impact in junior residents (R1-3) for drilling/pinning compared with senior residents (R4-6). Stratification between integrated and independent/traditional pathway residents indicated higher impact for traditional residents in all sessions except for ultrasound. 100% of residents desired continued skill simulation with the current models. A second breast marking session 12 months later indicated similar results, with more than 50% retention of skills and higher baseline comfort level for all trainees who participated the year prior.
CONCLUSION: Repetitive skill simulation using reusable low-cost, high impact models has the potential to supplement our current plastic surgery resident education; 12-month retention data is promising. Ongoing validation, and skill retention is necessary for formal integration.
SIGNIFICANCE: In the era of duty hour restrictions, clinical simulation can enhance a trainee's confidence and ability to perform vital procedures within the field. A formal curriculum can become an objective milestone in a competency-based curriculum, such as that being implemented by the American Board of Plastic Surgery.

RESEARCH/GRANT SUPPORT: None

P23

Title: Effect of an online critical care curriculum on critical care knowledge across medical specialties.

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Introduction: Online curricula avoid scheduling and geographic limitations inherent in traditional didactics. Studies show that online teaching is better than no formal teaching and non-inferior to in-person didactics on student learning. Few studies explored the effects of a single curriculum on multiple types of students or the durability of online learning. We developed an online curriculum for residents rotating through Intensive Care Units (ICUs) across UPMC to assess its effect on critical care knowledge over time and across training background.

Hypothesis: An online curriculum plus bedside teaching will improve critical care knowledge compared to bedside teaching alone. These findings will be consistent across medical specialties and will persist over time.

Methods: We are performing an IRB-approved experimental, randomized, unblinded trial of the efficacy of an online critical care curriculum. Subjects include residents rotating through the ICUs from multiple specialties. Randomization is by convenience block schedule based on when the learner's rotation occurs. Subjects complete a quiz of board-style questions pre, post, and six weeks after their rotation. Intervention subjects receive access to the curriculum throughout their rotation. Control subjects receive access after the 6-week quiz. We will compare the change in exam scores from baseline to the end of rotation and post-rotation across groups.

Results: We are currently enrolling. Among 53 residents invited to join the control arm, 28 (52.8%) enrolled, encompassing 10 distinct specialties. Of those 28 participants, 15 (53.6%) have completed the quizzes, with a mean pre-rotation score of 72.3% (95% CI 65.9%–78.7%) and a mean end of rotation score of 62.5% (95% CI 52.0%-72.7%). 100% of respondents indicated they received daily or near-daily bedside teaching. We do not have enough participants to calculate a post-rotation score, and we have not started enrolling in our intervention arm.

Conclusions: Residents rotating through the ICUs do not show improved scores on a test of core critical care knowledge topics with bedside teaching alone. This conclusion is limited by incomplete data collection, lack of resident engagement, and quiz focus and difficulty.

Significance: Despite limited data, we feel our curriculum will improve critical care knowledge for a multidisciplinary group of residents. Next steps include enrolling in the intervention group, continued data collection, and comparing performance across medical specialties.

P24

Title: Neuroradiology Fellow Remediation: a National Survey

Authors: Ouyang T[1], Agarwal V[2], Mullins M3, Policeni B[4].

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Introduction: It is estimated that approximate 7-10% of trainees across all medical specialties fall into category of "under-performing" or "problematic" trainee. The identification and remediation of under-performing fellows in one year radiology subspecialty fellowships (which most are) is particularly difficult and urgent because of the short duration of training. The purpose of our study was to identify the scope of the problem in one year neuroradiology fellowships and gather information on evaluation and remediation strategies as well as barriers to remediation.

Methods: Program directors of 91 ACGME accredited neuroradiology fellowship programs were sent an electronic survey. We collected information on demographics of the program, identification of problematic fellows, and decision making regarding remediation and remediation strategies/outcomes.

Results: The response rate was 30% (27 of 91). 30% (8 of 27) fellowship programs has had to remediate in the last 10 years. The most frequently reported deficiencies of under-performing fellows were: insufficient medical knowledge (71%), poor clinical judgment (46%), unsatisfactory behavior with faculty/staff (33%), and poor interventional skills (25%). Approximately half (48%) of programs reported having a structured remediation program in practice. Remediation included: frequent feedback sessions (82%), general counseling (55%), targeted mentorship (36%), remedial didactic and educational activity (27%), and psychiatric/psychological counseling (18%). 18% of fellows were placed on probation. Remediation failed to improve 9% (1 of 11) of fellows who did not graduate.

