Strategies for Increasing Occupational & Environmental Medicine (OEM) Participation

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Disclaimer

- The opinions expressed by the presenters and in the following slides are solely those of the presenters.

Objectives

- Analyze the trend of OEM physician training programs in the United States
- Discuss strategies and resources for building OEM community
- Consider benefits of mentorship in OEM residency training
- Discuss the role of preceptors in occupational medicine training

Outline

- Trends in OEM Training
  - Sajjad A. Savul, MD, MS, FACOEM
- Mentorship
  - Michael Pratt, MD, MPH, FACOEM
- Precepting
  - Aisha Rivera Margarin, MD, MS
- Building OEM Community
  - John Meyer, MD, MPH, FACOEM
- Discussion

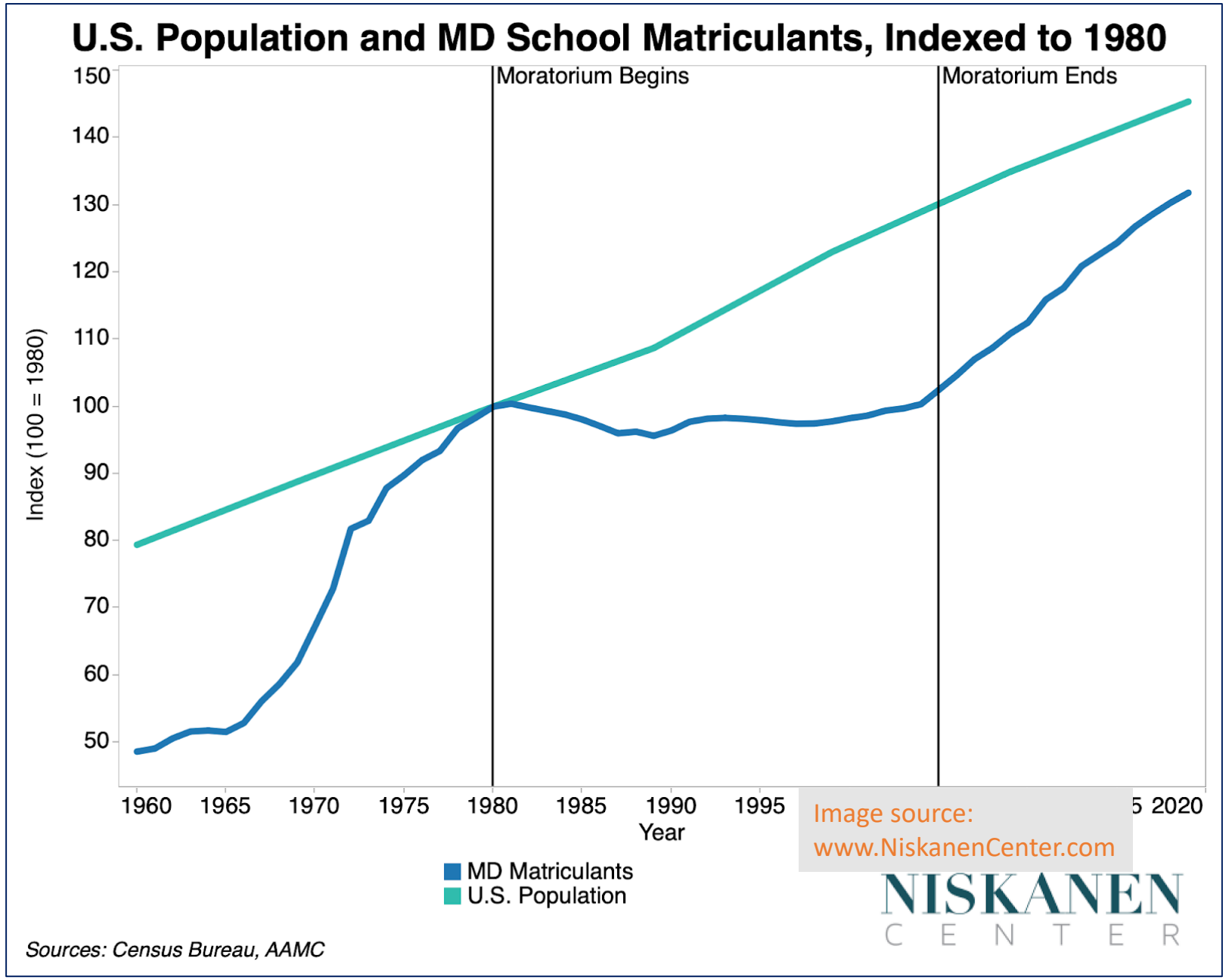
Trends in OEM Training

Sajjad A Savul, MD, MS, FACOEM

The Physician Pseudo-Surplus (1980-2005)

- GMENAC* (1981): “US on the verge of a massive physician surplus”. Recommended on curtailing domestic training of physicians and the admittance of international graduates.
- 1997: Consensus statement by the American Medical Association (AMA) and the Association of American Medical Colleges (AAMC) declared the same- Surplus!
- Early 2000’s: Awareness that prior projections of physician surplus were inaccurate
- 2005: AAMC acknowledged physician “shortage”, calling for a substantial expansion in medical school enrollment by 10-30%

*Graduate Medical Education National Advisory Committee


U.S. Population and MD School Matriculants, Indexed to 1980
Moratorium Begins
Moratorium Ends
Index (100 = 1980)
150
140
130
120
110
100
90
80
70
60
50
1960
1965
1970
1975
1980
1985
1990
1995
2020
Year
MD Matriculants
U.S. Population
Sources: Census Bureau, AAMC
Image source:
www.NiskanenCenter.com
NISKANEN
CENTER

OEM Physician Shortages

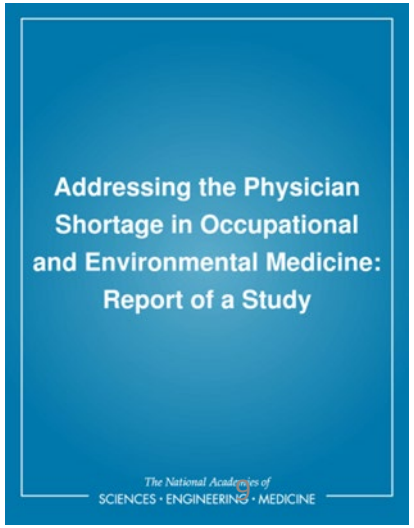
- In 1972, The National Institute for Occupational Safety and Health (NIOSH) identified a shortage of 3,000 physicians in occupational medicine
- A 1989 estimate commissioned by the Institute of Medicine (IOM) assessed OEM physician shortage staying up towards 3500 specialists
  - Limitations in availability of OEM training programs was considered one of the main reasons for this continued deficit.
- In 1991, NASEM* Report Indicated an additional need for up to 5,500 physicians with special competence in OEM

