Case Western Reserve University – University Program Medical School

Aug 1, 2024

Block 6: Action Plan 2023-2024

2023-2024

1. **Course Description:**

Block 6 (2023-2024) covered Ophthalmology, ENT, Neurology, Neuroscience, Mind, Addiction Medicine, and Bioethics. Block 6 is the final preclinical course that M2 students take before starting their clerkships.

2. **Block Co-Leaders:**

Block Leader: Maureen W McEnery, PhD, MAT

Neurology leader: Wei Xiong, MD

Neuroanatomy leader: Andrew Crofton, PhD*

Neuroscience leader: David Friel, PhD Psychiatry leader: Andrew Hunt, MD, MHA[^] Addiction Medicine leader: Ted Parran, MD

Bioethics: Robert Guerin, PhD ENT leader: Todd Otteson, MD

Ophthalmology leader: Yasemin Sozeri, MD

* no longer with CWRU

^ will not be the person primarily responsible

3. **Design Team:**

Neurology and Neuroanatomy:

Krishan Chandar, MBBS, MRCP (London)

Darin Croft, PhD

*Eleni Markakis, PhD

Psychiatry:

Rajeet Shrestha, MD Jennifer Brandstetter, MD Matthew Newton, MD Neil Bruce, MD Samantha Imfeld, MD Andrew Hunt, MD, MHA ^Maggie Musso, MD

SCME Block 6 representative (2023-24)

Sophia Friedl, M2

4. <u>Block Goals:</u> Please fill in the table below for your Block Goals.

Competency and Definition	Educational Program Objective (EPO)	Block Goals Block #6	Recommended Changes
Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care	Demonstrates ability to apply knowledge base to clinical and research questions. Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician	Achieve an understanding of the normal structure and physiology of eyes, ears, nose, and throat and conclude with an understanding of the pathological, congenital and acquired processes which negatively impact ophthalmologic and ENT function.	None
Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care	Demonstrates ability to apply knowledge base to clinical and research questions Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician	Review the common clinical disorders of the human nervous system and their pathophysiology while using normal anatomic-functional relationships to pinpoint the site of disease involvement in the nervous system.	None

Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care	Demonstrates ability to apply knowledge base to clinical and research questions Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician	Learn the basic cellular, molecular, biochemical and pharmacological processes that contribute to normal and abnormal neuronal function throughout the lifespan of the individual.	None
Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care	Demonstrates ability to apply knowledge base to clinical and research questions Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician	Learn the clinical presentation, diagnosis, and multimodal treatment of psychiatric disorders, as well as underlying pathophysiology and theories regarding complex etiology.	None
Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care	Demonstrates ability to apply knowledge base to clinical and research questions Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician	Learn the integrated biopsychosocial elements of human mental function and their application in clinical psychiatric practice, and the general practice of medicine.	None

Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care Common to all Blocks:	Demonstrates ability to apply knowledge base to clinical and research questions Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician	Recognize the signs and symptoms of substance use disorder using a biopsychosocial model in order to make an accurate diagnosis, referral and plan; Demonstrate respectful language and communication.	None
Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care	Demonstrates ability to apply knowledge base to clinical and research questions Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician	Recognize and analyze ethical problems in clinical medicine and biomedical research using the principles of autonomy, beneficence, nonmaleficence and justice.	None
Teamwork & Interprofessional Collaboration Demonstrates knowledge and skills to promote effective teamwork and collaboration with health care professionals across a variety of settings	Performs effectively as a member of a team	Develop and practice the knowledge and skills that promote effective teamwork across a variety of settings.	None

Professionalism Demonstrates commitment to high standards of ethical, respectful, compassionate, reliable and responsible behaviors in all settings, and recognizes and addresses lapses in behavior	Commonly demonstrates compassion, respect, honesty and ethical practices Meets obligations in a reliable and timely manner Recognizes and addresses lapses in behavior	Understand and practice the behaviors of an ethical, respectful, compassionate, reliable, culturally competent, and responsible physician.	None
Interpersonal & Communication Skills Demonstrates effective listening, written and oral communication skills with patients, peers, faculty and other health care professionals in the classroom, research and patient care settings	Uses effective written and oral communication in clinical, research, and classroom settings Demonstrates effective communication with patients using a patient-centered approach Effectively communicates knowledge as well as uncertainties	Understand and demonstrate effective communication skills for learning and clinical practice environments.	None

Research & Scholarship Demonstrates knowledge and skills required to interpret, critically evaluate, and conduct research	Analyses and effectively critiques a broad range of research papers Demonstrates ability to generate a research hypothesis and formulate questions to test the hypothesis	Analyze, critique and present research studies from the primary literature.	None
	Demonstrates ability to initiate, complete and explain his/her research		

What changes were made	How did the changes work?	What would you like to change next year
20232024?		2024-2025?

