

New Resident Feedback Form and Delivery Method Increased Volume of Feedback Data Over 6 Month Pilot

Education Based QI Intervention

W. Niehaus, MD; S. Laker, MD; J. Sliwa, DO; S. Apkon, MD

Setting: Residency Program with 6 Advanced Residents per PGY level

- Facing declining use of ROCA form
- Limited data on resident performance outside of mid and end of rotation evaluation for the CCC to review for resident performance
- Looking to improve timely & meaningful feedback for residents that encouraged an evidenced based feedback method

Name of New Resident Feedback Form:

R.I.S.E. Form (Reflection on Improvement Survey & Evaluation)

Mission: Transition from the Resident Observation and Clinical Assessment (ROCA) Form to a method of feedback that encourages resident initiated performance evaluation and increases the volume and quality of data flowing to the clinical competency committee.

R.I.S.E. Form Implementation Strategy:

- Transition from ROCA form to an Ask / Tell Format
- Establish a resident-initiated feedback structure
- Require at least four R.I.S.E forms per two-month rotation (one per ACGME domain - Communication / Professionalism / Patient Care / System Knowledge)
- Create a mobile friendly web-based format
- Query residents & faculty perception of pre & post intervention

QI Pilot Timeline: 7/1/20 – 12/31/20

Metrics:

- Number of R.I.S.E Forms completed per resident in comparison to prior ROCA Form completion
- Pre & Post Likert based questionnaires from residents & faculty
- Time & Date R.I.S.E Forms completed to track how far into rotations these are initiated

Results

- 177 R.I.S.E Forms were completed over the QI period
- An avg. of 3.8 R.I.S.E Forms were submitted per rotation by residents which compared to an avg. of 15.1 ROCAs at graduation
- Overall residents and faculty positively responded to the implementation based on Likert questionnaires
- Despite residents overwhelming feeling the R.I.S.E Forms improved timely and meaningful feedback, they did not feel it provided a means to improve during their residency training
- Faculty reported improvements in all categories except having a formal way to review residents outside of the mid and end of rotation feedback forms
- Most R.I.S.E Forms were completed in the closing week of rotations

Conclusion

- The R.I.S.E Form drastically increased the volume of data flowing to the clinical competency committee and established an evidenced based method of timely and meaningful feedback that encourages resident initiated performance evaluation

Moving Beyond the ROCA: Over 400% Increase in the Volume of Feedback Data with Resident Initiated Method

Scan to get more info on this project



Scan to get more info on this poster design



Pre-Intervention Data

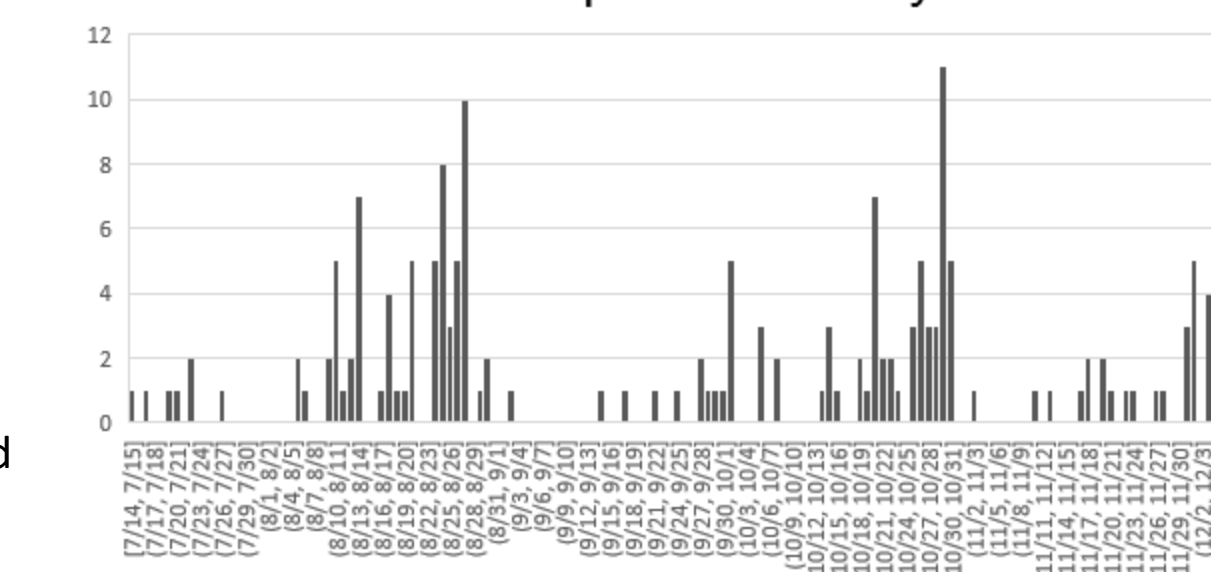
Graduation Year	Average Number of ROCA Forms per Resident Completed at time of Graduation	Average Numbers of ROCA Forms per Resident per Year Divided by Number of Rotations (18)
2016	19.5	1.08
2017	16.0	0.89
2018	15.2	0.84
2019	16.0	0.89
2020	8.6	0.48
5 yr AVG	15.1	0.84

Post-Intervention Data

Month	Total Number of R.I.S.E. Forms
July – Aug	73
Sept – Oct	69
Nov – Dec	31*

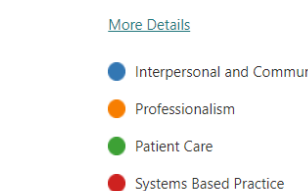
*as of 12/12/20

Rise Forms Completed Per Day Over Time



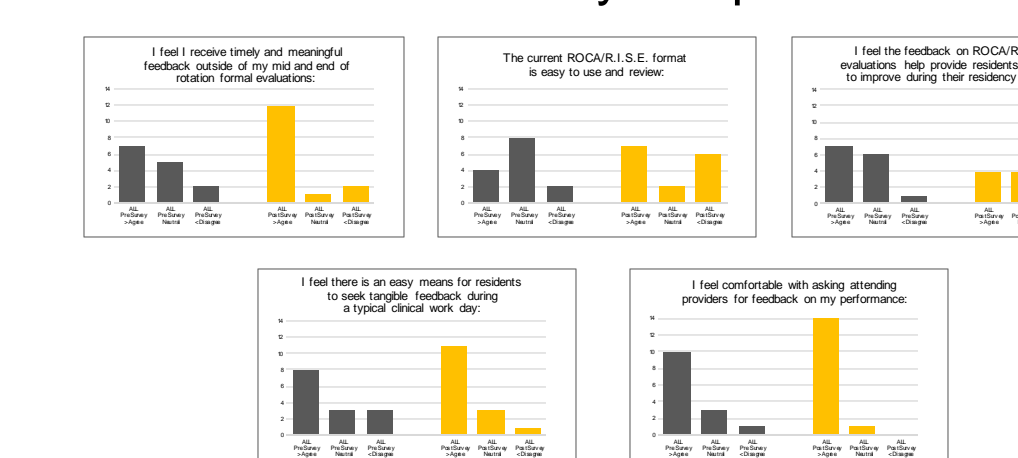
Projected to have ~ 70 R.I.S.E. Forms completed by each resident at the time of Graduation
464% Increase from prior number of ROCAs

What ACGME domain is being discussed?

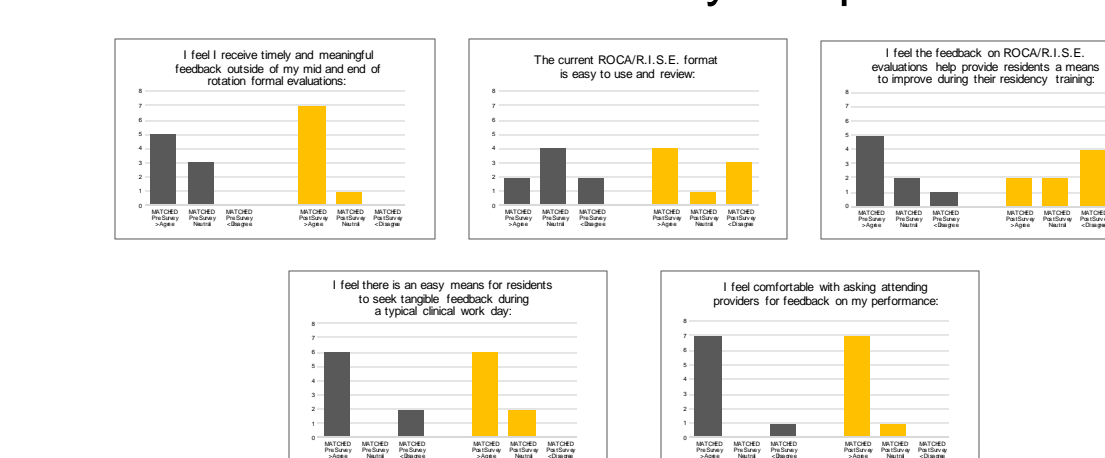


Satisfaction Survey Results

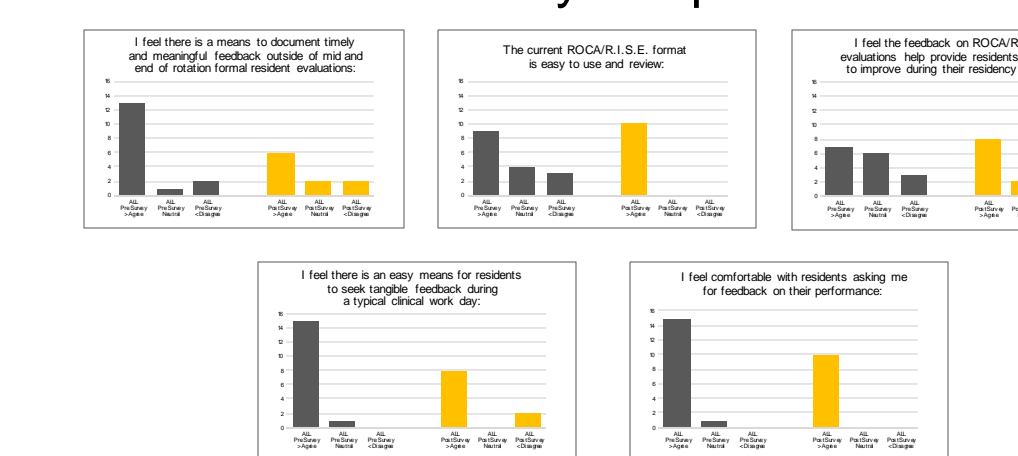
All Residency Responses



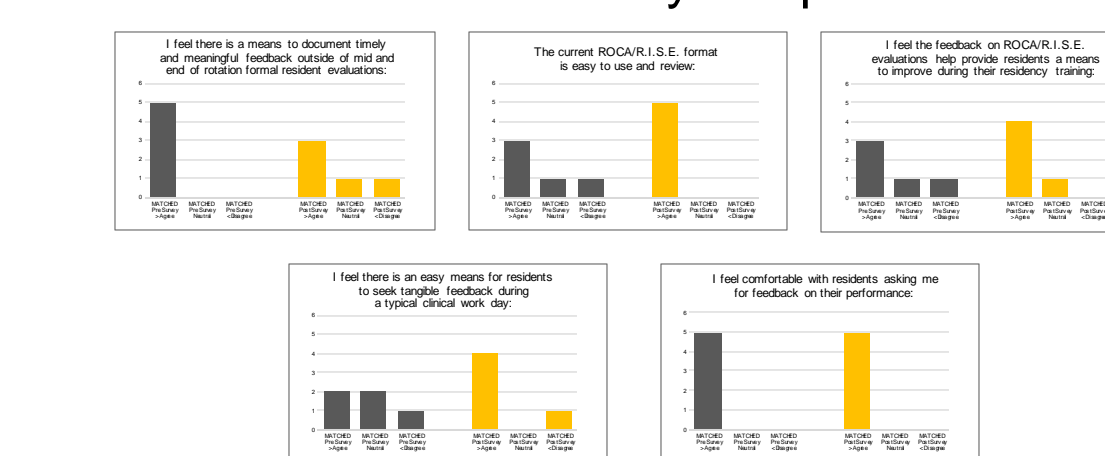
Matched Residency Responses



All Faculty Responses



Matched Faculty Responses



Special Thanks To:

- Scott Laker, MD – Program Director
- James Sliwa, DO – External PAL Mentor
- Susan Apkon, MD – Department PAL Mentor
- Mallory Priddy – Residency Program Manager
- Vera Staley, MD & Christina Sarmiento, MD – Chief Residents



Improving Use of Formative Assessment for Physical Medicine and Rehabilitation Residents

