

Case Western Reserve University – University Program Medical School

Block 4: Action Plan 2021-2022

Year 1 – July through May

<p>Becoming A Doctor</p> <p>Block 1 (5 Weeks)</p> <p>Population Health, Epidemiology, Biostatistics, Health Disparities</p> <p>Field Experiences Assessment Week</p>	<p>2 Weeks Anatomy Bootcamp</p>	<p>The Human Blueprint</p> <p>Block 2 (11 Weeks)</p> <p>Endocrinology, Reproduction, Development, Genetics, Molecular Biology, Cancer Biology</p> <p><u>Integrative Week</u> Assessment Week</p>	<p>Food to Fuel</p> <p>Block 3 (9 Weeks)</p> <p>Gastroenterology, Nutrition, Biochemistry</p> <p>Assessment Week</p>	<p>Homeostasis</p> <p>Block 4 (14 Weeks)</p> <p>Cardiovascular, Pulmonary, Renal, Cell Physiology and Pharmacology</p> <p><u>Clinical Immersion Week</u> Assessment Week</p>
<p>Structure (GARLA and “Systems and Scholarship”)</p> <p><u>Foundations of Clinical Medicine</u> (Tuesday Seminars, Communications, Physical Diagnosis, Patient Based Experiences)</p>				

1. Course Description:

The Homeostasis Block (Block 4) integrates the following disciplines: Cellular Physiology, Principles of Pharmacology, Bioethics, Physiology and Pathophysiology of the Heart, Lungs and Kidneys. The content areas are introduced individually and then integrated, primarily through IQ cases, SEQs, and Simulated Case Presentations during Clinical Immersion week during the second half of the Block.

2. Block Co-Leaders:

Jason Mears, PhD and Vidya Krishnan, MD MHS

3. Design Team:

Cellular Physiology: Steve Jones, PhD (section leader)

Pharmacology: Jason Mears, PhD and Tawna Mangosh, PhD (section leaders)

Bioethics: Kathryn (Kate) Miller, MD MA (section leader) and Mark Aulisio, PhD

Heart: Jim Strainic, MD and Ashish Aneja, MD (section leaders); Jose Ortiz, MD, and Brian Hoit, MD, Elizabeth Kaufmann, MD

Lungs: Vidya Krishnan, MD MHS and Ziad Shaman, MD (section leaders); Jeffrey Renston, MD, Arvind Suguness, MD

Kidneys: Mimi Lam, MD (section leader)

4. **Block Goals:** Please fill in the table below for your Block Goals.

Competency and Definition	Educational Program Objective (EPO)	Block Goals Block 4	Recommended Changes
<p>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</p>	<p>Demonstrates ability to apply knowledge base to clinical and research questions</p> <p>Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician</p>	Apply principles of cell physiology to understand molecular function of the heart, kidneys and lungs.	none
		Understand how drugs affect the body and how the body handles drugs.	none
		Understand a) normal cardiovascular physiology and cardiac cell function and b) how cardiovascular diseases alter normal cardiac physiology and function at both the organ and cellular levels.	none
		Understand a) normal pulmonary physiology; and b) how pulmonary diseases alter normal pulmonary physiology and function.	none
		Understand a) the role of the kidney in maintaining homeostasis and b) the interaction of the kidneys with other organ systems.	none

Common to all Blocks:			
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, and responsible physician.	none

<p>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</p>	<p>Uses effective written and oral communication in clinical, research, and classroom settings</p> <p>Demonstrates effective communication with patients using a patient-centered approach</p> <p>Effectively communicates knowledge as well as uncertainties</p>	<p>Understand and demonstrate effective communication skills for learning and clinical practice environments.</p>	<p>none</p>
<p>Research & Scholarship Demonstrates knowledge and skills required to interpret, critically evaluate, and conduct research</p>	<p>Analyzes and effectively critiques a broad range of research papers</p> <p>Demonstrates ability to generate a research hypothesis and formulate questions to test the hypothesis</p> <p>Demonstrates ability to initiate, complete and explain his/her research</p>	<p>Analyze, critique and present research studies from the primary literature.</p>	<p>none</p>

