

LONGITUDINAL AMBULATORY CARE EXPERIENCE (LACE) **Student Handbook**



LACE Student Handbook

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Longitudinal Ambulatory Care Experience - (LACE)

Student Handbook Acknowledgement and Consent

I, _____, received my copy of the LACE Student Handbook. It is my responsibility to read and understand the policies and procedures set forth in this manual. It is a guide to policies and procedures for the Longitudinal Ambulatory Care Experience (LACE) as an integral part of my education at the UC Riverside School of Medicine.

I understand and acknowledge that the LACE Program has the right to modify or amend policies, practices, assignments, forms, and other institutional guidelines within the limits of the LACE Program. I acknowledge that changes will be communicated to me via UCR email. It is my responsibility to be aware of and review the changes.

Student Name (Print): _____

Student Signature: _____

Date of Signature: _____

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II. LACE Program Overview

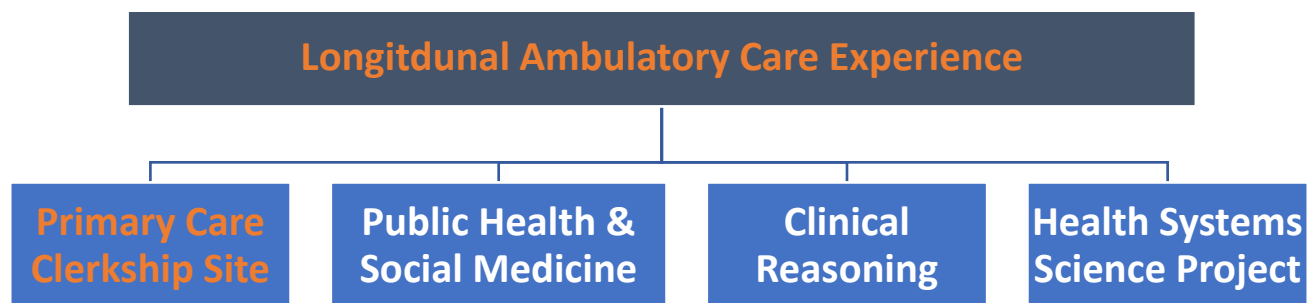
Mission Statement

The mission of the **Longitudinal Ambulatory Care Experience** (LACE) at UC Riverside School of Medicine is to develop innovative **community-based** physician leaders and advocates for the Inland Empire through applied **clinical reasoning** and **professional identity formation**. Our future physicians will have extensive knowledge of the provision of population health, preventive care, and chronic disease management in a **team-based, primary care home** model.

Structure & Function

The foundation of the Longitudinal Ambulatory Care Experience (LACE) program is an integrated three-year primary care clerkship with a **LACE Preceptor** that emphasizes core clinical skills with a focus on professional identity formation.

- LACE is a required and graded component of UC Riverside School of Medicine curriculum
- The primary care clerkship site provides **hands-on clinical experience** over three years, creating a link between classroom learning and real-time application of that knowledge.
- The **professional development** is based on formative feedback through a sustained mentor-mentee relationship with a community-based primary care physician.
- The LACE Program curriculum acts as a bridge between traditional pre-clerkship years and general clinical content with an emphasis on **clinical reasoning** and **metacognition**.
- The longitudinal clerkship experience is integrated with coursework in **LACE Curriculum Threads**: Public Health & Social Medicine, Clinical Reasoning, and Health Systems Science Projects.



III. LACE Program Goals: Primary Care Clerkship

The cornerstone of the UCR SOM Longitudinal Ambulatory Care Experience (LACE) is the three-year mentor-mentee relationship between our [LACE preceptors](#) and our medical students.

The purpose of the LACE Clerkship is to provide students with the skills and space to find out what it means to be a physician who treats themselves and their patients with dignity and compassion.

Clinical Reasoning

Clinical reasoning is the process of translating pertinent patient information (history, physical exam, diagnostic data) into a problem list of assessments to build a differential diagnosis and treatment plan (Durning, et al). The ability to synthesize clinical information requires both *medical knowledge* and *clinical experience*.

While medical knowledge is built through various curriculum modalities (lecture, small-group sessions), LACE Clerkship offers our medical students an opportunity to gain valuable clinical experience through [deliberate practice](#) with an experienced preceptor. Each LACE session is guided by specific learning objectives (Deliverables – Appendix A) to improve clinical skills and diagnostic reasoning under guidance of their [LACE preceptor](#).

Professional Identity Formation

Many factors influence the formation of a medical student's professional identity, including their learning environment, peer support, teaching and assessment, clinical experiences, and role models and mentors (Cruess et al).

The [LACE Preceptor](#) fills this most important mentorship role during the three-year clerkship; each preceptor provides a blueprint of what it means for our students to “think, act, and feel like a physician.” Research strongly suggests that medical students learn this art of being a physician by participating in patient care with an experienced preceptor (Melvin, et al).

Our students participate in active reflection on their LACE Clerkship sessions with both their preceptors and integrated assignments in the LACE Curriculum Threads. This process helps students identify both the conscious and unconscious acquisition of behaviors and knowledge.

IV. LACE Learning Outcomes (Deliverables)

To ensure our students receive a consistent and equivalent learning experience across clerkship sites, we provide specific **learning outcomes** for the entire three-year LACE Clerkship (**Appendix A4-6**).

(a) LACE Deliverables (M1, M2, M3)

To facilitate supervision of learning outcomes for both students and **LACE Preceptors**, we included a recommended timeline for completion of **Deliverables** that is integrated with pre-clerkship coursework (**Appendix A1-3**), to be reviewed at each LACE Clerkship session.

- The learning outcomes (**Deliverables**) reflect the practical application of student coursework in Clinical Skills, Doctoring, and each of the LACE Curriculum Threads (Clinical Reasoning, Public Health, Health Systems Science Project).
- **Deliverables** will be performed at the primary care clerkship site under the supervision of the **LACE Preceptor**.
- Each **LACE Preceptor** may use their discretion to change the order of any **Deliverable** to better align with their specific clinic experience.
- Students are expected to share a list of **Deliverables** with their **LACE Preceptor** at the start of each LACE Clerkship session.

Expectations for the **clinical content** of the student **Deliverables** fall into three core categories:

1. **Preventive health and wellness** - includes screening for social determinants of health, identification of risk factors of disease, promotion of health and wellness practices, and implementation of screening evaluations (primary, secondary, and tertiary prevention).
2. **Undifferentiated disease process** - symptom-driven care (i.e., shortness of breath). Although the specific symptoms and/or differential diagnosis may vary by practice type, the fundamental clinical reasoning approach to assessment is consistent.
3. **Chronic disease management** - diagnosis-driven care (i.e., diabetes or hypertension). Includes population health management of chronic diseases and coordination of care with community-based resources.

(b) Required Clinical Experiences

To help identify areas for continuous quality improvement of the LACE Clerkship, students are required to log (via Acuity) each of the **Deliverables** as “Required Clinical Experiences” (**RCEs – Appendix B1-3**).

V. LACE Student Responsibilities & Requirements

(a) Lectures and Education

Students are required to attend all [LACE Lectures](#) (Public Health, Clinical Reasoning, Health Systems Science Project) with active learning components as per UCR SOM attendance policy. These lectures are a fundamental part of the core medical school curriculum.

- Please refer to each individual LACE Curriculum Thread syllabus for specific learning objectives, required readings/assignments, and course schedules.
- The official academic schedule is available on the [UCR SOM Intranet](#). It is the student's responsibility to check their individual schedule and access Canvas for any changes.

(b) LACE Clerkship: Policies

General: Each student is paired with a community [LACE Preceptor](#) in primary care for the duration of their three-year longitudinal integrated clerkship. The primary care clerkship site offers clinical experience for our students through direct observation and deliberate practice.

