

Case Western Reserve University – University Program Medical School

Block 4: Action Plan 2020-2021

Year 1 – July through May

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|--|-------------------------------------|---|---|---|
| <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, and Simulated Case Presentations during Clinical Immersion/Correlation 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 (section leader)

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

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

Lungs: Vidya Krishnan, MD MHS and Ziad Shaman, MD (section leaders); Jeffrey Renston, MD, James Finley, MD PhD, Shine Raju, 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> | <p>Apply principles of cell physiology to understand molecular function of the heart, kidneys and lungs.</p> | <p>none</p> |
| | | <p>Understand how drugs affect the body and how the body handles drugs.</p> | <p>none</p> |
| | | <p>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.</p> | <p>none</p> |
| | | <p>Understand a) normal pulmonary physiology; and b) how pulmonary diseases alter normal pulmonary physiology and function.</p> | <p>none</p> |
| | | <p>Understand a) the role of the kidney in maintaining homeostasis and b) the interaction of the kidneys with other organ systems.</p> | <p>none</p> |

| 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? |
|---|--|---|
| Entire curriculum was virtual, due to the ongoing COVID-19 pandemic | <p>Students struggled with minimal contact – especially with IQ discussions. Mandatory in-person learning with GARLA and CI week only.</p> <p>Faculty and staff had some experience from the second half of the block in the previous year, but there was a continued effort to learn how to create and conduct zoom sessions for lectures and reviews for a full class, IQ sessions for smaller groups, breakout sessions for TBL's and Clinical Immersion /Correlation week. No pre-taped lectures were used. Video recordings of lectures were made available to students, but they did not appear to be utilized as a key resource for their learning</p> <p>Review sessions were formatted to be case-based learning opportunities, as well as question/answer sessions.</p> <p>TBLs were virtual and ran smoothly, and these sessions were reasonably well received.</p> | <p>Use HEC building space for more (all) teaching sessions, while maintaining acceptable social distancing and remote learning options. 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, but will not do synchronous in-person and virtual sessions.</p> <p>Continue to format review sessions into case-based learning opportunities to review key concepts.</p> <p>Optimize the in-person TBL sessions and better simulate use of the scratch-off forms for the GRAT.</p> |
| Used Zoom polls for interactive sessions | Zoom polls were better incorporated into student interactions than PollEverywhere, but this software limited the types of interactions (word clouds, comments, etc.) | Require at least 2 interactive questions for each didactic session. Incorporate additional interaction – such as face-to-face “turn talks” in the lecture hall. |
| Recruited Dr. Frank Jacono to take on a pivotal Pulmonary physiology lecture. | Well-received lecturer for key fundamental pulmonary lecture. | Continue to encourage increased participation of Pulmonary faculty from VA and UH, and MetroHealth. |

| What changes were made 2020-2021? | How did the changes work? | What would you like to change next year 2021-2022? |
|--|--|---|
| Recruited Dr. Marcin Golczak to deliver Pharmacokinetics lecture | Well-received lecturer for a fundamental pharmacology lecture. | Encourage additional problems in lecture setting (turn talks, interactive Qs) based on students' desire for more examples |
| Incorporated the identity cards in IQ cases to improve diversity in patient cases | Students and facilitators appreciated how these cases revealed personal biases in addressing a patient. This intervention improved the students' perceptions of relying on "stereotypes" in case presentations. | Continue to participate in the IQ Diversity project, adds robust diversity and randomly assigns patient identities to IQ patients in Block 4. We will continue to maintain the one IQ case with a patient who uses gender neutral pronouns. |
| Incorporated 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. Students offered to vet these materials in advance. |
| Increased use of virtual office hours | Each discipline held virtual office hours 3-4 times during the block, for students to be able to ask questions. These sessions were attended by few students (3-12 students, on average), but very well received. | Continue to offer office hours – as a combined virtual / in-person experience, to improve learner-teacher interactions. |
| Clinical Correlation Week converted to Clinical Immersion / Correlation Week. Cardiology EKG reading were in-person and mandatory, as well as Friday case. Pulmonary and Renal sessions were optional. | Being unable to give students the hands-on practical experiences of our traditional Clinical Immersion Week due to the COVID-19 pandemic, we provided 1-2 hour online practical sessions with spirometry lab and the dialysis unit. The cardiology team was able to provide in-person EKG teaching sessions, which the students found extremely useful. Student feedback was very positive for the in-person EKG- sessions, but mixed on the rest of the week's experiences. | If feasible, the hands-on practical experiences of Clinical Immersion Week will resume. |

6. What changes do you anticipate making to the Block next year (AY 2021-2022)

Our experience with nearly 100% online learning will result in continued use of virtual learning to supplement the curriculum, which is expected to be in-person.

We sincerely thank Nivo Hanson and Eva Orszag for their organization and expert facilitation of zoom polls and chat discussions during the learning sessions. Nivo and Eva are key staff members who are critical to the success of the 100% online learning curriculum.