* National Academies of Sciences, Engineering and Medicine

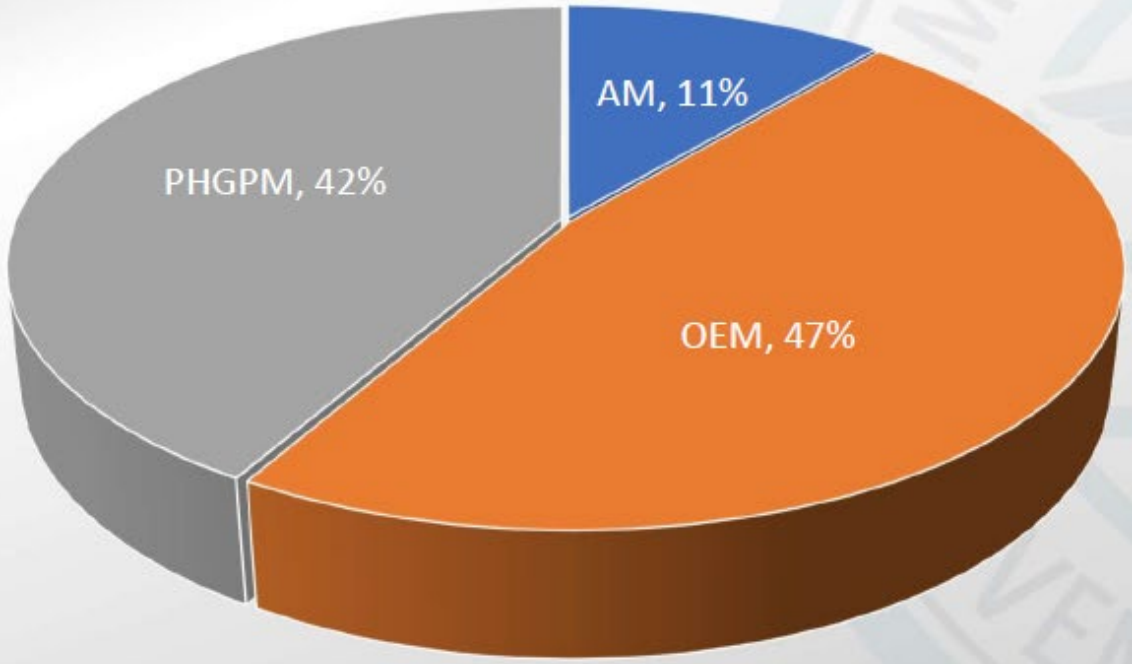
NASEM Report 1991

The Institute of Medicine (IOM) committee offered six specific measures to alleviate the shortage of physicians in OEM:

1. Increase OEM interest among students and trainees
2. Establish a cohort of centers of excellence to train future teachers, researchers, and leaders
3. Integrate environmental medicine with occupational medicine training and research programs
4. Increase funding for faculty development
5. Support residency and fellowship training; and
6. Explore, refine, and adopt new pathways to certification and accreditation in OEM



Specialty Certificates as Proportion of All Specialty Certificates



Specialty	# Certificates
AM	733
OEM	3,103
PHGPM	2,741
All Specialties	6,577

*Includes TL & NTL Certificates active as of January 2023

Graph courtesy of ABPM presentation to Program Directors- April 2023

ABPM-OEM Certified Physicians (Initial)

- Board Certification Started: 1955
- Last 30 years:
  - Highest number certified (1997): 229
  - Lowest number certified (2010): 60

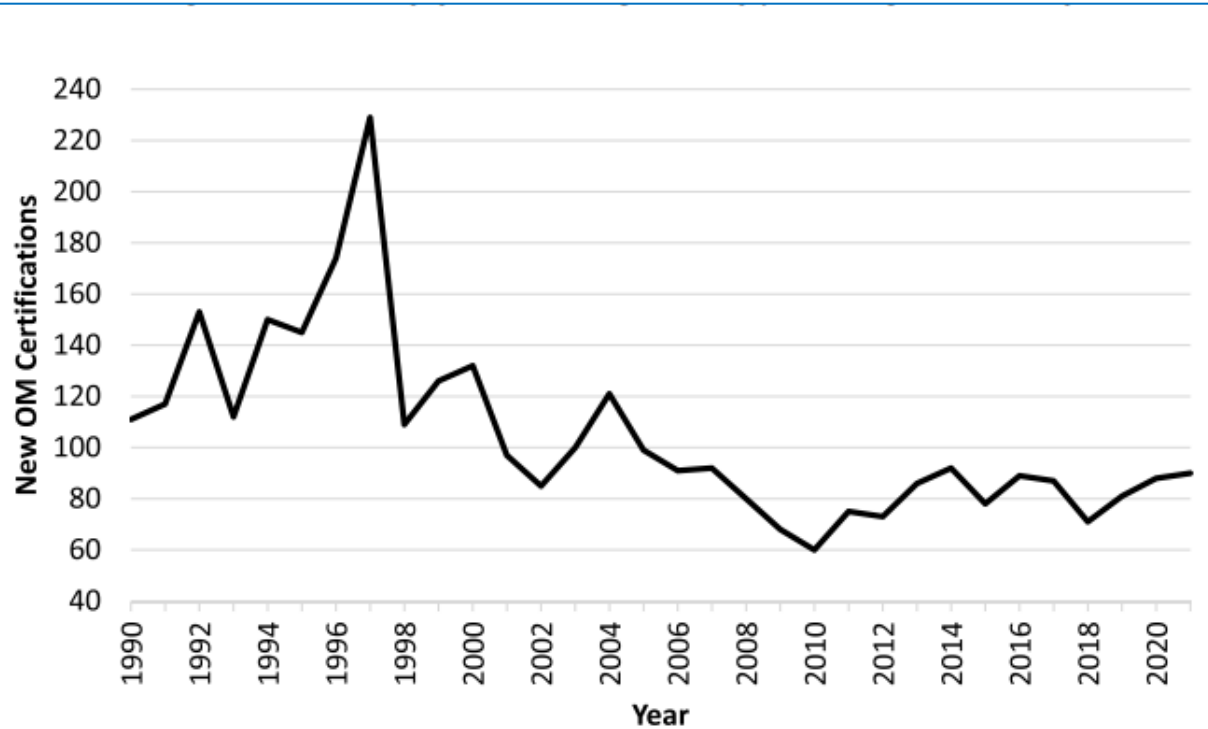
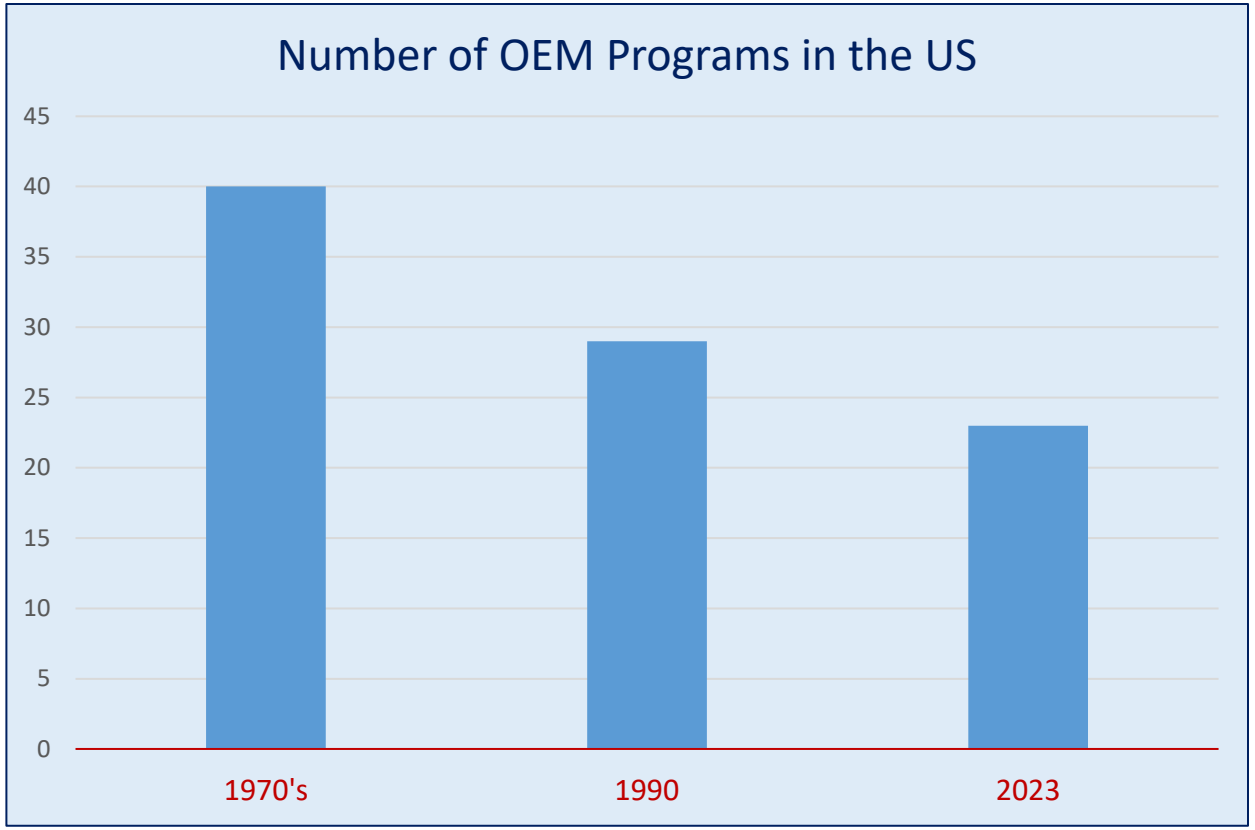