Orientation:

All students are required to attend the LACE Clerkship Orientation prior to their first clerkship session. Students should arrive on-time to their LACE Clerkship session (1:30pm) with their white coats, medical kit equipment (stethoscope, reflex hammer, pen light, tuning fork, otoscope, ophthalmoscope, paper/pen), and a list of Deliverables (Required Clinical Experiences) for the clerkship session. At the start of each session, students are expected to meet with their preceptors to review the *Deliverables/Required Clinical Experiences* for each LACE Clerkship session.

- **Onboarding Requirements:** Students are required to complete necessary onboarding requirements (through the Office of the Registrar) for their respective LACE Clerkship clinical sites. Failure to complete these requirements will result in delays to LACE Clerkship and will be counted as unexcused absences that may adversely affect the students' grade (attendance).

Clerkship Schedule: 100% attendance at all LACE Clerkship sessions is required

- **LACE 1: 16 total half-days** - every other week (Tuesday, Wednesday, or Thursday afternoons) from 1:30 to 5pm
- **LACE 2: 15 total half-days** - every other week (Tuesday, Wednesday, or Thursday afternoons) from 1:30 to 5pm
- **LACE 3: 39 total half-days** – every week (Monday through Friday afternoons) from 1:30 to 5pm.
- If a student and their LACE Preceptor request to change their assigned rotation half-

day for any reason, they must submit the request to the LACE Clerkship Director(s) and the LACE Program Coordinator for approval.

- **Wellness Days:** Students that are scheduled for LACE Clerkship on their Wellness Days are required to re-schedule with their LACE Preceptors for an alternate half-day during that week.
- **Desert / Palm Springs:** Each year, students are assigned to complete a portion of their third-year clerkship rotations in the desert region of Riverside County (Palm Springs).
 - o Students who are assigned to rotate in this region for 16+ consecutive weeks will be assigned to a LACE Preceptor in the region of their clerkship rotations.
 - o Students who are assigned to rotate in this region for short periods (less than 16 consecutive weeks) will complete assignments from the *LACE 3 Clerkship Supplemental Curriculum* (Canvas) each week during their required LACE Clerkship sessions, regardless of length of their rotation.
- **Clerkship Didactics:** Students that are scheduled for LACE 3 Clerkship that conflicts with other clerkship didactics are asked to re-schedule with their LACE Preceptors for an alternate half-day afternoon during that clerkship rotation and notify the LACE Program Coordinator.

Attendance: Students are required to attend all assigned LACE Clerkship sessions with an expectation of at least 3.5 hours per session (1:30-5:00pm).

- **Absence:** Refer to UCR SOM Policy (950-07-016) on “Attendance and Planned, Emergency, Unexcused, and Extended Absences” - [UCR Attendance Policy \(950-07-016\)](#)
 - o *Anticipated Absence:* In the event a student is unable to attend their assigned LACE Clerkship due to anticipated absence, the student must complete the “Request for Excused Absence” form 45 days prior to their assigned rotation (according to UCR Policy 950-07-016), with the plan for make-up session included in the form.
 - In addition, the student must notify via e-mail the LACE Program Coordinator and CC their LACE Preceptor.
 - Failure to submit the required form on-time will result in an **unexcused absence**
 - o *Emergency Absence:* In the event a student is unable to attend their assigned LACE Clerkship due to emergency absence (for approved reasons, per UCR SOM policy), the student must complete the “Request for Excused Absence” prior to the time of their LACE Clerkship rotation, with the plan for make-up session included in the form.
 - In addition, the student must notify via e-mail the LACE Program Coordinator and CC their LACE Preceptor.
 - Failure to submit the required form on-time will result in an **unexcused**

absence

- *Unexcused Absence:* Students with unexcused absences (for any reason) from LACE Clerkship will result in remediation of the LACE Module in that Block.
 - Students are required to make-up those sessions before the end of the following Block to avoid a failing grade.
 - Unexcused absences will warrant referral to the Professionalism Education Committee by the LACE Clerkship Director(s)
- **LACE Preceptor - Schedule Conflict:** If a LACE Preceptor is unavailable for a scheduled LACE session (for any reason), the student must notify via e-mail the LACE Program Coordinator and CC their LACE Preceptor.
 - Students are expected to contact their LACE Preceptor prior to their assigned LACE Clerkship sessions, to avoid unexpected absences.
 - If a LACE Preceptor is unavailable for a prolonged period, the student will be assigned supplemental assignments until additional arrangements can be made.

LACE Preceptor: Each student is paired with a community preceptor in primary care for the duration of their three-year longitudinal integrated clerkship.

- **Supervision:** There may be other learners assigned to the same clinical site throughout the year; this often necessitates supervision by resident physicians. The majority of time in LACE Clerkship must be under direct supervision of the assigned LACE Preceptor.
- **RECITE:** If a student appraises a faculty preceptor as having deficiencies on one or more specific teaching/assessment skills or inadequate overall performance, the LACE Clerkship Director will provide direct feedback to review summative evaluation, provide resources for improvement, and mutually create an improvement plan.
- A student may not arrange alternate or make-up sessions with another LACE Preceptor or UCR faculty without approval from the LACE Clerkship Director.
- A student's personal primary care physician may never serve as their LACE Preceptor.

Work Hours: Students are required to log their "work hours" for LACE Clerkship (Acuity) at the end of each LACE Clerkship week.

- Failure to log the work hours will be marked as **unexcused absence**.
- These logs will be audited and reviewed with the LACE Preceptor by the LACE Program Coordinator to verify attendance at the end of each Block.

Students with Disabilities/Accommodations: Students must contact the UCR School of Medicine Office of Student Affairs to coordinate appropriate accommodations for LACE Clerkship. Students may also contact the Associate Dean of Clinical Medicine Education or the Senior Associate Dean of Student Affairs to discuss the specific situation.

- Disability Resources and Services can be contacted (951-827-3861) to coordinate reasonable accommodations for students with documented disabilities.

Student Wellness: Students should contact the UCR School of Medicine Director of Student Wellness (Amanda.Smith@medsch.ucr.edu) to be connected for mental health and support resources. UCR School of Medicine also offers [urgent services](#) and [critical student resources](#).

Academic Integrity at UCR: UCR Policy on Plagiarism and Academic Integrity: <http://conduct.ucr.edu/policies/academicintegrity.html>

An extensive list of additional policies and procedures is available on the the [UCR SOM policy page](#).

(c) LACE Clerkship: Helpful Tips

Each LACE Preceptor participates in orientation on expectations and educational objectives; students can thus employ strategies during LACE Clerkship to optimize their experience:

Review Deliverables: Meet with your LACE Preceptor at the start of each session to review [Deliverables](#) and determine specific patients for deliberate practice.

Selective Patients: Dedicate a select number of patients per half-day for deliberate practice; an active student does not need to observe every patient encounter to have a meaningful learning experience.

Direct Observation: Ask to practice clinical skills (history, physical) under direct supervision of your LACE Preceptor observation for immediate feedback.

Repetition is Key: The timeline of the Deliverables is merely a guide; feel comfortable repeating skills across multiple sessions.

Regular Feedback: Meet regularly with your LACE Preceptor to identify areas for reflection and improvement on a consistent basis.

Ask For Rationale: Talk through clinical decision-making points with your LACE Preceptor to gain valuable insight into their thought process.

Admit What You Don't Know: Recognize your limits and engage in self-directed learning using various medical reference resources.

Promote a "Growth" Mindset: Discuss your own journey as a medical student and reflect on the struggles and triumphs of your LACE Preceptor on their journey.

