

THREE RIVERS CURRICULUM PLANNING PHASE REPORT

On behalf of the Curriculum Reform Task Force

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I OVERVIEW

We are at the fortunate confluence of a major curriculum reform, a new Dean's vision, and UPSOM breaking into the top ten US medical schools. Our vibrant students, staff, and faculty have seized the moment to leverage our current accomplishments, to create new and important features and structural changes, and to ready our curriculum for the next decade envisioned. In the following summary we highlight the recommendations from Planning Phase 2 of the Curriculum Reform Task Force (CRTF) generated over the last year and a half.

Planning engaged over 80 students, staff, and faculty members through standing and ad-hoc meetings as well as town halls and an idea competition. During these activities we have also adapted on-the-fly to improve the process and so the development of the new curriculum. It's a living blueprint in the wider setting of continuous innovation with Formation Phase 3 in the months to come. Major improvements to planning included increased student representation and student leadership roles. We also emphasized consensus and understanding of disagreement to fully represent all stakeholders while providing a basis for continued evolution of the new curriculum in the next phase.

The future of Pitt Medicine outlined in this Planning Phase Report embraces the Dean's charge that all Pitt Medicine people are Healers, Activists, Innovators, and Leaders. Our vision is to develop physician leaders and agents of change. Recognizing that our students are a diverse group with multiple talents and backgrounds, we commit to helping them flourish in varied careers in interprofessional teams. We foresee leaders in science, education, clinical care, and administration. We expect to see our students improve patients' health and quality of life and promote the health of communities. They will develop scientific breakthroughs, teach future physicians, make health care more equitable and accessible for patients, and eliminate health disparities. To that end, we will create active, self-directed, and lifelong learners with excellent foundations in health sciences and clinical medicine.

In the following are the recommendations of the CRTF Planning Subcommittees for the new curriculum. The Foundations, Clerkships, Bridges, and Streams/Tracks Subcommittees, working together with the Student Advisory and Steering Subcommittee, planned the major components of the new curriculum. You will find many new important recommendations including an accelerated three-year MD stream providing primary care physicians for Western Pennsylvania, as well as plans to dramatically advance interprofessional education and integrate training with all health science schools at the University of Pittsburgh. The recommendations are highlighted below in seven sections, designated Foundations, Clerkships, Bridges, Assessment, Threads, Streams, Longitudinal Alliance Program, and Accelerated MD Program. Further details are available in the full list of Subcommittee recommendations which complete this Planning Phase Report.

II SUBCOMMITTEE REPORTS AND RECOMMENDATIONS

Foundations

The Foundations Subcommittee recommends a teaching model that is built around a case-based curriculum and is supported longitudinally by dedicated educators. In this model, clinical skills development and clinical exposure will begin in the first semester of MS1 and both continue throughout the preclinical curriculum. The proposed case-based curriculum begins with a Keystone Fundamentals basic sciences component (4 months) and builds through Organ Systems blocks (12 months). Core content integrates horizontally across the Keystone Fundamentals and Organ Systems blocks and in turn these preclinical blocks are vertically integrated with the Clerkships and Bridges blocks of the clinical curriculum. The curriculum formally integrates four areas of critical content and skills designated as “Threads” throughout the pre-clinical and clinical cases: Interprofessional Education, Social Medicine, Critical Reasoning, and Leadership.

We will develop a case-based preclinical curriculum with cases developed in-house by a multidisciplinary committee including basic content experts, clinicians with broad knowledge, course/thread directors, and student representatives. We will have the option to hire professional case writers. We recommend shortening the preclinical curriculum from 2 years to 1.5 years.

Dedicated educators with a front-facing emphasis on clinical skills (CS) and knowledge (CK), inter-professionalism, and social determinants of health (SDoH) will be involved starting on Day 1. Clinical educators will partner with students for ~2 years, devoting ~3-4 half-days per week to teaching and mentoring particularly in the clinic skills courses and small group learning sessions. We also recommend pairing basic science educators with clinical educators in teaching small group sessions during Keystone Fundamentals and to have them serve as content experts in Organ Systems to enhance student mechanistic knowledge and elevate the impact of clinical educators. Active learning approaches should be the centerpiece of teaching in the new curriculum with learner-centered dialogical reasoning on the evidence. This is a commonality of the dozen or more active teaching formats recommended for Foundations.

We recommend including two to three ‘Flex Weeks’ per semester for dedicated time for Independent learning/remediation, shadowing, research, and personal activities (see Map 1, vertical grey boxes).

We recommend anatomy content incorporates traditional cadavers and virtual cadavers, rather than either alone, with a dedicated Anatomy block for traditional cadaver dissection (weeks 2-4), followed longitudinally by anatomy discussions, AR/VR or prosections (weeks 5-72).

Keystone Fundamentals (KF) block in weeks 1-17 will deliver basic sciences content in an integrated and clinically relevant manner followed by a Transition Block in weeks 16-20 to Organ Systems.

We envision Organ Systems (OS) as a strategic bridge that will emphasize interconnectedness of the body's biological systems with focus on systemic diseases in the context of Hematology, Immunology, and Infectious Disease. Organ Systems should successfully advance complex clinical knowledge while integrating and reinforcing basic sciences content through purposeful redundancy. In OS we recommend a new proposed Rheumatology Block of 1.5 weeks duration in alignment with USMLE Multisystem Processes and Disorders followed by Dermatology and an Oncology Block of 1.5 weeks duration that consolidates malignancy and treatment.

Considerable plasticity should exist with respect to remediation during the first few months of the curriculum. The inclusion of flex weeks in the curriculum is going to be essential but time should also be set aside each week to help students with areas defined as needing improvement. There should be clear guidelines for students about the background expected before beginning Keystone Fundamentals that will not be explicitly covered. A uniform remediation process should be created by identifying the steps to initiate, support, and complete the process. Faculty members will be involved in remediation efforts, and a reporting structure to ensure student progress will be created.

We will incorporate interprofessional guests and patient panels should be incorporated into the new curriculum to supplement the education from the clinical cases to highlight and normalize the interdisciplinary teams. Having adequate knowledge of other disciplines, when and how to access them, what role they play in patient care, and how patients experience that care is essential in modern health care.

We will have a dedicated 1-week Patient-Centered Care block (Introduction to Being a Physician) in the first week of the curriculum, followed by a sustained, stand-alone Patient-Centered Care Block across the first 1.5 years of the curriculum with expansion of content on leadership and inter-professionalism along with close coordination with basic sciences and organ systems courses that are taught at the same time.