FIGURE 5. Number of new certifications in OM per year, 1990–2021. Data from the American Board of Preventive Medicine. OM, occupational medicine.

Source: ACOEM Guidance Statement: The Future of Occupational and Environmental Medicine; Judith Green-McKenzie, et al. JOEM. Volume 64, Number 12, December 2022

ACGME Approved OEM Residencies

- 1970's: 40 Programs (highest)
- 1990: 29 Programs
- 2023: 23 Programs
  - 21 University based/ affiliated
  - 2 Military based



US Residency Positions

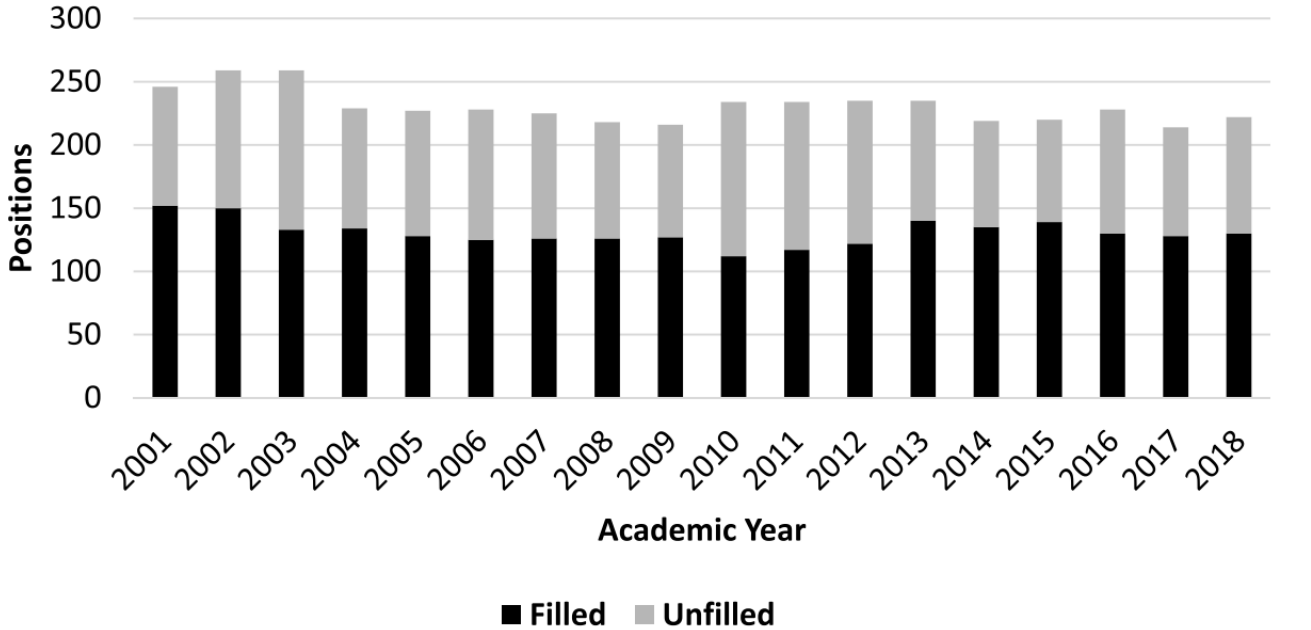


FIGURE 1. Filled and unfilled residency positions in US occupational and environmental medicine training programs, 2001–2019. Data from the Accreditation Council for Graduate Medical Education.

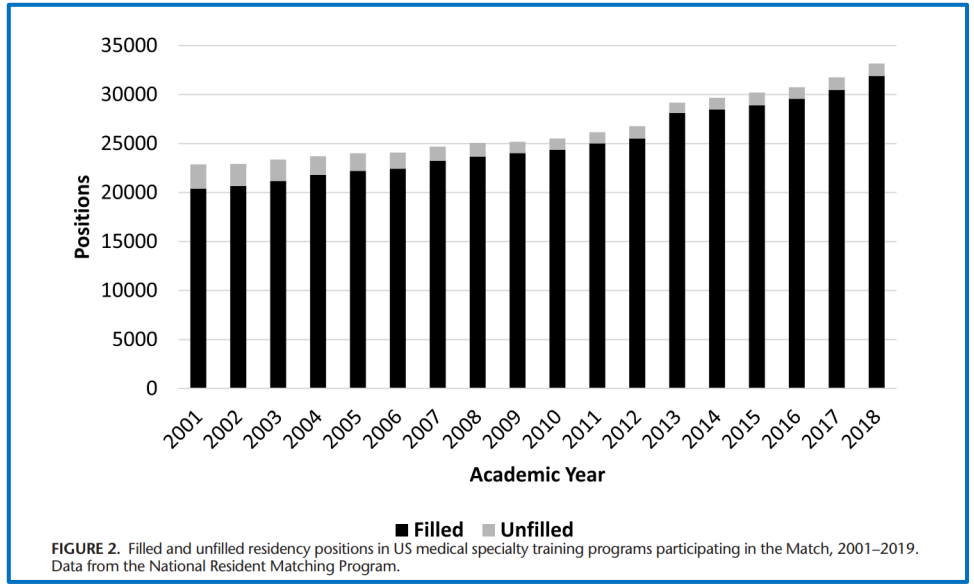


FIGURE 2. Filled and unfilled residency positions in US medical specialty training programs participating in the Match, 2001–2019. Data from the National Resident Matching Program.

