

# Curriculum Update: Clinical Skills Teaching and Assessment and Other Activities

Steven A. Haist, MD, MS

Associate Dean for Curriculum and Assessment

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# College of Medicine

- Four campuses, one medical school
- Bowling Green and Northern Kentucky campuses are four year sites
- Morehead (Rural Physician Leadership Program): years 3 and 4 in Morehead
- Comparable education at all campuses
- Large group teaching activities broadcast to the campuses
- Small group teaching is in person at the regional campuses

# Grading System Pass/Fail

- Pass/fail all four years (previously A, B, C, and F)
- Need to identify ways for students to differentiate themselves

# Education: First-Year Curriculum

Hybrid curriculum: First two courses are discipline-based followed by organ system courses. Mix of block and longitudinal courses. Never more than two courses at the same time

- Clinical Anatomy and Radiology (9 weeks)
- Foundations of Infection, Disease and Therapeutics (10 weeks)
- Organ System Based Curriculum
  - Hematologic & Lymphatic (4 weeks)
  - Neurosciences (8 weeks)
  - Behavioral Basis of Medicine (3 weeks)
  - Musculoskeletal & Integumentary (5 weeks)
- Introduction to Clinical Medicine (ICM) (32 weeks, 20 class sessions with preceptors)
- Contemporary Practice of Medicine (8 weeks)

# Education: Second-Year Curriculum

Continue to develop an integrated understanding of health and disease using a systems-based approach.

- Integrated Organ System-Based Courses
  - Respiratory (5 weeks)
  - Renal & Urinary (4 weeks)
  - Cardiovascular (5 weeks)
  - Gastrointestinal & Nutrition (5 weeks)
  - Endocrine & Reproductive (6 weeks)
- Advanced Clinical Medicine (ACM) (22 weeks)

# United States Medical Licensing Examination (USMLE) Step 1 (Pass/Fail)

- After the formal second-year curriculum
- Six to eight weeks of dedicated study for Step 1
- Amboss purchased by UKCOM for 1st-year and 2nd-year students
  - Question bank with explanations and links to manuscripts or other references
- Customized Assessment Services from the NBME (retired Step 1 questions, built an examination question by question to match our curriculum through the first year, number of question are proportional to the number of weeks of curriculum); CAS exam on May 22, 2024.

# Education: Third-Year Curriculum

Broad exposure to major medical disciplines (weeks)

- Internal Medicine (8 weeks)
- Pediatrics (7)
- Surgery (7)
- Obstetrics & Gynecology (4)
- Psychiatry (4)
- Family & Community Medicine (4)
- Neurology (2)
- Emergency Medicine (4)
- Entrustment in Clinical Medicine in Clinical Medicine (4 one-week blocks, 1 two-week block)

# Third-Year Evaluations

- Faculty (and residents) evaluations of performance during the clerkship (narrow spread)
- Shelf examinations are clerkship specific exams using retired Step 2 questions.
  - Passing is the 5<sup>th</sup> percentile (most common passing mark used by medical schools).
  - Clerkships assign U-World questions in prep for the Shelf-exam questions.

# Education: Fourth-Year Curriculum

Further development and demonstration of competence of clinical skills and to prepare for residency in chosen specialty

- Two acting internships (one primary and one secondary or two primary)
- Five elective rotations
- Three months for USMLE Step 2 prep, vacation, interviews
- Transition to Residency (final 4-week block before graduation); include high fidelity simulations, challenging scenarios

# USMLE, Step 2

- Step 2 is taken during fourth year, usually in the summer
  - Three-digit score
  - Prep materials include the U-World question bank, subscription provided for each 3<sup>rd</sup>-year medical student.

# Enhancements to the Curriculum

- House system
- Scholarly Concentrations: Bioethics, Global Health, Research and two new SC this year, Primary Care and Rural
- Community service
- Research
- Interprofessional education
- Interest groups
- Electives
- Shadowing

# Clinical Skills Teaching and Assessment

# First Year: Interviewing

- MD 811 and MD815 Introduction to Clinical Medicine
  - Fall and Spring semester course teaching medical interviewing (groups of 7-10 students and 2 preceptors (physician and a behavioral scientist)).
  - Utilizes **standardized patients (SPs)** heavily to teach and for formative and summative assessments of the students.
  - Begins with the most basic concept, introducing yourself to the patient, then chief concern and history of present illness, over time, Past Medical Hx, Family Hx, Psychosocial Hx and ROS are introduced.
  - Students practice these skills in front of their preceptors.