The Student Research Program (SRP) will continue with increased diversification. The LRP was incorporated throughout the curriculum as an indispensable component of medical education and has been broadly defined to provide a wide range of opportunities (including laboratory-based or clinical research experiences as well as less traditional choices) to appeal to individual students' interests and aspirations. The intent is to expose students to the mechanics of scientific investigation; teach them how to develop a hypothesis and how to collect, analyze, and interpret data to support it; encourage them to pursue research opportunities; and help them understand the structure of thought underlying the practice of medicine and its future generation. The LRP and DSRP are integrated into two of three required courses of the current MD program. They are Evidence-Based Medicine Applied (MS1 Spring) and Investigation & Discovery (MS2 Fall). Many students initiate their longitudinal research project by participating

in the Dean's Summer Research Project (DSRP), while others might take a year off to pursue an intensive research program at Pitt or elsewhere. The committee recommends that the structure and organization of the DSRP be maintained, and impact elevated through the incorporation of a Social Medicine Thread. The Social Determinants of Health (SDoH) Research Projects and Enrichment for the 2021 DSRP was a Community Partnership Forged with the School of Medicine and the School of Health Sciences Office for Diversity, Equity and Inclusion at the University of Pittsburgh. The DSRP SDoH pilot leaders and Social Medicine Thread Directors are exploring mechanisms that would facilitate incorporating this as a required feature of the DSRP. We recommend that diversification of the SRP include QI projects and that students can complete the LRP in less than four years. Some students find the DSRP, LRP, or both experiences so rewarding that they consider a career as a physician-scientist. The goal in every case, however, is to enhance their ability to think independently, critically, and creatively and, thereby, become better equipped to practice medicine in the 21st century.

Clerkships

The approach taken by this subcommittee was to assess both the national norms for clerkships and to survey local clerkship directors and other content experts about how much time and exposure would be necessary to reach clerkship learning objectives and Educational Program Objectives (EPOs), including required clinical conditions and procedure. This approach was helpful in addressing time allotments for the various clerkships. First, the pre-clerkship experience was considered to be critical for students' transitioning from a largely classroom experience to the clinical environment, and the pre-clerkship was extended from 1 to 2 weeks in length. The Geriatrics will continue to feature interprofessional aspects and will include high value experiences such as diagnostics. Second, most of the core clerkships will remain at their current duration. These include Adult Inpatient Medicine and Pediatrics at 8 weeks each. Family Medicine, Psychiatry and Neurology will all remain at 4 weeks each. Third, in an effort to bring them more in line with national norms, the Surgery and Obstetrics-Gynecology clerkships will be increase to 8 and 6 weeks, respectively. There will be a flex week and 2 weeks for holiday breaks in the clerkship segment of the curriculum. The overall duration of the core clerkships will be 38 weeks.

Some notable changes in the core clerkship schedule include the following. The Ambulatory Adult Medicine Clerkship and the Anesthesia Clerkship will be moved to the fourth year (post-clerkship) curriculum portion. The Ophthalmology/Otolaryngology/Emergency Medicine clerkship will cease to be required, but we intend to include core components within other educational experiences and possibly to include some aspects within the extended surgery experience. We have included time for elective experiences during the clerkship year to allow students to have some flexibility in their schedules. To decrease confusion in scheduling we will require that students create their schedules in 8-week blocks. Then, even if an educational experience is of less duration, student will rotate blocks together.

From a pedagogical perspective, learning during the clerkships has long been largely experiential but supplemented by formal educational sessions. This basic structure will remain in place, but we will strive to have uniformly active learning formats during the educational sessions. The curricular thread of critical reasoning is already highlighted on rounds and in conferences. Those of IPE and Social Medicine will be increasingly highlighted. The presence of social workers, pharmacists, nurses and others on rounds and in formal educational sessions will facilitate the learning objectives of the threads.

Bridges

The post-clerkship portion of the curriculum (referred to here as “Bridges”) will be expanded. As mentioned earlier, the Adult Medicine Ambulatory and Anesthesia experiences will move to the Bridges portion. One aspect of Anesthesia that will be different is that some student may elect to do 4 weeks of Anesthesia and use that to count as their Acting Internship. All students will have an Acting Internship experience, as is typical nationally. We recommend that students will choose from a menu of month-long experiences involving acutely ill, undifferentiated patients that will include Emergency Medicine and a variety of critical care units. The Integrated Life Science (ILS) experience will be retained, but in a reinvigorated form that will require similar structuring with learning objectives, stated activities and assessments. ILS will highlight patient experiences demonstrating basic science breakthroughs translated into the clinic, and will include Interprofessional and Social Medicine thread components. All students will have an Advanced Longitudinal Clinical Experience (ALCE) where they have an ambulatory rotation a half-day per month caring for a continuous panel of patients and get critical reasoning and health systems science exposure that will better prepare them for residency. It is hoped that many of these experiences can be in community health clinics. Woven throughout this portion of the curriculum will be a series of exposures to high value medicine featuring diagnostics, such as radiology and pathology. As mentioned in the Clerkships segment, the 4 curricular Threads will continue to be emphasized. We particularly envision the longitudinal experiences as laboratories to develop experiences in the Threads. We hope to emphasize Leadership in this segment through allowing students to take active roles in organizing and presenting various aspects.

Students will continue to have multiple elective experiences, which will be either 2 weeks (exposure) or four weeks (depth). We recommend that students diversify their electives with a “perspective” elective, that is one that asks them to move outside their planned careers and experience something that they will not likely be able to visit in the future. We recommend that a point or credit system be developed that reflects the difficulty of each elective and determines a minimum number and distribution of educational experiences required to successfully complete the post-clerkship (“Bridges”) phase and graduation. These electives should be integrated into the overall learning objectives and content mapping the medical school education.

Threads

The main goal of each Thread is to ensure integration of critical themes by connecting and developing them through curricular components to achieve the vision of what a Pitt physician should be once graduated from the MD program. Thread leaders will identify thematic learning objectives (LO) from all relevant courses, clerkships and other curricular components as they relate to a thread. There are four Threads planned for the new curriculum currently: Interprofessional Education, Social Medicine, Critical Reasoning, and Leadership.

Interprofessional Education Thread

Interprofessionalism (IP) is essential to the practice of medicine and specific Interprofessional Education (IPE) thread training and practice should be an essential part of the MD curriculum at UPSOM. The working group felt that IPE should be longitudinal throughout the MD curriculum and experiences should be level appropriate, allowing for graduated learning and practice during the MD curriculum. UPSOM students should be exposed to non-physician professionals as educators, complementary to physician educators. Students should engage in co-learning with other professional students. All required clinical experiences should include IPE and coordination by UPSOM leadership should be done to avoid gaps and redundancies. It is possible that resources may be needed to develop these experiences if they do not presently exist during clinical curricula and UPSOM should make a commitment to provide material and logistic support as needed.

Assessment for IP should be longitudinal and mostly formatively assessed at defined times in the curriculum to account for variations in students' experiences. Assessments should be remote from IP learning experiences. We felt that observation or workplace-based assessment was the best, but not only, technique to assess IP.

Existing and newly developed University groups on IP should be engaged and involved with the development and maintenance of IPE at UPSOM. These include but are not limited to the IPE Thread Group, Working Group on IP Education, and the newly created position of Associate Vice-chancellor for Health Sciences Integration.

