Faculty Handbook for the MD Curriculum

SECTION 4. OVERVIEW OF MD LEAD.SERVE.INSPIRE (LSI) CURRICULUM

CORE EDUCATIONAL OUTCOMES

[Adopted 2/27/2018, Executive Curriculum Committee]

On February 27, 2018, the Executive Curriculum Committee adopted the AAMC-endorsed Physician Competency Reference Set (PCRS) as the core outcomes of the curriculum. While the PCRS reflects desired attributes of practicing physicians, medical students are expected to exhibit the competencies appropriate to their stage of training.

Patient Care

The graduate is able to provide patient-centered care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. To accomplish this, the graduate is able to:

1. Perform all medical, diagnostic, and surgical procedures considered essential for the area of practice.

2. Gather essential and accurate information about patients and their conditions through history-taking, physical examination, and the use of laboratory data, imaging, and other tests.

3. Organize and prioritize responsibilities to provide care that is safe, effective, and efficient.

4. Interpret laboratory data, imaging studies, and other tests required for the area of practice.

5. Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment.

6. Develop and carry out patient management plans.

7. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision making.

8. Provide appropriate referral of patients including ensuring continuity of care throughout transitions between providers or settings, and following up on patient progress and outcomes.

9. Provide healthcare services to patients, families, and communities aimed at preventing health problems or maintaining health.

10. Provide appropriate role modeling.

11. Perform supervisory responsibilities commensurate with one's roles, abilities, and qualifications.

Knowledge for Practice

The graduate is able to demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care. To accomplish this, the graduate is able to:

1. Demonstrate an investigatory and analytic approach to clinical situations.

2. Apply established and emerging bio-physical scientific principles fundamental to healthcare for patients and populations.

3. Apply established and emerging principles of clinical sciences to diagnostic and therapeutic decision-making, clinical problem-solving, and other aspects of evidence-based healthcare.

4. Apply principles of epidemiological sciences to the identification of health problems, risk factors, treatment strategies, resources, and disease prevention/health promotion efforts for patients and populations.

5. Apply principles of social-behavioral sciences to provision of patient care, including assessment of the impact of psychosocial and cultural influences on health, disease, care-seeking, care compliance, and barriers to and attitudes toward care.

6. Contribute to the creation, dissemination, application, and translation of new healthcare knowledge and practices.

Practice-Based Learning and Improvement

The graduate is able to demonstrate the ability to investigate and evaluate one's care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning. To accomplish this, the graduate is able to:

1. Identify strengths, deficiencies, and limits in one's knowledge and expertise.

2. Set learning and improvement goals.

3. Identify and perform learning activities that address one's gaps in knowledge, skills, and/or attitudes.

4. Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement.

5. Incorporate feedback into daily practice.

6. Locate, appraise, and assimilate evidence from scientific studies related to patients' health problems.

7. Use information technology to optimize learning.

8. Participate in the education of patients, families, students, trainees, peers and other health professionals.

9. Obtain and utilize information about individual patients, populations of patients, or communities from which patients are drawn to improve care.

10. Continually identify, analyze, and implement new knowledge, guidelines, standards, technologies, products, or services that have been demonstrated to improve outcomes.

Interpersonal and Communication Skills

The graduate is able to demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. To accomplish this, the graduate is able to:

1. Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds

2. Communicate effectively with colleagues within one's profession or specialty, other health professionals, and health related agencies.

3. Work effectively with others as a member or leader of a health care team or other professional group.

4. Act in a consultative role to other health professionals.

5. Maintain comprehensive, timely, and legible medical records.

6. Demonstrate sensitivity, honesty, and compassion in difficult conversations, including those about death, end of life, adverse events, bad news, disclosure of errors, and other sensitive topics.

7. Demonstrate insight and understanding about emotions and human responses to emotions that allow one to develop and manage interpersonal interactions.