Neurology: Last year, we asked all of the lecturers to introduce their lecture using a clinical case that exemplifies the key clinical pearls for that particular content area. Additionally, we asked the lectures to 1) focus on ONE "high-yield" topic per lecture in order to knit together the block curriculum with major board preparation services that students typically use such as MED ONE. We will highlight this content with a recurrent notable visual identifier.	The formal feedback we received suggested this was a positive addition to the lectures. (score 3.3) Lectures in 2023-24 were rated overall (74%) to be about the same as (2022-23) (79%)	We plan on continuing this practice. We will also build upon this by asking lecturers to: 1) include board style questions to students as a resource 2) include a single-slide summary of the key points of their lecture 3) reference the relevant chapter/page in the Daroff Neurology textbook, which is available online. 4) reference the foundational principle that best aligns with the clinical content (see attached document)
In week 1 there was one IQ case (spinal cord lesions) that will help students recognize the importance of foundational neuroanatomy knowledge for clinical practice. The facilitator guide in the Brown Sequard Syndrome IQ	Feedback from students and IQ facilitators was positive. Feedback from students and IQ facilitators was positive.	We will do this again in 2024-25. Revisions to the facilitator guide will continue.
case was revised to emphasize and highlight for facilitators the fundamental concepts that students should understand having worked through this case.		

We continued the rotation structure this year that allowed every IQ group to have a neurology resident at least for part of each week's IQ sessions. We believed this approach to be the fair way of distributing the residents, even if it meant lack of continuity with residents. The goal was to maximize the availability of residents.	This change was again well-received. The neurology resident participation was approximately the same this year (96%) as last year (97%). The data from the specific questions gives this a score of 3.7/4.0.	We will do this again in 2024-25.
Instead of starting the block with ENT and Ophthalmology content, which the students found to be very dense, we started with basic neuroscience and neuroanatomy.	This change was well-received.	We will repeat this in 2024-25
ENT and Ophtho content will be moved to week 3.	The change was well received.	
The ENT IQ case was eliminated. The content was covered in Dr. Otteson's lecture.	The calendar demanded we remove two IQ cases, the ENT case was one of them.	The ENT and Ophtho content will be covered in week 8 of Block 6. 2024-25 We will repeat this in 2024-25

As noted above, we eliminated 1-2 IQ cases due to various holidays that interfere with our scheduling in 2023-24. The Brachial plexopathy IQ case was also removed.	This may have helped meet the demands of the calendar, but it will not be repeated this year. The students asked for more IQ cases in their feedback; however, in the specific feedback they supported this with a score 3.4	The brachial plexopathy case will be reinstated (week 2).
A new lecture molecular therapeutics in neurology was presented on Jan 12, 2024	Minimal feedback.	This will not be repeated as a lecture in 2024-2025; rather this will be a review.
Neuroanatomy: Integration of MedOne board-style questions into neuroanatomy lectures and reviews to emphasize that the neuroanatomy content covered in Block 6 is consistent with what is found on boards and necessary for clinical practice, including for non-neurologists.	Well received	We will repeat this in 2024-25
Explicit request to the UH Neurology Residents during our first planning meeting BEFORE Block 6 begins to not make negative comments regarding Block 6 content when participating as teachers in Block 6.	There is no evidence that the residents commented on the curriculum in a negative fashion.	We will repeat this request in the orientation for 2024-25

Add a 2-hour, mandatory neuroanatomy "boot camp" in the cadaver lab at Robbins (pending approval by the Committee on Medical Education) that will expose students to brain dissection during the first week of Block 6. This should help provide students with an important neuroanatomy foundation for the remainder of Block 6.	Exceptionally well. The students agreed with this and the rationale 3.4/4.	We would like to repeat this. However, Dr. Crofton, who proposed this innovation and led the sessions, is no longer associated with CWRU. We hope that other faculty in the Dept of Anatomy will be able to step in and take the lead.
Pharmacology Videos for IQ Cases in Notability. We worked with Dr. Tawna Mangosh to create pharmacology videos to be paired with IQ cases.	Students have called for more explicit pharmacology tools, such as whiteboard videos with interactive elements. This has been piloted in other blocks, with success. This is important as student feedback on Pharmacology is low compared to other sections.	We will repeat this in 2024-25 We will continue to work with Dr. Mangosh.
The development of the nervous system lecture was given by Dr. Scott Simpson	Dr. Ron Conlon stepped down, Dr. Simpson is an expert and teaches the graduate Embryology course at CWRU	We will repeat this in 2024- 25