The success of the student in achieving the educational objectives during their longitudinal clerkship experience depends on several factors, including:

- **DO:** Show up on time, ask for opportunities to participate, practice documentation, respectfully engage clinic staff members in professional manner.
- **DO:** Read pertinent clinical topics between patients, discuss/evaluate Health Systems Science (HSS) Project, identify community resources for patients.
- **DO NOT:** Provide direct unsupervised care to the patient; all patients are the full responsibility of the LACE preceptor and must be seen and examined by the physician.
- **DO NOT:** Perform or assist in invasive procedures beyond your level of training (venipuncture, biopsies, intra-articular injections/aspirations).
- **DO NOT:** Participate in any activities or behaviors that violate the UCR SOM Student Conduct Policy.

(d) LACE Clerkship: Sample Schedule

1:20 – 1:30pm: Student meets with [LACE Preceptor](#) to review [Deliverables](#) for session and identify patients for deliberate practice

1:30 – 4:30pm: Student participates in deliberate practice with selected patients with direct feedback from [LACE Preceptor](#). Between patient visits, students may practice documentation in the medical chart, perform self-directed reading on pertinent case topics, perform chart review, work on LACE Health Systems Science Project (HSSP)

4:30 – 5:00pm: Student participates in active reflection on learning points from the session, while exploring the thought-process and clinical reasoning of the [LACE Preceptor](#). The LACE Preceptor provides feedback and guidance on further readings.

- Students log (via Acuity) their “**Required Clinical Experiences**” and “**Work Hours**”

(e) Professionalism

The LACE Program strives to create an inclusive and supportive environment for all students. The students are encouraged to reach out to the LACE Program Director and LACE Program Coordinator regularly with feedback and areas of improvement. At regular intervals during the academic year, the LACE Program Director will meet with respective Class Representatives to identify areas for improvement. This information will be distributed via update e-mails and in Canvas, including upcoming deadlines for assignments.

It is understood that all students abide by the expectations and guidelines outlined in the [LACE Student Handbook](#). If a student is identified as needing additional assistance in meeting these

outlined expectations for any reason (unexcused absences, delayed assignments or evaluations, other concerns related to any component of the LACE program), a meeting will be arranged with the LACE Program Director to discuss referral to the UCR SOM Professionalism Education Committee. Please refer to the [UCR SOM Handbook](#) for more information on this process.

The following are some examples of behaviors that require referral to **UCR SOM Professionalism Education Committee**:

- A student requests protected time to study for exams/other coursework during scheduled LACE Clerkship time
- A student attends LACE Clerkship without completing onboarding requisites or clearance from the Office of the Registrar
- A student arranges LACE Clerkship opportunities with a community preceptor other than their assigned LACE Preceptor
- A student does not notify LACE Program Coordinator of changes to their clerkship day or supervision
- A student uses their LACE Preceptor as their personal primary care physician
- A student is late in submitting required documents/assignments for LACE Clerkship or LACE Curriculum Threads

VI. LACE Clerkship – Assessment & Evaluation

LACE Preceptors are required to complete formative and summative assessments of their students during each LACE Clerkship year. This is critical to ensure students are meeting learning objectives and program goals as part of their development as future physicians.

- The *UCR Office of Medical Education Quality and Integration* provides annual reports that summarize the contents of these assessments and evaluations, as part of continuous quality improvement of our curriculum.
- The contents of these reports are reviewed by the **LACE Subcommittee (Clerkship Taskforce)** of the **UCR SOM Medical Education Committee**.
 - o Each year, student representatives and representatives from the community faculty of LACE Preceptors will participate as members of the LACE Subcommittee. These student representatives will collect feedback from their classmates and share ideas for one of two task-forces throughout the year:
 - The **LACE Clerkship taskforce** is focused on improving the experience for students and preceptors at their LACE Clerkship rotation sites during M1-M3 years.
 - The **LACE Curriculum taskforce** is focused on improving the experience for students and teachers in the four LACE Curriculum threads (Health Systems Science Project, Clinical Reasoning, Public Health).

(a) Formative Assessment

Each student will receive formative assessments from their LACE Preceptor through the “*Observed Clinical Encounter*” and the “*Mid-Clerkship Assessment*.” The formative assessments will not be indicative of or incorporated into the student’s final grade and narrative assessment. However, failure to submit either the “*Observed Clinical Encounter*” or “*Mid-Clerkship Formative Assessment*” forms will result in an “**Incomplete**” grade until completed. If the grade remains incomplete at deadline of the next academic quarter, it will automatically result in a “**Fail**” grade, per UCR SOM policy.

- **Observed Clinical Encounter** (OCE) – *once per LACE Clerkship year* – the LACE Preceptor must have direct observation for at least one of the student’s clinical encounters, to include formal feedback on the following: interview/history taking, physical examination, clinical reasoning, communication skills, etc.
 - o The student and faculty must use the UCR School of Medicine “**UCR SOM Clerkship Observed Clinical Encounter by Faculty**” form. This form requires a

student and faculty signature. The student will bear the responsibility to return the completed form via Canvas.

- **Mid-Clerkship Formative Assessment** (MCF) – *once per LACE Clerkship year* – a scheduled session between **LACE Preceptor** and student to include the following:
 - Review of progress of learning outcomes (Deliverables)
 - Review of **Required Clinical Experiences** (RCE) patient logs
 - Discuss the completion or plan for completion of the **Observed Clinical Encounter** (OCE)
 - Review of student **work hours** log
 - Perform meaningful review of clinical performance; students should complete a self-assessment of their performance for review prior to the scheduled meeting
 - Identify areas of improvement and goals for the remainder of the clerkship year
 - The student and faculty must use the UCR School of Medicine **“UCR SOM Mid-Clerkship Formative Assessment of Medical Student by Faculty”** form. This form requires a student and faculty signature. The student will bear the responsibility to return the completed form via Canvas.

(b) Summative Assessment

Each student will receive narrative assessments from their **LACE Preceptor**, in the form of:

- **“Medical Student Clerkship Summative Assessment by Faculty” Form** – LACE Preceptors must complete this electronic form (via Acuity) for the specific purpose of rating the student’s clinical performance and providing narrative assessment to the clerkship.
 - A summative assessment will be entered to assess the student’s performance at the end of the clerkship year. The contents of this assessment may be included in the student’s Medical Performance Student Evaluation (Dean’s Letter).
 - The content of the summative assessments will not be indicative of or incorporated into the student’s final grade for the LACE Clerkship.
 - **If a LACE Preceptor does not submit the *Clerkship Summative Assessment* form within two weeks of the end of the academic year, the student’s grade may be listed as “Grade Delay” until completed.**

(c) Student Evaluations of Clerkship/Teaching

To improve upon the LACE Program, we gather evaluations of both LACE Clerkship and the instruction of our LACE Preceptors from students at the end of each LACE Clerkship year.

- Students must complete both **“Student Evaluation of LACE Clerkship”** and **“Student Evaluation of Faculty Teaching”** forms (via Acuity)

- RECITE Policy: If a student appraises a [LACE Preceptor](#) as having deficiencies on one or more specific teaching/assessment skills or inadequate overall performance, the LACE Clerkship Director will provide direct feedback to review summative evaluation, provide resources for improvement, and mutually create an improvement plan.

(d) Grading Policy – LACE Clerkship

LACE 1 & 2: The grading policy for **LACE 1 and LACE 2 Clerkship** are part of the LACE Module. Students must pass each component of the LACE Module in each Block 1-9. Please refer to the UCR SOM Grading Policy for complete details.