Professionalism

The graduate is able to demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. To accomplish this, the graduate is able to:

1. Demonstrate compassion, integrity, and respect for others.

2. Demonstrate responsiveness to patient needs that supersedes self-interest.

3. Demonstrate respect for patient privacy and autonomy.

4. Demonstrate accountability to patients, society, and the profession.

5. Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

6. Demonstrate a commitment to ethical principles pertaining to provision or withholding of care, confidentiality, informed consent, and business practices, including compliance with relevant laws, policies, and regulations.

Systems-Based Practice

The graduate is able to demonstrate an awareness of and responsiveness to the larger context and system of healthcare, as well as the ability to call effectively on other resources in the system to provide optimal healthcare. To accomplish this, the graduate is able to:

1. Work effectively in various healthcare delivery settings and systems relevant to one's clinical specialty.

2. Coordinate patient care within the healthcare system relevant to one's clinical specialty.

3. Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care.

4. Advocate for quality patient care and optimal patient care systems.

5. Participate in identifying system errors and implementing potential systems solutions.

6. Perform administrative and practice management responsibilities commensurate with one's role, abilities, and qualifications.

Inter-professional Collaboration

The graduate is able to demonstrate the ability to engage in an inter-professional team in a manner that optimizes safe, effective patient- and population-centered care. To accomplish this, the graduate is able to:

1. Work with other health professionals to establish and maintain a climate of mutual respect, dignity, diversity, ethical integrity, and trust.

2. Use the knowledge of one's own role and the roles of other health professionals to appropriately assess and address the healthcare needs of the patients and populations served.

3. Communicate with other health professionals in a responsive and responsible manner that supports the maintenance of health and the treatment of disease in individual patients and populations.

4. Participate in different team roles to establish, develop, and continuously enhance inter-professional teams to provide patient- and population-centered care that is safe, timely, efficient, effective, and equitable.

Personal and Professional Development

The graduate is able to demonstrate the qualities required to sustain lifelong personal and professional growth. To accomplish this, the graduate is able to

1. Develop the ability to use self-awareness of knowledge, skills, and emotional limitations to engage in appropriate help-seeking behaviors.

2. Demonstrate healthy coping mechanisms to respond to stress.

3. Manage conflict between personal and professional responsibilities.

4. Practice flexibility and maturity in adjusting to change with the capacity to alter one's behavior.

5. Demonstrate trustworthiness that makes colleagues feel secure when one is responsible for the care of patients.

6. Provide leadership skills that enhance team functioning, the learning environment, and/or the healthcare delivery system.

7. Demonstrate self-confidence that puts patients, families, and members of the healthcare team at ease.

8. Recognize that ambiguity is part of clinical healthcare and respond by utilizing appropriate resources in dealing with uncertainty.

CENTRAL OVERSIGHT OF LSI CURRICULUM

Accreditation standards for US medical schools require central oversight of the curriculum with established program and curricular outcome measures capable of monitoring to prove that graduates are achieving the desired competencies. OSU COM accomplishes this with the Executive Curriculum Committee (ECC), authorized by the College Council. The ECC includes representatives from faculty, administration, and students who are charged with making sure that the OSU COM meets the accreditation standards. ECC is chaired by a faculty member who is not part of the education administration. [Additional information about ECC is located in Section 7 of the Faculty Handbook (Professional Advancement) for individuals who wish to participate.]

ECC has delegated some of the routine management aspects of the LSI curriculum to the MICRO subcommittee (Management, Innovation, Compliance, Revision, Optimization). The MICRO subcommittee consists of education leadership, elected faculty with demonstrated involvement in the curriculum, students, and ECC representatives. It makes recommendations to ECC for final approval.

The LSI curriculum is managed by the Associate Dean for Medical Education who reports to ECC and chairs the MICRO subcommittee. Four faculty academic program directors manage the horizontal aspects of the curriculum for Part 1, Part 2, and Part 3. Another faculty program director manages the evaluation and assessment activities across all parts. Eight faculty directors of competency manage the integration of each of the eight PCRS competency domains across and through the parts of the curriculum. These 13 faculty directors all report to the Associate Dean and are the education leadership members of the MICRO subcommittee of ECC.