Front Load more neuroanatomy in Block 6 to give students ample time to learn this important and complex information. To this end, move 4 hours of neuroanatomy lecture to the first week of Block 6 and make the first GARLA session of Block 7.6 the Neuroanatomy I lab, which will complement the Neuroanatomy Boot Camp. These changes should provide students with early, extensive exposure to neuroanatomy that is foundational to Block 6.	This strategy received positive feedback from students.	We will repeat this in 2024-25
In 2023-24, we reviewed the curriculum for comparison with published descriptions of core and recommended material to determine if Block 6 covers what has been highlighted by medical educators at large (Moxham et al 2015, Gelb et al. 2021). We found that the Block does indeed cover virtually all of the core and recommended topics identified by those authors.	However, some students thought the amount of neuroanatomy was overwhelming and went beyond what was needed for "step 1".	With neuroanatomy being delivered by two different individuals in 2024-25 (Markakis and the Dept of Anatomy), there is a need to align the content and ensure that extraneous detail is not introduced.
We also identified areas that could be more concisely articulated in Block 6. We introduced a new lecture on acute and chronic pain.	This lecture was well presented and important to the Block goals.	We will repeat this in 2024-25.

Pilot integrating neuroanatomy and clinical lectures that complement each other (e.g. basal ganglia and cerebellum) rather than delivering them separately. We believe this change will help students better appreciate how the neuroanatomy they're learning is clinically relevant. It should also streamline lectures by reducing redundancy generated by the fact that clinicians aren't always fully aware of what neuroanatomy knowledge students have. This approach should also help demonstrate coordination between basic and clinical sciences and interprofessional cooperation between faculty.	Well-received.	We will repeat this in 2024-25
We introduced a series of lectures on human sexuality. The rationale is as follows: extending beyond week 7, Block 6 lost 5.5 hrs of contact time with the distribution of hours from Block 6 to FCM. The consequence of this was the removal of the two lectures in human sexuality from the Block 6 curriculum. The removal of this content is corrected by the new lecture series on human sexuality.	Well-Received	We will repeat this in 2023-24 but will reconsider this moving forward as we also consider the input from the Sexuality and Gender Identity Design team.

We introduced a lecture that was a close reading of a case of a patient who progressed from a vegetative to a brain death state. Students will be introduced to a cast of characters, i.e., we will come to know the patient's social history, family dynamics, and values for healthcare. We will also find ourselves in a family meeting, where the attending physician will describe the family brain-death testing and the diagnosis of brain death. With intentional blunders embedded in the case, students will be able to assess poorly delivered braindeath diagnoses to families and speak about ways to improve communication. This case might also lead naturally to a general discussion of best practices in family meetings.	The impression from those present for the lectures (this lecture was delivered in two parts, once early in the block and again at the end of the block) was that this new lecture was well received. I think students appreciated the emphasis on the emotional experience of family meetings and delivering bad news to families.	These lectures will be delivered again in 2023-24.
A mandatory student debriefing was held following the interview with Ms Kate Gill.	We did not hear any complaints about the scheduling.	We will do this again in 2024- 25, looking forward to working with FCM on this.
This mandatory session helped students consolidate everything they had learned in the medical curriculum, instead of rapidly leaving campus. I believe this helps them reflect upon the enormity of what they vicariously experienced with the loss of Noah Scott to the long-term effects of a nonfatal drug overdose.		

Increase use of PollEverywhere to enhance student interaction, i.e. identify regions on a diagram.	Enhance student participation and engagement.	We will repeat this in 2024-25.

5. What changes do you anticipate making to the Block next year (AY 2024-2025)

General:

The areas of attention that we articulated for next year's (see above) will be refined for 2024-25.

- 1) We will identify opportunities for lecturers to refer to prior and upcoming lectures in order to effectively create continuity between lectures.
- 2) We will also build upon this by asking lecturers to:
 - a) include board style questions to students as a resource
 - b) include a single-slide summary of the key points of their lecture
 - c) reference the relevant chapter/page in the Bradley and Daroff Neurology textbook (2022), which is available online (for Neurology and neuroanatomy)

https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20180003758

d) reference the foundational principle that best aligns with the clinical content (see attached)

Block 6 Topic Outline July 30, 2024 Maureen McEnery, PhD, MAT Block leader

3) In the spring and summer of 2024, using a GPT constructed with resources from the curriculum, we evaluated the Block 6 content to determine if it was aligned with the USMLE topics.

https://chatgpt.com/g/g-ar86Cz9IA-med-exam-topic-checker

We found that the Block aligns very well, although some specific areas are missing (pediatric neurology, brain infections, metabolic neurological disorders, pain management, neurotoxins, and poisoning.