Interestingly, 35% (8 of 23) responders had under-performing trainees who were *not* remediated (approximately 12 in past 10 years). Reasons listed for not remediating included delay in recognizing need for remediation, insufficient time to remediate, and possible stigma for trainee future employment chances.

Conclusion: Despite the relatively low response rate, 30% of neuroradiology fellowship programs have had to remediate in the last 10 years and another 35% of respondents had under-performing fellows who were not officially remediated.

Significance: Our data indicate that under-performance is not an uncommon problem in one year neuroradiology fellowships, and while deficiencies may exist in multiple domains requiring individualized learning plans, remediation is possible and usually successful.

P25

TITLE: Development of a Mobile Application to Optimize Parenteral Nutrition in Pediatric Patients

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AFFILIATIONS: *1. Department of Critical Care Medicine, UPMC Children's Hospital of Pittsburgh, University of Pittsburgh Medical Center, Pittsburgh, PA. 2. Department of Pediatrics, UPMC Children's Hospital of Pittsburgh, University of Pittsburgh Medical Center, Pittsburgh, PA.*

BACKGROUND: The complex formulation of macro- and micronutrients for ordering TPN in children is associated with a high incidence of ordering errors (15.6/1000 PN orders) and the American Society for Parenteral and Enteral Nutrition advocates for standardized processes for TPN delivery. Furthermore, the ability to accurately assess a patient's nutritional status and order TPN is necessary, yet, many trainees do not feel prepared for these tasks. Limitations of currently available resources are lack of age and weight-based recommendations, automation and seamless integration in an evidence-based, single-modality platform that can be easily accessed. Therefore, we sought to develop a mobile application (app) to address these concerns with the aims to both improve and optimize nutrition in hospitalized pediatric patients.

METHODS: We reviewed current learner practices for ordering pediatric TPN and titrating nutrition via a survey. Currently utilized resources were reviewed and to address the need for a comprehensive tool, we developed a mobile app for use by learners of all different levels of medical training. Recommendations for both macro- and micro-nutrients are included, as well as the daily caloric support from major macronutrients, and hourly fluid requirements. The app also summarizes daily contribution of each method of nutritional support, whether parenteral or enteral, to patient's overall daily nutrition.

RESULTS: 91 medical trainees completed the survey. 57 of 91 (63%) trainees feel uncomfortable with ordering TPN, and 58 of 91 (64%) are uncomfortable with performing a nutritional needs assessment. Currently, learners utilize various different tools to help with ordering and titrating TPN. 88 of 91 (97%) respondents reported they would likely use a TPN app. Our pediatric-specific mobile app accounts for the dynamic nutritional needs of pediatric patients based on age and weight, and provides guidance for initiating nutrition. Our app allows for simultaneous titration of TPN components while viewing how these changes will impact patient's daily nutritional support in a single-page view. Once installed onto a compatible Apple iOS phone or tablet, the app can be used remotely anywhere.

CONCLUSION: Our pediatric-specific TPN app is critical for advancing learner education and for optimizing nutrition and improving patient care in hospitalized children. Future studies will be directed at assessing its safety and efficacy in clinical practice, and will include a post-implementation survey to develop the app further. Patient safety will be assessed based on pre- and post-implementation incidence of TPN ordering errors. Disease specific nutritional considerations will need to be further addressed.

P26

First Job and Promotion: Is There An Internal Bias in Academic Plastic Surgery Employment?

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Abstract

Background: Following completion of training, a physician's training institution has a lasting and meaningful impact on career trajectory. Training program influence on first job placement and academic promotions remain uncertain in academic plastic surgery. The aim of this study is to determine the impact of training and internal bias in academic plastic surgery employment and promotion.

Methods: Academic plastic surgery faculty were identified through an internet search of all ACGME-accredited residency training programs. Online faculty profiles, Doximity, LinkedIn, private-practice, and public websites were used to gather faculty demographics, training background, employment and leadership status. The analysis examined the impact of internal recruitment bias on first job employment, the impact of training history on institutional leadership promotion (chief, residency director, or fellowship director), and the impact of alumni effect on academic employment.