CURRICULAR LEARNING OUTCOMES

The PCRS competency domains and competency elements describe the desired attributes of graduates of OSU COM. In order to monitor appropriate development of the competencies, measurable Curricular Learning Outcomes (CLOs) have been developed by the directors of competency and academic program directors with approval by the MICRO subcommittee and ECC. Teaching and learning methods (TLMs) and assessment items are mapped to the CLOs. The CLOs are used to blueprint the curriculum and to monitor for redundancies, deficiencies, and evidence of assessment.

The TLMs are developed by individual faculty with oversight from the appropriate academic program committee. Each TLM for the required components of the curriculum must be linked to

one or more of the CLOs. Individual faculty generate learning objectives for their assigned TLM that must be linked to a single CLO. The learning objectives are more granular and more appropriate for students to use as study guides. The learning objectives are sampled in assessments and used to document achievement of the appropriate CLO.
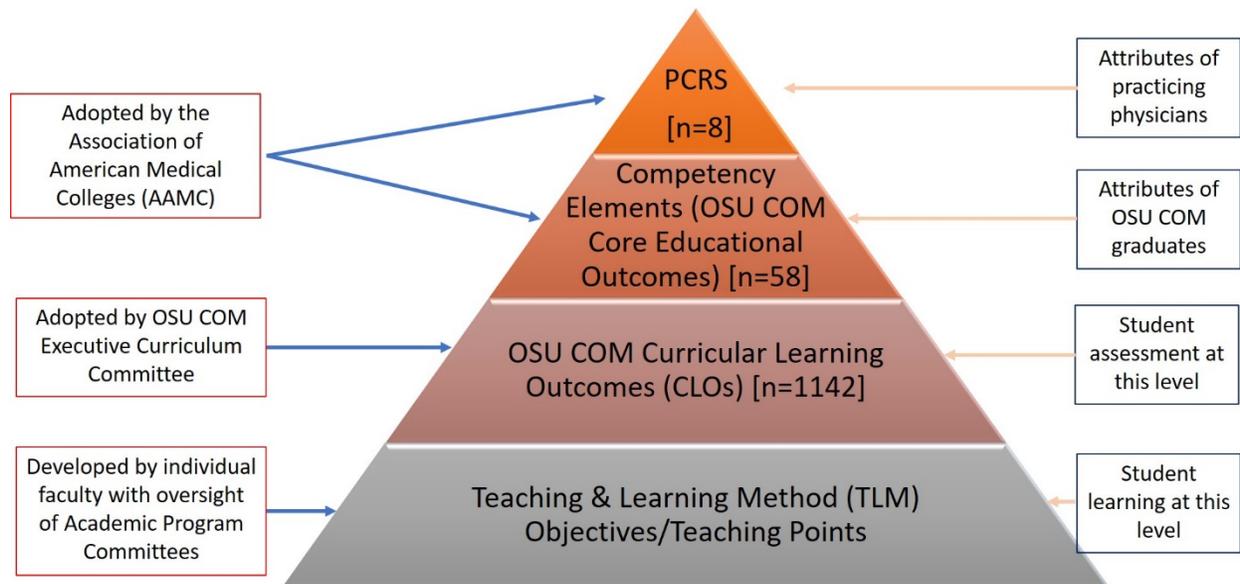
PCRS = Physician Competency Reference Set

ACADEMIC CALENDARS

The University academic calendar includes commencement dates and university holidays where campus offices are closed. The College of Medicine, as a professional college, has a different calendar for beginning classes for each semester. The COM observes university holidays. Medical students are not permitted to start a new semester until the university commencement for the previous semester has occurred. The University calendar may be found at

https://registrar.osu.edu/staff/bigcal.asp

The LSI calendar varies according to the curricular year in which the student is involved. Med 1 and 2 students start the year in August, the week immediately after the University summer commencement has occurred and usually about 3 weeks before the majority of students return to campus. They conclude their year prior to the University spring commencement. Med 3 and 4 students begin their years in May, the week immediately after the University spring commencement has occurred.