5. In the grid below, please list the specific course changes you made this year based on last year's report.

What changes were made 2020-2021?	How did the changes work?	What would you like to change next year 2021-2022?
<p>Most of the curriculum went back to in-person sessions.</p> <p>Virtual sessions were reserved for Review sessions, and for accommodation of presenters when there were unexpected personal/professional urgencies.</p> <p>There was one last-minute emergency when the presenter was unable to give the lecture, and the video from the prior year was used.</p>	<p>Students generally liked being back to in-person sessions. Attendance was excellent at the beginning of the block but decreased over the block to pre-2020 attendance rates or lower.</p> <p>Faculty required re-orientation to the HEC space and technology, but in-person sessions went quite smoothly. Virtual sessions were available from the lecture hall, small group rooms, or at student's purview, depending on the schedule.</p> <p>Review sessions were formatted to be case-based learning opportunities, as well as question/answer sessions, virtually. Attendance was low, but students who attended benefitted from the discussions.</p> <p>TBLs were in-person and ran smoothly, and these sessions were reasonably well received.</p>	<p>Continue to use HEC building space for teaching sessions, while maintaining acceptable social distancing. Better utilize the excellent acoustics and comfort in lecture hall, excellent A/V support in all rooms</p> <p>Continue option for online learning through review sessions and office hours.</p> <p>Continue to format review sessions into case-based learning opportunities to review key concepts. Consider combining review session and office hours.</p> <p>Optimize the in-person TBL sessions and better simulate use of the scratch-off forms for the GRAT. Consider incorporating EKG teaching in TBL format.</p>
<p>Recruited Dr. Tawna Mangosh to Pharmacology co-section leader.</p> <p>She has created pharmacology videos for each IQ case to supplement student learning using Notability on the iPads</p>	<p>Dr. Mangosh has been a tremendously positive addition to Block 4.</p> <p>Her videos were extremely well received by students.</p>	<p>Continue to use the video format for pharmacology concept supplemental learning.</p>

What changes were made 2020-2021?	How did the changes work?	What would you like to change next year 2021-2022?
As part of the iPad curriculum development, A/V utilities were implemented with TBLs in an effort to better engage students in these sessions.	This did not work well with the older iPads due to connectivity issues with the Solstice software. Newer iPads with USB-C connections worked well, but most rooms resorted back to the Doc Camera for interactive writing/drawings	Unless there is better adaptability for the iPads, we will continue to use the Doc Camera during TBL sessions for visual interactions.
Used Poll Everywhere polls for interactive sessions	Poll Everywhere questions needed to be transferred into many of the presentations for this year.	Require at least 2 interactive questions for each didactic session. Incorporate additional interaction – such as face-to-face “turn talks” in the lecture hall. Create method for Poll Everywhere questions can be used from year to year. Explore use of Kahoot for interactive questions.
Incorporate the use of A/V technology (Wacom tablet, iPads) into the delivery of lecture content	Few lecturers used these devices, mostly due to unfamiliarity and a potential learning curve. UTech offered sessions to learn these tools.	Continue to use technology as it benefits the curriculum. Continue to provide sessions for faculty to learn how to implement this tech.
Recruited Dr. Arvind Suguness to the pulmonary lectures, review sessions, and Design Team.	Well-received lecturer for pulmonary lecture. Excellent student comments for his review session and office hours.	Continue to encourage increased participation of Pulmonary faculty from VA and UH, and MetroHealth.
Incorporated more diversity into didactic lectures in partnership with student group	This effort was discussed with section leaders in an effort to incorporate more diversity into didactic sessions.	With more lead time, reach out to additional lecturers to focus on diversity in medicine to better match other parts of the curriculum.
Obesity curriculum	Worked with a 2 nd year student, to review and incorporate suggestions related to discussions of obesity, and management of obesity and obesity-related conditions.	We will continue to review content to ensure that we have a unified message related to obesity in the curriculum.