Social Medicine Thread

The following recommendations are designed to ensure that students are trained to understand and intervene on underlying socially determined causes of health and disease, and become future physician leaders who address healthcare system challenges and social determinants of health to promote equity and justice within their local and global communities, and the new curriculum embraces the biopsychosocial model in the systematic study of the relationships between society, disease, and medicine.

We will provide projects that address systems and community factors that impact health equity or health outcome could satisfy the longitudinal scholarly project requirement. Faculty

members with experience and expertise in community engagement should be appointed to the leadership of the Student Research Program/LSP/DSRP.

We will integrate social medicine content into the weekly cases and as thread modules that extend through Clerkship and Bridges.

We will support the creation of the Social Medicine Portfolio for student development.

We support the design, creation, and financial support for a Community Alliance Program that addresses structural and social determinants of health in several neighborhoods around Pittsburgh. (a) Recognizing the time, energy, and effort needed to produce a quality impactful program for students and the community, support the creation of a 'CAP Working Group' dedicated to the development of the Community Alliance Program to pair students longitudinally with a non-profit agency in an underserved neighborhood. (b) Support strengthening CEUs such that they start earlier in training and require intentional engagement throughout both pre-clinical and clinical years. (c) Support the recommendation to transform CEs into a required Community Alliance Program with support for Community Based Organizations and involvement of faculty and community mentors.

We will develop a formal "Teaching Social Medicine" certificate program with dedicated resources, workshops, and sessions featuring external speakers should be created and offered for faculty professional development on a monthly/quarterly basis. (a) Social medicine faculty professional development should be required for dedicated longitudinal educators

We support the inclusion of individuals with social medicine expertise in the multidisciplinary collaborative writing of teaching cases.

Institutional funding and resources should be intentionally produced and allocated to support social medicine related activities (e.g., patient panels, community speakers, CBOs, faculty and student projects, etc.)

Critical Reasoning Thread

The Critical Reasoning (CR) Thread aims for the curriculum to be more explicit and metacognitive about developing scientific and clinical reasoning in medicine. Critical Reasoning should be developed longitudinally through the MD curriculum in stages that are level appropriate. Teaching in the CR Thread in the pre-clinical segments of the curriculum can involve integration within as well as coordinated stand-alone sessions with preclinical courses and blocks. Various active learning formats will be using for in person workshops and online with curated modules and formative assessments. Teaching in the CR Thread in the Core Clerkships and Bridges facets of the curriculum will be integrated and coordinated directly with the clerkship directors without stand-alone sessions.

Early in the curriculum, Scientific Reasoning in medicine can be most emphasized in the Evidence and Discovery Block which features as a principal component the Student Research

Program (SRP) with its optional Dean's Summer Research Program (DSRP) and mandatory Longitudinal Research Program (LRP). Over the last couple of years and continuing opportunities have been created in the DSRP and LRP for students to explore scholarly activity in non-traditional research especially social medicine as the main focus or a facet of a student project. The new and important Streams (Tracks) recommendation is expected to provide additional opportunities for innovative scholarly activities. The CR Thread will be coordinated with these scholarly pursuits to support and enhance our learners development of creative and scientific thinking in their medicine.

Clinical reasoning in medicine will be threaded through the pre-clinical curriculum to provide a basis in cognitive theory, medical decision-making to improve universal diagnostic reasoning, and develop skills to leverage the core clerkships. Coordinated and level-appropriate with concurrent courses and blocks, clinical reasoning will be emphasized using online educational modules on principles and concepts from Cognitive Theory then applied to case scenarios comparing, contrasting, and developing scientific and diagnostic reasoning. The major teaching format can be student centered dialogical reasoning on the evidence presented in the case. These case-based workshops can be held approximately twice per term, and coordinated with what is being learned by concurrently in Foundations and Organ Systems courses, guided by facilitators on the diagnostic process

Assessments in the SRP will continue to be narrative feedback on student presented progress in Research Dean quarterly reports, narrative evaluations by facilitators in EBM and I&D courses, and critiques and narrative evaluation by Research Deans of DSRP, LRP proposals, and MS4 LRP Final Reports. In the next Formation Phase of curriculum reform assessments for the clinical reasoning component, as well as coordinate threading of the common and distinctive aspects of scientific and clinical reasoning in medicine will be developed.

Leadership Thread

To assist students in becoming change agents and determine what is important to feel fulfilled in the field of medicine, we must encourage focus on personal and professional development. By the nature of our profession physicians are leaders, as healers, as activists, and as innovators. Physicians' voices innately have influence, and it is UPSOM's responsibility to teach our students how to use their voices effectively to influence positive change, on the levels of self, patient, team, or nation. This is evident in the AAMC Core EPAs for Entering Residency document which states that medical schools "provide leadership skills that enhance team functioning, the learning environment, and/or the health care delivery system." To support leadership development, intentional, devoted time for learners is needed to develop their professional identity, understand emotional and social intelligence principles, and recognize their ability to influence and promote change with patients, healthcare teams, and beyond. A leadership thread should give students the tools they need to become competent leaders and the ability to practice leadership skills in a *safe*, supportive environment where they can receive formative feedback. Integrating leadership in the curriculum should decrease levels of burnout, increase professional satisfaction, and lead to improved patient outcomes. ^{5,7,8}

The Leadership Thread working group recommends as objectives for our graduates development in five areas, emotional intelligence, values, self-limiting beliefs, creating a vision, and professional identity formation.

Leadership activities for the thread should begin early in the curriculum, with leadership concepts and activities building on themselves based on appropriate stage of training. A series of activities have been planned involving self and social awareness and management as well as social connections. Integrating leadership concepts early on sets the expectation that leadership skills are important to the educational priorities at UPSOM and , which is reflected in Dean Shekhar’s acronym charge HAIL, where L is for leadership. Webb’s literature review on UME leadership curriculums discusses “explicitly branding these [communication and teamwork] skills as leadership competencies would frame a common leadership language that could be reinforced throughout a longitudinal curriculum.”⁸ The curriculum should ensure that each student is exposed to different leadership models and be given the opportunity to work with leaders at UPSOM, Pitt, UPMC, local, state and national levels

The leadership curriculum will be assessed formatively in various formats including large group active learning of didactics, small group workshops, case-based learning, OSCE, and written reflections

Streams/Tracks

We recommend the creation of Tracks for the new curriculum. “Tracks” in medical education provide students with additional dedicated and enriched training looking to fulfil students own interests and future career path, allowing students to explore various areas of interest in conjunction with the “mandatory” medical school curriculum. The goal would be promoting intellectual curiosity, appreciation of scholarly inquiry, inter-professional collaboration and developing attitudes and skills for self-directed, lifelong learning and career development.