- The LACE Module consists of:
 - LACE Clerkship
 - **Requisites:** 100% attendance at LACE Clerkship sessions, submission of required Deliverables per Block - *refer to LACE 1 and LACE 2 Clerkship syllabi for specific deadlines for each assignment*
 - LACE 1 Clerkship:
 - Required Clinical Experiences = **23** – Appendix B1
 - Minimum # of Patient Encounters = **16**
 - LACE 2 Clerkship:
 - Required Clinical Experiences = **24** – Appendix B2
 - Minimum # of Patient Encounters = **16**
 - LACE 3 Clerkship:
 - Required Clinical Experiences = **20** – Appendix B3
 - Minimum # of Patient Encounters = **35**
 - **Work hours log, Required Clinical Experiences log, Mid-Clerkship Formative Assessment, Observed Clinical Encounter, Student Evaluation of Clerkship, Student Evaluation of Teaching**
 - LACE Curriculum Threads
 - **Requisites:** 100% completion of assignments/deliverables from LACE Curriculum Threads. Please refer to the respective syllabi for each LACE Thread for a complete list of assignments and grading policies. (Canvas)
 - **Health Systems Science Project**
 - **Clinical Reasoning**
 - **Public Health & Social Medicine**
 - As per UCR SOM policy, all requisites for the Block must be completed by two weeks after the Block Course is completed before grades are released to the students.

- If requisites are not done, the student grade is listed as “Incomplete.” The “Incomplete” grade automatically converts to “Fail” if not rectified by the student by the end of the quarter.
- Similarly, assigned evaluation of clerkship and faculty must be completed no later than two weeks after the end of LACE 2 Clerkship.

LACE 3: The grading scale for **LACE 3** is **Honors, High Pass, Pass, or Fail**. Please see the LACE 3 Grading Rubric (Canvas) for criterion-based reference grading based on Knowledge, Professionalism, and Clinical Performance, per UCR SOM policy.

- Honors (9 total points),
- High Pass = 7-8 total points
- Pass = 5-6 total points
- **Clinical Knowledge**
 - LACE Practice Improvement Project (PIP) Thread – Final Paper
 - 90 to 100% = 3 points
 - 80 to 89% = 2 points
 - 70 to 79% = 1 points
- **Clinical Performance**
 - Full attendance at all required LACE 3 Clerkship sessions
 - 100% attendance = 3 points
- **Professionalism**
 - Completed on-time assignments LACE 3 Clerkship:
 - 100% on time = 3 points
 - 90% on time = 2 points
 - 70% on time = 1 points
 - LACE Clerkship – Required Assignments:
 - Work hours log, Supplemental Curriculum assignments (if assigned), Required Clinical Experiences log, Mid-Clerkship Formative Assessment, Observed Clinical Encounter, Student Evaluation of Clerkship, Student Evaluation of Teaching
 - LACE Practice Improvement Project (PIP) Thread – Required Assignments
 - Science Poster, Presentation at Dean’s Research Day, Final Paper / Project Write-Up, Abstract

VII. LACE Curriculum Threads

The purpose of the four [LACE Curriculum Threads](#) is to give students a foundation for their professional identity formation as they transform into a physician, an advocate, and a scholar.

(a) LACE Health Systems Science Project

The Inland Empire suffers from persistent health disparities stemming from intersecting socio-economic challenges. As part of our central mission to train physicians who can ameliorate the effects of these disparities, our students embark on a three-year curriculum that guides them through each piece of the research and scholarship process. By following the curriculum, the students become the kind of physician-scientists that can help put good health within reach of every person in our region.

The educational requirements related to the **Health Systems Science Project Thread** progress over the course of three years, including: literature review, formulating a research question, submitting for IRB review, and implementing data collection and analysis. [All projects must be approved by the LACE Health Systems Science Thread Director \(Daniel Novak, PhD – UCR Director of Scholarly Activities\).](#)

Students will be expected to present the progression or outcome of their work at the annual conference (“[Dean’s Research Day](#)”) at UC Riverside School of Medicine. This event serves to disseminate innovative research and quality improvement in healthcare throughout the Inland Empire.

Please refer to the [LACE Health Systems Science Projects Thread Syllabus](#) for further details.

(b) LACE Clinical Reasoning

LACE Clinical Reasoning is a longitudinal interactive workshop series focused on integrated [clinical decision-making](#) and [diagnostic reasoning](#) through the practice of metacognition. Students will explore clinical case narratives to externalize thoughts and analyze their own thinking for potential heuristic error. This conscious reflection is a critical step as students participate in socialization and enter the community of medical practice.

The LACE Clinical Reasoning thread will explore factors that influence clinical decision-making: evidence-based medicine, population health, applied biostatistics, shared decision-making, patient perspectives, and heuristics and cognitive errors. Students will apply these learned methodologies with their LACE Preceptors during their longitudinal clerkship.

Please refer to the [LACE Clinical Reasoning Thread Syllabus](#) for further details.

(c) LACE Public Health & Social Medicine

The LACE Public Health core curriculum titled ‘[Public Health and Social Medicine: A Focus on Disparities](#)’ is vital to exposing students to a variety of foundational health care topics with an integrated focus on community engagement. Topics include health policy, social determinants of health, ethics, structural competency, medical humanities, and preventive medicine. When linked to their longitudinal clerkship, this core component of the medical school curriculum equips our future physicians to better understand public health and improve the health of the community.

Please refer to the [LACE Public Health Thread Syllabus](#) for further details.

Appendix A-1: LACE 1 Deliverables

BLOCK ONE

Week 5:

- Observe the process of a medical assistant/nurse in preparing two patients for a visit
- Obtain **vital signs** on at least two patients during a visit
 - RCE (Acuity): *"Physical Exam – Vital Signs"*
- Obtain a **History of Present Illness** using the OLDCART(S) method as applicable, with supervision of your LACE Preceptor: Onset, Location, Duration, Character, Alleviating/Aggravating factors, Radiation, Timing, Severity
 - RCE (Acuity): *"History – present illness (OLDCARTS method)"*
- With your LACE Preceptor, perform a partial or complete **skin exam** on at least one patient
 - RCE (Acuity): *"Physical Exam – Skin"*
- Submit **work hours log** via Acuity

Week 7:

- With your LACE Preceptor, obtain a **History of Present Illness** for at least one patient (using the OLDCART(S) method as applicable)
 - RCE (Acuity): *"History – present illness (OLDCARTS method)"*
- With your LACE Preceptor, perform a partial or complete **ENT examination** on at least one patient
 - RCE (Acuity): *"Physical Exam – Ear, Nose, Throat"*
- With your LACE Preceptor, perform a partial or complete **head, neck, lymph node** on at least one patient
 - RCE (Acuity): *"Physical Exam – head, neck, lymph node"*
- With your LACE Preceptor, obtain a **social history** using the HEADSSS method: home status, education, activities/employment, diet, substance use, suicidality/self-image, sexuality, safety
 - RCE (Acuity): *"History – social assessment (HEADSSS)"*
- Submit **work hours log** via Acuity

BLOCK TWO

Week 1:

- Obtain **vital signs** on at least one patient during a visit
 - RCE (Acuity): *"Physical Exam – Vital Signs"*
- With your LACE Preceptor, obtain a **History of Present Illness** for at least one patient (using the OLDCART(S) method as applicable)
 - RCE (Acuity): *"History – present illness (OLDCARTS method)"*
- With your LACE Preceptor, analyze the **cardiac risk factors** for at least one patient
 - RCE (Acuity): *"History – assessment of cardiac risk factors"*

Week 3:

- With your LACE Preceptor, obtain a **History of Present Illness** for at least one patient (using the OLDCART(S) method as applicable)
 - RCE (Acuity): *"History – present illness (OLDCARTS method)"*
- With your LACE Preceptor, analyze the **cardiac risk factors** for at least one patient
 - RCE (Acuity): *"History – assessment of cardiac risk factors"*
- Interpret the basic parts of an **electrocardiogram** with your LACE Preceptor – see example (Figure 1)
 - RCE (Acuity): *"Skills – read an electrocardiogram"*
- Submit **work hours log** via Acuity