An updated student calendar is published annually in the Medical Student Handbook and may be found at

https://medicine.osu.edu/student-resources/student-handbook

OVERVIEW OF CURRICULAR ORGANIZATION

The LSI curriculum is a competency-driven curriculum. It is divided into three Parts: Part 1 Clinical Foundations, Part 2 Clinical Applications, and Part 3 Advanced Clinical Management. [The following descriptions represent the curriculum prior to Covid-19. Some modifications have occurred during the pandemic.]

Part 1 Clinical Foundations

Part 1 of the curriculum is 18 months long and is divided into eight interdisciplinary blocks covering the major foundational sciences and their clinical correlates. Foundations and introductory material are established in the first two blocks and then continued as threads throughout the six systems-based blocks that follow. Instruction is through a variety of methods including recorded didactics, case-based small group discussions, team-based learning exercises, and independent reading. Assessment occurs through completion of assigned tasks, multiple choice question examinations, anatomy practical examinations, and individual and group readiness assessments during the team-based learning exercises.

Students develop skills in patient care and communication through weekly small group sessions (Longitudinal Group) and participation in an ambulatory clinical site every other week (Longitudinal Practice). Skill development topics are linked to the interdisciplinary blocks. Assessment occurs through faculty assessment and Observed Standardized Clinical Examinations (OSCEs). Students also complete a longitudinal project in Community Health Education.

Applied Health Systems Sciences and the Educational Portfolio begin in Part 1 and continue throughout the curriculum. The Educational Portfolio and Coaching program addresses the Practice-Based Learning and Improvement competency. It is intended to enhance student reflective practice and self-directed learning skills in order to promote excellence in our future physicians. The Part 1 portfolio contains performance data, reflective stories, and digital artifacts.

Med 1, Semester 1

Foundations 1 (5 weeks; Biochemistry, Genetics, Histology, Cell Biology, Behavioral Science, Nutrition, Embryology)

Foundations 2 (4 weeks; Genetics, Histology, Cell Biology, Anatomy, Pathology, Research Methods, Pharmacology, Immunology)

Selectives Week 1 (students select an in-depth competency-linked selective)

Professional Development Week 1 (career and personal development)

Bone and Muscle Disorders (6 weeks; Histology, Anatomy, Pathophysiology, Pharmacology)

Med 1, Semester 2

Cardiopulmonary Disorders (9 weeks; Histology, Anatomy, Physiology, Pathophysiology, Pharmacology)

Endocrine/Reproductive Disorders (6 weeks; Histology, Anatomy, Physiology, Pathophysiology, Pharmacology)

Med 2, Semester 1

Neurological Disorders (7 weeks; Histology, Neuroanatomy, Embryology, Physiology, Pathophysiology, Pharmacology, Behavioral Science, Special Senses)

Selectives Week 2/Professional Development Week 2

GI/Renal Disorders (6 weeks; Histology, Anatomy, Physiology, Pathophysiology, Pharmacology)

Host Defense (3 weeks; Skin, Immunologic disorders, Virology, Pharmacology)

Med 2, Semester 2

Host Defense (6 weeks; Microbiology, Infectious diseases, Pharmacology, Hematology)

Professional Development Week 3

Readiness for Part 2 Clinical Applications

Students must demonstrate readiness to enter Part 2 of the curriculum by achieving competency in all components of Part 1 and posting a score on a Comprehensive Basic Science Skills Assessment examination from the NBME that predicts a passing score on USMLE Step 1. Students are given 6-7 weeks to prepare for the examination after the conclusion of Part 1. Students are required to post a passing score on USMLE Step 1 in order to continue in the Part 2 curriculum.

Students must also fulfill all immunization requirements, complete training in the OSUWMC electronic medical record, complete training and be certified in ACLS, renew HIPAA certification, complete a background check, complete the infection control module, be fitted for N95 mask, and satisfactorily complete all required computer-based learning modules for the hospital.