Tracks should be optional and up to 2 years long. During the MS1 year, students could participate in lectures/introductory activities from various tracks, allowing students the flexibility to explore different areas of interest. This would allow students to “sample” the tracks. Students would have to join a track no later than by the end of the 1st year. Students could join up to two tracks simultaneously, as long as they remain in good academic standing and fulfill the requirements of the track. Our current Areas of Concentration (AOC) model was the perfect foundation for the new tracks system to be built upon. We recommend that the new tracks system to include rigorous guidelines, goals, and objectives, designed longitudinal curriculum, graduation requirements, core faculty members, student leaders, mural and extramural activities, interprofessional development activities and include a scholarly/scholastic project that can be met by, could complement, but should not replace, the Longitudinal Research Project (LRP). Experience credits would be earned by joining the activities of any tracks, and could include noon activities, finalizing the scholarly project, outreach activities, etc.

Students performance in tracks should be highlighted in the Medical Students Performance Evaluation letter.

Current AOCs should be the foundation of the new tracks; however, the final model and implementation should be decided on the next stage of the curriculum reform.

While all the stakeholders agree that the current AOCs should be the foundation of the track system, we could not arrive to a consensus as to the “final tracks”. We recommend the following tracks as a beginning point, which we based on the academic tracks that faculty members follow in academic institutions. We also believe tracks could align well with the “HAIL to Pitt” message of our curriculum reform. Leaders of the AOCs should be part of the next implementation phase of the curriculum reform regarding tracks.

Assessments

This subcommittee assumed the tasks of monitoring learning among the students and the programmatic assessment of the complete curriculum. Regarding learner assessment, we recognized several principles as critical to developing the spirit of the new curriculum. In a learner-centered curriculum that contains a great deal of self-directed and active learning, we will need frequent formative knowledge assessments. These assessments will provide the students and faculty valuable feedback on student learning and the performance of the curriculum itself. The formative assessments will be mainly comprised of testing cognitive knowledge to affirm that students have an adequate comprehension of the material being discussed. An example of implementation of this concept can be weekly quizzes in a multiple-choice format. Both students and instructors will receive feedback on students’ performances. A larger, but still low stakes version of formative cognitive assessment, is semi-annual progress testing, where understanding of large portions of the curriculum can be assessed. This level of assessment can be accomplished either via using the National Board of Medical Examiners’ (NBME) Comprehensive Basic Sciences Exam (CBSE) or by creating local exams. Other knowledge and skill domains can be assessed in a formative fashion. A good example is our current Clinical Skills Assessment (CSA), which is done in an Objective Structured Clinical Examination (OSCE) fashion utilizing standardized patients. Among the advantages of regular formative assessment is the ability to identify struggling learners, who then can be referred for remediation. Therefore, the new curriculum will need a robust feedback program that includes coaches for all students. These coaches can direct students to learning activities based on solid data from the formative assessment system.

In addition to formative assessments, we will continue to need summative assessments. At the course level, course directors will use NBME Subject exams whenever possible. The new curriculum will continue to require that Pitt Med students pass both the USMLE Steps I and II exams prior to graduation with Step I remaining a requirement for beginning clerkships. Many of our courses use pass/fail grading and will continue to do so. These, as well as those using more complex grading schemes (e.g., Honors/High Pass/Pass/Fail), will need to preform

transparent standard setting. In general, criterion-based systems are preferred over normative systems, but course directors will have discretion in deciding how to establish passing criteria. In terms of curricular monitoring, we will need to conduct mapping at several levels. The first is at the event level. Each contact period in the curriculum will need to have clear learning objectives and will need to state which of the institutional learning goals or Educational Program Objectives (EPOs) it addresses. We will track each EPO to guarantee its presence in the curriculum. The Association of American Medical Colleges (AAMC) and its regulatory arm the Liaison Committee on Medical Education (LCME) are moving toward requiring Competency Based Medical Education along the outline of the AAMC's 13 Core EPAs for graduation. This level of competency will need to be assessed for all our graduates.

Three Year Accelerated MD Program

The University of Pittsburgh School of Medicine seeks to create an accelerated pathway to the MD degree, with a UPMC “ranked to match” residency spot assured for qualified students. The goal of this program would be to help reduce the costs of education for students who are willing to enter primary care specialties, addressing a national physician shortage. This program will also begin to shift our curriculum to a more competency-based assessment, allowing more students to individualize their time in medical school based on their attainment of knowledge and skills, rather than simply time spent in a program. In this new track, students will need to demonstrate competency outcomes; if they achieve developmentally appropriate milestones, they will be ranked favorably to assure a residency spot in one of three disciplines—Family Medicine, Internal Medicine, or Pediatrics—a discipline that they would have selected upon matriculation. Steering subcommittee recommends the creation of a three-year MD track for seven students who would be “ranked to match” at a UPMC primary care residency

Longitudinal Alliance Program (LAP)

The LAP currently attracts about one-quarter of each class, with participating students paired up with a patient whom they meet with in the community, go to medical appointments with, and learn from, over all four years if possible. Students participate in occasional group discussions about care systems, patient perspectives, social determinants, and a variety of related topics—this has been a most meaningful experience for both patients and students, and we want to make this a graduation requirement for all learners. Although it will take effort and resources to build the program capacity, we feel this can be achieved, and it fits in with the vision of early, patient-centered care, giving students invaluable IPE and social medicine experiences. The Steering Subcommittee recommends making the Longitudinal Alliance Program required for graduation, which will also help ally UPSOM students, staff, and faculty with the community.

III PLANNING SUMMATION AND AREAS FOR DEVELOPMENT

Features

- Active learning, continuity
- Earlier to clinical
- Emphasizes our values (SDH)
- Preserves, diversifies LRP
- Innovations (case based, long eds, progress tests)
- Uniform structuring

Areas for Development in Formation Phase 3

- Longitudinal Educators: expense, time commitment, diversity
- Study time for Step 1: amount, timing
- Displaced clerkship: ENT/Ophthalmology
- Longitudinal Experience: logistics
- Pittsburgh Student-Anchored Community Health Sites Beyond Birmingham Clinic
- Legacy-to-New Curriculum Transition Logistics
- Educational Technical Support
- Shifting to Competency-Based Medical Education

Four harbingers of the future of medicine at UPSOM worth noting from the Planning Phase needing further development through curriculum reform include (1) increasing emphasis on chronic conditions; (2) engaging both students and Pittsburgh communities in our health sciences mission by expanding the number of student-anchored clinics like the Birmingham Clinic, longitudinal clinical opportunities to ally our students, staff, and faculty with our Pittsburgh community; (3) bringing artificial intelligence and computational medicine centerstage, and; (4) continuing to make UPSOM medicine creative as well as sentential in the best practice and future of medicine for our communities of patients and economic entities.

IV LISTS OF COMPLETE RECOMMENDATIONS

In the following are the complete recommendations voted on by the Planning Phase CRTF, organized by the Subcommittee and Working Groups generating the recommendations.