Week 5:

- With your LACE Preceptor, obtain a **History of Present Illness** for at least one patient (using the OLDCART(S) method as applicable)
 - RCE (Acuity): *"History – present illness (OLDCARTS method)"*
- With your LACE Preceptor, perform a partial or complete **cardiovascular exam** on at least one patient.
 - RCE (Acuity): *"Physical Exam – Cardiovascular"*
- Interpret the basic parts of an **electrocardiogram** with your LACE Preceptor – see example (Figure 2)
 - RCE (Acuity): *"Skills – read an electrocardiogram"*
- Submit **work hours log** via Acuity

Week 7:

- With your LACE Preceptor, obtain a **History of Present Illness** for at least one patient (using the OLDCART(S) method as applicable)
 - RCE (Acuity): *"History – present illness (OLDCARTS method)"*
- With your LACE Preceptor, obtain a history of **tobacco use** for at least one patient
 - RCE (Acuity): *"History – assessment of tobacco use history"*
- With your LACE Preceptor, perform a partial or complete **respiratory exam** on at least one patient.
 - RCE (Acuity): *"Physical Exam – Respiratory"*
- Submit **work hours log** via Acuity

BLOCK THREE

Week 1:

- Obtain a **History of Present Illness** for a consenting patient of your LACE Preceptor's discretion.
- The related medical history may include: past medical history, past surgical history, reproductive/sexual history, medications, allergies, or a pertinent review of systems

- With your LACE Preceptor, perform a complete **respiratory exam** on at least one patient.
 - RCE (Acuity): *"Physical Exam – Respiratory"*
- With your LACE Preceptor, perform a complete **cardiovascular exam** on at least one patient.
 - RCE (Acuity): *"Physical Exam – Cardiovascular"*
- Schedule time to meet with your LACE Preceptor to complete **Mid-Clerkship Formative Assessment** (Canvas) and to review log of RCEs by the end of Block 3
- Submit **work hours log** via Acuity

Week 3:

- With your LACE Preceptor, obtain a **social history for an adolescent patient** using the HEADSSSS method: home status, education, activities/employment, diet, substance use, suicidality/self-image, sexuality, safety.
 - RCE (Acuity): *"History – social assessment (HEADSSS)"*
- With your LACE Preceptor, perform a partial or complete **abdominal exam** on one patient.
 - RCE (Acuity): *"Physical Exam – Abdominal"*
- Submit **work hours log** via Acuity

Week 5:

- With your LACE Preceptor, observe and assist with a **genitourinary exam** with a consenting patient. If possible, participate in the genitourinary exam with both a male and female patient.
 - RCE (Acuity): *"Physical Exam - Genitourinary Exam (Male)"*
 - RCE (Acuity): *"Physical Exam - Genitourinary Exam (Female)"*
- Obtain a **complete dietary history** (including access/affordability) on a patient, preferably one with a history of pre-diabetes, diabetes, or dyslipidemia.
 - RCE (Acuity): *"History – screen for social determinants of health"*
- Submit **work hours log** via Acuity

Week 7:

- With your LACE Preceptor, observe and assist with a **genitourinary exam** with a consenting patient. If possible, participate in the Genitourinary exam with both a male and female patient.
 - RCE (Acuity): *"Physical Exam - Genitourinary Exam (Male)"*
 - RCE (Acuity): *"Physical Exam - Genitourinary Exam (Female)"*
- Submit **work hours log** for Block 3 via Acuity
- Complete **"UCR SOM Observed Clinical Encounter by Faculty"** (available in Canvas) by the end of LACE 1 Clerkship (May)
- Submit **work hours log** via Acuity

BLOCK FOUR

Week 1:

- Obtain a **reproductive history** for a consenting patient of your LACE Preceptor's discretion.
 - RCE (Acuity): "History – social assessment (HEADSSS)"
- With your LACE Preceptor, perform a partial or complete **breast examination** on at least one patient.
 - RCE (Acuity): "Physical Exam – Breast/axillae"
- Discuss recommended **screening guidelines** for at least one patient using the [US Preventive Services Task Force \(USPSTF\) Guidelines](#)
- [ePSS - Online Tool for USPTSE](#): read the "Rationale" and "Clinical Considerations" sections for at least two screening recommendations
 - RCE (Acuity): "Skills – counsel on preventive care for chronic disease"
- Submit **work hours log** via Acuity

Week 3:

- With your LACE Preceptor, perform a partial or complete **musculoskeletal exam of the upper extremity** on at least one patient.
 - RCE (Acuity): "Physical Exam – Musculoskeletal (upper extremity)"
- With your LACE Preceptor, interpret basic parts of any **radiograph** (chest, abdomen, extremities) – see attached example (Figure 3)
 - RCE (Acuity): "Skills – read a chest radiograph"
- Submit **work hours log** via Acuity

Week 5:

- With your LACE Preceptor, perform a partial or complete **musculoskeletal exam of the lower extremity** on at least one patient.
 - RCE (Acuity): "Physical Exam – Musculoskeletal (lower extremity)"
- Screen a patient for **intimate partner violence** and share your findings with your LACE Preceptor
 - RCE (Acuity): "History – screen for intimate partner violence"
- Submit **work hours log** via Acuity

BLOCK FIVE

Week 1:

- Obtain a **History of Present Illness** for a consenting patient of your LACE Preceptor's discretion.
 - RCE (Acuity): "History – present illness (OLDCARTS method)"

- With your LACE Preceptor, perform a partial or complete **neurologic exam** on at least one patient.
 - RCE (Acuity): “Physical Exam - Neurological”
- Submit **work hours log** via Acuity

Week 3:

- Obtain a **History of Present Illness** for a consenting patient of your LACE Preceptor’s discretion.
 - RCE (Acuity): *“History – present illness (OLDCARTS method)”*
- With your LACE Preceptor, perform a partial or complete **neurologic exam** on at least one patient.
 - RCE (Acuity): “Physical Exam - Neurological”
- With your LACE Preceptor, perform a partial or complete **ophthalmologic exam** on at least one patient.
 - RCE (Acuity): “Physical Exam - Ophthalmologic”
- Submit **work hours log** via Acuity

Week 5:

- Obtain a **History of Present Illness** for a consenting patient of your LACE Preceptor’s discretion.
 - RCE (Acuity): *“History – present illness (OLDCARTS method)”*
- Identify a patient presenting with *headache / stress management* (Doctoring)
- Submit **work hours log** via Acuity
- Assessments/Evaluations (required to release grades):
 - Complete **“Student Evaluation of Clerkship”** form via Acuity
 - Complete **“Student Evaluation of Teaching”** form via Acuity
 - LACE Preceptor required to complete **“Clerkship Summative Assessment by Faculty”** form via Acuity

Appendix A-2: LACE 2 Deliverables

BLOCK SIX

Week 2:

- Obtain a **History of Present Illness** using the OLDCART(S) method as applicable, with supervision of your LACE Preceptor: Onset, Location, Duration, Character, Alleviating/Aggravating factors, Radiation, Timing, Severity
- Submit **work hours log** via Acuity

Week 4:

- Obtain a **focused HPI, directed physical exam** and provide a differential diagnosis for at least two patient encounters with the supervision of your LACE Preceptor
- With your LACE Preceptor, perform a partial or complete **musculoskeletal exam of the upper extremity or lower extremity** on at least one patient
 - RCE (Acuity): *"Physical Exam – Musculoskeletal (upper extremity)"*
 - RCE (Acuity): *"Physical Exam – Musculoskeletal (lower extremity)"*
- Analyze the results of one **hematologic laboratory result** obtained from a patient with your LACE Preceptor. Examples: complete blood count, peripheral smear, electrophoresis, etc.
 - RCE (Acuity): *"Skills – interpret hematologic laboratory values"*
- Submit **work hours log** via Acuity