Part 2 Clinical Applications

Students are required to satisfactorily complete three Rings of clinical clerkships and their components in Part 2. Each ring includes 14 weeks of clinical experience with a week of groundschool (simulation, small group, didactics) and a week of assessment. All required clinical clerkships must be completed under the supervision of the faculty of the College of Medicine, as required by LCME accreditation standards, therefore students must complete required rotations at OSUWMC and its affiliates. Each ring merges foundational knowledge gained in Part 1 with one week of practice in the clinical skills lab during "Ground School" to prepare students for rotation in a clinical setting. Assessment occurs through clinical performance assessments, NBME subject examinations, OSCEs, and task completion.

Curricular units that make up the three Rings are

> Understanding Patients within Populations (PWP): Pediatrics, Family Medicine, Ambulatory Internal Medicine

> Understanding Surgical and Reproductive Needs (SRN): Surgery, Obstetrics and Gynecology, Perioperative services

> Understanding Specialized Medical Needs (SMN): Internal Medicine, Neurology, Psychiatry

The Systems-Based Practice competency has its major emphasis during Part 2 with students learning the skills needed to complete a team project related to patient safety or systems improvement (Advanced Health Science Systems). Portfolio and Coaching continues in Part 2. The Part 2 portfolio contains performance data, reflective stories, and digital artifacts.

Part 3 Advanced Clinical Management

The goal of Part 3 of the LSI curriculum is to prepare Ohio State medical students to be the finest interns in the country. To achieve that goal, this part of the curriculum focuses on the breadth of what students can do—taking them from students to doctors.

Clinical tracks are selected by students to prepare them for internships/residency training in the specialty/subspecialty field of their interest. Students receive individualized guidance from advisers in their chosen disciplines, who also ensure that students are cultivating the skills necessary to be successful in residency and as practicing physicians.

Advanced Management in Hospital-Based Care is a unique, eight-week clerkship in which students learn acute care management in an integrated manner. One four-week block occurs in the Emergency Department and one four-week block occurs as a sub-internship in an area associated with the chosen clinical track.

Advanced Management in Relationship-Centered Care is a course that emphasizes team-based care of patients with complex or chronic diseases and may be completed in 8 weeks or as a longitudinal concurrent experience

Advanced Competencies and Electives are offered over a 4 four-week blocks. Students may choose from a variety of advanced competencies and clinical electives to become proficient in their specialty.

Students present their Part 2 project in Advanced Health Science Systems. The Portfolio and Coaching portion in Part 3 serves as a venue for demonstrating the student's development as a physician in training and sharing their accomplishments with others. The contents include stories containing narratives on progress in competency development in the 8 competency domains over their medical school career. The completed portfolio is presented to and assessed by two faculty members. Many students have found their portfolio work to be useful during the residency application process.

OTHER CURRICULAR TRACKS

Medical Scientist Training Program (MSTP)

The MSTP is a MD/PhD track that offers core programs in biomedical sciences, neuroscience, and biomedical engineering as well as other affiliated PhD programs. The first 16 months of the MSTP program mirror that of the college's LSI curriculum with the exception that the Host Defense block

is completed during the summer between Med 1 and 2. This allows for earlier Step 1 exam dates and entry into full-time graduate school studies and research in March of the second year. Students complete their PhD work and then return to LSI for Part 2 and Part 3.

Additional information may be found at

 https://medicine.osu.edu/education/dual-degree/mstp/curriculum

Primary Care Track (PCT)

Ohio State's three-year Primary Care Track (PCT) medical school program prepares students to be successful in a career in primary care by providing strong faculty mentorship and advising for students, early-and-often clinical learning experiences in family medicine offices, and a cultivated learning community for students interested in primary care. The program is ideal for students who are committed to family medicine as their specialty of choice, who want to enter practice earlier and with less debt, and who are looking for a six-year medical school to practice pathway. Students who successfully graduate from the Primary Care Track program are ranked to match into the Ohio State Family Medicine Residency Program.