Holly Pajor DO, Ashlee Bolger MD, MEd, Mary Duke C-TAGME, Eric Warm MD

Background

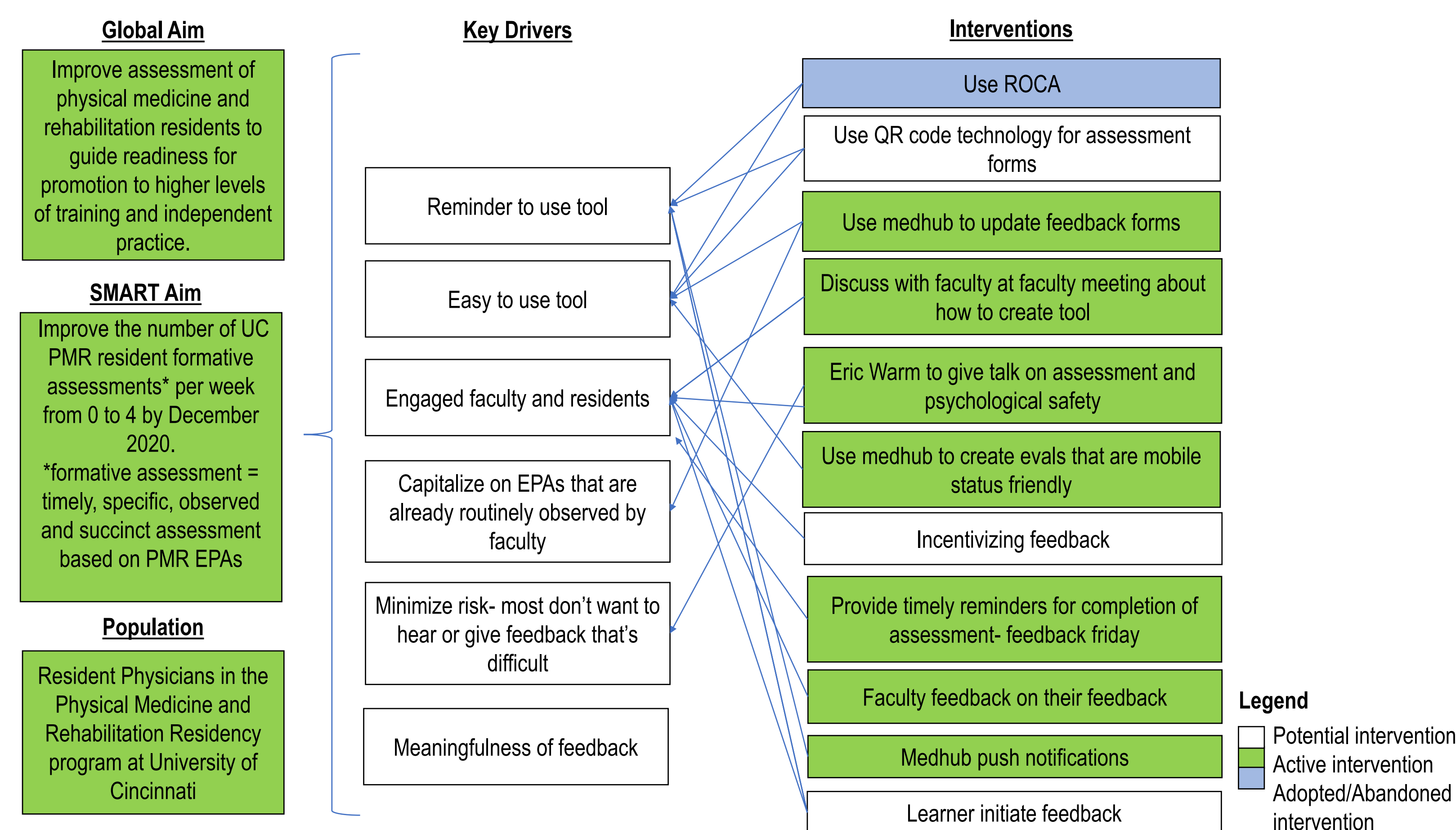
Effective assessment is necessary, timely, specific, formative, based on direct observation and limited to 1-2 items ¹. Without this formative assessment, good behavior is not reinforced, mistakes go uncorrected and the learner will make assumptions. We noted that faculty in our division had difficulties with providing specific, timely formative assessment. On average, our division evaluated residents 1.5 times per month, or approximately 17 times in a year. Our resident evaluations were summative and provided at the end of the rotation.

Entrustable professional activities (EPAs) have been developed to provide a link between competency based medical education and clinical practice ². EPAs are units of professional practice that a trainee completes with increasing competence over the course of their training ³. Recently, 19 physical medicine and rehabilitation-specific EPAs were published ⁴.

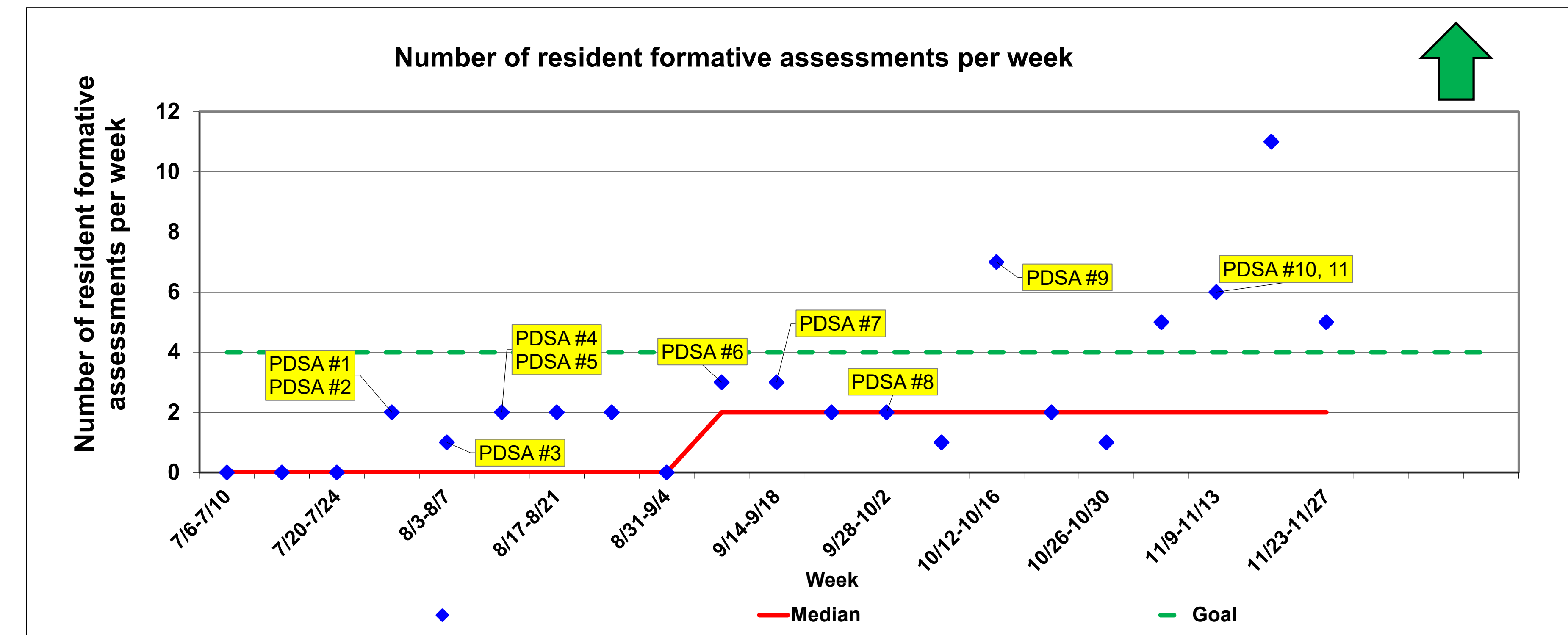
Given the challenges of obtaining consistent formative assessment in our program and the availability of PMR specific EPAs, we sought to improve the process of resident feedback by increasing the number of formative assessments per week with the global aim of improving assessment of physical medicine and rehabilitation residents to guide readiness for promotion to higher levels of training and independent practice.

SMART Aim: Improve the number of UC PMR resident formative assessments per week from 0 to 4 by December 2020.

Key Driver Diagram

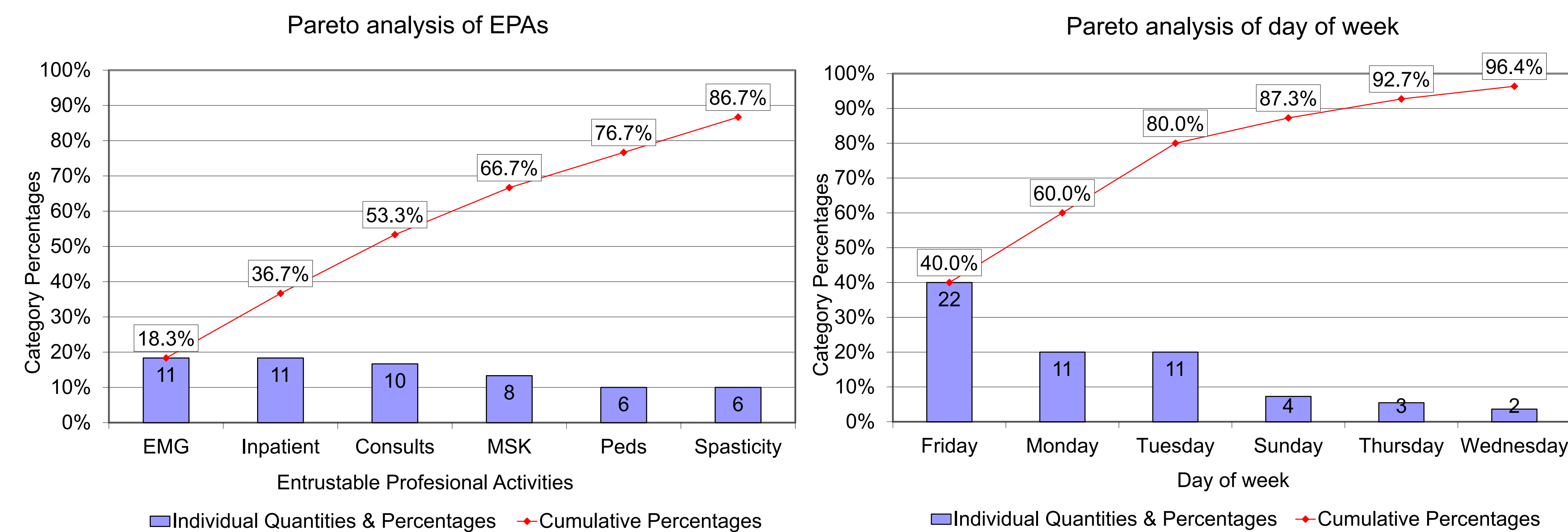


Results



PDSA 1-4	Implement feedback form for specific residents and faculty
PDSA 5-6	Discussion/education with faculty at faculty meetings
PDSA 7	Reminder emails from Program Coordinator; trialed multiple days
PDSA 8	Grand Rounds on assessment from Eric Warm (PD Internal Medicine; Expert on GME assessment)
PDSA 9	Faculty meeting progress update and feedback session
PDSA 10-11	Trialed Medhub reminder to fill out feedback forms

Pareto Analysis



Discussion

Using the IHI Model for Improvement, we designed and implemented several interventions to increase number of assessments completed. We achieved a shift in our median number of formative assessments per week to 2/week but have not yet achieved our SMART Aim goal. These assessments were well-distributed across included EPAs. Our shift was driven by (1) Developing an easy-to-use tool, (2) engaging faculty in the process and, (3) sending frequent reminders.

- (1) We created a novel feedback form to generate timely and specific feedback that was limited to 1-2 items and based on direct observation. We wanted to capture meaningful feedback in every low stakes assessment and encourage a growth mindset.
- (2) We met frequently with faculty and solicited their feedback on the tool and the process.
- (3) We trialed multiple reminder strategies for faculty reminder and found disparities in day of the week assessments were completed which may be a target for future interventions.

Number of assessments is a process measure, not an outcome measure though we expect that increased number of observations will help with more complete evaluation of our residents.

Next interventions include:

- Continuing to optimize reminder schedule
- Soliciting feedback after upcoming milestone meeting with these additional assessments
- Engage residents: both in soliciting feedback and assessing value of feedback through this process.

Key Terms

EPA – Entrustable Professional activities
Formative – Ongoing feedback throughout a rotation
Summative – Overall performance at end of rotation/year
Assessment – Formative, ongoing, process oriented, improve learning
Evaluation – Summative, Product oriented, gauge quality
SMART Aim – Specific, Measurable, Achievable, Relevant, Time bound
PDSA – Small test of change, problem solving model for improving a process

References

1. Hewson MG, Little ML. Giving feedback in medical education: verification o recommended techniques. *Journal of General Internal Medicine* 1998;13:111-116
2. Ten Cate O: Entrustability of professional activities and competency-based training. *Med Educ* 2005;39:1176-7
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4. Mallow M, Baer H, Moroz A, Nguyen VQC. Entrustable Professional Activities For Residency Training in Physical Medicine and Rehabilitation. *Am J Phys Med Rehabil.* 2017;96(10):762-764. doi:10.1097/PHM.0000000000000741

Standardizing Outpatient MSK Curriculum Access and Delivery Utilizing Google Classroom

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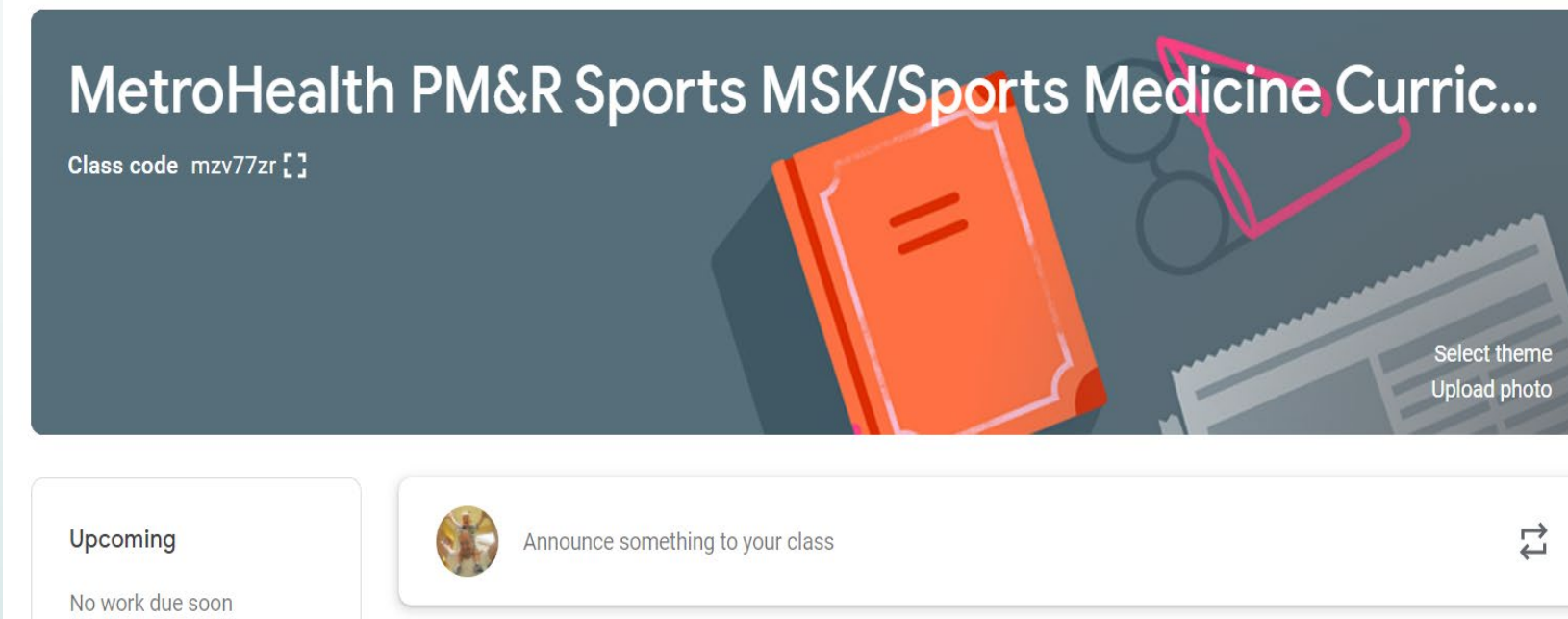
Internal Mentor: Richard Wilson, MD

External Mentor: David J. Kennedy, MD



Introduction

- The ACGME requires residency programs to provide goals and objectives for each educational experience and distribute them to faculty and residents in written or electronic form.
- MSK Faculty members and residents have difficulty accessing learning objectives and monitoring progression towards completion.
- The current method uses a shared intranet storage drive for faculty and residents to access objectives.
- A platform is needed that allows efficient, uniform access to goals and objectives across multiple locations.