Week 6:

- With your LACE Preceptor, perform a partial or complete **musculoskeletal exam of the upper extremity or lower extremity** on at least one patient.
 - RCE (Acuity): *"Physical Exam – Musculoskeletal (upper extremity)"*
 - RCE (Acuity): *"Physical Exam – Musculoskeletal (lower extremity)"*
- Identify age-appropriate **preventive screening guidelines** specific to at least one patient with your LACE Preceptor
 - RCE (Acuity): *"Skills – counseling on screening guidelines"*
- Interpret the results of one **infectious-culture laboratory** result obtained to evaluate a patient with your LACE Preceptor. Examples: urine dipstick, urine culture, wound culture, sputum culture, etc.
 - RCE (Acuity): *"Skills – interpret microbiology culture or analysis"*
- Submit **work hours log** via Acuity

Week 8:

- Obtain a **focused HPI and directed physical exam** for a patient with a possible infectious chief complaint. Review your differential diagnosis with your LACE preceptor.
- With your LACE Preceptor, perform a partial or complete **respiratory exam** on at least one patient

- RCE (Acuity): "Physical Exam – Respiratory"
- With your LACE Preceptor, perform a partial or complete **skin exam** on at least one patient
 - RCE (Acuity): "Physical Exam – Skin"
- Submit **work hours log** via Acuity

BLOCK SEVEN

Week 1:

- With your LACE Preceptor, perform a partial or complete **ENT examination and lymph node exam (head, neck)** on at least one patient
 - RCE (Acuity): "Physical Exam – Ear, Nose, Throat"
- RCE: With your LACE Preceptor, perform a partial or complete **skin exam** on at least one patient
 - RCE (Acuity): "Physical Exam – Skin"
- Submit **work hours log** via Acuity

Week 3:

- Obtain a complete **sexual and reproductive history** from either a male or a female patient.
- Identify any potential **nephrotoxic agents** on a patient medication list with your LACE preceptor.
- Schedule time to meet with your LACE Preceptor to complete **Mid-Clerkship Formative Assessment** (Canvas) and to review log of RCEs by the end of Block 7
- Submit **work hours log** via Acuity

Week 5:

- With your LACE Preceptor, perform a partial or complete **cardiovascular and respiratory exam**.
 - RCE (Acuity): "Physical Exam – Respiratory"
 - RCE (Acuity): "Physical Exam – Cardiovascular"
- Obtain a history of **cardiac risk factors** for at least one patient
- Use motivational interviewing to counsel a patient on **cessation of tobacco/nicotine use**
 - RCE (Acuity): *"Skills – counseling on smoking cessation"*
- **Analyze the basic parts of an electrocardiogram** with your LACE Preceptor - see attached example (Figure 4)
 - RCE (Acuity): "Skills – Interpret an electrocardiogram"
- Submit **work hours log** via Acuity

Week 7:

- With your LACE Preceptor, perform a partial or complete **cardiovascular and respiratory exam**.

- RCE (Acuity): "Physical Exam – Respiratory"
- RCE (Acuity): "Physical Exam – Cardiovascular"
- **Interpret a chest radiograph** with your LACE Preceptor - see attached example (Figure 5)
 - RCE (Acuity): "Skills – Interpret a chest radiograph"
- Submit **work hours log** via Acuity

BLOCK EIGHT

Week 1:

- With your LACE Preceptor, perform a partial or complete **abdominal exam** on at least one patient
 - RCE (Acuity): "Physical Exam – Abdominal"
- Review and interpret the results of one **abdominal and/or pelvic imaging study** with your LACE Preceptor. Examples: abdominal X-ray (KUB), CT abdomen/pelvis, renal ultrasound, pelvic ultrasound etc. - see attached example (Figure 6)
 - RCE (Acuity): "Skills – Interpret abdominal/pelvic imaging study"
- Submit **work hours log** via Acuity

Week 3:

- With your LACE Preceptor, perform a partial or complete **abdominal exam** on at least one patient
 - RCE (Acuity): "Physical Exam – Abdominal"
- Analyze and interpret the results of a **gastrointestinal/hepatology laboratory result or imaging result** with your LACE Preceptor. Examples: liver function tests, lipase, bilirubin levels, abdominal ultrasound or tomography, etc.
 - RCE (Acuity): "Skills – Interpret abdominal/pelvic imaging study"
- Submit **work hours log** via Acuity

Week 5:

- With your LACE Preceptor, observe and assist with a **genitourinary exam** with a consenting patient. If possible, participate in the genitourinary exam with both a male and female patient.
 - RCE (Acuity): "Physical Exam - Genitourinary Exam (Male)"
 - RCE (Acuity): "Physical Exam - Genitourinary Exam (Female)"
- With your LACE Preceptor, discuss **advanced care planning** with a patient/family. If applicable, you may assist the patient in completing an Advance Directive:
 - Advance Directive (California): http://oag.ca.gov/consumers/general/adv_hc_dir
 - The Conversation Project: <https://theconversationproject.org/>
 - RCE (Acuity): "Skills – counseling on advance care planning"
- Submit **work hours log** via Acuity

Week 7:

- With your LACE Preceptor, perform a partial or complete **breast examination** on at least one patient.
 - RCE (Acuity): "Physical Exam – Breast (Female)"
- Complete **"UCR SOM Observed Clinical Encounter by Faculty"** (available in Canvas) by the end of LACE 2 Clerkship (April)
- Submit **work hours log** via Acuity

BLOCK NINE

Week 1:

- With your LACE Preceptor, perform a partial or complete **neurologic and ophthalmologic** exam on at least one patient.
 - RCE (Acuity): "Physical Exam - Neurological"
 - RCE (Acuity): "Physical Exam - Ophthalmologic"
- Obtain a screening psychiatric history for a patient (PHQ-9, GAD, MDQ) - see attached example (Figure 7)
 - RCE (Acuity): "Skills – Psychiatry screening tool"
- Submit **work hours log** via Acuity

Week 3:

- With your LACE Preceptor, perform a partial or complete **neurologic and ophthalmologic exam** on at least one patient.
 - RCE (Acuity): "Physical Exam - Neurological"
 - RCE (Acuity): "Physical Exam - Ophthalmologic"
- Complete a **Montreal Cognitive Assessment** for a patient with possible cognitive impairment - see attached example (Figure 8)
 - Instructions and patient education: <http://www.mocatest.org/>
 - RCE (Acuity): "Skills – screening for cognitive delay"
- Practice at least **one formal patient presentation** with your LACE Preceptor including an expanded differential diagnosis with supporting clinical reasoning evidence.
- Submit **work hours log** via Acuity

Week 5:

- Practice at least **one formal patient presentation** with your LACE Preceptor including an expanded differential diagnosis with supporting clinical reasoning evidence.
- Submit **work hours log** for Block 9 via Acuity
- Assessments/Evaluations (required to release grades):
 - Complete **"Student Evaluation of Clerkship"** form via Acuity
 - Complete **"Student Evaluation of Teaching"** form via Acuity

- LACE Preceptor required to complete “**Clerkship Summative Assessment by Faculty**” form via Acuity
- Submit **work hours log** via Acuity

Appendix A-3: LACE 3 Deliverables

Week 1-4:

- List a differential diagnosis for a patient with presentation of **abdominal discomfort**, using history and physical exam to support hypothesis-driven clinical reasoning
 - RCE (Acuity): *"Diagnosis – Abdominal Discomfort"*
- Submit **work hours log** via Acuity

Week 5-8:

- Explain a management plan for a patient with **congestive heart failure**, using evidence-based guidelines
 - RCE (Acuity): *"Diagnosis – Congestive heart failure"*
- Submit **work hours log** via Acuity