What changes were made 2020-2021?	How did the changes work?	What would you like to change next year 2021-2022?
Increased use of virtual office hours	Office hours were held by the section leaders primarily at the end of the block. They were attended by 3-8 students per session, but valuable to the students who attended.	Schedule office hours as a virtual option for each discipline once during the first half of the block, and then again once in the week prior to the exam, preferably after the end-of-block review.
Clinical Immersion Week	Very positive student feedback comments. There were some site variations in student experiences. There were also differences in patient interaction experiences based on availability.	Site variability can be improved by having more planning sessions prior to the week and having a basic structure for the experience. The variability of patient experiences and variability in teacher practices are meant to be part of the real-world experience.

6. What changes do you anticipate making to the Block next year (AY 2022-2023)

We are so grateful to Nivo Hanson and Deidre Gruning for all their support in this past year. We warmly welcome Elizabeth Day as the new Block 4 co-manager with Nivo Hanson for the upcoming year.

Returning to in-person sessions was a treat for faculty and students. Our experience with online learning will result in continued use of virtual learning to supplement the curriculum, and review sessions used this technology effectively.

We are using student feedback to improve the offerings of Block 4 lectures and sections. We plan to improve introductions to the Block overall, and to each subsection – including setting expectations and providing a roadmap for the block/sections. We will also use the student attendance for lectures and consider replacing lectures with low attendance with alternative offerings (additional topics, expounding on current important topics).

We annually review the success and feasibility of the Clinical Immersion week. The feedback this year was generally positive, which also reflects the ability to coordinate these sessions in person. The students appreciated the opportunity to integrate the concepts that they had been learning throughout the block. Any negative feedback was largely due to logistics (group size, uniformity, etc). We will work to try to make the experiences more uniform by learning objectives across centers but will embrace the diversity of the experiences offered at different sites. We will continue to prioritize Clinical Immersion week as a key element of Block 4 in AY2022-2023.

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

The incorporation of Pharmacology Videos related to the IQ sessions were an excellent addition to the Block 4 curriculum. Most students (75%+) responded that they used this material as a learning resource. The only concern was the use of the Notability app, which limited access for some individuals. Regardless, this active learning content was very well received by the students.

The reviews from the TBL sessions were also generally positive. The expansive slides that were incorporated for the remote sessions in previous years were simplified to ensure interaction in the TBL rooms in Sampson. Still, we shared answers with detailed slides to students after these required sessions to provide excellent review material. We also worked with UTech to implement interactive technology in the TBL rooms to encourage student engagement during the exercises and to summarize key concepts. We will continue to work to optimize application exercises and facilitator training, especially for new participants.

We continue to believe that our end of week Summary & Integration sessions that extensively utilizes an audience response system (currently using Poll Everywhere) is a best practice of the block.

The in-person Clinical Immersion experience was very well-received by students and was essential to integrate block concepts and clinical experiences. Student comments indicated this might be a valuable experience in other blocks as well.

We offer office hours over Zoom to review key concepts with students. This was particularly helpful as the block became more integrated. Along with other resources (i.e. CaseMed Minute videos, Pharm videos, SEQs, etc.), these sessions offered a chance for students to discuss topics with content experts.

We remain diligent in reviewing diversity in didactic materials and small group sessions moving forward. This emphasis was strongly implemented with the "IQ Diversity" project that began in the previous academic year. Section leaders were encouraged to incorporate and review their colleague's delivery of content to ensure that the examples/cases reflect the diversity within our community.

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

Changes anticipated for next year	Reason for changes (evidence)
Standard yearly updates to IQ cases	Normal procedure
Improved approach to oral presentation in IQ case content	Continuous improvement of curriculum

In addition to in-person learning sessions, identify continued virtual supplementation of curriculum (review sessions, office hours, etc)	In-person interactions are invaluable, but virtual sessions are effective in providing easily accessible sessions to directly address students' questions and review content
At least 2 interactive questions in each lecture (or other interactive technique, e.g., pair and share exercise).	Better faculty and student engagement during interactive sessions.