# First Year: Interviewing

- MD 811 and MD815 Introduction to Clinical Medicine
  - Begin to tackle more advanced interviewing including asking about social determinants of health, assessing for depression, substance use, and sexual history.
  - Other topics germane to medical education are discussed including medical ethics, health equity, stress and wellness, basics of behavioral change, eating behaviors, patient safety, and giving bad news.

# First Year: Interviewing

- MD 811 and MD815 Introduction to Clinical Medicine Assessments
  - Formative assessments: After learning and practice with SPs in the small group setting, there are 7 individual interview lab practices and feedback sessions with SPs
  - Mid-term video interview reviewed with preceptor
  - Summative assessment of interview skills the last week of class: 40-minute SP interview (chief concern, HPI, ROS, PMHx, Fm Hx, and Psychosocial Hx, including substance use and sexual Hx). Communication skills rubric is used, and students submit a note for grading.
  - Required activities including working at a free or underserved clinic and three afternoons for 4-5 hrs each at a clinical site.

# First Year: Physical examination (PE)

- MD814 Clinical Anatomy and Radiology
  - Six sessions learning the PE coinciding with the body area of anatomy
  - Three summative PE examinations where the students demonstrate the specific PE maneuvers on a SP
- MD817 Neuroscience
  - Neurologic examination is taught, practice with feedback from instructions and the SPs
  - Final examination where the students demonstrate the PE on a SP
- MD818 Integumentary and Musculoskeletal Systems
  - Instruction and practice on the knee, shoulder and back examinations on SPs
  - Summative examination: Obtain a history and perform a focused PE on a patient with a chief concern of either a knee or shoulder or back problem; scored by a SP checklist and a written note including the most likely diagnosis and a differential.

# Second Year: Interviewing and Physical Examination

- MD821 Advanced Clinical Medicine (Physical Diagnosis)
  - Small groups of 3-5 students per group
  - Students perform seven history & PEs on hospitalized patients; written presentations of the Hx and PE are graded by the preceptor.
  - One written SOAP note from a standardized case
  - Team-based clinical reasoning sessions: seven ~90-minute sessions of groups of 3-6 students working through three cases and faculty facilitators go from group-to-group to listen and recalibrate, if necessary.

# Teaching and Assessing Clinical Skills

- Communications skills rubric: 22 items, 16 on a yes/no scale and 6 on an excellent/adequate/needs improvement scale

➤	Maintains appropriate eye contact throughout.	No	Yes	
➤	Maintains flow of interview with transition statements.	No transition statements used	Transition statements used in scripted manner, not clear to patient	Consistent transition statements that increase understanding or comfort to patient

- Core physical examination
  - 16 core items, technique is stressed
- Cluster examinations
  - 10 cluster examinations (plus 6 subcategories for musculoskeletal)
  - e.g., eye cluster, cardiovascular cluster, neurologic cluster

# Third Year

- The student's ability to obtain a history and perform the physical examination on patients is assessed during each rotation by attendings, and if applicable, residents.
  - Obtain a relevant history for a patient
    - Due to inadequate skills, needed someone to do it for them
    - Requires close supervision - needed someone to talk them through it
    - Requires minimal supervision - needed prompting from time to time
    - Performs independently - may have needed someone to add subtle points but they were competent at an intern level
  - Conduct an appropriately focused physical exam (or mental status exam) for a patient
    - Due to inadequate skills, needed someone to do it for them
    - Requires close supervision - needed someone to talk them through it
    - Requires minimal supervision - needed prompting from time to time
    - Performs independently - may have needed someone to add subtle points but they were competent at an intern level

# Third Year: MD839 Entrustment in Clinical Medicine

- Four one-week blocks and 1one two-week block.
  - Formative assessment: First one-week block (first week of third year) has three SP patient stations where the students interviews and examines the patient and writes a SOAP note.
  - Summative assessments: Second-, third- and fourth one-week blocks occur at week 15, week 30 and week 45. The students, three station examinations, evaluated on communications skills, physical examination and their SOAP note.
  - Other activities: Coaching, didactic workshops, small group discussions, portfolio reviews, career counseling