Methods

- A Google Classroom was created containing the goals, objectives, and educational materials for the MSK rotation.
- Pre and post-surveys were created
- The pre-survey was administered to current residents who completed the MSK rotation prior to the start of the project.
- Classroom was trialed over a 2 month period and the post-survey was administered to the participating residents.
- Questions for the surveys included:
 1. Have the goals and objectives been reviewed?
 2. Rate the ease of access to the learning objectives, both in clinic or off site/at home.
 3. Rate the effectiveness of Classroom as a tool for the distribution and organization of learning materials. (5 point Likert scale used for numbers 2 and 3 above)
- The project was complicated by IS security protocols instituted mid project, which limited on site/in clinic Classroom access requiring a workaround using iPads for the residents. Faculty on site access was affected most severely.

Results

Pre -Survey (10 respondents)

80% - had **not** accessed the learning objectives using the G drive.

The respondents (2) that had accessed the objectives, rated the in-clinic and at home accessibility as **Neutral** (5 point Likert scale from Very Easy to very Difficult)

Post-Survey (4 respondents)

100% - had accessed the learning objectives using Google Classroom

100% - rated the ease of in clinic and home access as Very Easy

100% - rated the Google Classroom as Very Effective for distribution and organization of materials.

Comments:

“I really enjoyed being able to access the guidelines from anywhere. Overall it streamlined my learning and offered fast reference material”

Conclusion

- Google Classroom is an effective education tool for distribution of learning material.
- This project was hampered by limited security access to Google Classroom due to institutional security risk concerns.
- This will limit long term effectiveness of using Google Classroom and necessitate looking for other web based or mobile app solutions.
- Future projects may focus on other platforms that would not be considered a security risk.

REFERENCES:

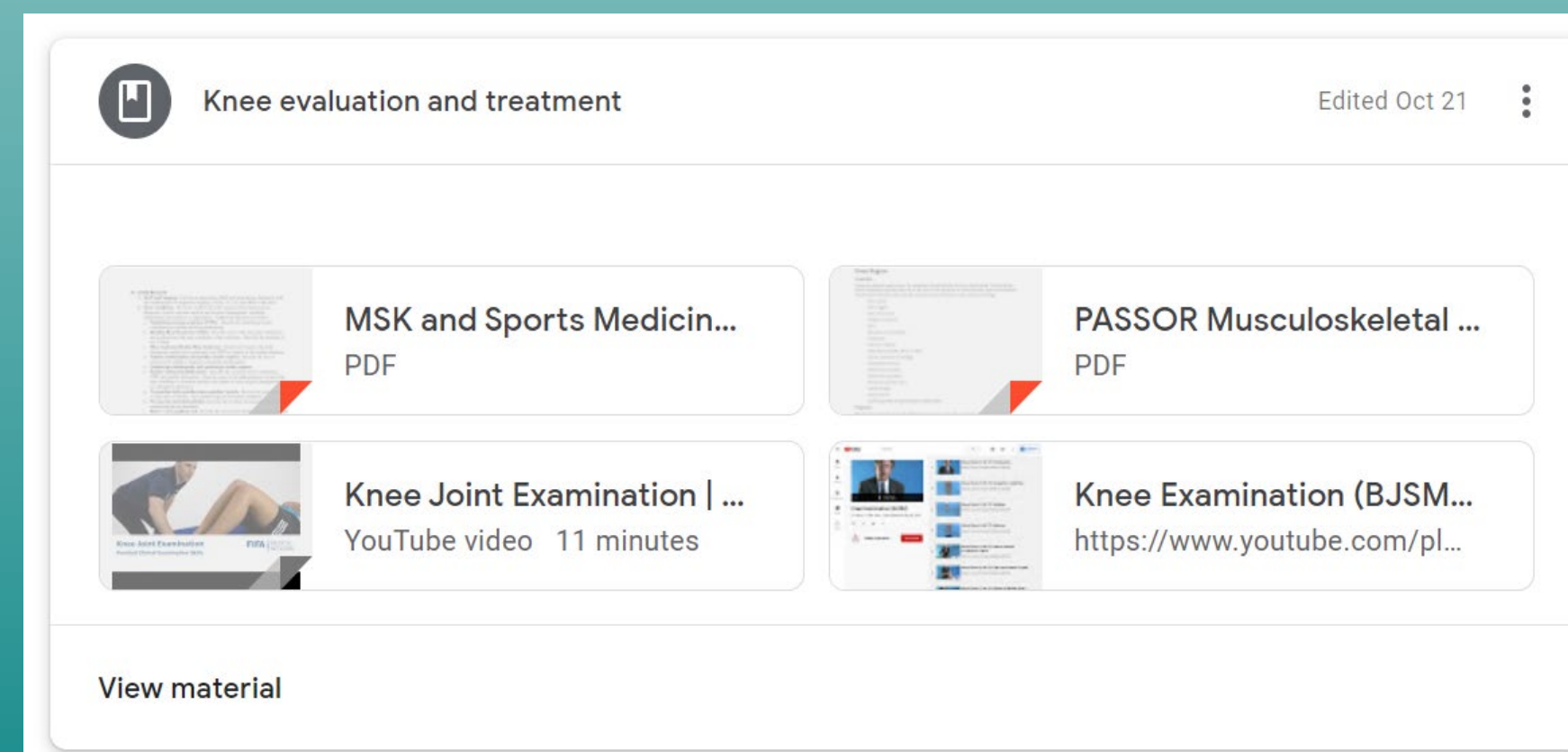
1. ACGME Common Program Requirements. (2017). Accreditation Council for Graduate Medical Education (ACGME).



Google Classroom

Objectives

- Google Classroom is a web and app based educational platform
- Classroom is a tool to facilitate creating assignments, sharing of materials, and fostering communication between students and educators.
- The goal of this project is to evaluate if Google Classroom can be used as a tool to improve access to residency learning objectives and educational materials compared to the current method (shared intranet/G drive).



Sample of learning materials on Google Classroom

Improvement in Understanding Spinal Deformity and Associated Disability in Rehabilitation Based Training Programs

Adrian Popescu , MD, Vincent Arlet, MD, David Lenrow, MD, Mitra McLarney, MD
Advisors: Raj Vishwa, MD



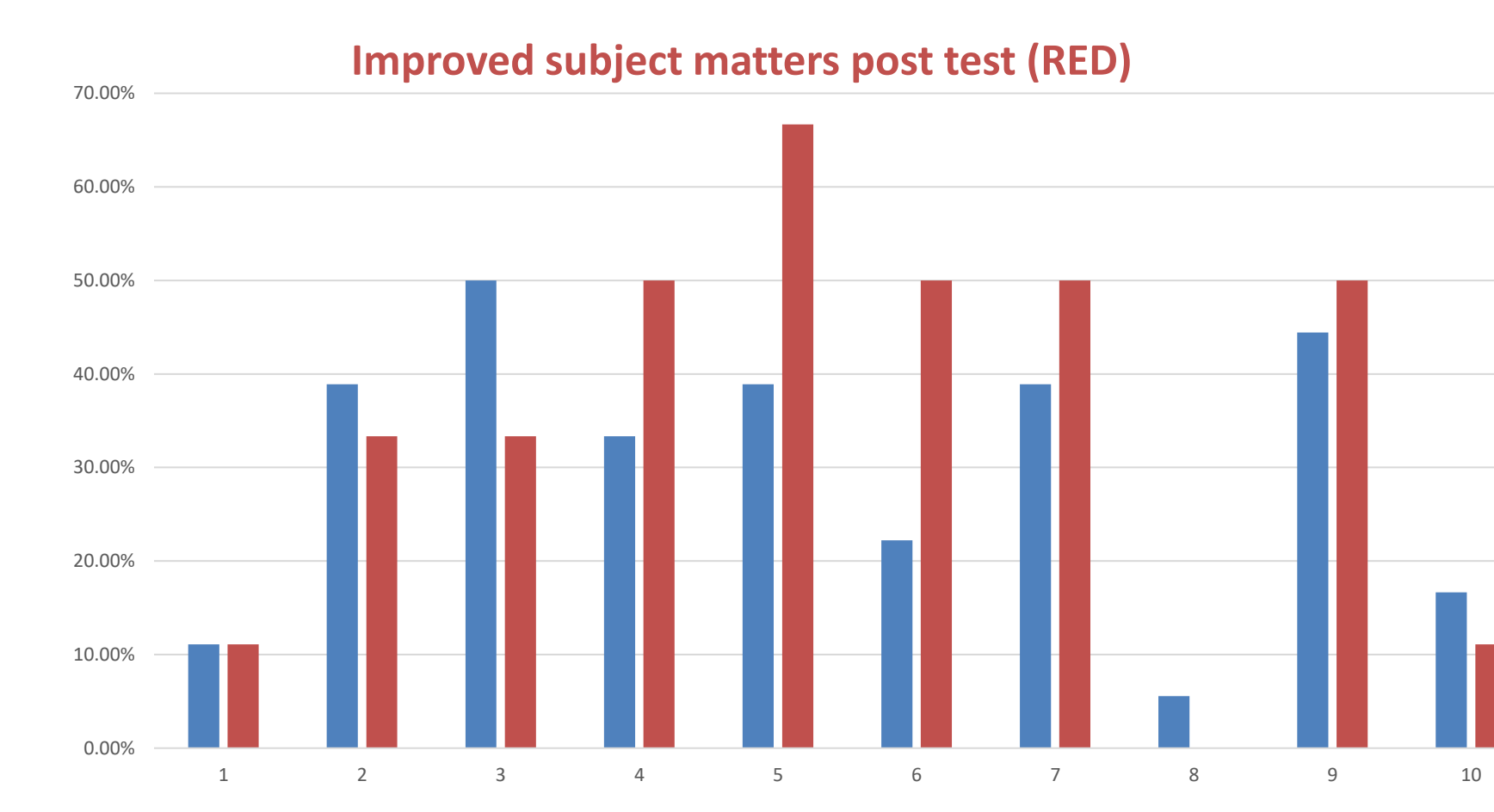
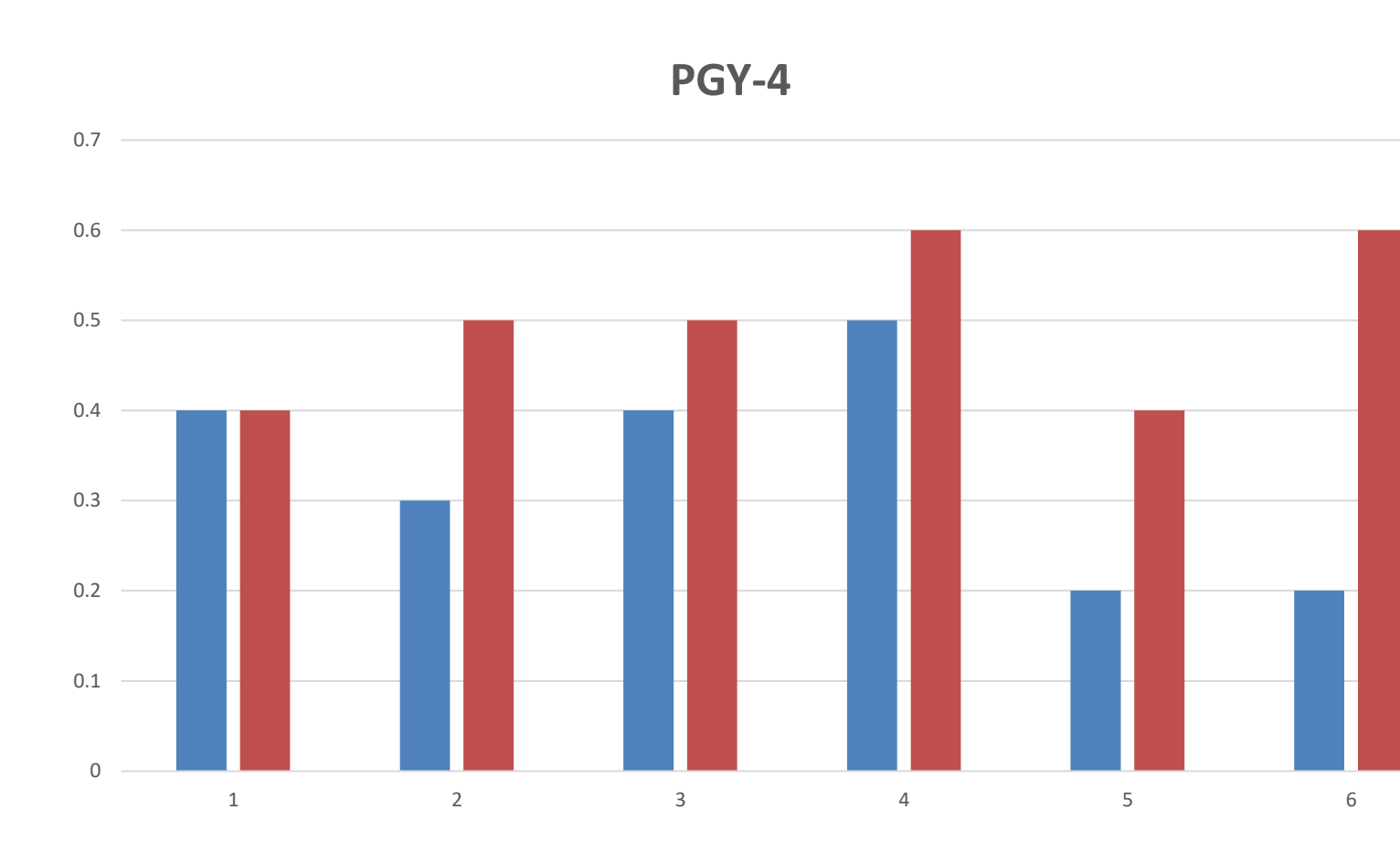
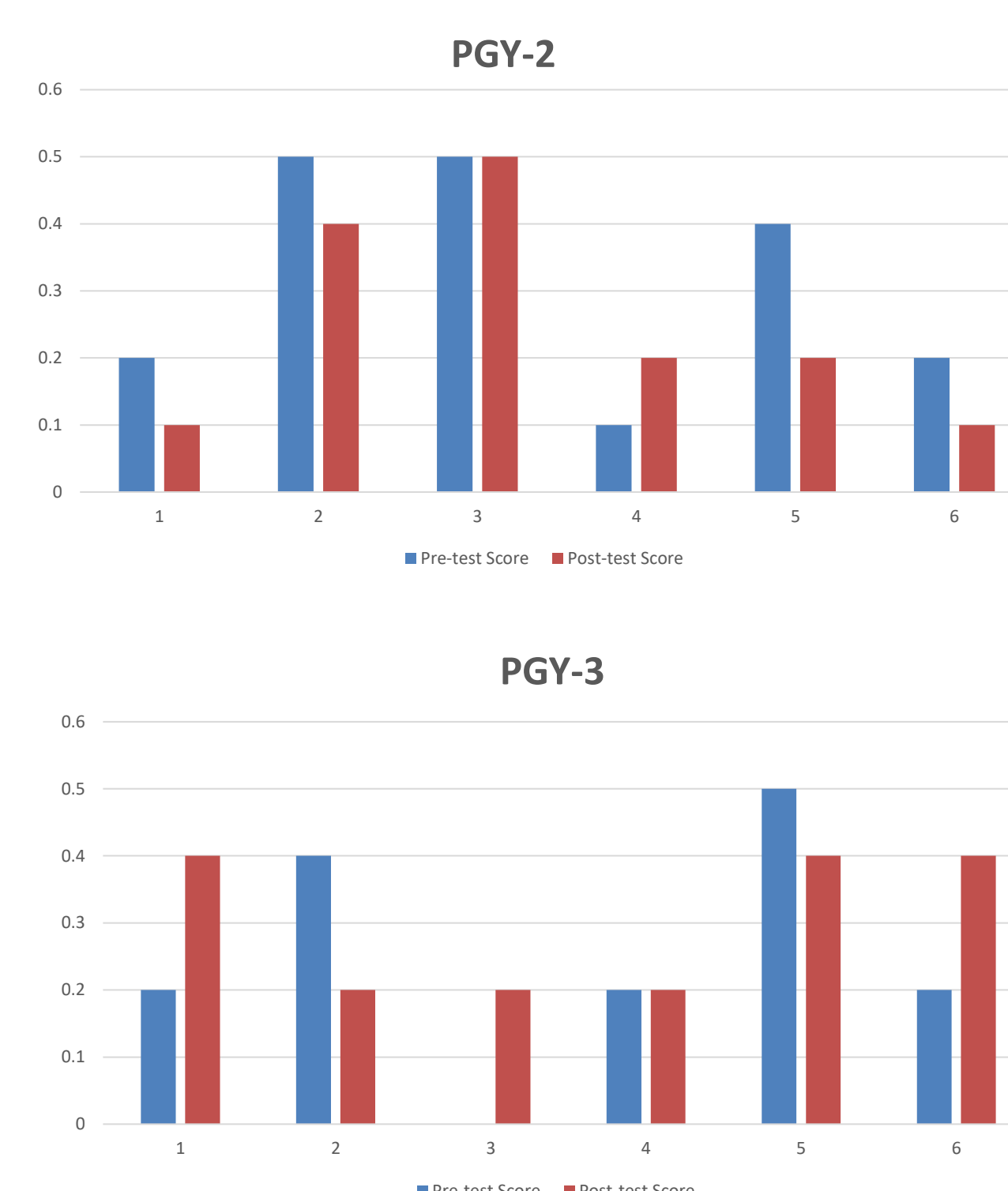
Abstract