4) Implement use of AI supported resources, including GPT constructed from the lectures and resources for Neurotransmitter, Receptors, and Neurotransmission (McEnery lectures).

Neurology:

- 1) Resequencing of the schedule: the schedule of the PGY3 resident was accommodated by resequencing the lectures. Content that was once presented in week 3 is now being presented in week 8. The focus of week 8 will be ENT, Ophthalmology, and lectures on hypothalamus and the autonomic nervous system
- 2) There is a potential slot for either a new IQ case or the ENT case in week 8.
- 3) We will be reintroducing the brachial plexopathy IQ case (week 2).

Neuroanatomy:

The goal is to sustain the improvements for neuroanatomy instruction that were introduced last year:

- 1. Continue the 2-hour, mandatory neuroanatomy "boot camp" in the cadaver lab at Robbins that will expose students to brain dissection during the first week of Block 6. This should help provide students with an important neuroanatomy foundation for the remainder of Block 6.
- 2. Continue to integrate neuroanatomy and clinical lectures that complement each other (e.g. basal ganglia and cerebellum) rather than delivering them separately. This approach should help demonstrate coordination between basic and clinical sciences and interprofessional cooperation between faculty. Dr. Markakis will work with the various clinical lecturers on the alignment.

Psychiatry:

We have discussed specific feedback pertaining to the Psychiatry portion of block 6, and this year we will be transitioning leadership of the block to Margaret Musso, MD, who will be spearheading changes for the next year. We discussed satisfaction with the current structure, and IQ Cases in terms of what they cover, and how each case addressed specific psychiatric skills, disparities, knowledge, and decision-making in a realistic way. This year we will be trying to align OLOs in a more standardized way, so as to increase predictability and learning structure.

Lastly, we would like to bring more of our lecturers up to date with modern teaching strategies including use of USMLE style questions, review tools, and chatGPT. We were pleased, overall, with the psychiatry section feedback for 2023-2024.

Bioethics:

The bioethics feedback is generally positive. Next year we will introduce a lecture entitled "The Difficult Patient". This lecture will introduce an important topic into the curriculum and help students in anticipation of their encounter with challenging patients.

Medical Education: Guidelines for Effective Teaching of Managing Challenging Patient Encounters - PMC

6. What successful, innovative components of your block that are best practices that you would like to share with the other Blocks?

- 1) Use of residents as IQ facilitators in the IQ program.
- 2) Block 6 section leaders meet weekly throughout the year to review the curriculum, student feedback, and the IQ cases. Guests are invited as needed. This practice establishes rapport and helps to define common goals. In the past, including Dr. Croft and Dr. Crofton in our design team has helped establish continuity and reduce redundancy in the Block 6 and Block 7 curricula. We will continue this practice with Dr. Markakis.
- 3) The TBLs in the neuro section complemented the weekly IQ cases. The PGY3 Neurology residents, as facilitators in IQ groups, contribute content expertise, particularly in the clinical realm. A pre-session training opportunity for residents is critically important in this model, i.e. incorporating residents into IQ and small group learning activities could be applied to other Blocks.
- 4) We utilize a multidisciplinary approach for psychiatry and addiction medicine and instruct based on a biopsychosocial model of illness. Excellent clinical care in any field of medicine must take into account psychological and social factors if disparities are to be eliminated, and excellent care is to be delivered universally. This integrative approach could be expanded to other blocks.

Data from Longitudinal feedback:

Trends: Overall quality of the Block remained approximately the same compared to last year,

7. What specific changes (lectures, TBL, IQ cases, other) do you plan to make to the course next year?

Changes anticipated for next year (2024-2025)	Reason for changes (evidence)
Ongoing revisions to the facilitator guide will continue.	Update for changes in medical practice and clarity.
The lecture on molecular therapeutics in neurology will be a review.	Molecular therapeutics need to be represented in the curriculum.
Consolidation of the ENT and Ophtho and visual system content in week 8.	Better sequencing for curriculum and resident participation.
Include a dedicated review on neurotransmitter, receptors, and neurotransmission	Students asked for additional content.
Reinstate the brachial plexopathy case	This case is a good bridge between Block 5 GARLA and students asked for additional content.
Continue the 2-hour, mandatory neuroanatomy "boot camp" in the cadaver lab at Robbins which was piloted last year.	This will expose students to brain dissection during the first week of Block 6. This should help provide students with an important neuroanatomy foundation for the remainder of Block 6.
Pharmacology Videos for IQ Cases in Notability	Students have called for more explicit pharmacology tools, such as whiteboard videos with interactive elements. This has been piloted in other blocks, with success.
Increase use of PollEverywhere to enhance student interaction, i.e. identify regions on a diagram.	Enhance student participation and engagement.