Foundations

- A uniform remediation process should be created by identifying the steps to initiate, support, and complete the process, faculty members involved in remediation efforts, and a reporting structure to ensure student progress is monitored.
- A workable model is for CLINICAL educators to partner with students for ~2 yrs, devoting ~3-4 half-days/wk to teaching and mentoring particularly in the clinic skills courses and small group learning.

- A workable model is to pair BASIC science educators with clinical educators in teaching small group sessions during Keystone Fundamentals (semester 1) and serve as content experts in Organ Systems (semester 2 & 3)
- Active learning approaches should be centered in the new curriculum in order to improve student engagement, knowledge retention, and team-based skills.
- Anatomy in Clerkships & Beyond: self-directed anatomy learning modules in this segment seems appropriate and sufficient
- Anatomy organization in Foundations: I support a dedicated Anatomy block for traditional cadaver dissection (wks 2-4), followed longitudinally by anatomy discussions, AR/VR or prosections (wks 5-72); see Map 1, sunny orange coloring
- Cap major curriculum segments with an integrated exam.
- Cases should be developed in-house by a multidisciplinary committee including basic content experts, internists with broader knowledge, course/thread directors, and student representatives.
- Dedicated BASIC science educators would enhance student mechanistic knowledge and elevate the impact of clinical educators
- Dedicated CLINICAL educators would enhance student learning and success, development of professional identity, and maximize a consistent, quality educational experience
- Dedicated educators (clinical and basic) would add appreciable value to the curriculum
- Flex blocks: Allocation of 2-3 flex blocks per semester and the suggested distribution is reasonable (see Map 1, vertical grey boxes)
- Flex blocks: I support this dedicated time for Independent learning/remediation, shadowing, research, and personal activities
- I support a case-based approach for the new Foundations curriculum
- I support a dedicated 1 wk Doctoring block (Introduction to Being a Physician) in the first week of the curriculum, followed by a sustained Doctoring course across the first 1.5 years of the curriculum (see pink blocks in Map 1)
- I support a new proposed Onc Block (1.5 wk) that consolidates malignancy and treatment. See Map 1, wk 69-70.
- I support a new proposed Rheum Block (1.5 wk) in alignment with USMLE Multisystem Processes and Disorders; preceded by Hemato/Immunol/ID and followed by Derm, for optimal alignment. See Map 1, wk 21-22.
- I support shortening the preclinical curriculum from 2 yrs (currently) to 1.5 yrs (proposed)
- I support the re-allocation of OS block time in general proportion to representation on USMLE Step 1
- I support the recommendation that Doctoring expand content on leadership and inter-professionalism
- I support the recommendation that Doctoring material should be presented in stand-alone courses, in close coordination with basic sciences/organ systems courses that are taught at the same time

- I support the strategic construction of clinical scenarios that could be revisited across different blocks to add layers of complexity and reinforce knowledge
- Incorporation of BOTH traditional cadavers and virtual cadavers, rather than either alone, is imperative
- Innovation – see video: The idea of creating new conceptual spaces by interrogating Pittsburgh’s livability (incl. racial, environmental history) through the lenses of the radical imaginary (e.g., Black Studies, Queer Studies, Critical Geography, Poietics) has intriguing potential to transform how we view the possibilities for our community. The concept deserves further attention by the conceivers.
- Innovation: The proposed case-based preclinical curriculum guided by dedicated educators with a front-facing emphasis on clinical skills and knowledge, inter-professionalism, and SDH all starting on Day 1 is innovative
- Interprofessional guests should be incorporated into the new curriculum to supplement the education from the clinical cases in order to highlight and normalize the interdisciplinary teams because having adequate knowledge of other disciplines, when/how to access them, and what role they play in patient care is essential.
- It is important to find a way to help students use vetted third-party resources in conjunction with in-house materials as these resources are leaned on heavily for Step 1 preparation.
- Link exam questions and practice questions to learning objectives in order to more effectively assess student learning, with feedback to students.
- Low/no stakes formative quizzes should be administered frequently and supplemented with separate practice questions; summative assessments should be administered less often.
- New KF-to OS transition: I support this block as a strategic bridge that will emphasize interconnectedness of the body’s biological systems
- New KF-to-OS transition: I support the proposed focus on systemic diseases in the context of Hematology, Immunology, and Infectious Disease which also strategically queues up the first OS block, Rheum.
- Overall: I support the general structure of, and time allocation to, Keystone Fundamentals (wk 1-17), Transition Block KF-to-OS (wk 16-20), and Organ Systems (wk 21-72)
- Patient panels should be incorporated into the new curriculum to supplement the education from the clinical cases and allow our students to re-focus on why they are learning these concepts.
- Phase out Integrated Case Studies (ICS): The new clinical cases in the proposed case-based curriculum would replace the current 2.5 wk ICS course
- Pitt should have the option to hire professional case writers.
- Priority areas are appropriately represented including: didactics, inter-professionalism, patient interactions, clinical skills, independent learning, research, and makeup (see Table, p. 30)
- Questions should be Board-style, including clinical vignettes.

- Rare disease education framework should include the following: how to care for a patient with a diagnosis that is unfamiliar to us, how to interview patients or family members that may have a rare disease, how to work within an interdisciplinary clinical team to provide optimal care, how to consider the unique challenges and disparities that patients with rare disease face, what special considerations need to be taken in terms of seeking out treatment, adaptive equipment and resources, and providing holistic care.
- Students should be well-informed about expectations, content coverage, and assessment format.
- The Clerkship Tracks capstone experience should supplement but not supplant the LRP.
- The length of the proposed basic sciences segments in Clerkships & Beyond (see light blue coloring in Clerkships Map 1), likely to be implemented in a revised Integrated Life Sciences (ILS) course, is appropriate and sufficient
- The proposed Foundations curriculum achieves the priority goals of: (1) content integration, (2) focus on the translational applications of basic science materials, and (3) improved concision
- The proposed Keystone Fundamentals block successfully delivers basic sciences content in an integrated and clinically relevant manner
- The proposed number, roles, qualifying criteria, selection process and salary support are a reasonable starting place for deeper considerations in Phase 3 (this was a point of extensive discussion, see p. 12)
- The proposed Organ Systems block successfully advances complex clinical knowledge while integrating and reinforcing basic sciences content through purposeful redundancy
- The proposed proof-of-principle clinical scenarios successfully depict the integration and interleaving of basic sciences, organ systems, social medicine, and diagnostics (imaging/labs); see summary Table p. 27
- The suggested time allocation is reasonable: 15 hr synchronous activities + 16 hr self-directed learning + 5 hr homework + 2 hr assessments + 2 hr remediation = 40 hr week (see Figure, p. 32)
- Time dedicated to Anatomy: seems reasonable (this was a point of extensive discussion, see p. 18)
- We recommend detailed discussion about overlap in Phase 3 of curriculum reform with the following considerations: 1) Most or all of the organ system courses will need to be taught twice in the same year, once for legacy students and once for new matriculants. 2) Both legacy curriculum MS3/4 students and new curriculum MS2 students will be seeking clerkship opportunities starting in Spring 2025, significantly increasing demand for a limited number of slots.
- We recommend directing students to specific, relevant, institutionally-accessible third-party resources (specific videos, pages, etc.) alongside corresponding material in the syllabus or with the case documents.