- Spinal deformity encompasses a myriad of conditions that may result in significant physical disability
- Understanding, diagnosing, monitoring, and treatment of these conditions do not constitute a current focus of rehabilitation-based residency or fellowship spine programs
- Background: There is one spine deformity lecture every other year for our residency program, usually given by a spine surgeon. There is no specific curriculum in spine fellowship programs and rehabilitation residency programs to teach and assess for knowledge of spinal deformity disorders and disability associated with it

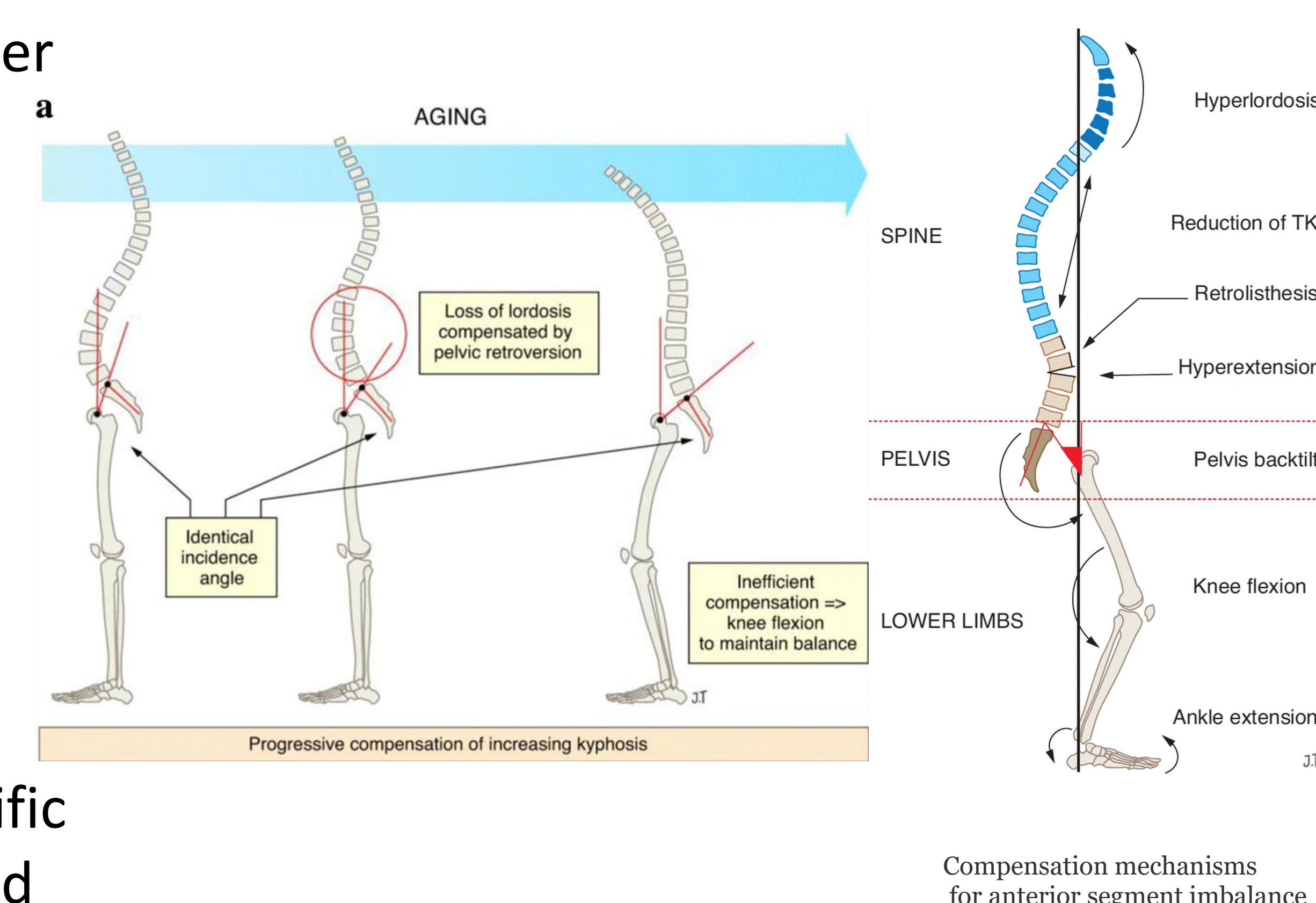
Design

- Assessing the depth of knowledge for spinal deformity of Physiatry residents in a large quaternary academic medical center at baseline and after teaching interventions, at 6 weeks after the initial evaluation/test. No trainee had access to results after the first test. They had no access to the test questions in between the evaluations
- The assessment was performed in an anonymous way allowing each resident to assign a four-letter number to herself/himself and the PGY year. There were total of 18 residents who received the initial evaluation and 17 residents who received the evaluation after the educational materials were given.
- The most used measures for spinal deformity and sagittal imbalance of the spine were tested during didactic sessions. The subject matters were selected in collaboration with the Chief of Spinal Deformity Surgeon of the institution (internal mentor)

Results



- All the PGY-4 residents improved their knowledge after the didactic material was presented (p=0.0305)
- With one exception, in each of the PGY-2 and PGY-3 years, the residents did not improve their knowledge on spinal deformity
- The concepts in evaluation of spine included: global balance, pelvic tilt, pelvic incidence, line of gravity, sacral slope, relationship between spinal angles, degenerative scoliosis progression, concepts of thoracic kyphosis, lumbar lordosis measurements, compensatory mechanisms for sagittal imbalance, specific measurements and equations for sagittal imbalance, and gold standard of imaging for sagittal imbalance



Implications & Limitations

Implications:

- There was a clear improvement in knowledge on spinal deformity assessment for PGY-4 year
- There was improvement in understanding the concepts of: progression of degenerative scoliosis, specific measurements and equations for sagittal imbalance, and gold standard of imaging for sagittal imbalance
- There is a clear need for a spinal deformity curriculum in PMR residency and fellowship programs with focus on evaluation, diagnosis, management and counseling on natural history, progression and surgical options as well as limitations.

Limitations:

- The survey given had no implications for the trainee in order to stimulate reading/interest
- There was one trainee that was not present for the initial test session
- There is limited exposure to spinal deformity and evaluation in PMR curriculum for residents
- There are variables that can influence the data like: trainee behavior on subspecialty subject matters, limited faculty interest in spinal deformity, faculty and trainee access to multidisciplinary spinal rounds/didactics

Increasing Sports Medicine Faculty Engagement to Improve Fellowship Program Didactics



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Internal Mentor: Alex Moroz, MD, MHPE (NYU Langone / Rusk Rehabilitation)
External Mentor: Flora M. Hammond, MD (Indiana University School of Medicine)

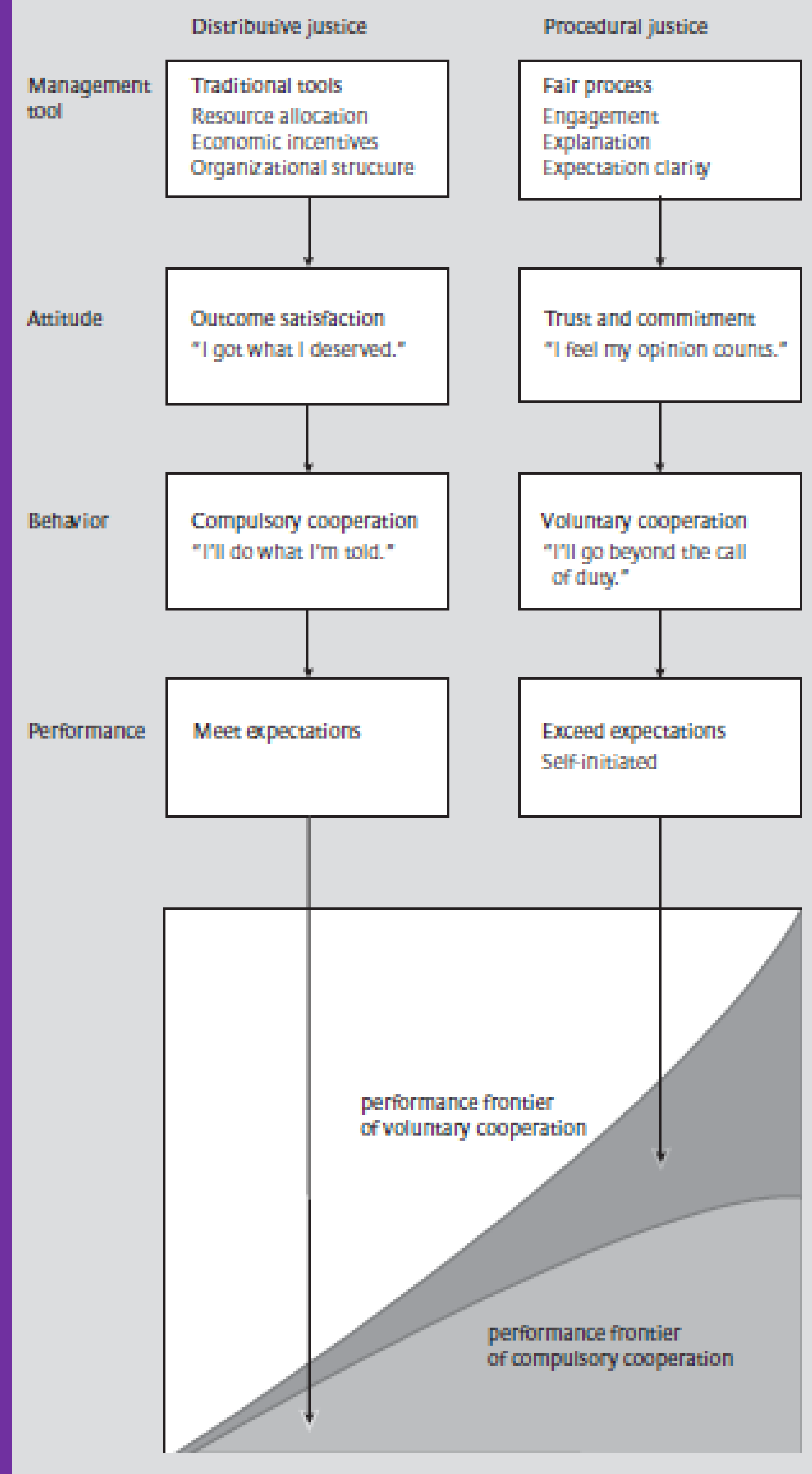
INTRODUCTION (Plan)

- PM&R Sports Medicine Fellowship Program Evaluation Committee (PEC) meeting revealed need to incorporate more PM&R sports medicine faculty attendance into the didactic sessions to elevate the level of discussion.
- Historically, fellowship didactic curriculum had been conducted by the Primary Care Sports Medicine (PCSM) fellowship program faculty under the department of Orthopedics, without PM&R faculty.
- Beginning this past year, the PM&R Sports Medicine fellowship program director and one PM&R sports medicine fellowship faculty member began attending these sessions intermittently.
- Despite improved collaboration between the PCSM fellowship faculty and PM&R sports medicine fellowship faculty, the quality of discussion has been variable and the attendance of PM&R faculty is less than desirable.
- GOAL
 - Engage PM&R sports medicine faculty to increase attendance and participation in didactic sessions to yield an improved educational experience for the sports medicine fellows.