Source: ACOEM Guidance Statement: The Future of Occupational and Environmental Medicine; Judith Green-McKenzie, et al. JOEM. Volume 64, Number 12, December 2022

Why OEM Program Numbers are Declining?

- Lack of adequate funding for training programs
- Lack of OEM curriculum in medical school education
- No formal mentorship in medical school or medical conferences on the specialty of OEM
  - Over the course of medical school, most medical students change their preferred residency specialty. A quarter (25.7%) of 2018 respondents to the Graduation Questionnaire indicated the same specialty preference as they had indicated on the Matriculation Student Questionnaire*
  - NASEM Report 1991: Medical schools specifically teaching OEM as part of the required curriculum had a mean teaching time of just 4 hours in 4 years.

*Source: AAMC. 2018 GQ as of Sept. 13, 2018, and matching MSQ data from various survey years.
and Image source: https://www.aamc.org/news-insights/gme

Mentorship in Residency

Michael Pratt, MD, MPH, FACOEM

mentor

n. A trusted and experienced individual who counsels a less experienced person in their academic and/or career development

mentee

n. An individual counseled by a mentor

Career growth and development

Primary focus of mentoring

Source: Ragins, Belle Rose, and K. E. Kram. *The Handbook of Mentoring at Work : Theory, Research, and Practice*, SAGE Publications, Incorporated, 2007. *ProQuest Ebook Central*, https://ebookcentral-proquest-com.proxy.libraries.rutgers.edu/lib/rutgers-ebooks/detail.action?docID=996702.

1. Coaching, facilitating advancement and positive visibility, protecting, and challenging
2. Nurturing trust and relationship bonds that promote mentee "growth, identity, self-worth, and self-efficacy"

Mentoring functions

Source: Ragins, Belle Rose, and K. E. Kram. *The Handbook of Mentoring at Work : Theory, Research, and Practice*, SAGE Publications, Incorporated, 2007. *ProQuest Ebook Central*, https://ebookcentral-proquest-com.proxy.libraries.rutgers.edu/lib/rutgers-ebooks/detail.action?docID=996702.

Counselors
Friends
Role-models

Offering “acceptance and confirmation”

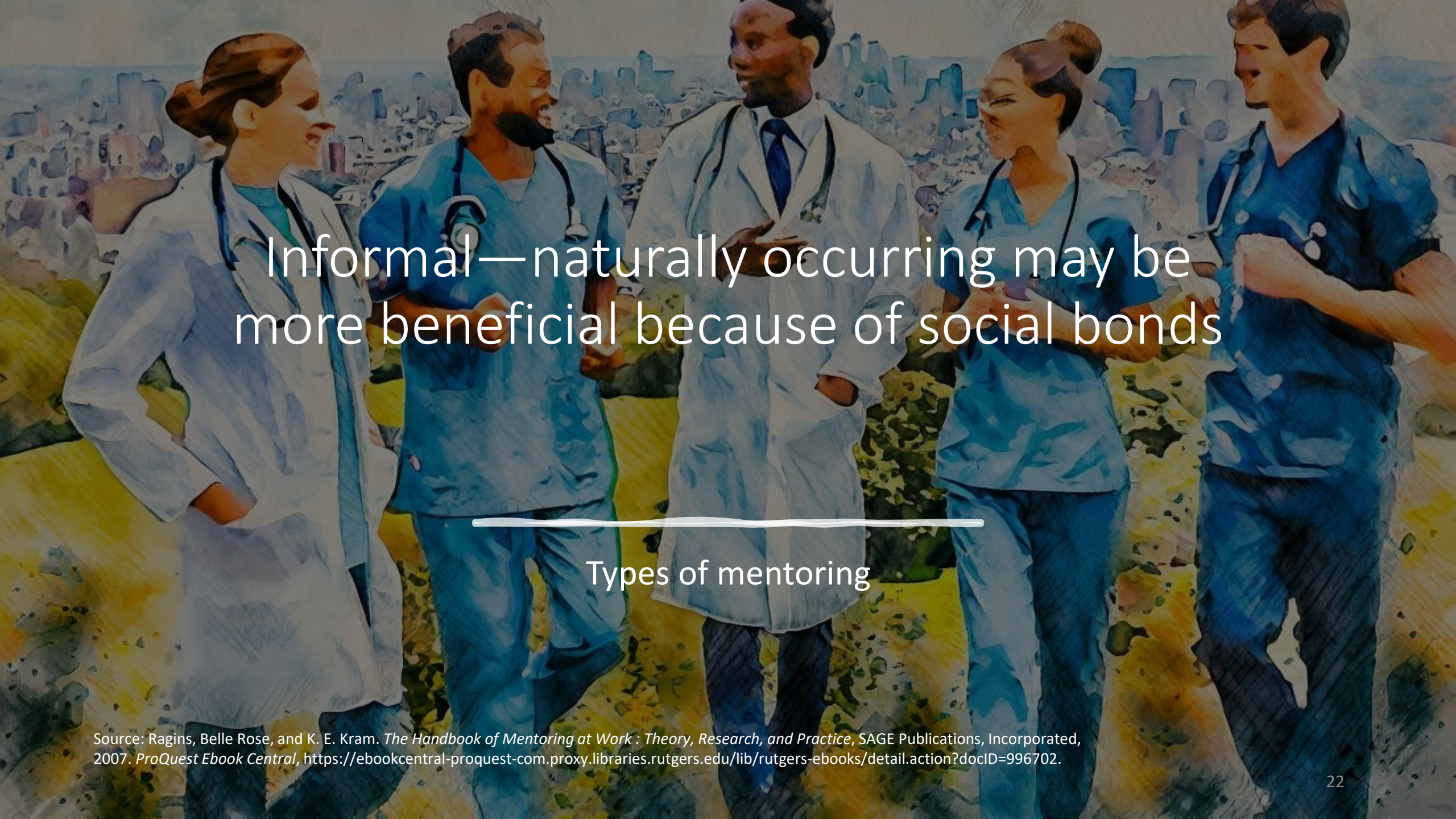
Mentoring behaviors

Source: Ragins, Belle Rose, and K. E. Kram. *The Handbook of Mentoring at Work : Theory, Research, and Practice*, SAGE Publications, Incorporated, 2007. *ProQuest Ebook Central*, https://ebookcentral-proquest-com.proxy.libraries.rutgers.edu/lib/rutgers-ebooks/detail.action?docID=996702.