Week 9-12:

- Explain a management plan for a patient with **coronary artery disease**, using evidence-based guidelines
 - RCE (Acuity): *"Diagnosis – Coronary Artery Disease"*
- Submit **work hours log** via Acuity

Week 13-16:

- List a differential diagnosis for a patient with presentation of **cough**, using history and physical exam to support hypothesis-driven clinical reasoning
 - RCE (Acuity): *"Diagnosis – Cough/asthma, chronic obstructive"*
- Submit **work hours log** via Acuity

Week 17-20:

- Explain a management plan for a patient with **diabetes mellitus / insulin resistance**, using evidence-based guidelines
 - RCE (Acuity): *"Diagnosis – Diabetes / Insulin resistance"*
- List a differential diagnosis for a patient with presentation of **rash/skin issue**, using history and physical exam to support hypothesis-driven clinical reasoning
 - RCE (Acuity): *"Diagnosis – Rash or skin issue"*
- Submit **work hours log** via Acuity

Week 21-24:

- List a differential diagnosis for a patient with presentation of **headache**, using history and physical exam to support hypothesis-driven clinical reasoning
 - RCE (Acuity): *"Diagnosis – Headache"*
- Submit **work hours log** via Acuity
- Schedule time to meet with your LACE Preceptor to complete **"UCR SOM Mid-Clerkship Formative Assessment by Faculty"** (Canvas) and to review log of RCEs by the end of January

Week 28-32:

- Explain a management plan for a patient with **hyperlipidemia**, using evidence-based guidelines
 - RCE (Acuity): "Diagnosis – Hyperlipidemia"
- Explain a management plan for a patient with **hypertension**, using evidence-based guidelines
 - RCE (Acuity): "Diagnosis – Hypertension"
- Submit **work hours log** via Acuity

Week 33-36:

- Complete "**UCR SOM Observed Clinical Encounter by Faculty**" (Canvas) by end of LACE 3 Clerkship (June)
- Submit **work hours log** via Acuity

Week 37-40:

- Explain a management plan for a patient with **upper respiratory infection**, using evidence-based guidelines
 - RCE (Acuity): "Diagnosis – Upper respiratory infection"
- List a differential diagnosis for a patient with presentation of **mental health issue**, using history and physical exam to support hypothesis-driven clinical reasoning
 - RCE (Acuity): "Diagnosis – Mental health (depression, anxiety)"
- Submit **work hours log** via Acuity

Week 41-44:

- Explain a management plan for a patient with **urinary tract infection**, using evidence-based guidelines
 - RCE (Acuity): "Diagnosis – Urinary tract infection"
- List a differential diagnosis for a patient with presentation of **musculoskeletal issue**, using history and physical exam to support hypothesis-driven clinical reasoning
 - RCE (Acuity): "Diagnosis – Musculoskeletal issue"
- Submit **work hours log** via Acuity

Week 45-49:

- Explain a management plan for a patient with **wellness visit**, using evidence-based guidelines
 - RCE (Acuity): "Diagnosis – Wellness visit"
- Submit **work hours log** via Acuity
- Assessments/Evaluations (required to release grades):
 - Complete "**Student Evaluation of Clerkship**" form via Acuity
 - Complete "**Student Evaluation of Teaching**" form via Acuity
 - LACE Preceptor required to complete "**Clerkship Summative Assessment by Faculty**" form via Acuity

Appendix A-4: Learning Objectives for LACE 1 Clerkship

After completing LACE 1 Clerkship, participating medical students will be able to:

1. Obtain a supervised social history using the HEADSSS method.
2. Conduct vital signs on a patient.
3. Perform a supervised skin exam on a patient.
4. Perform a supervised head, neck, lymph node exam on a patient.
5. Take part in a supervised ENT exam on a patient.
6. Analyze the history of cardiac risk factors on a patient.
7. Obtain a supervised history of tobacco use on a patient.
8. Interpret the basic parts of an electrocardiogram
9. Perform a supervised cardiovascular exam on a patient.
10. Perform a supervised respiratory exam on a patient.
11. List and analyze a complete history on patient, including past medical/surgical history and reproductive/sexual history.
12. Identify social determinants of health (food insecurity) during a patient history interview

13. Demonstrate a complete cardiovascular and respiratory exam on a patient.
14. Perform a supervised abdominal exam on a patient.
15. Perform a supervised genitourinary exam on a patient.
16. Explain potential heuristic errors and implicit bias in clinical reasoning.
17. Perform a supervised breast exam on a patient.
18. Conduct a supervised musculoskeletal exam of the upper and lower extremity on a patient.
19. Discuss recommended preventive screening guidelines with a patient.
20. Screen a patient for intimate partner violence during a history interview.
21. Interpret the basic parts of a radiograph.
22. Perform literature review in the process of health systems science research.
23. Perform a supervised neurological exam on a patient.
24. Perform a supervised ophthalmologic exam on a patient.
25. Interpret characteristics of diagnostic tests using sensitivity, specificity, predictive value.
26. Demonstrate professionalism and ethical behavior in clinical setting.

Appendix A-5: Learning Objectives for LACE 2 Clerkship

After completing LACE 2 Clerkship, participating medical students will be able to:

1. Analyze a history of present illness on a patient.
2. Perform a complete musculoskeletal exam of the upper and lower on a patient.
3. Perform a complete skin exam on a patient.
4. Analyze the results of a hematologic laboratory result on a patient.
5. Interpret the results of an infectious-culture laboratory result on a patient.
6. Identify recommended preventive cancer screening guidelines for a patient.
7. Perform a complete head and neck exam on a patient.
8. Perform a complete cardiovascular and respiratory exam on a patient.
9. Analyze the basic parts of an electrocardiogram for a patient.
10. Interpret a chest radiograph for a patient.
11. Identify on a patient medication list any nephrotoxic agents.
12. Explain an interdisciplinary approach to identifying and ameliorating health disparities.
13. Perform a complete abdominal exam on a patient.
14. Perform a complete a genitourinary exam on a patient.
15. Interpret an abdominal/pelvic imaging study for a patient.
16. Create an advanced care plan with a patient and/or family.
17. Analyze community values that influence a patient's physical health and communication style.
18. Obtain and document a psychiatric history of present illness on a patient.
19. Perform a complete neurological exam on a patient.
20. Perform a complete ophthalmologic exam on a patient.
21. Interpret an abdominal/pelvic imaging study for a patient.
22. Screen for cognitive delay with a patient and/or family.
23. Explain potential heuristic errors and implicit bias in clinical reasoning.
24. Gather patient and population data in the process of research or quality improvement.
25. Interpret characteristics of diagnostic tests using sensitivity, specificity, predictive value.
26. Demonstrate professionalism and ethical behavior in a clinical setting.

Appendix A-6: Learning Objectives for LACE 3 Clerkship

After completing LACE 3 Clerkship, participating medical students will be able to:

1. Perform and document a complete history and physical examination on the patient.
2. Interpret laboratory and imaging studies with other pertinent data.
3. Explain a comprehensive assessment and treatment plan for a patient.
4. Identify preventive health screening per recommended specialty guidelines.
5. Explain the basic principles in management of common outpatient conditions.
6. Identify the basic management principles of chronic disease management.
7. Perform a complete medication reconciliation in a patient-centered fashion.
8. Identify social determinants of health that affect patient health outcomes.
9. Analyze heuristic error and bias that influence clinical reasoning.
10. Complete advanced care planning with a patient and/or family.
11. Complete an informed consent with patient/family for common outpatient procedures.
12. Explain community values that influence a patient's physical health and communication style.
13. Analyze and publish results of research and/or quality improvement process.
14. Communicate effectively with patients and families across diverse socioeconomic and cultural backgrounds.
15. Model and foster the development of desirable personal and professional attributes (establish rapport and exhibit sensitivity in patient interactions, maintaining professional boundaries with patients and family members, respect diversity, dress and act in a professional manner, and resolve conflict professionally).

