
IMPACT OF THE COVID-19 PANDEMIC ON A REQUIRED COMBINED NEUROLOGY AND PM&R CLERKSHIP ON THE CLINICAL KNOWLEDGE AND SKILLS OF FOURTH YEAR MEDICAL STUDENTS

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BRODY SCHOOL OF MEDICINE 7TH ANNUAL MEDICAL EDUCATION DAY

COLLABORATIVE TEAM MEMBERS

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- Luan Lawson, MD- Assistant Dean, Curriculum, Assessment, and Clinical Academic Affairs
- Stephen Charles, PhD- Assistant Dean for Medical Education Outcomes and Assessment, Interim Assistant Vice Chancellor for Interprofessional Collaboration
- Clinton Faulk, MD- Chair, Department of Physical Medicine and Rehabilitation
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- John Norbury, MD- Assistant Professor, Department of Physical Medicine and Rehabilitation

NEUROLOGY-PHYSICAL MEDICINE AND REHABILITATION M4 ADVANCED CORE CLERKSHIP

- Required 4-week advanced core clerkship during the M4 year in the Brody School of Medicine (BSOM)
- Initially was a 2-week PM&R rotation that was increased to a 4-week curriculum
 - Increase in educational benefits of the rotation when it was increased from 2 to 4 weeks by adding a Neurology rotation to create an integrated Neurology-Physical Medicine and Rehabilitation curriculum (N-PMR) (Curtis et al, 2021)
 - Required 2- or 4-week rotation has a beneficial impact on medical students and patients, especially when focused on common musculoskeletal and pain conditions (Faulk et al 2012, Norbury et al 2016)
- This 4-week advanced core clerkship was the clerkship taken by BSOM M4s in the 2019-2020 academic year



COVID-19

COVID-19 CHALLENGES

- BSOM went on a brief pause for clerkships during the early pandemic for student/education safety
- Neuro/PM&R is a four-week required advanced core clerkship
- The total number of blocks available for students was reduced by BSOM resulting in a need to accommodate a larger number of students in the clinical space per block
- Social distancing recommendations require that the clinical space not be saturated with learners
- Additional goal to provide students with flexibility with scheduling to accommodate a compressed time interval for Acting Internships, interviews, studying for high stakes examinations, and unexpected scheduling changes

CURRICULUM CHANGES- OUR SOLUTION

- Divide Neuro/PM&R into two clerkships:
 - Neuro/PM&R 1 is a two-week required clerkship which was delivered online.
 - Neuro/PM&R 2 is a two-week required clerkship which will be delivered in person at the ECU and Vidant clerkship sites
- Together these clerkships will meet the 4-week N/PMR objectives

CURRICULUM CHANGES- OUR SOLUTION

2019/20 Neuro/PM&R Integrated Course	2020/21 Neuro/PMRI (Didactics)	2020/21 Neuro/PMR 2 (Clinical)
Neurology Lectures (4 hours)	Neurology Lectures (4 hours)	
1 hour neurology physical exam 1 hour MSK physical exam	Videos on the Neuro and MSK physical exams The Precise Neurological Exam Module (1 hr)	
Lifestyle Medicine for Pain lecture(1 hr)	Lifestyle Medicine for Pain lecture (1 hour)	
Neuropathology Lab (4 hours)	Neuropathology Lab (4 hours) Flipped classroom with pre-recorded lectures	
MSK/Neuromuscular Case Studies (1 hr)		MSK/Neuromuscular Case Studies(1hr)
Chronic Pain Lecture (1 hour)	Chronic Pain Lecture (1 hour) / Bias in Chronic Pain Management (30 minutes)	
Approach to Neuromuscular Disorders Prezi	Approach to Neuromuscular Disorders Prezi	
Interprofessional Conflict Didactic and OSCE (3 hours in person)		Interprofessional Conflict Didactic and OSCE (1 hour virtual, 2 in person)
Neurological Case Studies (1 hour)	Case Files Neurology (3 rd Ed) (3 hours)	
TOTAL: 18 hours	TOTAL: 16 hours	TOTAL 4 hours

RATIONALE/NEED

- Notable Changes:
 - Didactics were virtual and recorded
 - Physical examination demonstrations were virtual and recorded
 - Neuropathology lab was virtual and recorded
 - Increased course flexibility due to online lectures that can be done on the M4s own time
- These changes were important and necessary for the safety of our learners
- We, the investigators, are curious whether these change had an impact on the education of our students

METHODS

- The students of academic year 2019-20 (normal curriculum) will be compared to the performance of the students of academic year 20-21 (COVID-impacted)
- Three components of the educational curriculum will be compared between the groups in order to see what affect, if at all, these changes had on the education of the students
 - OSCE evaluations
 - End-of-clerkship examination (test scores)
 - Final M4 evaluations of their clerkship experience (Elentra)

RESULTS

- **At present, only the quantitative data from the clerkship evaluation is available for students completing the course through January 2021**
- Course satisfaction overall increased from 63.01% to 72.00% of students ranking the course as “Very Good or Excellent.”
- Additionally, there was an increase of students that felt the design and organization of the rotation promoted student learning
- Other improvements were seen, with students feeling the experience enhanced diagnostic and patient management skills as well and encouraged them to apply evidenced-based information to medical problems
- Largely unchanged from year-to-year were the categories of clear objective outlines, assessments reflecting clerkship objectives, development of patient interviewing skills, faculty teaching, and a positive and supportive learning environment.
- Decreases were seen in the ratings of the teaching of the residents and the resident/faculty supervision with clinical encounters, with a decrease of 18-19% in both categories of students ranking the course as “Very Good or Excellent.”

CONCLUSIONS (THUS FAR)

- A redesigned, partially virtual N-PMR clerkship overall was similar to improved in the majority of categories on medical student evaluations
- This provides a framework for future partial virtual coursework going forward as student evaluations show largely similar feedback despite the changes to the course
- Areas of improvement going forwards involve improving resident teaching and improving resident/faculty supervision
- Further conclusions will be made upon complete collection of student testing data from OSCEs and end-of-rotation test scores.

NEXT STEPS

- Full examination of quantitative and qualitative data from the clerkship evaluation
- Comparison of final examination data from the 2019-20 to the 2020-21 academic years
- Comparison of the OSCE performances from the 2019-20 to the 2020-21 academic years
- Analyzing which parts of each version of the curriculum (traditional vs. virtual) worked well in terms of educational results and course satisfaction
- Discuss further curriculum changes to potentially create a flexible, hybrid clerkship model moving forwards

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QUESTIONS?