Results: A total of 931 academic plastic surgeons were identified. For assistant professors that graduated in the past 3 years, 38.6% are practicing at the same institution as where they received residency or fellowship training. Of the 229 institutional leaders, 31.5% of Chairs, 39.6% of Residency Directors, and 37.5% of Fellowship Directors were internal hires. Overall, 34% of plastic surgery faculty in the US share a common training program with at least one colleague. The top 5 programs that have the most faculty who trained at their hiring institution are Harvard (30 faculty), University of Southern California (15 faculty), University of California Los Angeles (12 faculty), University of Michigan (12 faculty) and Albert Einstein (12 faculty). Overall, 54% of plastic surgery departments employ 2 or more faculty who share a common external training program. The top 5 programs that have the most faculty who share an external training program are (1) Methodist Houston, 8 faculty who trained at Baylor; (2) Hofstra, 7 faculty who trained at NYU; (3) Stanford, 6 faculty who trained at UCLA; (4) Wisconsin, 5 faculty who trained at UPMC; (5) USC, 4 faculty who trained at NYU.

Conclusion: The study highlights that a limited internal bias exists in the recruitment for first jobs and leadership promotions. However, a clear bias of internal hiring exists at several institutions. In addition, an alumni effect was identified, where some programs have a bias of hiring faculty who trained at the same external institution.

P27

Research Productivity During Residency and its Influence on a Career in Academic Plastic Surgery

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Abstract

Background: Medical students interested in a career in academic plastic surgery are uncertain on the type of residency program that would facilitate their academic career goals. Therefore, the aim of the study was to identify programs that yielded high resident research productivity in order to guide and prepare medical students interested in academic plastic surgery career.

Methods: Academic plastic surgery faculty that graduated in the past ten years were identified through an internet search of all ACGME accredited residency and fellowship training programs. Research productivity was compared based on h-index, number and quality of peer reviewed articles published during residency.

Results: A total of 375 academic plastic surgeons were identified who produced 2487 publications during residency. The top 10 programs that led to the most productive residents were Johns Hopkins, Georgetown, University of Michigan, Stanford, University of California Los Angeles, Northwestern, Harvard, New York University, University of Pennsylvania, and Baylor. Academic productivity was higher among integrated residents (integrated = 8.68 publications, independent = 5.49 publications; $p < 0.0001$). The number of publications was positively correlated to the faculty size ($r = 0.167$, $p = 0.0013$), NIH funding ($r = 0.249$, $p < 0.0001$), and residency graduation year ($r = 0.211$, $p < 0.0001$), and was negatively correlated with Doximity ranking ($r = - 0.294$, $p < 0.0001$). H-index was positively correlated with faculty size ($r = 0.295$, $p < 0.0001$) and NIH funding ($r = 0.256$, $p < 0.0001$) and negatively correlated with Doximity ranking ($r = - 0.405$, $p < 0.0001$) and residency graduation year ($r = - 0.163$, $p < 0.0017$).

Conclusion: Our study has found that there is an elite cohort of programs that promote high resident research productivity. Productivity is higher amongst integrated residents, recent graduates, and programs that are larger in size, with a higher Doximity ranking and NIH funding. This study guides medical students applying for integrated plastic surgery residency, residents applying for plastic surgery fellowship, and future applicants who are interested in a career in academic plastic surgery in the selection of their ideal residency programs that match their career aspirations.

P28

Title: Increasing Resident Screening for Food Insecurity

Authors: Goldstein H, Holland S, Conti T
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Needs and Objectives: Food insecurity (FI), defined as "access to food being limited by financial or other resources", affects 14% of US households and 21% of US children. FI is associated with multiple negative health outcomes including metabolic syndrome, disordered eating patterns, behavioral problems, and mood disorders. Screening for FI can be performed with two validated questions:

- "Within the past year, we worried that our food would run out before we got money to buy more." (Yes/No)
- "Within the past 12 mo, the food we bought just didn't last and we didn't have money to get more." (Yes/No)

Yes to either question constitutes a positive screen.

Setting and Participants: The population of interest for this study was residents at the UPMC McKeesport Family Medicine Program. The program is based at Latterman Family Health Center, where 80% of patients receive insurance through medical assistance.

Description: A survey was given to residents to elicit their understanding of food insecurity and self-reported screening rates. A presentation was then given discussing the negative health associations of food insecurity,food insecurity rates in Allegheny County, and resources to recommend in the event of positive screens. Resources for positive screens include SNAP and WIC referral, and lists of local food banks and free food initiatives.