METHODS (Do)

- PM&R Sports Medicine fellow completed survey after 2 months of the current didactic curriculum, to evaluate PM&R faculty engagement in the educational program.
- PM&R Sports Medicine faculty completed similar survey to self-assess their current involvement in the educational experience of the fellows.
- Plan to institute intervention below on September 1st to change the current didactic curriculum.
- INTERVENTION
 - PM&R Sports Medicine faculty officially invited to serve as "fellowship faculty".
 - PM&R Sports Medicine faculty informed of new expectations
 - Required regular attendance of fellowship lectures.
 - Requirement for faculty to present 1-2 lectures per year.
- 3 months after implementation of the intervention:
 - Fellow and faculty complete the same surveys to assess whether or not their perceptions of PM&R faculty participation and ultimately the quality of the educational experience have improved after implementation of the intervention.

Two Complementary Paths to Performance



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RESULTS (Study)

- Fellow survey results:
 - All evaluated faculty scored highly prior to intervention.
 - Fellow abstained from evaluating one faculty member due to minimal contact.
- Intervention not implemented as planned due to more pressing needs:
 - Abrupt departure of most active faculty member and expedited onboarding of new faculty member
 - Increased engagement of new faculty, however risk of overburdening new faculty:
 - New faculty were abruptly requested to serve roles of former faculty member: fellowship interviewer, CCC, PEC, workshop instructor, and bedside teaching
 - New faculty were in process of creating new Spine curriculum and Journal Club
 - Unexpected administrative demands of fellowship program, interview season, college athletic program, and clinical practices related to COVID-19
 - Additionally, administrative delays related to delivery and capture of survey results through New Innovations created another barrier to implementation
 - Due to the above, implementation was modified to only formally invite attendings to become fellowship faculty. Faculty encouraged, but not required, to attend or present lectures
- Post-interview season:
 - Poor PM&R Sports Medicine faculty attendance of lectures unchanged
 - Fellow evaluations and faculty self-assessment scores grossly unchanged

DISCUSSION (Act)

- Fellow verbally reported desire for increased faculty attendance and post-lecture discussion.
- Fellow evaluations of faculty did not appear to correlate with actual faculty attendance of lectures.
- Fellow abstention from evaluating one faculty member identified need to increase fellow's contact with faculty member.
- Increased faculty engagement, but continued poor lecture attendance.
- Resistance met when faculty informed of new lecture attendance and presentation expectations, identified need to employ Fair Process.

Kim WC, Mauborgne R. (2003). Fair process: Managing in the knowledge economy. *Harvard Business Review*, January, 127–136.



IMPLEMENTATION AND ASSESSMENT OF A STRUCTURED READING EDUCATION PROGRAM FOR TRAINEES



SCHOOL OF MEDICINE
VANDERBILT UNIVERSITY

BYRON J SCHNEIDER MD 1. VANDERBILT UNIVERSITY MEDICAL CENTER, DEPT OF PM&R, CENTER FOR MUSCULOSKELETAL RESEARCH

PLAN

Residents frequently enquire about a “reading list” prior to or during a rotation. Self-directed learning is a fundamental component of physician education. With an increased focus on flipped classroom based learning there is an increased need for learners to obtain factual information prior to interactive time with faculty. A similar paradigm, but on a larger scale, exists with fellows prior to starting their fellowship.

As a developing and growing residency program, there is increased need for structured trainee learning that is not continuously dependent on faculty time. This has recently been highlighted by an internal departmental stated need to enhance resident educational programs. A structured reading program is one potential avenue to address this.

Specific to our interventional spine and musculoskeletal medicine rotation, we already have implemented a weekly one-hour long interactive teaching session between faculty members and rotating or otherwise interested trainees. This teaching session most often functions as a “flipped classroom”. However, without the pre-requisite knowledge to engage in discussion, this often results in faculty either conveying information that can be self-taught by trainees prior to lecture or leading a high-level discussion that is too advanced for many of the trainees present. This is also an area that a structured reading program can address.

Lastly our institution, similar to many other institutions, on boards new fellows every year. The early months of fellowship are often spent teaching fellows information that can otherwise be obtained via a structured reading program that could occur prior to or during the beginning of fellowship. A strong grasp of the landmark and fundamental literature in the field early on would allow for more mentorship and apprenticeship type learning for the majority of the fellowship year.

All of these issues have recently become more timely given the lack of in-person training and didactic sessions due to recent COVID-19 restrictions

DO

Identify approximately twenty high impact manuscripts in the topic of interventional spine and musculoskeletal medicine. Recent or landmark articles will be identified. A brief “learning objective” will be identified for trainees pertinent to each article to help with the reading being more structured. A pre and post course quiz will be developed and administered to trainees to assess if participating in the structured reading program increased their fund of knowledge. Because of the volume of articles and goal of increasing basic knowledge, the estimated time period will be 8-12 weeks. Accordingly, the knowledge assessed on the test will be concept based not detail oriented.

STUDY

Quantitatively assess pre and post assessment scores

Potential to qualitatively assess faculty member engagement and satisfaction with the weekly 1 hour long flipped classroom teaching sessions to see if increased fund of knowledge amongst the trainees correlates with increased faculty engagement and satisfaction.

ACT

Integrate structured reading assignments within the residency curriculum for other topics within PM&R

Apply similar project to other levels of trainees (ie. fellows or medical students)

Consider creating multiple “assignments” for the same topic (Interventional Spine and Musculoskeletal Medicine) for the same population (ie. have 3 assignments that are used on a rolling basis so each residency class does all three over their PHYII-PGY IV years)

ASSIGNMENT

The structured reading education program was designed to educate learners on both factual and conceptual principles that are fundamental to providing evidence-based spine care. Reading materials were selected to represent sentinel articles, recent reviews, and timely topics.

Neither the pre or post assessment scores were included as part of the residency evaluation process. It was meant to be a form of self-assessment. The assessment was designed to assess learners understanding of the topics and readings. The reading program was set up into mini-sections. Each section has stated learning objectives that were to be viewed before reading the articles. This was designed to give learners a “goal” with respect to what they should be trying to get out of reading the assigned articles.

23 articles were selected and divided into 9 sections:

Diagnosis of low back pain:

Safety interventional spine procedures

Epidural steroid injections:

Miscellaneous procedures:

Lumbar radiofrequency ablation:

PRP and Stem Cell injections in the spine:

Diagnostic discography:

Ultrasound for sacroiliac joint injections:

Diagnosis of Sacroiliac Joint Pain:

Below is an example of “guided” reading instructions (section on diagnosis of low back pain):

“Non-specific” low back pain is better described as “non-diagnosed” low back pain. The first overview article by DePalma should help you describe different causes of low back pain and how age affects the incidence of these at various points throughout life. The study by Levi is a good example of a study that validates a “test”, in this case taking a historical feature and comparing with another diagnostic test to validate it. You should be able to describe the clinical features of suspected discogenic pain after reading this article, and also describe why this paper is a valid measure of patient “history”.

RESULTS

12 Trainees completed the reading program

Average pre-test score was 12.7/25 (51%)

Range of 6/25 - 20/25

7 trainees have thus far completed the assignment

Average pre-test score of these was also 12.7/25 (51%)

Average post-test score was 21/25 (84%)

Range of 17/25– 23/25

Average Improvement was 8.4/25 (33%)

This represents a relative increase of 66%

Smallest improvement was from 17/25 to 20/25 (PGY 4 resident)

Greatest improvement was 6/25 to 21/25

This learner was a PGY II who also had the smallest time interval between pre-test and post-test and completed the learning assignment during the course of his spine/pain rotation

DISCUSSION

Overall, the results clearly demonstrate that readers increased their fund of knowledge, with the average pre-test score of 51% which traditionally would be considered a very poor “test” score and an average post-test score of 84%.

The limited number of participants who have yet to complete the project limit generalizability of the findings. Of note however, there was a trend that more senior learners scored higher on the pre-test. This is positive in the sense that they are naturally obtaining some of this information during their clinically training. This may also suggest that this project is best suited for junior residents as a “preparation” leading up to their spine/pain rotation. The post scores were uniformly high (a PGY-IV had the lowest score (17/25) with all other score >20/25. This suggests that there is no “ceiling” in terms of understanding of the content for more junior level trainees.

Out of 18 potential trainees, only 12 have thus far completed the pre-test despite it being available for 6 months. This is somewhat disappointing on a number of fronts. Firstly, there was a stated demand from the residents to have more type of this content available to them and yet utilization was only 67%. This was initiated during the early months of COVID, during which many trainees had minimal clinical responsibilities initially. This learning project was also deemed “mandatory” by the residency program director, though a firm “due date” was not given. Potential means of increasing participation could be more authoritarian/punitive. Neutrally, it could be stated the results of the test would be part of residency evaluations during their respective spine/pain rotation. Conversely, the spine/pain faculty could take additional initiative in organizing time to discuss each sub-section of the material during the spine/pain rotation as a means of informally encouraging completion of the reading as well as re-enforcing the learned material.

In conclusion, this project does show promise that providing learners with a structured form of focused reading can be a means of facilitating self-directed learning. This is an extension of simply providing a “reading list” and in theory may provide learners with a more intentional method of obtaining new knowledge.

FUTURE DIRECTIONS

This type of learning material can be extended to all rotations within our residency program. For this to be worthwhile, attention is likely needed to the issues discussed above to increase learner utilization and participation. There are also plans to disseminate this or a similar project nationally to all fellows who are participating in the new NASS Interventional Spine and Musculoskeletal Medicine Fellowship Program. For the latter, an extension of this would be to expand this material to include additional articles for the respective topics and to be more comprehensive for additional topics pertinent to interventional spine and musculoskeletal medicine. In that vein, it could serve as a foundation for a year-long curriculum.

ACKNOWLEDGEMENTS

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Patient Education to Enhance Virtual Visit Outpatient Musculoskeletal Physical Examination Efficiency and Practitioner Satisfaction

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¹Department of Physical Medicine & Rehabilitation, Mayo Clinic, Jacksonville, FL, ²Department of Physical Medicine & Rehabilitation, Baylor College of Medicine, Houston, TX

*PAL Participant, †Internal Mentor, ‡Collaborating Faculty, §External Mentor

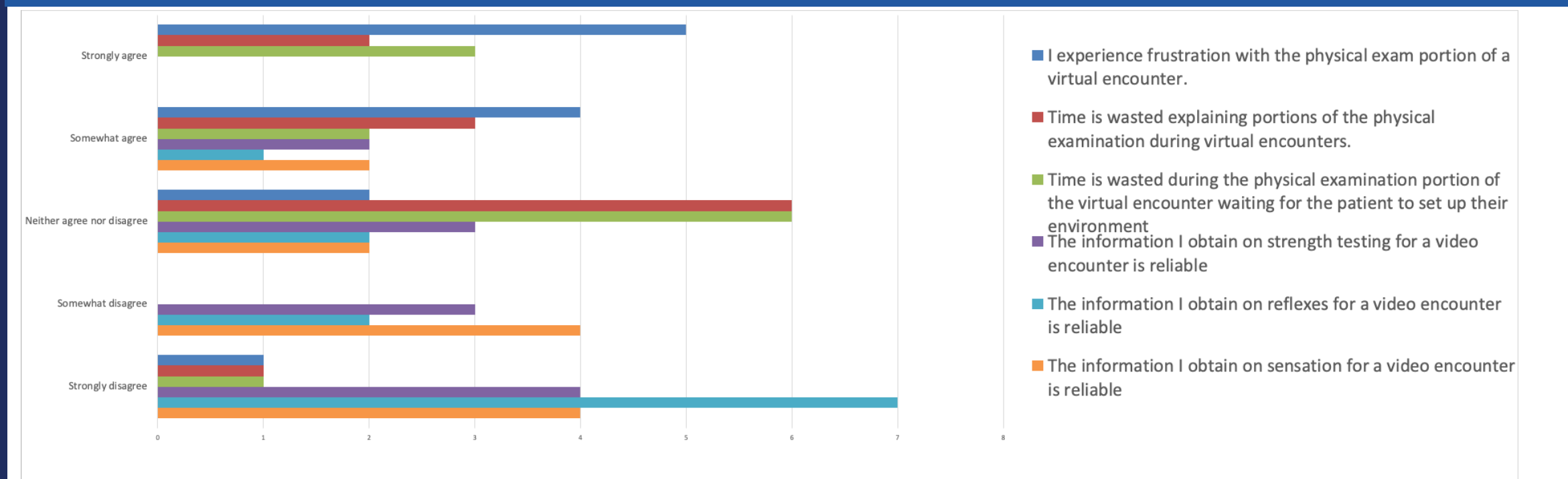
Plan

- COVID-19 drastically altered the delivery of outpatient musculoskeletal physiatry care.
- Virtual visits have emerged as a valuable tool to maintain physical distance and prevent further spread of the virus while continuing to deliver non-essential medical care.
- Virtual patient examination challenges due to physical distance, environmental restrictions and technological difficulties may cause inefficiencies.
- Physical distance challenges include inability to palpate, assess passive range of motion, test strength, sensation and reflexes or perform provocative maneuvers.
- Environmental challenges include inadequate space to achieve full-field of view of the problem area or assess movement.
- Technologic challenges include patient unfamiliarity with virtual software, low bandwidth connections and camera positioning and adjustment difficulties.
- The goal of this project is to develop a pre-visit physical exam patient-education video to improve virtual visit efficiency and provider satisfaction.