We welcome Kathy Dilliplane for her role in assessments during Block 4. We thank Minoo Darvish for her assistance in managing the formative and summative assessments for Block 4 and helping with a smooth transition of this vital aspect of the curriculum. We are particularly grateful to the Media Vision group of UTech who assisted in outstanding technical delivery of the virtual Block 4 curriculum. This includes the welcome addition of Darin Johnson's IT support throughout Block 4, and the returning help from Paul Salzgeber, Megan Slabach and Deidre Gruning during TBL sessions, and Paul and Megan for Clinical Immersion/Correlation Week. We also thank Carol Chalkley for her role in organizing Week 12 Clinical Immersion/Correlation Week activities.

We want to acknowledge the tremendous contributions of Dr. James Finley to Block 4 over the last 15+ years. Dr. Finley formally retired from CWRU SOM in Spring 2021, but will continue to support Block 4 in an advisory capacity.

One CWRU SOM faculty has proposed a new curriculum for medical students on healthcare financial literacy. We are exploring incorporating these concepts into Block 1, as well as 1 of the Block 4 IQ cases (Amanda Hennie case – pediatric asthma patient) as a learning objective. We believe the concepts of financial literacy will also bridge our conversations on inequities and disparities in healthcare.

We annually review the success and feasibility of the Clinical Immersion week (this year in the form of Clinical Correlation/Immersion week). Although we believe that student feedback is overly critical, we do believe that this week continues to be a good dedication of time and effort. We will make every effort to return Block 4 Clinical Immersion week in AY2021-2022.

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

We continue to be pleased with our real-time evaluation results from our TBL sessions. There were general/review slides that were incorporated for the remote sessions, and these should continue in the larger TBL rooms in Sampson. These also provide excellent review material for the students. 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 zoom polls over PollEverywhere) is a best practice of the block.

We use student feedback to create new CaseMed Minute series videos to supplement key concepts.

We provided new identities to our IQ patients as part of the “IQ Diversity” project that began in Block 2 during the 20-21 academic year. We maintained the gender-neutral identify of one IQ patient, as was introduced the prior academic year.

| Deletions | Additions |
|-----------|--|
| None | We added some content around health disparities, particularly in relation to GFR and PFT interpretation. |

We believe that a similar emphasis should be made in reviewing diversity in didactic materials moving forward. Examples/cases should 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 |
| Providing in-person learning sessions, with continued virtual supplementation of curriculum through virtual office hours | COVID-19 social distancing |
| 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?

Section Leaders attend as many of the lectures in their sections as possible (this was made easier this year through online sessions). 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 Eva Orszag. We sincerely thank Minoo Darvish for her assistance in managing the formative and summative assessments for our block. We continue to be appreciative of Yifei Zhu for program evaluation, Celinda Miller for outstanding IQ program support, and others in the Office of Curricular Affairs for assistance with TBLs. We also appreciate Darin Johnson, Paul Salzgeber, Megan Slabach and Deidre Gruning, who all contributed to the development and implementation of the Block 4 virtual curriculum and the training of all faculty who participated in this new teaching format. Special appreciation also goes to Celinda Miller who worked tirelessly to ensure that remote IQ groups were set up flawlessly and Block 4 IQ faculty were trained in both method and technical approach to remote facilitation. Carol Chalkley's assistance with organizing Week 12 Clinical Immersion / Correlation 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 Dr. James Finley for his continued support and expertise in Block 4 content, who continued to help with Block 4 teaching and content, particularly with the ongoing pandemic and the increased clinical demands of our faculty. We also wish to acknowledge the entire Office of Curricular Affairs for their unprecedented collaborative spirit that converted a complex, highly interactive curriculum into a highly effective virtual curriculum. They are all invaluable and we could not put forth a quality Block 4 without them, in-person or remotely!

Class of 2024 was asked questions of Block 4 components. Results are reported below as compared to results of previous three years. Responses/Expected: 176/183 (96%)

Percentage of Students who rated "Very Good" or "Excellent"

| Block 4: Homeostasis | | | | |
|---|--------------|--------------|--------------|----------------------|
| General Block Aspects | | | | |
| Block Components | 2017-18 % | 2018-19 % | 2019-20 % | 2020-21 % |
| Effectiveness of team-based learning group activities | -- | -- | -- | 51 |
| Overall quality of this Block | 85 | 85 | 83 | 73 |
| Block Concepts/Integration of Block Concepts and Longitudinal Themes | | | | |
| Pharmacology | 71 | 59 | 62 | 51 |
| Cell Physiology | 59 | 65 | 65 | 51 |
| Cardiovascular | 83 | 87 | 75 | 68 |
| Renal | 92 | 98 | 92 | 92 |
| Pulmonary | 79 | 85 | 76 | 68 |
| GARLA | -- | -- | 54 | 60 |
| Histopathology | 82 | 81 | 76 | 64 |
| Bioethics | 58 | 61 | 67 | 60 |