- We recommend including rare diseases in alignment with USMLE Step 1 in order to improve the quality of rare disease education within the curriculum.
 - We recommend maintenance of the mandatory Longitudinal Research Project (LRP) that extends throughout the four years of the medical school curriculum.
 - We recommend special consideration directed to the MSTP students when considering the overlap phase, and feedback from MSTP program leaders should continue to be sought.
 - We recommend student involvement to help to vet third-party resources, with financial compensation for invested time.
 - We recommend that learning objectives are provided to the students by the content experts and the curriculum developers who know what the big-picture goals are and how the learning objectives for different courses work together.
 - We recommend that the structure and organization of the Dean's Summer Research Project (DSRP) be maintained, and impact elevated through the incorporation of a Social Medicine Thread.
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Clerkships

- A formal needs assessment should be carried out following this year's Preclerkship Week to better characterize what students are looking for from this experience and how much time is needed to achieve these goals. This needs assessment would be best completed after this cohort has had 3-4 months in the core curriculum, so that students can have some perspective of what would be most beneficial from Preclerkship.
- Based on stakeholder input and national trends, the committee recommends the following clerkships remain at their current duration: Adult Inpatient Medicine (8 weeks), Pediatrics (8 weeks), Family Medicine (4 weeks), Psychiatry (4 weeks), Neurology (4 weeks)
- Based on stakeholder input and national trends, the committee recommends the following clerkships receive an increase in their duration: Surgery (8 weeks) and Ob-Gyn (6 weeks)
- The duration of a clerkship should be driven by the learning objectives and skills which are unique or best taught by that clerkship. Improved curricular mapping at UPSOM would be beneficial for helping to identify areas of curricular overlap or redundancy. This process is ongoing at present, and the below recommendations based on stakeholder consensus and national averages should be readdressed once this mapping process is complete.
- The following clerkships should be core clerkships that all students complete within the first 12-months of their clinical education as they provide foundational skills and content that should be completed before taking Step 2 CK: Adult Inpatient Medicine, Pediatrics (combined inpatient/outpatient), Psychiatry, Neurology, Surgery, OB/Gyn, Family Medicine

- The process of how best to transition to this new clinical curriculum and how to accommodate legacy students will need to be a major area of focus in the next phase of curriculum reform.
- We recommend that all students complete an Advanced Longitudinal Clinical Experience (ALCE) following completion of the core curriculum. This experience would occur in a consistent ambulatory clinical setting with a consistent clinical preceptor in a field of the student's choice (often but not always the field the student intends to pursue for a career). Students would spend 1-2 half days per week in this setting throughout the "Beyond" phase of the curriculum, with the exception of the AI and the Acute Care Clerkship so have multiple assessors observe/test learners.
- We recommend that for the core clerkship phase of the curriculum, threads be deliberately integrated into each individual clerkship. Thread coordinators should work with clerkship directors to ensure that this information is not redundant across clerkships and to assist in development of materials if needed.
- We recommend that students be required to complete clinical experiences in the fields of Anesthesia and ambulatory medicine at some point during their clinical years. Students will have freedom to schedule these experiences during their elective time during the core clerkships or during the Bridges phase of the curriculum, as best suits their individual needs
 - **We recommend 4 weeks of ambulatory instead of an ALCE.**
 - **We recommend at least 2 weeks of Anesthesia**
- We recommend that students complete a standardized assessment of their clinical skills, in the form of an Objective Structured Clinical Examination (OSCE), at the completion of the "core curriculum."
- We recommend that students receive, at a minimum, 6-weeks of elective time during the core clerkships for early career exploration and exposure to subspecialty fields.
- We recommend that students sign up for courses in 8-week periods. This streamlines scheduling and ensures that students are evenly distributed across clinical sites.
 - **Reached consensus but needs discussed further in Phase 3.**
- We recommend that students who choose to complete their Advanced Longitudinal Clinical Experience (ALCE) in Internal Medicine not be required to also complete a 4-week Ambulatory Medicine Experience. Other ALCEs may also meet enough of the Ambulatory Medicine learning objectives to exclude students from having to complete both – this will have to be determined.
- We recommend that the ALCE be graded on Pass/Fail basis, but that students be provided with periodic formative feedback on their performance using EPAs relevant to starting residency training.
- We recommend that time remain for Preclerkship Week (2 weeks), Geriatrics Week (1-week), a holiday break (2-weeks), and flex week (1-week) in the core clerkship curriculum.
- We strongly recommend that a separate taskforce be included in the next phase of curriculum reform to focus solely on the ALCE. This taskforce should consist of

ambulatory educational leaders, clinical directors who understand clinic flow and logistics, administrators, and students.

Bridges

- Courses should utilize active learning for students across courses and modalities.
- Integrated Life Sciences (ILS) should be modified into a new course to better meet the objective of revisiting critical basic science principles during the clinical years.
- Learning objectives for the curriculum should be integrated both horizontally and vertically through several longitudinal integrated courses, inclusive of Tracks, Threads, Areas of Concentration, Integrated Life Sciences as well as novel experiences: Advanced Longitudinal Clinical Experience (ALCE) and the development of a “Medical Diagnostics and Professionalism” course.
- Our taskforce recommends not having formalized “tracks” of course work related to a student’s interested/ intended medical specialty. Our taskforce does endorse having a menu of drop-down options for course type (columns) for each medical specialty a student could match into (row).
- Our taskforce recommends students be required to take the following selectives/ clinical experiences during their 4th year (post-clerkship phase; “Bridges” portion of their curriculum: **Acting Internship (AI) and Integrated Life Science (ILS) course.**
- Our taskforce recommends students to take the following selectives/clinical experiences during their 4th year (post-clerkship phase; “Bridges” portion of their curriculum - **A “Perspective” Elective**
- The Taskforce recommends the development of 3 tiers of elective rotations: 2-weeks, 4-weeks and a 4-week AI/Sub-I for specialties in which students can match into for residency. Separate, but related to these tiers, points will be assigned to electives/ courses based on level of patient contact/care.
- The taskforce recommends the development of a point system (credits) to determine a minimum number of educational experiences required for the post-clerkship (“Bridges”) phase and graduation. These should be integrated into the overall learning objectives and content mapping the medical school education.
 - Reached consensus, but needs discussed further in Phase 3.

Threads

- **Interprofessionalism Education (IPE) Thread**
- Assessment for interprofessionalism should be level appropriate and continue through the students’ progression through the curriculum.