The PCT offers clinical experiences early in the program, beginning prior to the first day of medical school classes. First-year students are assigned to a family medicine clinical site, which continues throughout the three years of medical school, allowing students to become an integral part of the health care team. This experience also permits joint credit for achieving the Family Medicine portion of Part 2 and the AMRCC ambulatory rotation of Part 3.

The first 16 months of the PCT program mirror that of the college's LSI curriculum with the exception that the Host Defense block is completed during the summer between Med 1 and 2. This allows for earlier Step 1 exam dates and entry into full-time clinical care in January of the second year.

CURRICULUM CONTACTS

Jennifer McCallister MD, Associate Dean for Medical Education

Joanne Lynn MD, Associate Dean for Student Life

Jack Kopechek MD, Chair, Executive Curriculum Committee

Doug Danforth PhD, Part 1 co-director

Cami Curren MD, Part 1 co-director

Kim Tartaglia MD, Part 2 director

Nick Kman MD, Part 3 director

Cynthia Leung MD, Director of Evaluation and Assessment

Larry Kirschner MD PhD, MSTP director

Allison Macerollo MD, PCT co-director

Kristin Rundell MD, PCT co-director

MEDICAL STUDENT DUTY HOURS

Information on duty hours is found in Section 2 of the Faculty Handbook (Health and Safety).

LIABILITY COVERAGE

Students in the College of Medicine are covered by the University Hospitals self-insurance program in amounts of at least $1 million per occurrence and $3 million annual aggregate for acts or omissions performed in the scope of their assigned academic course work at OSU Hospitals and Clinics and all OSU owned or operated facilities. Acts or omissions that are intentional or are so careless to be wanton or reckless are not covered.

Medical students are covered while participating in any required or elective course work at OSU hospitals, affiliates, or institutions within the state of Ohio approved by the Associate Dean for Medical Education. They are covered for electives approved by the Associate Dean for Medical Education and outside the state of Ohio through The Ohio State University Self Insurance Program (USIP). Proof of coverage is obtained through the Offices of Medical Education and Student Life (155 Meiling). Students are not covered for electives outside of the United States and must work with the Office of Global Health Education.

In no case will Ohio State provide coverage for nonacademic activities. This includes non-approved volunteer services to non-OSU owned or sponsored groups. No coverage is provided where medical students are performing work for hire, that is, receiving compensation as salary or other benefits.

Non-OSU medical students, including visiting or foreign medical students, are not covered on the same terms as College students for service at OSU Hospitals and Clinics. *Note: Approval by*

the College and clinical department as well as reporting to the Medical Director of OSU Hospitals must be completed first. All visiting students must provide proof of insurance coverage comparable to OSU coverage prior to beginning any clinical activity.

SIX YEAR RULE

[Executive Curriculum Committee, reviewed/approved 2/2/2010]

Regular progress through the curricular components is required of all students. Each student must successfully complete the entire curriculum within six years of his or her starting date. Successful passage of USMLE Steps 1, 2CK, and 2CS are graduation requirements and, as such, are considered part of the curriculum. [The requirement for Step 2CS has been waived until a new examination is released by the USMLE.] Leaves of absence for any reason are included and count towards the maximum time of six years unless the leave is taken within the first eleven weeks of the first attempt at Med 1.

Students obtaining a dual degree (PhD, MPH, MHA, MBA, or JD) or those involved in approved academic pursuits such as research fellowships are granted a renewable waiver from the six year rule for completion of requirements for the MD degree based on successful progress in the alternative program. This waiver is contingent upon the academic pursuit being the primary purpose of the leave as determined by the Associate Dean for Student Life or his/her designee.

When it is clear at any point in the course of studies that a student cannot complete the entire curriculum within the specified six years, he or she will be subject to dismissal from the College of Medicine. Student review and dismissal procedures will be followed in accordance with the College of Medicine's Academic Review policy detailed in the Medical Student Handbook.