Do

- Baseline assessment of providers (N = 12)
- 84% provided no virtual pre-visit education at baseline
- Provider approach to virtual examination
 - 8% try to mimic in-person exam
 - 25% modify exam to capture everything they feel they can reliably assess virtually
 - 42% perform basic screening exam
 - 25% do no examination except observation during history
- Patient education video distributed to all new PM&R and Spine virtual visits as of 10/16/20 to improve provider satisfaction and visit efficiency

Baseline Data



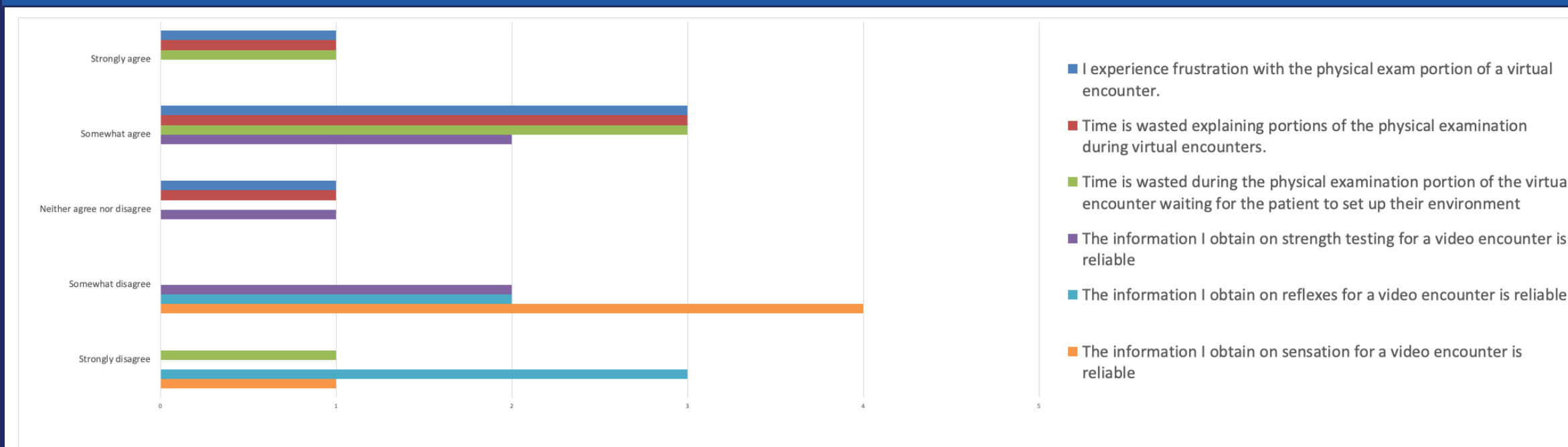
Video Stills



Representative still images from the video shared with patients demonstrating important landmarks and approaches to approximating an in-person examination including key components such as inspection, palpation, range of motion, strength, reflexes and special tests.

Full length video: <https://youtu.be/U3AswzGgDS8>

Study (Follow-up Data)



Act

- Follow-up assessment of providers (N = 5)
- 4/5 in Dept of Pain (patients did not receive video)
- 1/5 in Dept of PMR (patients did receive video)
- 1/1 PMR providers and 0/4 pain providers perceived improvement in patient preparedness for virtual encounter (expected given distribution of video)
- Limitations
 - Low follow-up assessment return rate
 - Short duration of intervention, perhaps not long enough to see positive result
 - Volume of virtual visits has drastically decreased possibly diminishing potential impact of intervention
 - Patient perceptions not formally assessed
- Future
 - Continue to collect follow-up responses to gain better understanding of success of the intervention
 - Continue sending video to new patients
 - Continue to assess patient and provider satisfaction and make improvements to education
 - Plan to explore potential value in implementing a similar video for international patients who may benefit from virtual visits even outside of the COVID-19 pandemic

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1. American Academy of Physical Medicine & Rehabilitation to Members of the American Academy of Physical medicine & Rehabilitation. March 20, 2020. COVID-19 statement from the AAPM&R Board of Governors, Rosemont, IL.
2. Laskowski, Edward R., Shelby E. Johnson, Randy A. Shelerud, Jason A. Lee, Amy E. Rabatin, Sherilyn W. Driscoll, Brittany J. Moore, Michael C. Wainberg, and Carmen M. Terzic. "The telemedicine musculoskeletal examination." In *Mayo Clinic Proceedings*, vol. 95, no. 8, pp. 1715-1731. Elsevier, 2020.



Burke PM&R Residency Mentorship Improvement Project



Benjamin Seidel, DO
7 December 2020

Internal Mentor: Carolin Dohle, MD (Burke Rehabilitation Hospital, White Plains, NY)
External Mentor: Michael Mallow, MD (Sidney Kimmel Medical Center, Philadelphia, PA)

Context

When Burke's rehabilitation PM&R program began in 2016, they had assigned new residents with an advisor at random, and then re-assigned those residents based on how their interests changed thereafter during their residency, which caused inconsistencies and disruption of advisement. When the program director left abruptly in March of 2019, the mentorship program denigrated and was not reinstated with the start of the new resident cycle. There was no formal monitoring of the mentorship program when I became program director in September 2019.

Mentorship is an important aspect of PM&R training, and one that the ACGME affirms is a critical part of all specialty training. Residents need guidance to help them along their career path, and although many faculty provide intermittent mentorship- there needs to be a formalized process in place to make sure that no one slips through the cracks, and those with particular expertise in areas of interest for the resident are paired appropriately.

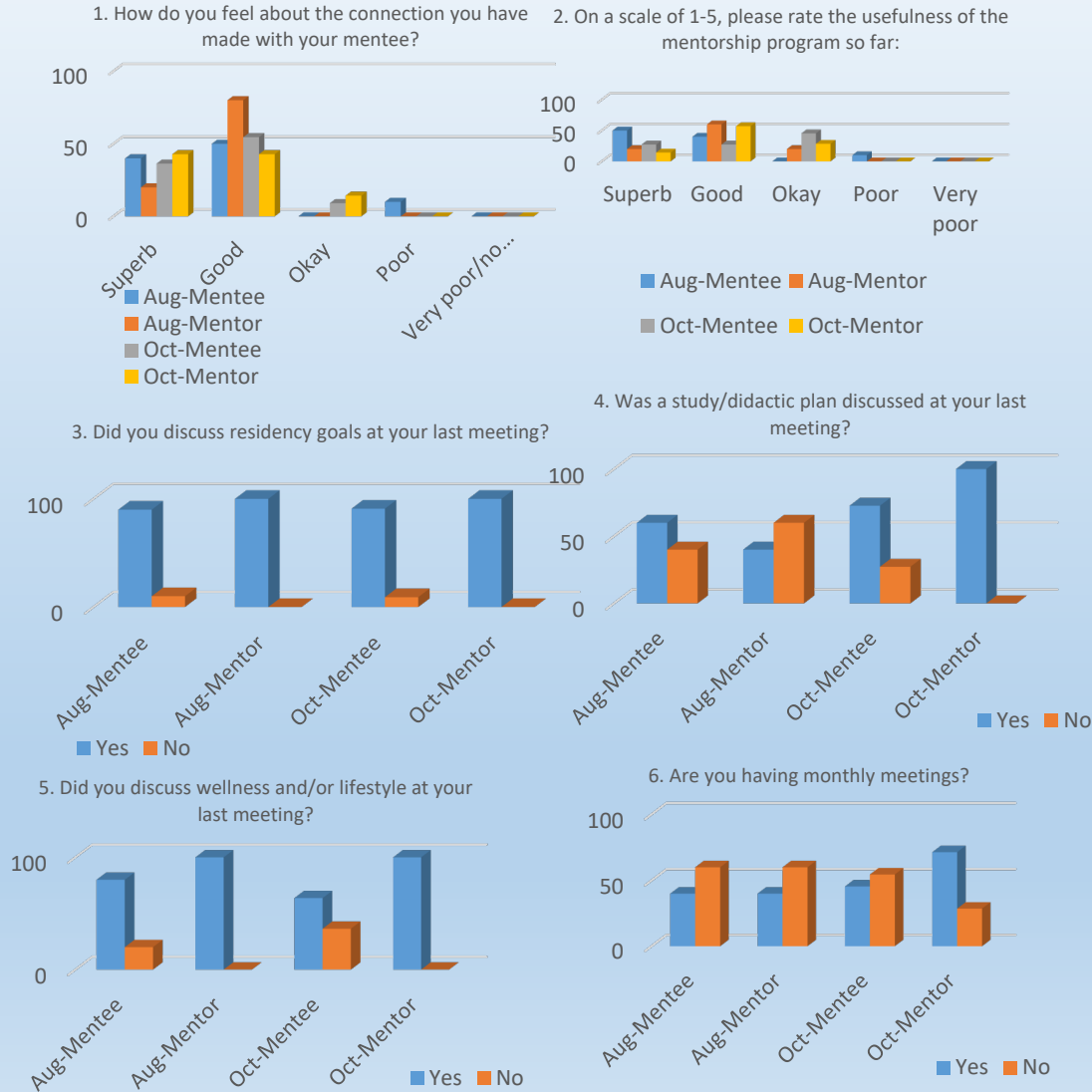
The goal was to reinstitute a mentorship program that was mutualistic and synergistic, and one that not only met the requirements of the ACGME, but also helped to guide residents to achieve success.

Study Design

An inquiry was sent to incoming residents asking them their levels of interest in various aspects of PM&R (General, SCI, Brain Injury, Sports, Pain, etc.). We also attempted to glean other aspects of resident interest such as anticipated geographic locale (mid-West, East Coast, etc.), practice type (inpatient, outpatient, academic, private practice, etc.), and interests outside of residency (such as cooking, running, travel, etc.). Once this was ascertained, they were paired with a mentor who appeared compatible with as many elements of their interest questionnaire as possible.

The program coordinator disseminated pairings to the residents. We used a randomized electronic platform (through SurveyMonkey) for measurement of data, and to protect resident confidentiality.

Outcomes



Study Design (cont)

We created individualized surveys for both the resident and mentor. Their feedback was traced through a Likert scale- to have quantifiable data to monitor. 2 surveys were performed to monitor progress. The content of the surveys encompassed their compatibility, goals, relationship, and usefulness of the program.

Results

All residents (including PGY-4 residents) completed the survey. The PGY-4 residents all had mentors, with whom they kept. All others (PGY-3 and incoming PGY-2 residents) were assigned to mentors as described in the study design.

The results of the 2 questionnaires sent both to mentor and mentee revealed that most parties felt that they made "superb" or "good" connections, and felt the mentorship program had either "superb" or "good" utility. Almost all parties felt that residency goals were addressed, as well as wellness and/or lifestyle at meetings. The outcomes were mixed in terms of reports regarding study/didactic plan discussions, with most mentors and mentees beginning to discuss this metric by the October questionnaire. Only about 50% of subjects were having monthly meetings, although most reported having "regular" meetings.

Conclusions

My ultimate goal was to establish a formalized mentorship program, as this is a necessary part of PM&R residency. Beyond the requirements of the program, however, I hoped to achieve improvements in both resident and faculty interaction. I believe that based on the survey data, that both the resident and faculty felt that the mentorship program was useful (see analysis of data), and the primary objectives were achieved.

The primary objective moving forward is to sustain the connections that these pairs have made, and facilitate resident matriculation into jobs, fellowships, and achieve success in their residency program. Some additional considerations that might facilitate the process might include sending the survey out earlier in the process (during their intern year), as well as rotating faculty to prevent faculty mentor fatigue. Finally, having regular (e.g. quarterly) check-ins with residents/faculty might be beneficial from the program director's standpoint to ensure adherence to regular meetings and optimizing the experience for all.



Improving Resident Education by Increasing Use of Virtual Didactics

Fernando Sepúlveda-Irizarry, MD; Internal Mentor: Carmen López-Acevedo, MD External Mentor: Mary McMahon, MD (University of Cincinnati College of Medicine) Department of Physical Medicine, Rehabilitation & Sports Medicine
University of Puerto Rico-School of Medicine

Department Need and Background

Department Need: Asses the acceptance of incorporating new teaching methods to improve the educational quality and experience.

Background: In order to provide our residents and faculty with the tools needed to thrive as teachers, students and healthcare providers, it's our duty to integrate new tools for every participant in order to extract their full potential. However, our state university faces a set of budgetary challenges that directly impacts the Department's ability to continue recruiting new faculty that can fill gaps in evolving areas of our specialty. This has led to the hiring of part-time faculty that has a somewhat limited exposure to our residents, both in clinics and during didactics. The topic was recently discussed during our internal annual program evaluation, were residents highlighted their desire for greater exposure to our faculty during their didactics. During the past few months, the use of virtual didactics has allowed both residents and faculty increased participation in the educational program, without having to be on-site. Implementing this teaching tool, also allows for greater participation by faculty from other specialties, thus enriching their educational experience.

Intervention

- Incorporate and formalize into the regular didactic schedule the use of virtual didactics. These didactics would feature residents, faculty from our program, other academic institutions, colleagues from other specialties and physiatrists from the community with expertise on different topics. This will require an optimal virtual meeting or didactic platform and determining the best time to schedule those educational experiences.