- Assessments for interprofessionalism should be cumulative and at defined time periods in the curriculum (ex: every 6 months) to account for variations in students' experiences.
- Assessments for interprofessionalism should be separated from the experience/learning.
- During clerkships, med students should receive integrated IPE experiences within EACH clerkship.
 - *These experiences should primarily be in the form of working relationships with other non-physician professionals.*
 - *Each clerkship should name and catalog their IPE experiences and these should be mapped to UPSOM education objectives.*
 - *Clerkships may require resources such as space or personnel in order to create these experiences.*
 - *IPE experiences in the clerkships should be coordinated so as to not be redundant and to ensure that students are exposed to working with as many other non-physician health care professionals as possible*
- During foundations, students should be exposed to other health care professionals who can teach curricula.
- Interprofessionalism is best assessed via observation.
- IPE Curricular events originating at Pitt Schools of Health Sciences outside UPSOM should be encouraged and incentivized.
- IPE Curricular events originating at Pitt Schools of Health Sciences outside UPSOM should be encouraged.
- IPE education should use team-based teaching methods tailored to specific skill acquisition.
- IPE experiences should be evaluated routinely to ensure quality and appropriateness of the experiences.
- IPE experiences should include a focus on the patient/caregiver/support persons' perspectives on health care and medicine.
- IPE needs to be longitudinal in the curriculum and needs to be level appropriate:
 - During the beyond phase, IPE experiences should be part of required experiences including, but not limited to, in depth experiences (i.e., AI's) and longitudinal experiences (ALCE).
 - *Experiences for senior medical students should focus on working collaboratively and/or leading health care teams when appropriate*
 - *Students who complete more than the minimum requirements for IPE should be acknowledged for their efforts.*
 - **Reached consensus but needs discussed further in Phase 3.**
- IPE should be intensively introduced very early in the curriculum.
- Professionals from other (non-UPSOM) Pitt Health Sciences Schools and other Schools at the University be involved in curricular design for IPE.
- The curriculum should ensure that each student is exposed to specific interprofessional experiences and non-physician health care professionals.
 - This can be done and tracked via multiple models including:
 - *Learning logs*

- *Small group discussions*
- The curriculum should include meaningful IP co-learning and the Pitt Working Group on Interprofessional Education (WGOIPE) should be engaged to help develop/maintain such.
- The end goal(s) should dictate the curriculum for IPE – i.e., what do our graduates need to know / what do our graduates need to do? At a minimum, this should include:
 - *Knowledge of the roles and responsibilities of physicians and non-physician health care professionals*
 - *Responsive and responsible communication with non-physician health care professionals*
 - *Working in teams with non-physician health care professionals in patient care*
 - *Working with individual of other professions with mutual respect*
 - *Understanding patient/caregiver/support persons' journey in the health care system*
- There should be appropriate IPE in in ALL main phases of the curriculum.

- **Social Medicine (SM) Thread**

- A formal “Teaching Social Medicine” certificate program w/ dedicated resources, workshops, and sessions featuring external speakers should be created and offered for faculty professional development on a monthly/quarterly basis:
 - *Social medicine faculty professional development should be required for dedicated longitudinal educators.*
- I support a social mission statement for UPSOM that reflects its commitment to improving the health of the surrounding communities and to address health inequities.
- I support integrating social medicine content into the weekly cases (as proposed by Foundations) and/or as 2 thread modules per term that extend through Clerkship and Bridges.
- I support the creation of the Social Medicine Portfolio for student development as described in the document.
- I support the design, creation, and financial support for a Community Alliance Program that addresses structural and social determinants of health in several neighborhoods around Pittsburgh Program:
 - *Recognizing the time, energy, and effort needed to produce a quality impactful program for students and the community, I support the creation of a ‘CAP Working Group’ dedicated to the development of the Community Alliance Program.*
 - *I support the recommendation to transform CEs into a required Community Alliance Program with support for Community Based Organizations and involvement of faculty and community mentors.*
 - *I support strengthening CEUs such that they start earlier in training and require intentional engagement throughout both pre-clinical and clinical years.*
- I support the inclusion of individuals with social medicine expertise in the multidisciplinary collaborative writing of teaching cases.

- Institutional funding and resources should be intentionally produced and allocated to support social medicine related activities.
- Projects that address systems and/or community factor(s) that impact health equity or health outcome could satisfy the longitudinal scholarly project requirement:
 - *Faculty with experience and expertise in community engagement should be appointed to the leadership of the Student Research Program/LSP/DSRP*
- **Leadership (L) Thread**
 - Leadership curriculum should be skills based, while incorporating vision, with opportunities for learners to practice in different phases of the curriculum.
 - The curriculum should ensure that each student is exposed to different leadership models and be given the opportunity to work with leaders at UPSOM, Pitt, UPMC, and the VA, local, state and national levels.
 - The leadership content should start early in the curriculum with the concepts building on themselves based on appropriate stage of training.
 - The leadership curriculum will be assessed formatively in various formats.
 - The leadership thread will have the end in mind when developing content with the expectation that upon graduation students will have a greater awareness and understanding of the following topics framed around the Emotional/ Social Intelligence models: self-awareness, self-management, social connections, and relationship management.
- **Critical Reasoning (CR) Thread**
 - A Critical Reasoning Thread is recommended to integrate scientific and clinical reasoning throughout the relevant pre-clinical and clinical courses and to provide activities designed to apply and further develop as life-long learners these skills in medicine.

Streams/Tracks

- Current AOCs should be the foundation of the new tracks; however, the final model and implementation should be decided on the next stage of the curriculum reform.
- Each track should have “core activities” open to all students.
- Each track should include a scholarly/scholastic project that should not replace the Longitudinal Research Project (LRP).
- Leaders of the AOCs should be part of the next implementation phase of the curriculum reform in regard to tracks.
- Oversight of tracks and proper funding should be discussed and guaranteed at the next stage of the curriculum reform.
- Student’s performance should be evaluated as “experience credits.”
- Student's performance in tracks should be highlighted in the Medical Students Performance Evaluation letter.

- Tracks should be optional and up to 2 years long
- Tracks should not be chaotic and must have strict guidelines, goals, objectives and curriculum.
- We recommend the creation of Tracks for the new curriculum. This recommendation has the strongest support by leaders of the curriculum reform and the students' groups.