Evaluation: 100% of residents surveyed (N=20) endorsed "FI is a problem that affects my patients". However, prior to educational intervention 85% of residents reported screening zero patients in the past month for FI.

Analysis is in process examining rates of screening for FI by residents during the eight weeks following the educational intervention compared to those during the eight weeks prior. Screening rates are determined by EHR review. Parameters to be reported include:

- Total number of screens performed at well-child and prenatal visits before and after the educational intervention
- Total number of positive screens during the same periods
- For positive screens: Whether or not an intervention was performed, and which type (social work referral, resources provided, or other).

Discussion: The survey suggests that residents recognize FI as an important social determinant of health that affects our patients, but are not routinely screening for FI. The effect of education on screening rates as determined by EHR review will be used internally to promote more systematic screening and intervention for social determinants of health in our clinic.

P29

Title: Increasing Resident Awareness of the 4th Trimester

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Needs and Objectives: Each year in the United States more than 600 women die from pregnancy-related causes. Even with reductions in mortality from postpartum hemorrhage and infection, maternal mortality (MM) and severe maternal morbidity (SMM) from cardiovascular conditions and other chronic health problems continue to increase. Furthermore, stark racial disparities exist in outcomes with black women experiencing 3.5 times higher pregnancy related mortality rates than their white counterparts. In May 2018, the American College of Obstetricians and Gynecologists (ACOG) called for a new paradigm to address these critical gaps. This Committee Opinion, based on a fundamental recognition that the postpartum period is an ongoing period (fourth trimester) beyond the traditional one-time visit, tasks maternity care providers to change the timing and content of postpartum care to include repeated medical, psychological and social assessments and services from a team of caregivers. Although ACOG has called for a new paradigm for postpartum care, little is known how these new guidelines will be implemented in family medicine residency training sites, where many high risk women receive their maternity care.

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Setting and Participants: The population of interest for this study was residents at the UPMC McKeesport Family Medicine Program. The program is based at Latterman Family Health Center where full spectrum family medicine including Obstetrics and postpartum care is delivered.

Description: Multiple presentations regarding the updated guidelines as well personalized chart review feedback and implementation of EHR tools will be delivered to learners.

Evaluation: Not yet complete as study is being reviewed by UPMC QRC for approval to incorporate a pre and post surveys of resident knowledge and attitudes.

Discussion: This new emphasis on adequate postpartum care proposes shifting the current medical approach of treating mothers and infants as separate individuals to considering the health of the maternal-child dyad or whole family unit, a concept already embedded in family medicine. Teaching residents to deliver tailored, individualized assessment through this study. during the postpartum can improve patient outcomes, close gaps in care, enhance continuity and help the most vulnerable patients during this critical transition.

P30

Implementation of a Text-Messaged-Based End-of-Shift Evaluation Tool in Emergency Medicine Residency

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Needs/Objectives: The Accreditation Council for Graduate Medical Education requires programs to provide trainees with faculty performance evaluation during educational assignments and emphasizes the use of specialty-specific milestones. Research has not supported the use of the milestones as a stand-alone end-of-shift evaluation (ESEs) tool. End-of-rotation faculty surveys often provide limited and delayed information. ESEs allow for more real-time and accurate assessment. To overcome the limitations of paper ESEs, we sought to create an emergency medicine-specific electronic ESE for obtaining data for feedback and assessment.

Setting/Participants: Emergency medicine residents rotating at four core academic emergency departments.
Description: We created a text-message-based system to electronically match residents with faculty and which randomly assigns a specific milestone-based area of evaluation for each shift. At the start of the shift, text messages are sent to the resident and faculty to identify the assigned content area. At the end of the shift, the faculty member receives a message that 1) prompts them to provide face-to-face feedback, and 2) gives a unique web-link for an ESE that can be completed on a smartphone, populates a database, and is incorporated into a summative evaluation for each month.

Evaluation/Discussion: We created an electronic ESE that was accepted and utilized by residents and faculty. From January 2018-November 2019, 7,792 ESE's were assigned and 3,526 were completed (45.3%). Responses were equally divided among categories of assessment and response rates remained stable. There was a wide range of completion rates between attendings (<2%-100%). Administrative burden has improved for residents (who no longer need to seek out faculty to complete a paper ESE) and for core faculty (who no longer must collect and interpret hand-written evaluations). Future efforts will be geared towards expanding the system to communicate with new scheduling software platforms and to further evaluate user feedback.

