A Focus on Nerves and Joints: Impact of a Revised Curriculum for the 4th Year Physical Medicine and Rehabilitation (PM&R) Clerkship at Brody School of Medicine

Department of Physical Medicine and Rehabilitation, Brody School of Medicine

2nd Annual REACH Medical Education Day
April 20, 2016
Rationale/Need

- Relative weakness in exposure to clinical neuroscience at The Brody School of Medicine based on student self report and standardized testing
- 4th year required PM&R clerkship improved students’ knowledge and enhanced clinical skills,¹ however PM&R had the lowest student rankings among the 8 required clerkships

**Rationale / Need**

- This is not a Brody specific issue:
  - Study at Harvard Medical School found that medical students lacked the “clinical confidence” and “cognitive mastery” with regard to musculoskeletal (MSK) care\(^2\)
  - Similar research demonstrates lack of comfort with neurology or “neurophobia”\(^3\)

- AAMC Entrustable Professional Activities (EPAs)
  - EPA 1: Gather a history and perform a physical examination
  - EPA 2: Prioritize a differential diagnosis

---


Collaborative Team Members

- John Norbury MD, RMSK, Clerkship Director, 2014-present
- Clinton Faulk MD, Clerkship Director 2009-2014, Residency Director 2014-present
- Kelly Harrell PhD, MPT, Department of Anatomy and Cell Biology
- Luan Lawson MD, BSOM Academic Affairs
- Daniel Moore MD, PM&R Chairman
- Jayveeh Navarro MD, PM&R faculty and case study preceptor

Team Leader Key Contact Info:
John Norbury, Pager 252-707-8230, norburyj@ecu.edu
Clerkship Changes

- Required Readings on General Neurology and MSK Topics\(^4\)
  - (Previous readings from PM&R Literature on Rehab Topics)
- Basic Science Anatomy Clinical Correlation
- Hands on workshops on Neuro and MSK Physical Examination
- Case based workshop on shoulder pain, wrist pain, and back pain
- “Chalk talk” on pain, bowel, and bladder management (3P’s)

Conceptual Framework for the revised BSOM 2 Week PM&R Clerkship

- Basic Science Anatomy Clinical Correlation
- Readings on Sports Medicine and Clinical Neuroscience from CMDT 2015
- Brody students “entrustable” in the diagnosis and management of disorders of the neurological and musculoskeletal system
- Inpatient and Outpatient Clinical Exposure to Neurological and Musculoskeletal Disorders
- Workshops on the Musculoskeletal and Neurologic Physical Examination
- Small Group Case Studies: Shoulder, Wrist, and Spine
- “Chalk Talk” on Management of Pain, Bowel and Bladder
Results

- Welch’s T-test found a statistically significant improvement in the overall rotation evaluation by students.
- In 2015, 92% of students ranked the PM&R clerkship as either “excellent” or “very good” compared to 64% in 2014.
All improvements on the rotation evaluation statistically significant except for
- “supervising physicians available for discussions regarding patient care”
- “rotation complied with duty hour requirements”
  - (92% said we “always” comply; 8% said we “usually” comply)

The clerkship coordinator, clerkship director, PM&R faculty, and clinical experiences were the same 2014-2016
Selected Excerpts from Medical Student Comments

Strengths of the Rotation

“I learned how to complete a more thorough neuro and MSK exam. I learned a lot more about the different levels of dermatomes, myotomes, etc. and how to put all of that information together in a differential. THIS WAS INVALUABLE!!”

“Great in depth review of musculoskeletal and neuro that rotations 3rd year skimmed over.”

“I enjoyed increasing my knowledge on how to complete a full and expansive neurologic exam and musculoskeletal complaints.”

“Love that [the lecturer] really focused on the primary care and neurology issues that we will see in the future. The PM&R information was interesting but not always applicable to what we plan to do in the future. I appreciate that [the lecturer] took the parts that were applicable and taught us valuable tips for intern year.”
## Results

### Specific Ways the Rotation Could be Improved

“Would enjoy ‘a what is PM&R’ lecture that talks about the various things they do and common reasons for referral for people entering other fields”

“More presence before 4\textsuperscript{th} year”

“I actually would recommend that this would be a 3\textsuperscript{rd} year course as I think it would help with [USMLE] Step 2 [Clinical Skills].”

“Some of the resident didactics were over our heads at the M4 level. The time might be better spent reading or in a lecture for our level of training.”
Lessons Learned

- A sharp focus on the MSK care and neurology needed by the pluripotent medical school graduate is essential in a PM&R clerkship that supports Brody’s mission of training primary care providers.

- Key Ingredients
  - Anchored learning
  - Basic science correlation
  - A variety of pedagogic methods
  - Teach to the learner’s level of training
  - Utilize residents as teachers
  - Pizza
Next Steps

- Increase the neurology content in the rotation
- Incorporate recent CDC Guideline for Prescribing Opioids for Chronic Pain
- Assess impact of a “flipped classroom”
- Target other EPAs
  - EPA 8: Give or receive patient handover to transition care responsibilities
  - EPA 9: Collaborate as a member of an interprofessional team
Acknowledgements

- Kristi Arnold for her work and dedication as clerkship coordinator
- Dr. Eric Rush for his support with statistical analysis
- Dr. Libby Baxely for her support of medical student teaching in the Department of Physical Medicine and Rehabilitation
- Dr. Trey Sloan and Dr. Sienna Ona for their helpful suggestions on how to improve the rotation
- Dr. Ankit Patel and Dr. Jason Curry for their careful review of the revised rotation exam
Contact Information

- John Norbury MD, RMSK
- PM&R Medical Student Clerkship Director
- norburyj@ecu.edu
- Pager 252-707-8230