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

None

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

New lecturers were encouraged to share any materials that would help them prepare in advance of their sessions, and feedback was provided quickly to help revise materials as needed. Section leaders also review Block 4 faculty teaching evaluations (lecture and TBL) and if faculty are rated poorly, the possible reasons for this are considered. Faculty in need are referred to the Center for the Advancement of Medical Learning for coaching. Workshops on lecture skills are particularly encouraged. If teaching is particularly poor or efforts to align the lecture content with expectations of the curriculum cannot be achieved, then replacement teachers will be sought.

11. Response to PEAC Report

No new recommendations from PEAC were received since the report referenced in the 2019 Block 4 Action Plan.

12. Acknowledgements:

Block 4 continues to be extremely well managed by our course managers, Nivo Hanson and Deidre Gruning. Nivo continues to provide excellent support and Deidre stepped into the role on short notice at the start of the Block. Their efforts and professionalism are deeply appreciated. We sincerely thank Kathy Dilliplane for her assistance in managing the formative and summative assessments for our block. We continue to be appreciative of Yifei Zhu for program evaluation overall and for each component. Celinda Miller has been outstanding IQ program support, and Michele Mumaw for help with student assessment and others in the Office of Curricular Affairs for assistance with TBLs. We also appreciate Darin Johnson, Paul Salzgeber, and Megan Slabach, who all provided excellent technical support for lectures, TBLs, Block 4 virtual content and the training of all faculty on technology implementation (Wacom

tablet, iPads, Poll Everywhere, etc) and Nicole Pilasky who supported the Block facilitator’s training for use of Poll Everywhere. Carol Chalkley’s assistance with organizing Week 12 Clinical Immersion Week across 3 sites, in addition to coordinating the Cardiology Clinical Reasoning and Cell Physiology Review during the week, was greatly appreciated. We wish to thank Dr. Amy Wilson-Delfosse for her continued guidance in managing Block 4 and all of its complexities and moving parts! We also wish to thank Drs. James Finley and Al Connors who both, despite retiring from clinical work, have continued to take an active role in supporting Block 4 content, and a supportive role for when the pulmonary team has been overwhelmed by clinical work. We also wish to acknowledge the entire Office of Curricular Affairs for their collaborative spirit in coordinating an integrated curriculum that included highly effective in-person and virtual sessions. They are all invaluable and we could not put forth a quality Block 4 without them!

Class of 2025 was asked questions of Block 4 components. Results are reported below as compared to results of previous three years. Responses/Expected: 183/183 (100%)

Percentage of Students who rated “Very Good” or “Excellent”

Block 4: Homeostasis				
General Block Aspects				
Block Components	2018-19 %	2019-20 %	2020-21 %	2021-22 %
Effectiveness of TBLs	--	--	51	61
Effectiveness of Lectures	--	--	--	66
Effectiveness of IQ cases	--	--	--	90
Effectiveness of Clinical Immersion Week	--	--	--	84
Overall quality of this Block	85	83	73	93
Block Concepts/Integration of Block Concepts and Longitudinal Themes				
Pharmacology	59	62	51	80
Cell Physiology	65	65	51	--
Cell Biology	--	--	--	61
Cardiovascular	87	75	68	--
Cardiology	--	--	--	74
Renal	98	92	92	99
Pulmonary	85	76	68	73
Nephrology	--	--	--	96
GARLA*	--	54	60	84
Histopathology*	81	76	64	80
Bioethics	61	67	60	85

*The wording of the questions was changed to:

Rate the quality of your overall educational experience in GARLA

Effectiveness of Histopathology lectures

Scale changed in 2021-22 from 5-point scale “Poor-Fair-Average-Very good-Excellent” to 4-point scale “Poor-Fair-Good-Excellent”