Assessments

- A common single lexicon will be used across the curriculum for labeling content using a "meta tag" system
- Afford faculty time and guidance to adopt best practices. Train assessors providing subjective assessments and monitor consistently accurate ratings
- Align assessment methods and data with their specific, intended use and interpretation
- An educational assessment is a careful interpretation of data about student behavior and an inference about learning.
- Assess exactly what was done during the assessment, not what is known of the student beforehand. In other words, avoid 'halo/pitchfork' effects
- Assess skills and knowledge early and often in the curriculum
- Assessment depends on multiple, well-trained assessors
- Assessment is educational for the learner
- Assessment is grounded in values and vision for education
- Assessment should be an expected part of the curriculum that enables students to show their achievements
- Change grading scale to Honors/High Pass/Pass/Fail
- Continue most useful in-house developed
- Course and clerkship directors are expected to track medical students' progress in assessments relating to ACGME Core Competencies
- Course and clerkship directors will be responsible for maintaining and editing their metadata yearly. Metadata selections will be required for content changes and new courses
- Create school resource guide/website to highlight high-yield content in course/clerkship syllabus – correlate course material with prep materials/external resources.
- Creation of competency-based faculty development and support
- Creation of monitoring systems to allow students and advisors to track goals and progress on competencies
- Design programmatic assessment for competency-based education outcomes
- Development of clinical learner evaluations that prioritize the documenting of observations that inform competency-based evaluation in addition to summative evaluations that inform grades
- Ensure transparency (when, how and why assessed, plus how performance will be rated)

- Establish advising system for goal setting and tracking of competencies with medical learners
- Establish system for continuous review of national trends in CBME, including further development of milestones and EPAs for use in undergraduate medical education
- Explicitly align and delineate each assessment with an important task, competency, cognitive ability, or challenge so that it is clear what is being measured
- Faculty responsible for each course and session are expected to be able to explain to students and curricular oversight processes how formative feedback is used in the learning setting they oversee
- Give learners targeted feedback early and often
- If a student is successful and reaches our expected levels of competency through mentors, or coaches as appropriate remediation, careful thought should be given to what needs to be communicated to residency programs or future employers
- If despite the above, a student is unsuccessful in remediating, this is appropriate grounds for dismissal. The Promotions Committee should be in charge of making this determination.
- It takes multiple methods to evaluate learning
- Monitor for and prevent bias
- Monitoring and maintenance responsibilities will need assigned to the Office of Medical Education and Lab for Education Technology
- Outcomes are linked to stakeholders
- Periodically review assessment for underlying values that should be updated to reflect significant changes in medicine, education, society, or the institution
- Prepare and focus students' thinking prior to an instructional experience by starting with a formative assessment such as a "warm-up" question, quiz, or activity
- Prioritize collaboration across the Schools in the University of Pittsburgh in the development of learning analytics, learning dashboards, and uniform data capture of formative and summative assessments
- Provide access to validated, popular external resource prep materials/Q Banks and/or provide vouchers to students to purchase these resources themselves
- Provide frequent assessment opportunities as a resource for students to practice, improve, and apply knowledge
- Provide NBME Exams in preclinical and clinical years in the forms of self-assessment tools, customized exams, and clinical content exams
- Provide support to course directors in writing their own NBME-style questions that are reliable and valid for their in-house exams
- Recommend an easily accessible and clearly communicated self-referral process for students who are seeking additional help.
- Recommend clear and thoughtful preemptive messaging that of challenge during medical school are common, and resources will be proactively different levels offered and should be proactively sought to help with the growth of all students.

- Recommend comprehensive portfolio for each student tracking all possible data points with criterion-based goals for each competency relevant to the student's current level of training.
- Recommend each student have access to their own portfolio and that it is updated in real-time.
- Recommend early outreach to students who are at risk of not meeting the goals of each unit of the curriculum with multimodal resources for students depending on the competency/area of concern, including faculty or student support people, behavioral health or neuropsychiatric testing, and third-party resources.
- Recommend easy access for students to neuropsych and behavioral health evaluations when appropriate
- Recommend periodic goal-directed, formative evaluation of remediation process at every level (including faculty/student support members, course performance, board performance, clerkship performance)
- Recommend that a faculty or staff support person have the sole role of supporting and advocating for the student in this process
- Recommend that additional instruction on a flex week or mandated remediation, repetition of course/clerkship, or repetition of board exam take place with additional support or coaching from faculty and/or student support team member
- Recommend that faculty and student support people undergo continuing development to excel in their coaching, advising, and mentoring roles.
- Recommend that the remediation be well-funded and well-resourced
- Recommend that the specific remediation plan be tailored to the students' needs to meet their criterion-based goals, in alignment with school policies. This should be determined jointly by the student, the Academic Success Team, and other advisors, mentors, or coaches as appropriate
- Recommend transparent and clear guidelines for when a student should remediate a unit of the curriculum (e.g., course) or a year based on the criterion-based goals. These guidelines will need to be concretely determined as the structure of the new curriculum is finalized and should be shared with students and faculty alike and help guide promotions committee decisions
- Require standard setting, where course directors within Pass/Fail courses submit to the Curriculum Committee and follow a plan that accurately sets the failure cut-off.
- Review of legacy and new curriculum beginning in 2022 and continuing until 2028
- Secure and store the data of assessments in ways that support comprehensive analysis and visualization of learning
- Strive to have multiple assessors observe/test learners
- Students should not be required or coerced into participating in validation tests of assessment tools
- Students should receive scores and remarks soon after an assessment so they have time to study, practice, and improve performance

- Students' scores and ratings need to be interpretable and accessible for review, especially in the case of conflicts. Include scoring and grading sheets or answer keys in the recording of data
- Suggest a formative in-take assessment at the beginning of a course to orient students to what they will be learning in that course. Use the in-take assessment to help students develop an accurate self-evaluation of their knowledge.
- Take steps to ensure assessment is equitable for all students
- The assessment should inform students about future directions in education/evolution.
- The common lexicon will be used for the tip level tagging of curriculum components. Optional sub- levels can be established if more detail is desired
- The data of assessment enables the monitoring, analysis, and auditing of student learning
- The feedback should be actionable and communicated in ways that the student can understand (e.g., 'Practice reflecting a patient's concerns with their illness', as opposed to 'Get better at communication')
- The Mapping and Integration subcommittee of the curriculum committee is charged with selecting the lexicon set and maintaining consistency for the lexicon with external bodies including AAMC, LCME and ACGME
- Transparency with USMLE score data (mean score, passing rate)
- Use a formal programmatic assessment to evaluate the curriculum.
- Use formative assessment
- Use formative progress testing at strategic points along the curriculum
- Use quality, validated summative assessments
- USMLE Step 1 exam must be passed before starting clerkships in the second year
- USMLE step 2 CK must be passed in time to facilitate residency application. The exact date for this depends on the residency application process. We propose September 15 as a deadline
- Utilization of multi-faceted assessment system that links assessments to ACGME Core competencies
- When developing assessment, "work backwards" from the overall intended educational outcome to smaller specific assessment questions or processes
- When developing assessment, consider whether the assessment reflects the School's values and vision about the graduating physician
- Whether choosing or developing an assessment instrument, combine different modes and formats. Modes and formats include narratives and presentations, written tests and essays, research projects, simulations and peer-teaching, and many other options

Longitudinal Alliance Program

- To make the Longitudinal Alliance Program (LAP) a required curricular experience for all students.

Three Year Accelerated MD Program

- To create a three-year MD track for seven students who would be “ranked to match” at a UPMC primary care residency.