Formal—assigned
Informal—naturally occurring

Types of mentoring

Source: Ragins, Belle Rose, and K. E. Kram. *The Handbook of Mentoring at Work : Theory, Research, and Practice*, SAGE Publications, Incorporated, 2007. *ProQuest Ebook Central*, https://ebookcentral-proquest-com.proxy.libraries.rutgers.edu/lib/rutgers-ebooks/detail.action?docID=996702.



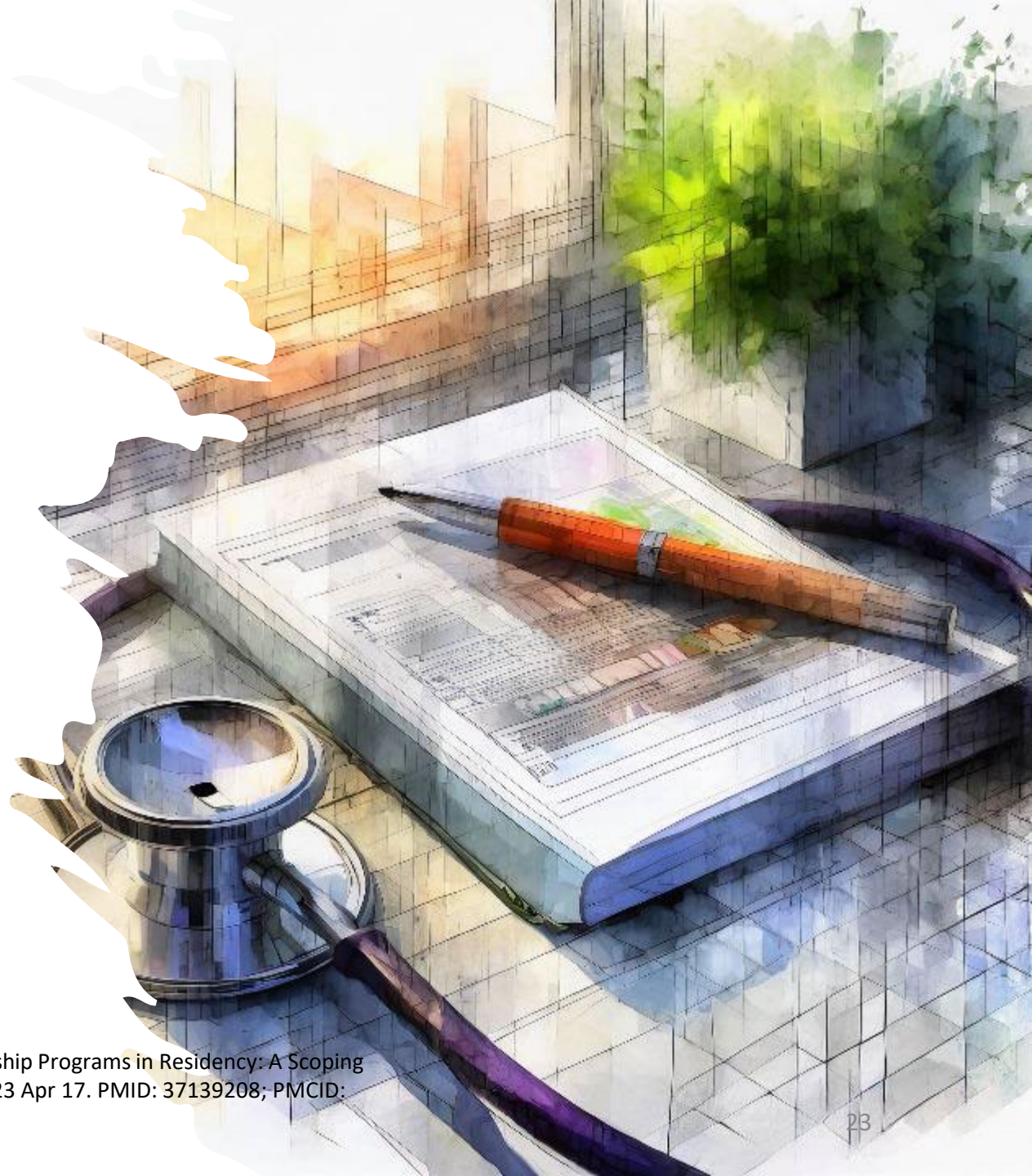
Informal—naturally occurring may be more beneficial because of social bonds

Types of mentoring

Source: Ragins, Belle Rose, and K. E. Kram. *The Handbook of Mentoring at Work : Theory, Research, and Practice*, SAGE Publications, Incorporated, 2007. *ProQuest Ebook Central*, https://ebookcentral-proquest-com.proxy.libraries.rutgers.edu/lib/rutgers-ebooks/detail.action?docID=996702.

2023 Scoping Review in Journal of Graduate Medical Education

- 55 studies met inclusion criteria
- Most programs assigned a staff physician mentor to a resident mentee with meetings every 3 to 6 months
- 50-80+% of residencies have a formal mentorship program
- Over 40% match mentors to mentees on the basis of interest, career, and gender identity



Source: Joe MB, Cusano A, Leckie J, Czuczman N, Exner K, Yong H, Ruzycki S, Lithgow K. Mentorship Programs in Residency: A Scoping Review. J Grad Med Educ. 2023 Apr;15(2):190-200. doi: 10.4300/JGME-D-22-00415.1. Epub 2023 Apr 17. PMID: 37139208; PMCID: PMC10150829.

2023 Scoping Review in Journal of Graduate Medical Education

- Positive impact on academics, career development, and productivity
- More likely to pass boards
- More likely to be hired in their specialty
- Underrepresented in medicine may derive special benefit

Source: Joe MB, Cusano A, Leckie J, Czuczman N, Exner K, Yong H, Ruzycki S, Lithgow K. Mentorship Programs in Residency: A Scoping Review. J Grad Med Educ. 2023 Apr;15(2):190-200. doi: 10.4300/JGME-D-22-00415.1. Epub 2023 Apr 17. PMID: 37139208; PMCID: PMC10150829.

2023 Scoping Review in Journal of Graduate Medical Education

- Mentors
  - Staff physicians (81%)
  - Resident peers (7%)
  - Peer and staff physicians (3%)

Source: Joe MB, Cusano A, Leckie J, Czuczman N, Exner K, Yong H, Ruzycki S, Lithgow K. Mentorship Programs in Residency: A Scoping Review. J Grad Med Educ. 2023 Apr;15(2):190-200. doi: 10.4300/JGME-D-22-00415.1. Epub 2023 Apr 17. PMID: 37139208; PMCID: PMC10150829.