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P31

Characteristics and Academic Productivity Among Pediatric Plastic Surgeons in the United States

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Introduction: The characteristics that predispose plastic surgeons to a career in pediatric plastic surgery remains unclear. Therefore, the aim of this study is to analyze the characteristics of current pediatric plastic surgeons, and to determine their academic productivity.

Hypothesis: H-index, number of publications, and number of citations can be applied to pediatric plastic surgery as it has been in other fields as a measure academic productivity.

Methods: Pediatric plastic surgeons were identified through an internet search of all academic children's hospitals affiliated with an Accreditation Council for Graduate Medical Education (ACGME) accredited integrated or independent plastic surgery program. Demographics, training background, institutional and leadership positions, and academic productivity were determined.

Results: A total of 304 pediatric plastic surgeons were identified. The average age is 48.2, with 57.9% (n=176) of the cohort completing residency before 2009. The majority of pediatric plastic surgeons were White (n=217, 71.8%) males (n=235, 77.6%). Clinical fellowships were completed by 86.8% (n=263) of the cohort, with craniofacial surgery (n=181, 59.7%) being the most common followed by hand surgery (n=54, 17.8%). Among the cohort, 41.1% had clinical fellowship training at 10 top institutions, with the top three most represented programs being University of Pennsylvania (n=19, 6.2%), University of California-Los Angeles (n=16, 5.3%), and Harvard University (n=15, 4.9%). Among the cohort, 25.7% (n=78) held leadership positions within their institutions (fellowship or residency directors, and chiefs/chairs). A significant higher academic productivity was found among research fellowship-trained surgeons, chiefs of pediatric plastic surgery, fellowship directors, and members of departments of plastic surgery. Those who completed an independent residency had a significant higher H-index and number of citations.

Conclusion: This study showed a variation in training background and a persistent gender and race disparity among pediatric plastic surgeons. The impact of training environment and academic productivity on career advancement is of great significance and should be highlighted for those interested in pursuing the field.

Significance: A comprehensive presentation of how certain variables influence academic productivity of pediatric plastic surgeons in order to optimize their career progression.

P32

Title: **A Glimpse Into the Eye – Introducing Ophthalmology to Preclinical Medical Students through a Lunch Talk Series at UPSOM**

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Needs and objectives: The required curriculum at the majority of U.S. medical schools provides minimal exposure to ophthalmology preclinically. Consequentially, physicians may lack a foundation in diagnosing and managing ophthalmologic problems. Additionally, medical students may not consider ophthalmology due to a lack of early exposure. This article describes an initiative taken by the Ophthalmology Interest Group (OIG) at the University of Pittsburgh School of Medicine (UPSOM) to educate students in ophthalmology over lunch. These lectures aim to provide medical students with foundational knowledge about ophthalmology, as a useful supplement to their pre-clinical coursework.

Setting and participants: Seven, 1-hour long talks were organized during the lunch hour by OIG at UPSOM over a 12-month period in 2018-2019. The talks were prepared and presented by ophthalmology faculty, residents, and staff. They were advertised via email to pre-clinical medical students and were attended voluntarily. A similar series of talks is being given during the current year.

Description: The talks included an introductory presentation on eye anatomy and ophthalmology and lectures on Cardiology and the Eye, Ocular Genetic Disorders, Ocular Infections and Immunology, Neuro-Ophthalmology, a guest lecture on International Ophthalmology, and a special lecture by the Ophthalmology Chairman. The talks complemented the pre-clinical medical school curriculum so that students could integrate their knowledge of ophthalmic pathology with their knowledge of systemic diseases. Generally, each talk started with a brief background about the topic followed by case presentations and an audience Q and A session.

Evaluation: Attendance at the lectures ranged from 14 – 57 people, with higher attendance at the lectures on eye anatomy, ocular infections, and the Chairman's talk. Students informally provided feedback, stating that the lectures helped to solidify concepts from their pre-clinical coursework. For example, one student commented that the lecture material on ocular genetic disorders helped him on a practice Step 1 examination.

Discussion: Providing medical students with early exposure to ophthalmology may increase their interest in this field and motivate them to pursue more training in ophthalmology throughout their medical education. The optional lunchtime lecture series supports this initiative, and informal student feedback indicates the series' efficacy. A potential future step is to collect student feedback in an organized way and make iterative improvements in the talks to better serve students' needs.

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