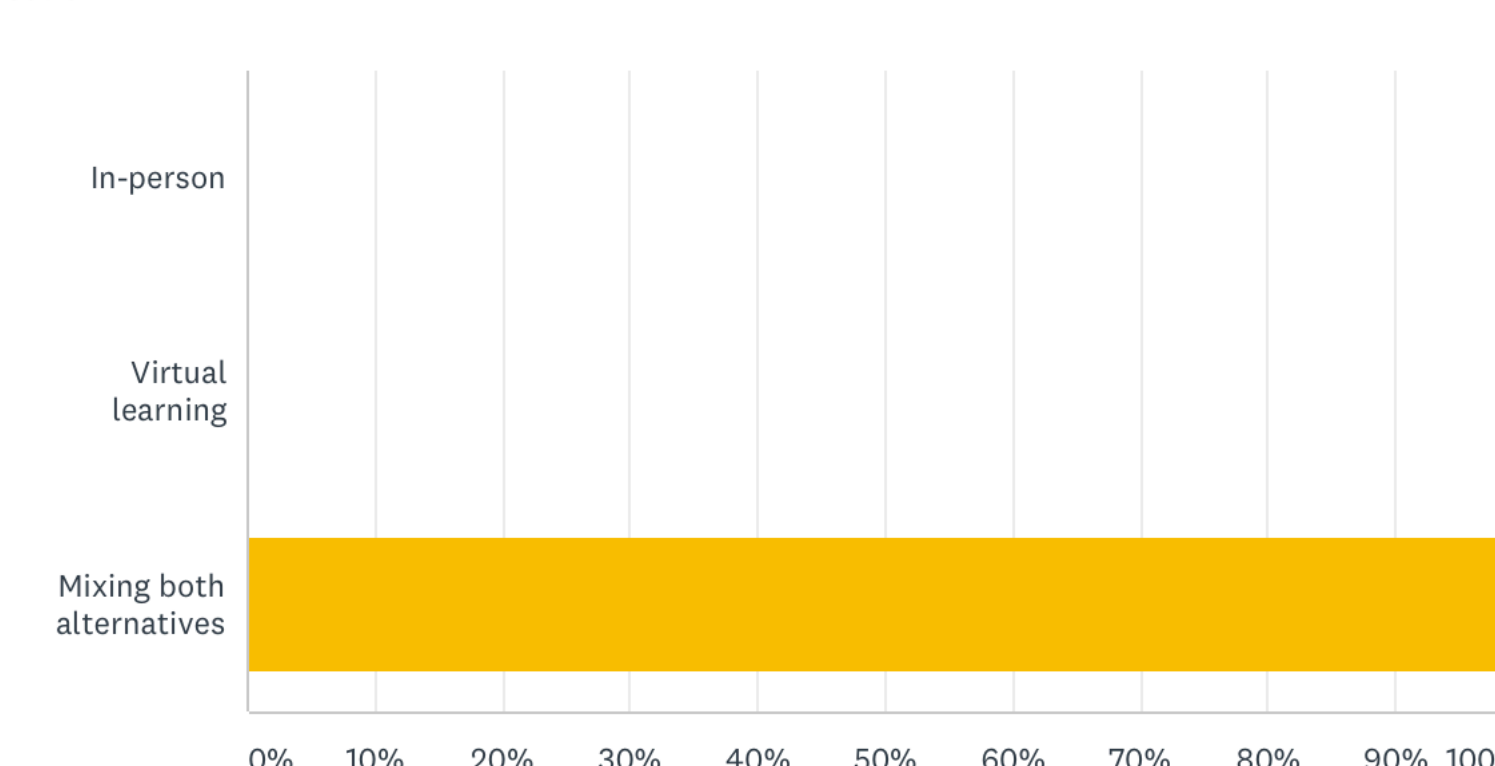
METHODS

- Asses via survey whether the residents and faculty believe the incorporation of virtual didactics has proved to be a positive influence in the quality and convenience of the educational program.

RESULTS

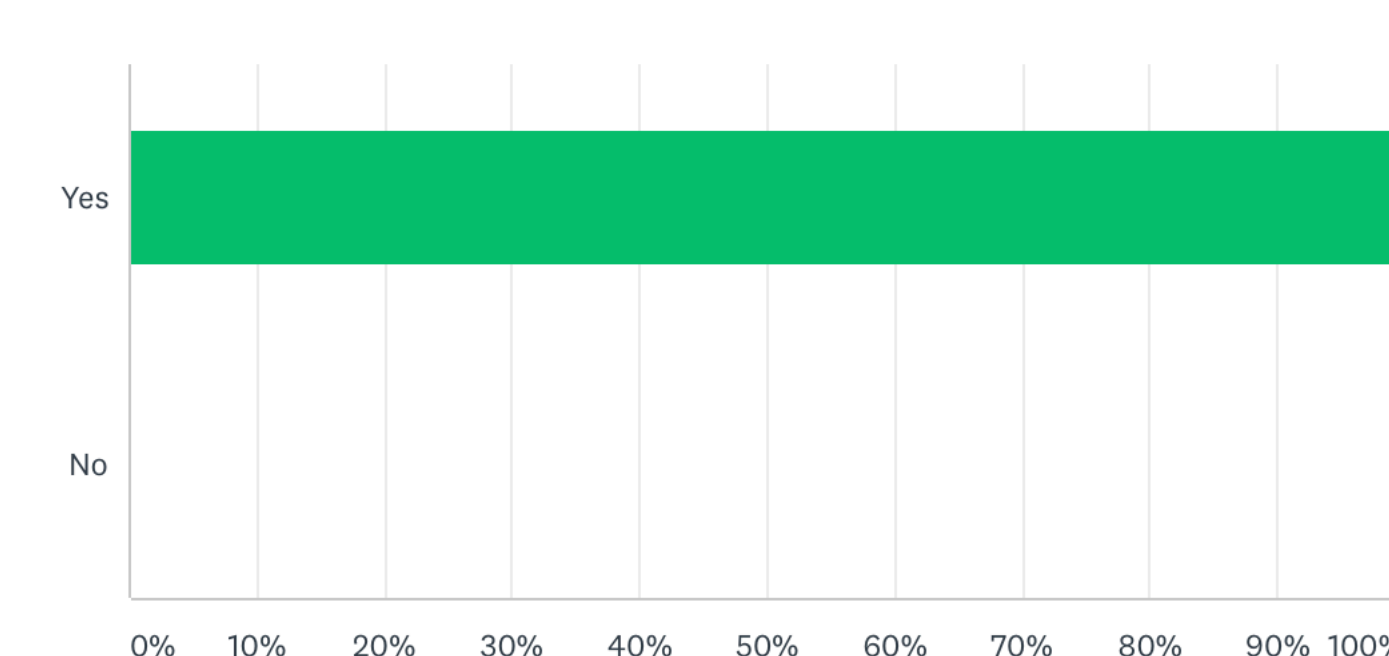
What is your preferred method of attending didactics:

Answered: 14 Skipped: 0



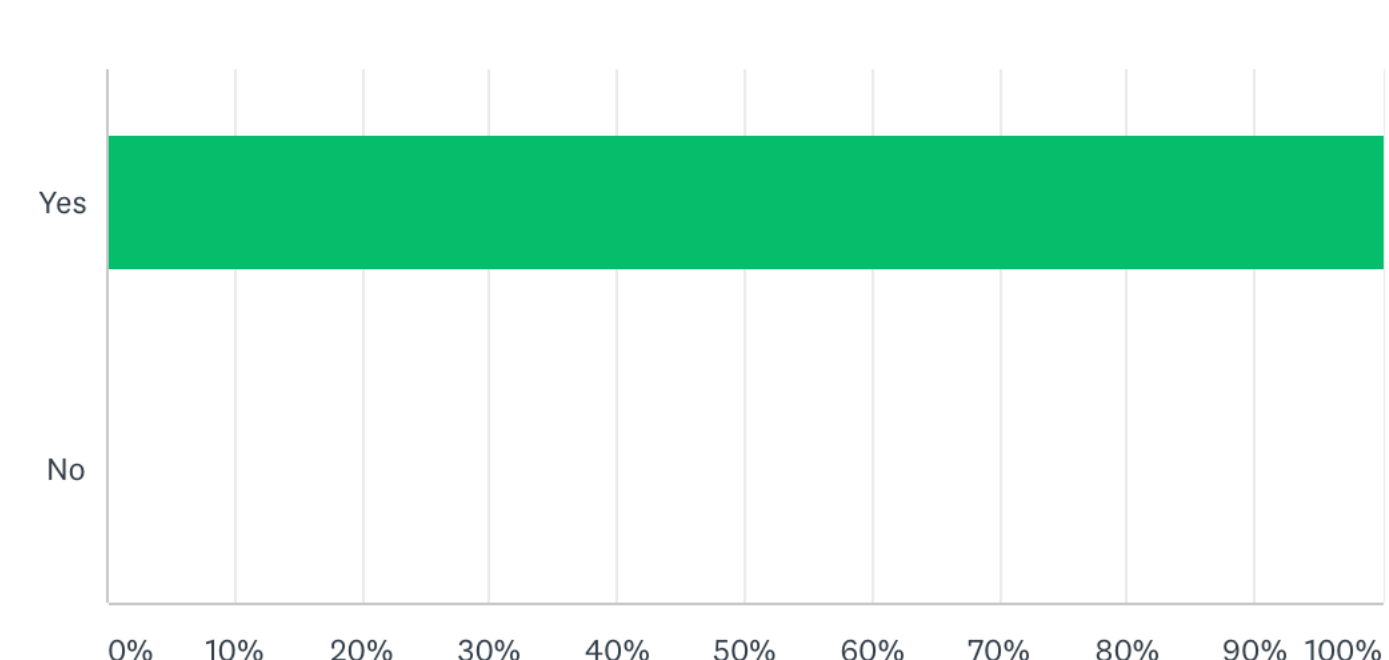
Incorporating virtual didactics has improved the participation of faculty:

Answered: 14 Skipped: 0



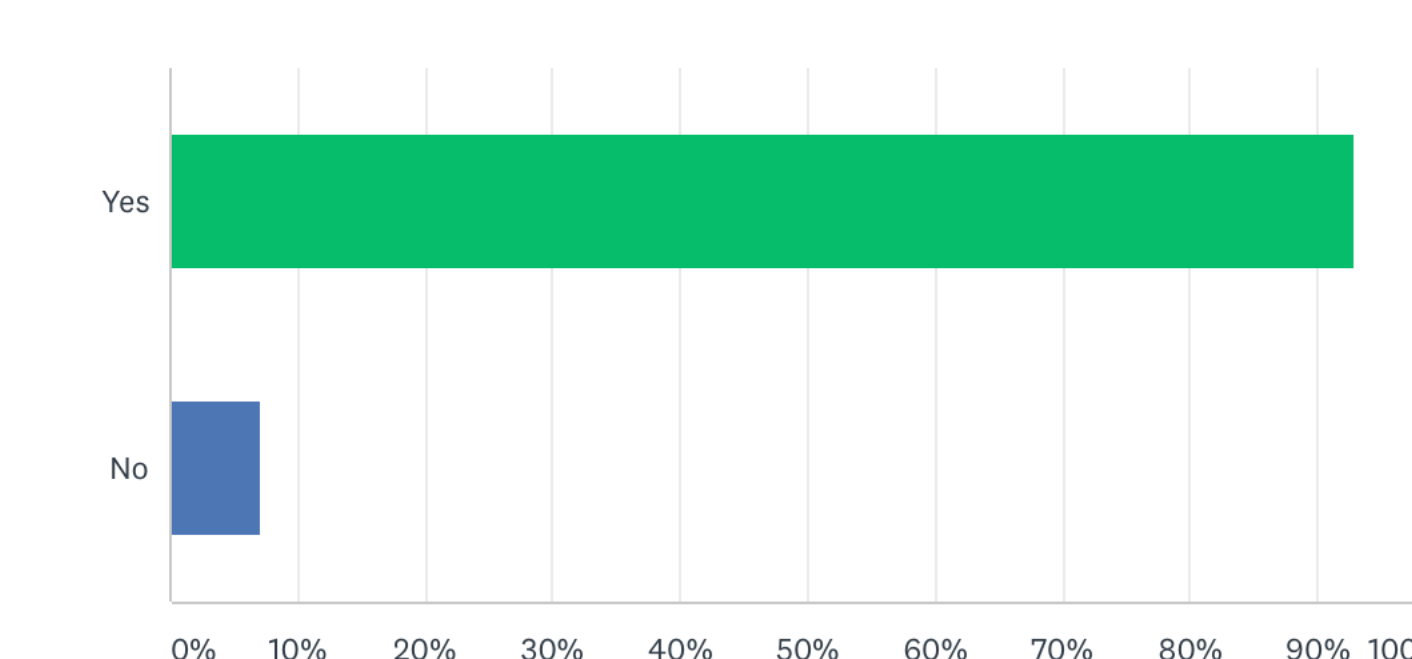
Incorporating virtual didactics has improved the capacity to bring speakers from outside of the department:

Answered: 14 Skipped: 0



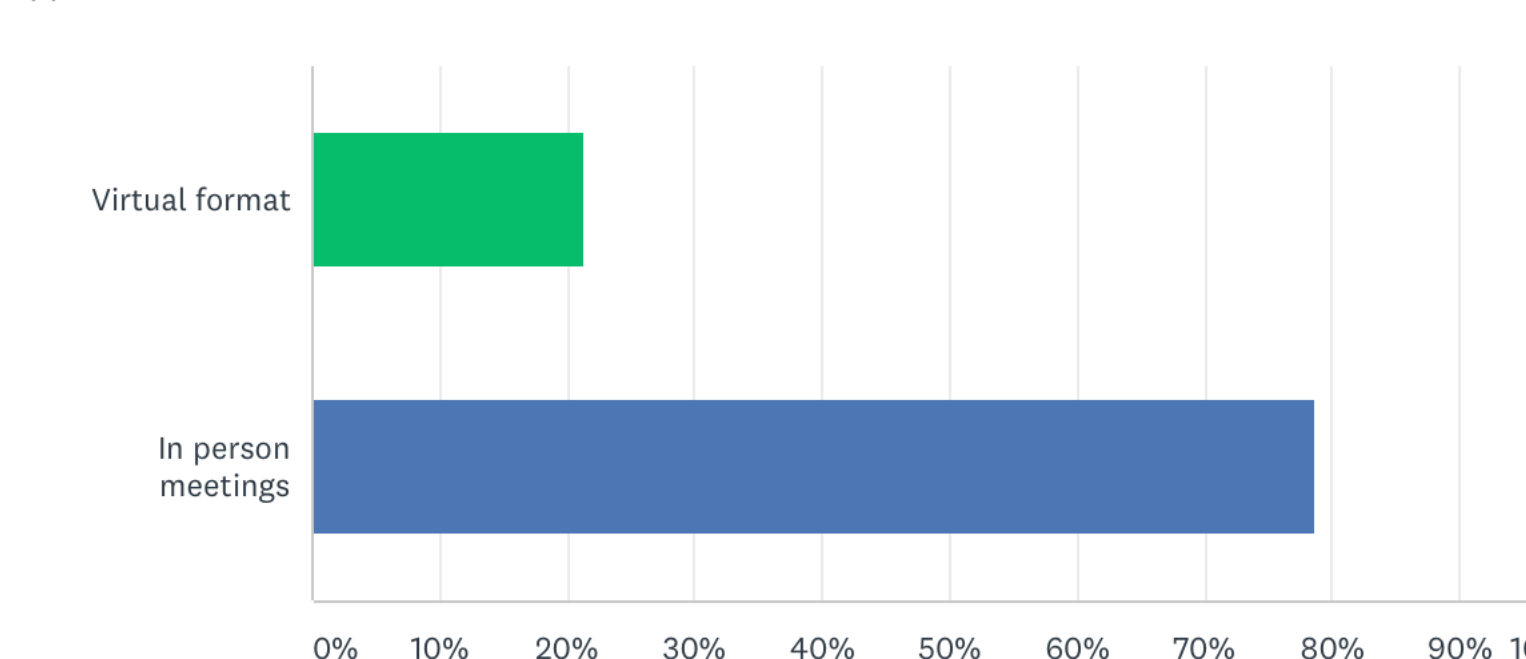
Incorporating virtual didactics has expanded the breadth of topics discussed:

Answered: 14 Skipped: 0



Do you feel more comfortable asking questions or providing input in:

Answered: 14 Skipped: 0



Conclusion

- Incorporating virtual didactics has improved attending participation
- Virtual format allows for more external subject-matter experts, and a broader variety of topics
- Virtual format should include friendlier ways for resident and attending physician's participation
- In-person didactics are still vital for hands-on workshops and relationship-building when public health measures allow it

Mapping Weekend Call Workflows and Resources to Support Outpatient PM&R Attendings Providing Inpatient Coverage



Chloe Slocum, MD, MPH,¹ Christopher Garrison, MD, MBA,^{2,3} Ross Zafonte, DO¹

1. Department of Physical Medicine and Rehabilitation, Harvard Medical School; 2. University of Texas at Austin Dell Medical School; 3. Central Texas Rehabilitation Hospital

Abstract

Physicians who practice primarily in the outpatient environment and do not routinely provide inpatient coverage are less likely to understand the idiosyncrasies, workflows, and culture that are specific to an inpatient service while providing weekend coverage. A qualitative analysis of stakeholder feedback regarding inpatient call coverage and workflows demonstrated alignment between inpatient and outpatient physicians' frequently used workflows and assisted in mapping shared resources for potentially time-consuming or high-risk activities. These resources were then incorporated into an educational tool for outpatient attendings taking call.

Introduction

Attending physicians with the Harvard Medical School Department of Physical Medicine and Rehabilitation (PM&R) whose primary clinical practice is based in the outpatient clinic environment provide weekend call coverage for 120 adult beds at a 132-bed inpatient rehabilitation facility (IRF). Contemporary qualitative research suggests that physicians whose clinical practice spans different practice environments may experience a marked lack of continuity and information regarding the basic logistics of providing care in a new environment and significant perceived risk to patient safety and delays in providing care.

Methods

A broad coalition of stakeholders participated in semi-structured interviews to help map workflows. Interviewees included:

- PM&R attending physicians whose primary clinical practice includes outpatient clinics
- Inpatient PM&R attending physicians
- Executive and frontline nursing leadership
- Clinical pharmacy, radiology, and laboratory services
- Admissions support and case management
- Chief PM&R residents
- Consulting physician services (i.e. internal medicine, infectious disease, psychiatry) and rehabilitation psychology
- Quality, regulatory compliance, and risk management

Interviewees were asked about commonly used weekend call workflows, shared resources, and any perceived opportunities for improvement that would help outpatient attending physicians practice safely and effectively on inpatient units, including:

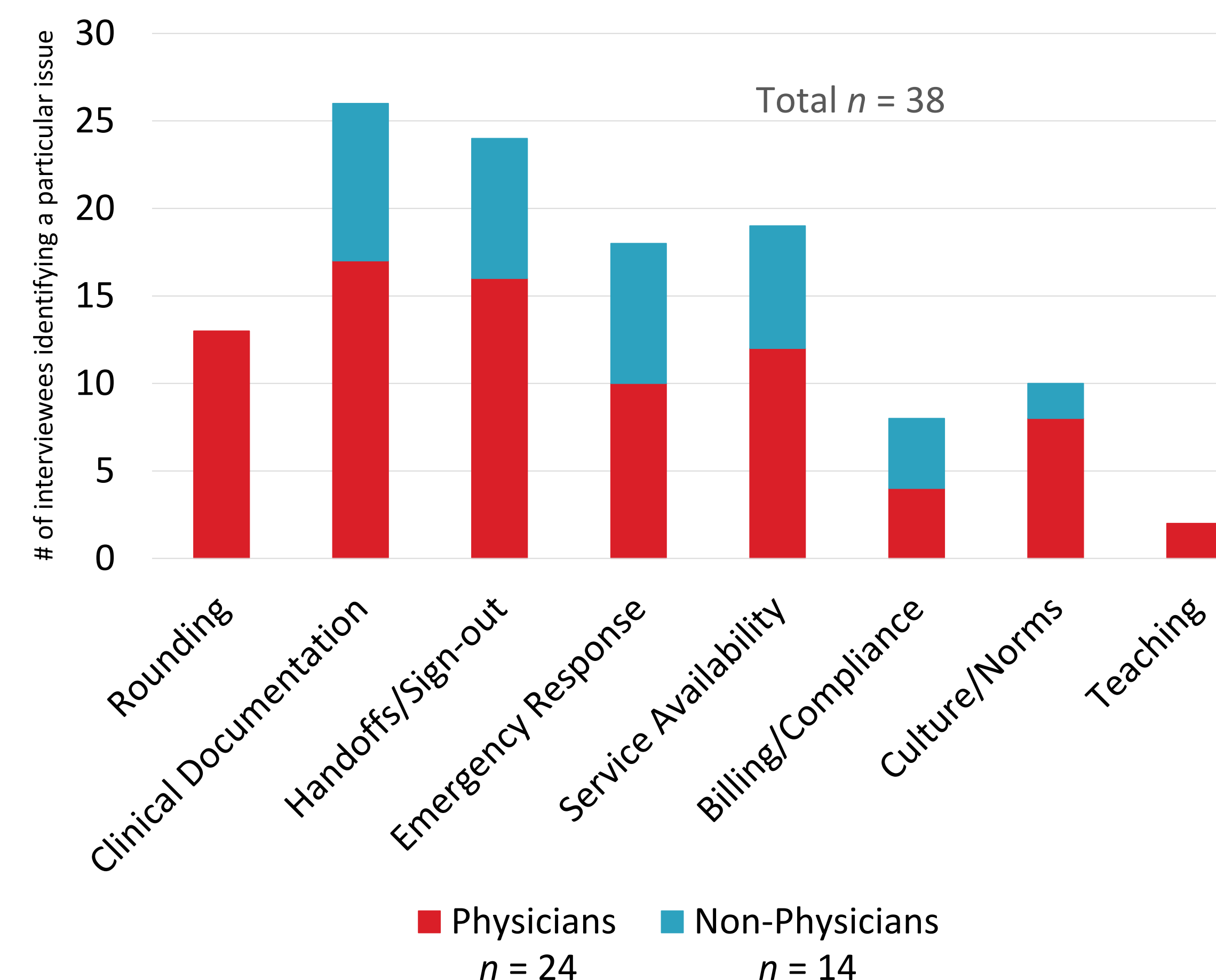
- Handoff and sign-out workflows between primary inpatient and weekend on-call teams
- Rounding and clinical documentation workflows
- Billing and regulatory compliance workflows
- Availability of pharmacy, radiology, and laboratory services on weekends
- Workflows involving responses to medical and/or behavioral emergencies by weekend coverage teams

Results

- A total of 24 physicians were interviewed, including outpatient PM&R physicians (n = 9), inpatient PM&R physicians (n = 8), inpatient consultants (n = 5), and chief PM&R residents (n = 2)
- 14 non-physicians were interviewed from nursing, clinical pharmacy, radiology, and laboratory services, quality and compliance, risk management, admissions support, and case management
- Thematic analysis of interviewees' feedback revealed common elements across both groups that included clinical documentation, handoffs and sign-out, emergency response, service availability, billing and compliance, and culture or institutional norms

- Both inpatient and outpatient physicians highlighted the importance of understanding weekend call coverage workflows related to rounding, clinical documentation, handoffs and sign-out between primary and weekend teams, emergency response, service availability and culture or institutional norms
- Resources and workflows related to billing and regulatory compliance were mentioned by a minority of interviewees in both groups
- Physician interviewees had specific feedback related to weekend rounding workflows and teaching responsibilities that were not shared by non-physicians
- Physicians have responded positively to a "Weekend On-Call Guide" incorporating interview themes so far

Figure 1. Qualitative interview themes by discipline.



Conclusions

Inpatient coverage arrangements that incorporate attending physicians whose primary clinical practice is in the outpatient clinic environment can benefit from mapping of clinical workflows related to team communication, service availability, patient safety, and clinical documentation. Workflows related to patient safety are foremost among concerns expressed by stakeholders of all disciplines and should be a priority for provider education. We intend to leverage this qualitative analysis in continued departmental process improvement work and network quality initiatives.

Why Did No One Teach Me This Stuff?

Financial and Business Practice Literacy Curriculum for PM&R Residents

^{1,2}Brionn Tonkin, MD, ¹James Dvorak, MD

²Ezgi Tiryaki, MD (Internal Mentor), ³Greg Worsowicz, MD (External Mentor)

¹University of Minnesota Department of Rehabilitation Medicine, Minneapolis, MN, ²Veterans Affairs Medical Center, Minneapolis, MN, ³University of Missouri Department of PM&R, Columbia, MO

Background

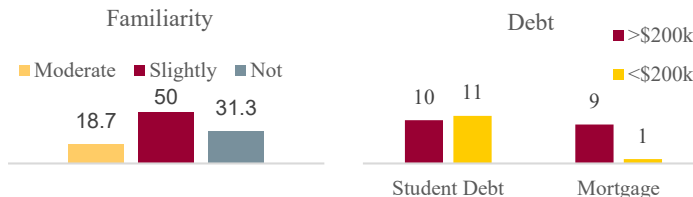
- PM&R residents are responsible for acquiring large amounts of clinical information during training. However, there is no direction from the ACGME or ABPMR regarding financial education other than residents must demonstrate competence in “ability to recognize and develop a plan for one’s own personal and professional well-being.”
- Because of high levels of debt, coupled with limited ability to accumulate wealth during training, graduates have reported difficulty with these topics and transition to practice and adjustment in income.
- As part of preparing trainees for practice, there appeared to be a gap in knowledge and ability to fully prepare them for practice.
- In 2002, Collier, et al demonstrated that financial concerns impacted resident wellness.
- In a survey sent to five specialties at a single institution, McKillip et al, reported an average student loan debt of \$191,730 in 2018.

Objective

- Assess baseline financial status and knowledge in a single PM&R residency program.
- Provide structured didactics addressing these perceived gaps.
- Identify changes in financial strategy or knowledge

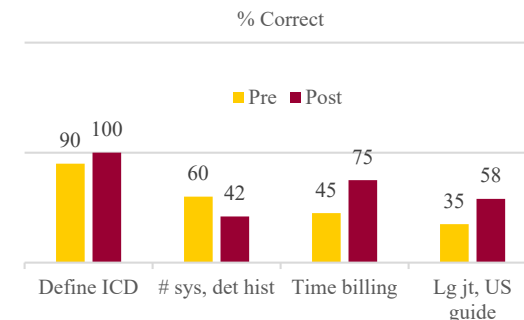
Design

- Baseline assessment of financial status and knowledge.
- Three-part curriculum addressing: Financial literacy, physician compensation and productivity norms, and billing and coding.
- Post-assessment



Results

- Baseline knowledge regarding investments, billing/coding and productivity measures was widely variable.
- 0% identified average range for wRVU production, 45% identified average regional per-wRVU compensation, and 44% identified average regional salary.
- Following implementation of the curriculum:
 - Improvement in identifying common acronyms (90-100%)
 - 75% able to correctly identify major components of time-based billing
 - Narrower range in identifying components of documentation for certain levels of billing (33.3-58.3) but still uncertainty
 - Improvements in identification of common acronyms
- Examples: Correct identification of common acronyms such as wRVU (36%), CPT (60%), E&M (90%), and ICD (90%).
- 30-35% accuracy for identifying common PM&R procedural codes
- 45% able to correctly identify major components of time-based billing.
- Range of 30-60% for accurately identifying components of documentation for certain levels of billing.



Discussion/Conclusion

- In a small sample size, trainees were generally familiar with common acronyms of medical practice and how they apply.
- Wide variability was noted regarding E&M knowledge. This persisted despite a workshop addressing this information with different learning modalities.
- Another gap seen was regarding expectations about productivity, and compensation.
- Responses in nearly all sections improved following formal didactic education including workshops
- Limitations include follow up assessment was likely too close to delivery of didactic material.