2023 Scoping Review in Journal of Graduate Medical Education

- Mentor attributes
  - Barrier—accessibility/availability issues
  - Facilitation
    - Accessible
    - Approachable
    - Honest
    - Nonjudgmental
    - Caring
    - Good listener

Source: Joe MB, Cusano A, Leckie J, Czuczman N, Exner K, Yong H, Ruzycki S, Lithgow K. Mentorship Programs in Residency: A Scoping Review. J Grad Med Educ. 2023 Apr;15(2):190-200. doi: 10.4300/JGME-D-22-00415.1. Epub 2023 Apr 17. PMID: 37139208; PMCID: PMC10150829.

2023 Scoping Review in Journal of Graduate Medical Education

- Mentee attributes
  - Barriers
    - Lacks career certainty
    - Too overwhelmed to participate
    - Lack of self-motivation
    - Time constraints biggest barrier
  - Facilitation
    - Motivated
    - Receptive

Source: Joe MB, Cusano A, Leckie J, Czuczman N, Exner K, Yong H, Ruzycki S, Lithgow K. Mentorship Programs in Residency: A Scoping Review. J Grad Med Educ. 2023 Apr;15(2):190-200. doi: 10.4300/JGME-D-22-00415.1. Epub 2023 Apr 17. PMID: 37139208; PMCID: PMC10150829.

History of Rutgers OEM Program Mentorship 2014 Residency Handbook

Mentorship

- All residents will be offered the opportunity to participate in the mentorship program with one OEM faculty member. Mentoring can be a powerful professional development tool that focuses on various residency- and career-related topics. Mentors will monitor resident academic and personal growth and will also make themselves available for informal dialogue.
- Mentoring provides a great platform for residents and faculty discuss any topic that can have a positive impact. Mentoring may be based on shared specialty interests or even professional and personal aspirations.
- Mentees should take the initiative to identify faculty mentors whom they respect and with whom they would want to establish a mentor-mentee relationship. Alternatively, a mentor may be assigned to a resident.
- Mentees may opt to change mentors at the beginning of their second year of training.

Current Rutgers OEM Program Mentorship

Formal

Individual

Currently, we have no formally assigned internal faculty members

We would facilitate a resident request

Group

Successful and experienced OEM mentors volunteer their time at EOHSI

Current Rutgers OEM Program Mentorship

Informal

Individual

We try to match residents with a successful and experienced mentor based on career interest or resident request

Group

Some mentors have facilitated group meetings on a specific career topic outside of the Rutgers setting

Rutgers Mentorship

- In the Rutgers OEM program, special emphasis is placed on *informal, external mentors*, matched to the career interests of our trainees
  - Well-received by residents
- Internal mentors
  - Historically not as well-leveraged by residents

Experienced OEM Specialists—Consider Reaching out to Your Nearest OEM Residency Program

Mentoring trainees in OEM is a service to our specialty that many find rewarding and an opportunity to “give back”

Precepting in Occupational and Environmental Medicine Training

Aisha Rivera Margarin, MD, MS

Precepting in Occupational and Environmental Medicine

- Discuss the role of preceptors in occupational medicine training
- Highlight the important skills preceptors should possess
  - Technical skills vs. soft skills
  - Familiarity with OEM competency and milestone documents
  - Effective communication, expectations, and feedback
  - Resources

What is a preceptor?

Merriam-Webster
Est. 1828

Dictionary | Thesaurus | preceptor

Dictionary

Definition

Synonyms

preceptor noun

pre·cep·tor pri-ˈsep-tər ˈprē-ˌsep-

Synonyms of *preceptor* ›

preceptor (prĭ-sĕp′tər, prē′sĕp′tər)

n.

1. A teacher; an instructor.

2. An expert or specialist, such as a physician, who gives practical experience and training to a student, especially of medicine or nursing.

3. The head of a preceptory.

Image of Preceptory of Knights Templar
Source: WikiMedia Commons

Have YOU ever thought about precepting?

What skills should a preceptor have?

Technical

- Diagnosis of occupational diseases
- Exposure assessment
- Risk communication
- *Knowledge of how OEM competencies, milestones align with your rotation site*
- **Rotation dependent**

Soft

- *Effective communication*
- **Applicable to all rotations**

ACGME Milestones and ACOEM Competencies

- ACGME Milestones
  - A tool to assess learning that focuses on individual learner and highlights pathway to expertise
  - Each medical specialty developed its own set of “Milestones” to guide the learning and assessment of its learners through core competencies
    - Patient Care and Procedural Skills
    - Medical Knowledge
    - Practice-based Learning and Improvement
    - Interpersonal and Communication Skills
    - Professionalism
    - Systems-based Practice
- ACOEM Competencies
  - Guidance statement prepared by OEM specialists which outlines the knowledge, skills, abilities OEM physicians need
  - 10 core competencies ranging from clinical OEM to OEM related management
- **As a preceptor you should know which milestones best align with the learning opportunities at your rotation site.**

ACOEM GUIDANCE STATEMENT

ACOEM OEM Core Competencies: 2021

Natalie P. Hartenbaum, MD, MPH, Beth A. Baker, MD, MPH, Jeffrey L. Levin, MD, MSPH, DrPH, Kenji Saito, MD, JD, Yusef Sayeed, MD, MPH, MEng, and Judith Green-McKenzie, MD, MPH, Work Group on OEM Competencies

PART 1: INTRODUCTION AND 10 CORE COMPETENCIES

JOEM • Volume 63, Number 7, July 2021 e445

Source: 1. Occupational and Environmental Medicine Milestones 2.0. Accreditation Council for Graduate Medical Education. 2020.
2. Hartenbaum NP, Baker BA, Levin JL, Saito K, Sayeed Y, Green-McKenzie J; Work Group on OEM Competencies. ACOEM OEM Core Competencies: 2021. J Occup Environ Med. 2021 Jul 1;63(7):e445-e461. doi: 10.1097/JOM.0000000000002211. PMID: 34184662.

Patient Care 1: History and Physical Examination				
Level 1	Level 2	Level 3	Level 4	Level 5
Obtains an accurate history	Obtains and reports an accurate and organized history, including occupational and environmental history	Consistently obtains and reports a comprehensive and accurate history, including occupational and environmental factors, and seeks appropriate data from secondary sources	Consistently obtains and concisely reports a focused history, including occupational and environmental factors, with pertinent details	Consistently serves as a role model and educator in obtaining and presenting a focused history, including occupational and environmental factors, with pertinent details
Performs a basic physical exam accurately	Performs an accurate and organized physical exam, and identifies appropriate physical findings for the chief complaint	Consistently performs an accurate and thorough physical examination, and reports relevant findings in support of likely clinical diagnosis	Consistently identifies subtle physical findings; is proficient with advanced maneuvers	Consistently serves as a role model and educator in the performance of an advanced physical exam
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐				
Comments:				
Not Yet Completed Level 1 ☐ Not Yet Assessable ☐				

Source: Occupational and Environmental Medicine Milestones 2.0. Accreditation Council for Graduate Medical Education. 2020.