# Fourth Year

- Assessed on every clinical rotation fourth year on communication skills, history obtained, physical examination performed.
- Transitions to Residency: Like a lot of medical schools, we have a course designed to prepare the 4<sup>th</sup> year students for the first day of residency. While some schools are shortening their courses, our course continues to be 4 weeks. There are 6 tracks for the students to better match the skills taught and assessed to the residency specialty they will be starting in eight short weeks.
  - Lectures, workshops, SP encounters, high fidelity simulations,
  - Topics covered include intern as teacher, cross-cover, anger de-escalation, radiology can't miss findings and lines and tube placement, sepsis, IV fluids, informed consent, delivering bad news, code-status conversations, death pronouncement, stress and wellness, leadership, patient safety culture

# How we got here?

- University of Kentucky College of Medicine first class of 40 students started in 1960
- Rural Physician Leadership Program (RPLP) two-year campus in Morehead Kentucky started in 2012
- Projected physician shortage in the Commonwealth of Kentucky in 2030 is approximately 3,000 physicians.
- Four-year regional campuses matriculated their first class of 30 students in Bowling Green in 2018 and first class of 35 students in Northern Kentucky in 2019.

# Confluence of Activities

- The University of Kentucky Health Education Building was approved by the Board of Trustees in May 2021 and authorized by the Kentucky General Assembly in 2022 with the original groundbreaking scheduled for 2024. Projected opening late 2026.
- College Success Initiative (CSI): A group of first- and second-year faculty who were concerned about lack of class attendance and how this is affecting medical education
- COMET was launched in the fall-winter of 2022

# College Success Initiative (CSI) then Committee to Optimize Medical Education Together (COMET)

- Lack of student engagement in the preclinical years, some students show minimal effort because they only must pass their courses to move on
- Students want a consistent learning rhythm
- Students want more active learning and fewer “sage on the stage”
- More Step 1 like questions to better prepare them for Step 1
- COMET, five domains: Content, Clinical Experiences, Delivery, Assessment, Educational Enhancements
- Now moved to domain and phase work (three phases to our curriculum, Core Principles (years 1 & 2), Application Phase (year 3), and Advanced Development (year 4))

# COMET Highlights:

- Each domain group generated a domain specific SWOT analysis (strengths, weaknesses, opportunities, and threats)
- Graduation Questionnaire ratings of excellent + good% for certain disciplines had significant decreases in ratings in the recent past (histology, pathology, and pharmacology)
- Provide earlier clinical experiences to first year students to actively engage them in a patient care in a role.
- Design interprofessional educational activities in years 2, 3 and 4 (make the activities feel natural and not forced)
- Begin to weave educational activities within the house system

- Design a learning rhythm for the Core Principles phase (two-week pattern)
- In the Core Principles phase expand “doer” activities
- In our pass/fail curriculum, identify how we can distinguish first and second-year high performers and third-year high performers.
- More formative assessments throughout the curriculum to help identify at-risk students in the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> years so we can intervene earlier

# Michael Rankin, MD Health Education Building

In the past, when curricular changes to the MD program were contemplated, space was always a limiting factor. With the new Health Education Building opening in 2026-2027, we can think differently about the curriculum. The Health Education Building will create flexibility for curricular evolution and innovation, support a skills-based education, and promote team building and problem-solving in an interprofessional environment.





# Health Education Building

- College of Health Sciences
- College of Nursing
- Colleges of Medicine
- College of Public Health
- Center for Interprofessional and Community Health Education







First Floor: Green = COM space, one 200-person classroom, two 50-person, room, expands to 100-person room, three 12 person classrooms

Second Floor: Green = COM space,  
 one 200-person classroom  
 three 12 person classrooms



Fourth Floor: Yellow-green = COM space, task trainer space, 12 beds + instruction station X 2



Sixth Floor: Yellow-green = COM standardized patient (SP) space (32 SP rooms, two 30 person rooms for debriefing, training), SP locker/lounge, student lockers, and SP program office; green = COM, 55+ offices and staff space





Seventh Floor: Yellow-green = COM simulations, 12 rooms for high-fidelity simulators, 6 control rooms, 12 10-person debrief rooms, 8 rooms for the Houses; green = COM, 21 12-person seminar rooms/small group rooms

Eighth Floor: Yellow-green = COM simulations, 2 rooms for high-fidelity simulators, 1 control room, two 10-person debrief rooms





Ninth Floor: Purple = Anatomy teaching space, prosection, dissection and pastinated models

# Questions?

sahaist@uky.edu