Continue with the lecture on chronic and acute pain.	This was an area that we identified as being under-represented in our curriculum based upon formal our process of reviewing the curriculum for comparison with published descriptions of core and recommended material to determine if Block 6 covers what has been highlighted by medical educators at large
Strive to integrate neuroanatomy with clinical lecture material.	This will help students better appreciate how the neuroanatomy they're learning is clinically relevant. It should also streamline lectures by reducing redundancy generated by the fact that clinicians aren't always fully aware of what neuroanatomy knowledge students have.
Introduce a lecture entitled "The Difficult Patient"	This lecture will introduce an important topic into the curriculum and help students in anticipation of their encounter with challenging patients. Medical Education: Guidelines for Effective Teaching of Managing Challenging Patient Encounters - PMC
Continuing the review of content in the Mind section and alignment with USMLE topics.	Part of our continuous improvement process and also is a very effective way to onboard Maggie Musso, as Block 6 Mind section leader.
With respect to Psychiatry Lectures, we plan to hold some trainings to discuss recent innovations in pedagogy/androgogy, most favored learning strategies, current student preferences, and examples of effective teaching strategies that we hope all our lecturers will try to incorporate in the coming year.	Lectures remain a lagging component of the curriculum in terms of student satisfaction, and new methodologies may help these experiences become more engaging, popular, and effective as a teaching modality.

8. Please review your Block objectives. Have you added or deleted major concept areas to your Block?

No major changes to our Block Objectives or concept areas.

9. Describe how faculty teaching quality was reviewed for your block. What faculty development opportunity was offered in response to student feedback?

Each faculty received individual feedback, and our section was reviewed by students as a whole.

We will continue to do TBL training for our faculty going forward in order to train new faculty and to refresh this pedagogical method for those who have already used it. When we do this, we carefully review the content of the TBL to see if any improvements can be made.

In 2024-25, we will be again instituting a blanket policy for lecturers to begin each lecture with a short clinical scenario and then return to this case to anchor their key learning points. We hope this will lead to increased faculty involvement and increased student engagement.

We will also be providing some training to faculty to enhance lecture structure, engagement, and align better with student preferences.

10. Response to PEAC Report

Summary of Block/Clerkship Areas for Improvement and our response

- Neuroanatomy content felt too in-depth and intimidating students wanted more time spent on foundational information. Some lectures are provided on the fundamentals.
 - We addressed this by reorganizing the first week of the block to include a neuroanatomy boot camp and focusing the first week of lectures on foundational information.
- Psychiatry transition felt abrupt and IQ cases seemed too long and repetitive. In particular, the DSM5 appears as a key component of several cases and some learning objectives across psychiatry cases are redundant or overly general.
 - The DSM5 IS a key component of all psychiatry cases and is central to the
 practice of psychiatry. Several IQ cases will be reviewed for clarity and to remove
 redundancies, and OLOs will be standardized structurally in terms of their
 language (although not much change in content).

11. Acknowledgements

Ms. Nivo Hanson is gratefully acknowledged for all of her work, her initiatives, and the significant effort taken on behalf of Block 6. Nivo was a kind and competent guide for the students and the faculty during this trying year and everyone is grateful for her patience and direction.

Ms. Yifei Zhu is gratefully acknowledged for her timely attention to our requests for feedback and "Just in Time" data and her expert preparation of the reports.

Xiaomei Song, PhD, Director of Student Assessment, Office of Student Assessment, Kelli Qua, PhD, Director, Evaluation and Continuous Quality Improvement, and Ms. Kathy Dilliplane, Assessment Administration Specialist, are gratefully acknowledged for sharing their expertise and support.

Sophie Friedl, SCME representative, was an active participant in our meetings and also attended all learning activities. She was a valuable source of student feedback.

A special acknowledgement to Ms. Celinda Miller and the numerous colleagues who participated as Block6 IQ facilitators.

Finally, Block 6 wants to thank the community of medical educators for your suggestions and advice.