Effective Communication

BUT IT INVOLVES MULTIPLE ELEMENTS AND IT IS EASY FOR MESSAGES TO NOT BE RECEIVED AS INTENDED

"process of exchanging ideas, thoughts, opinions, knowledge, and data so that the messa[illegible]and purpose."

Transactional Model of Communication

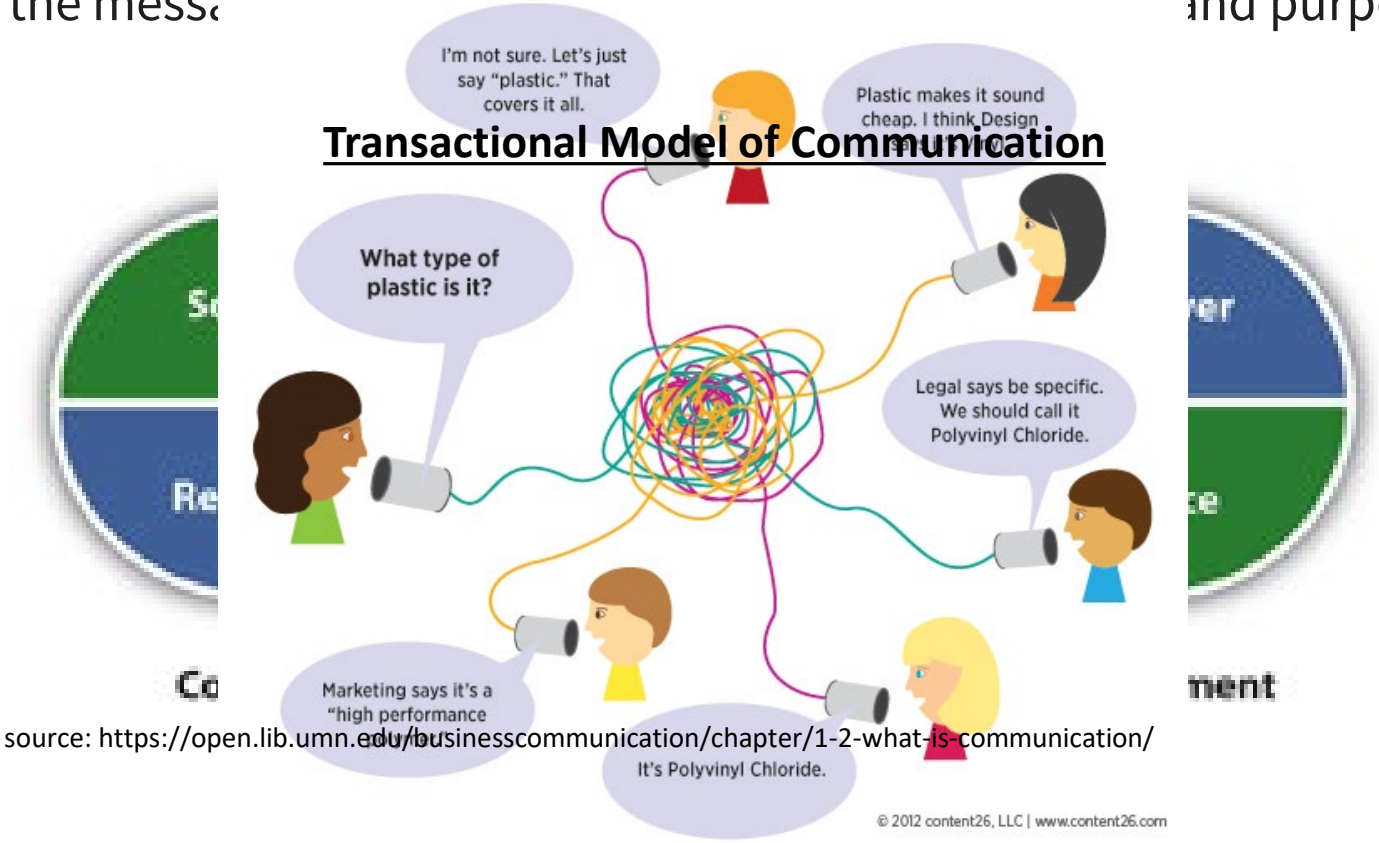
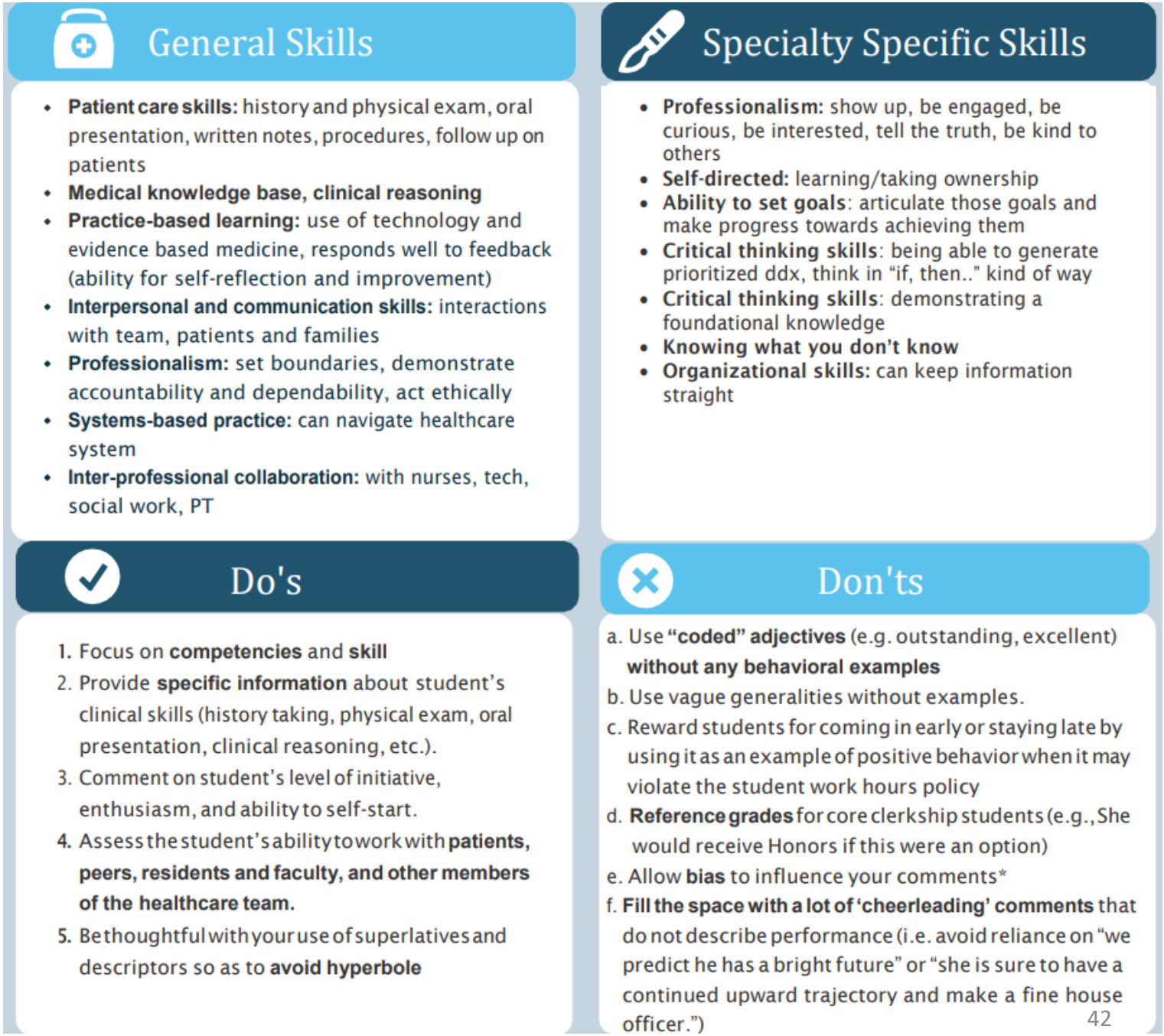


Image source: https://open.lib.umn.edu/businesscommunication/chapter/1-2-what-is-communication/

Tips for Preceptors on Effective Communication

- Set, Manage, and Revise Expectations
  - Ask yourself
    - How much time do you have for the resident?
    - Are you familiar with OEM competencies and milestones?
    - Do you know what the residents can learn at your rotation site that aligns with the OEM competencies?
- Communicate expectations
  - Welcome
  - Logistics/time/location/attire
  - Objectives/goals
  - Reading assignments
  - Schedule checkpoints and discuss best ways to communicate with you
  - **Consider putting all of the above items into a document and/or having a pre-rotation meeting to communicate mutual goals and expectations**
- Give feedback
  - Constructive/Corrective AND/OR Reinforcing/Encouraging
    - Goal: improve performance

What can you give feedback on?



Source: Duke Family Medicine

When giving feedback stay on “TASC-E”

- Timely
  - Increases likelihood feedback will be used for improvement
- Actionable
  - Based on shared model of competencies and expectations
- Specific
  - Based on direct observations and encounters
    - Example: You gave your patient adequate time after communicating the bad news.” vs. “You did a good job communicating the bad news.”
    - “I saw patient grimace and pull away during the exam and you continued the exam.”
- Clear
  - Need the learner to understand your feedback, so they can incorporate it and improve performance
- Environment
  - Be mindful of where you give the feedback (e.g., one on one vs. in a group)

Consider different feedback techniques

- Direct observation
  - OSCE, etc.
- Real time feedback
  - Online survey, minute feedback system, etc.
- **Self-assessment**
  - Johari window, etc.
- **Evaluative models**
  - ACGME milestones, etc.
- **Specialized feedback techniques**
  - Feedback sandwich, etc.

able	accepting	adaptable	bold	brave	calm	caring
cheerful	clever	complex	confident	dependable	dignified	energetic
extroverted	friendly	giving	happy	helpful	idealistic	independent
ingenious	intelligent	introverted	kind	knowledgeable	logical	loving
mature	modest	nervous	observant	organized	patient	powerful
proud	quiet	reflective	relaxed	religious	responsive	searching
self-assertive	self-conscious	sensible	sentimental	shy	silly	spontaneous
sympathetic	tense	trustworthy	warm	wise	witty	

Image source: https://www.mindtools.com/au7v71d/the-johari-window

Open area	Blind area
Hidden area	Unknown area

Challenges

- Time
- Space
- Poor communication
- Personal factors
  - Personality mismatches
  - Perceived skills of preceptor by trainee
  - Limited growth mindset
  - Blind spots in self-awareness
- Difficult conversations
  - Performance not meeting expectations

Best Practice Recommendations

1. **Feedback should be clear, specific, timely, and actionable. (Level 1a, Grade B)**
2. **Feedback should be based on observed behaviors. (Level 3b, Grade B)**
3. **Both corrective and reinforcing feedback should be provided to learners, although not necessarily at the same time. (Level 4, Grade C)**
4. **Feedback tools are recommended to increase learner satisfaction and volume of feedback; however, the use of tools must be combined with faculty development and a culture of feedback to improve the quality of feedback. (Level 3b, Grade C)**
5. **Feedback should incorporate learner self-assessment. (Level 3b, Grade C)**

Source: Natesan S, Jordan J, Sheng A, Carmelli G, Barbas B, King A, Gore K, Estes M, Gottlieb M. Feedback in Medical Education: An Evidence-based Guide to Best Practices from the Council of Residency Directors in Emergency Medicine. West J Emerg Med. 2023 May 5;24(3):479-494. doi: 10.5811/westjem.56544. PMID: 37278777; PMCID: PMC10284500.

Best Practice Recommendations

1. **Encourage learners to take an active role in the feedback process. (Level 2b, Grade B)**
2. **Take the work environment into account when creating appropriate feedback systems that are contextually appropriate as a way to improve learner perception of feedback. (Level 2a, Grade B)**
3. **Provide opportunities for learners to build longitudinal trusting relationships in order to promote a strong educational alliance and a growth mindset and to facilitate feedback reception. (Level 4, Grade C)**
4. **Address the tension between assessment and feedback as fear of consequences can predispose a learner to have a fixed mindset, thus limiting learner growth. (Level 4, Grade C)**
5. **Develop and maintain standardized, structured, multisource, and longitudinal feedback processes. (Level 3a, Grade B)**

Source: Natesan S, Jordan J, Sheng A, Carmelli G, Barbas B, King A, Gore K, Estes M, Gottlieb M. Feedback in Medical Education: An Evidence-based Guide to Best Practices from the Council of Residency Directors in Emergency Medicine. West J Emerg Med. 2023 May 5;24(3):479-494. doi: 10.5811/westjem.56544. PMID: 37278777; PMCID: PMC10284500.

Consider the scenarios and your role

- Overly confident resident→ GUIDE to CONSIDER OTHER POINTS of VIEW
- High performing resident → COACH
- Distressed resident → IDENTIFY and RESPOND to NEED FOR SUPPORT
- Resident with insight gaps→ HELP IDENTIFY GAPS

Source: Roze des Ordons A, Cheng A, Gaudet J, Downar J, Lockyer J. Adapting Feedback to Individual Residents: An Examination of Preceptor Challenges and Approaches. J Grad Med Educ. 2018 Apr;10(2):168-175. doi: 10.4300/JGME-D-17-00590.1. PMID: 29686756; PMCID: PMC5901796.

Resources

- ACGME, https://dl.acgme.org/pages/acgme-faculty-development-toolkit-improving-assessment-using-direct-observation-video-library#Feedback

- Society of Teachers of Family Medicine, https://www.teachingphysician.org/topic-index/

- Society to Improve Diagnosis in Medicine, https://www.improvediagnosis.org/art/

How can you collaborate with your local residency program and contribute to the next generation of OEM physicians?

Building OEM Community

John Meyer, MD, MPH, FACOEM

Discussion and Q & A