Appendix B-1: Required Clinical Experiences (RCEs) for LACE 1 Clerkship

Experience Name	Diagnosis/ Procedure	Level of Student Responsibility	Clinical Setting	Alternate Experience
Physical Exam - Vital signs	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 4 (p111-146)
Physical Exam - Skin	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 6 (p173-214)
Physical Exam - Head, neck, lymph node	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 7 (p215-302)
Physical Exam - Ear, nose, throat	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 7 (p215-302)
Physical Exam - Cardiovascular	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 9 (p343-418)
Physical Exam - Respiratory	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 8 (p303-342)
Physical Exam - Abdominal	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 11 (p449-508)
Physical Exam - Genitourinary (male)	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 13 & 14 (p541-606)
Physical Exam - Genitourinary (female)	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 13 & 14 (p541-606)
Physical Exam - Breast / axillae	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 10 (p419-448)
Physical Exam - Musculoskeletal (upper extremity)	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 16 (p625-710)
Physical Exam - Musculoskeletal (lower extremity)	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 16 (p625-710)
Physical Exam - Neurological	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 4 (p111-146)
Physical Exam - Ophthalmologic	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 17 (p711-796)
History - present illness (OLDCARTS method)	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 3 (p65-108)
History - social assessment (HEADSSS method)	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 18 (p799-926)
History - assessment of cardiac risk factors	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 3 (p65-108)
History - assessment of tobacco use history	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 3 (p65-108)
History - screen for social determinants of health (i.e., food security)	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 3 (p65-108)
History - screen for intimate partner violence	Procedure	Observed	Outpatient	MedEd - Open Access - IPV Screening: https://www.mededportal.org/doi/10.15766/mep_2374-8265.10622
Skills - counsel on preventive care for chronic disease	Procedure	Observed	Outpatient	Bates' Guide (12e) - Chapter 3 (p65-108)
Skills - read an electrocardiogram	Procedure	Observed	Outpatient	ECG Learning Center - University of Utah: https://ecg.utah.edu/outline
Skills - read a chest radiograph	Procedure	Observed	Outpatient	MedEd - University of Virginia: https://introductiontoradiology.net/courses/read/cxr/

Appendix B-2: Required Clinical Experiences (RCEs) for LACE 2 Clerkship

LACE 2 Clerkship – Required Clinical Experiences (RCEs)			
Experience Name (as Procedures)	Level of Student Responsibility	Clinical Setting	Alternate Experience
Physical Exam – Abdominal	Performed	Outpatient	MedEd - USCD: https://meded.ucsd.edu/clinicalmed/abdomen.html
Physical Exam - Breast / axillae	Performed	Outpatient	MedEd - USCD: https://meded.ucsd.edu/clinicalmed/breast.html
Physical Exam – Cardiovascular	Performed	Outpatient	MedEd - USCD: https://meded.ucsd.edu/clinicalmed/heart.html
Physical Exam - Ear, nose, throat	Performed	Outpatient	MedEd - USCD: https://meded.ucsd.edu/clinicalmed/head.html#Ear
Physical Exam - Genitourinary (female)	Performed	Outpatient	MedEd - USCD: https://meded.ucsd.edu/clinicalmed/pelvic.html
Physical Exam - Genitourinary (male)	Performed	Outpatient	MedEd - USCD: https://meded.ucsd.edu/clinicalmed/genital.html
Physical Exam - Head, neck, lymph node	Performed	Outpatient	MedEd - USCD: https://meded.ucsd.edu/clinicalmed/head.html
Physical Exam - Musculoskeletal (lower extremity)	Performed	Outpatient	MedEd - USCD: https://meded.ucsd.edu/clinicalmed/joints.html
Physical Exam - Musculoskeletal (upper extremity)	Performed	Outpatient	MedEd - USCD: https://meded.ucsd.edu/clinicalmed/joints.html
Physical Exam – Neurological	Performed	Outpatient	MedEd - USCD: https://meded.ucsd.edu/clinicalmed/neuro2.html
Physical Exam – Ophthalmologic	Performed	Outpatient	MedEd - USCD: https://meded.ucsd.edu/clinicalmed/eyes.html
Physical Exam – Respiratory	Performed	Outpatient	MedEd - USCD: https://meded.ucsd.edu/clinicalmed/lung.html
Physical Exam – Skin	Performed	Outpatient	Bates' Guide (12e) - Chapter 6 (p173-214)
Physical Exam - Vital signs	Performed	Outpatient	Bates' Guide (12e) - Chapter 4 (p111-146)
Skills - counseling on advance care planning	Performed	Outpatient	NHPCO Tools - https://www.nhpco.org/patients-and-caregivers/advance-care-planning/
Skills - counseling on screening guidelines	Performed	Outpatient	USPSTF Guidelines - Cancer: https://www.uspreventiveservicestaskforce.org/uspstf/recommendation-topics/uspstf-and-b-recommendations
Skills - counseling on smoking cessation	Performed	Outpatient	AAFP Smoking Cessation: https://www.aafp.org/afp/2012/0315/p591.html
Skills - interpret hematologic laboratory values	Performed	Outpatient	MedEd - Tulane University: https://acid-base.com/
Skills - interpret microbiology culture or analysis	Performed	Outpatient	NCBI Urine Culture: https://www.ncbi.nlm.nih.gov/books/NBK557569/
Skills - psychiatry screening tool (PHQ, GAD, MDQ)	Performed	Outpatient	USPSTF Guidelines - Depression: https://www.uspreventiveservicestaskforce.org/uspstf/document/RecommendationStatementFinal/depression-in-adults-screening
Skills - read and interpret a chest radiograph	Performed	Outpatient	MedEd - University of Virginia: https://introductiontoradiology.net/courses/rad/cxr/
Skills - read and interpret abdominal/pelvic imaging study	Performed	Outpatient	MedEd - University of Virginia: https://introductiontoradiology.net/courses/rad/gi/
Skills - read and interpret an electrocardiogram	Performed	Outpatient	ECG Wave Maven - Harvard: https://ecg.bidmc.harvard.edu/maven/mavenmain.asp
Skills - screening for cognitive delay (MOCA, MMSE, Mini-Cog)	Performed	Outpatient	MOCA (Veterans Affairs) - https://www.parkinsons.va.gov/resources/MOCA-Test-English.pdf

Appendix B-3: Required Clinical Experiences (RCEs) for LACE 3 Clerkship

Experience: Diagnosis	Level of Responsibility	Clinical Setting	Alternate Experience
Abdominal Discomfort	Participated	Outpatient	Aquifer: Family Medicine 15: 42-year-old male with right upper quadrant pain
Anxiety Disorder	Participated	Outpatient	Aquifer: Family Medicine 05: 30-year-old female with palpitations
Asthma	Participated	Outpatient	Aquifer: Pediatrics 13: 6-year-old female with chronic cough
Congestive heart failure	Participated	Outpatient	Aquifer: Family Medicine 31: 66-year-old female with shortness of breath
Coronary artery disease	Participated	Outpatient	Aquifer: Family Medicine 09: 50-year-old female with palpitations
COPD	Participated	Outpatient	Aquifer: Family Medicine 28: 58-year-old male with shortness of breath
Cough	Participated	Outpatient	Aquifer: Internal Medicine 22: 71-year-old male with cough and fatigue
Depression	Participated	Outpatient	Aquifer: Internal Medicine 05: 55-year-old male with fatigue
Diabetes / insulin resistance	Participated	Outpatient	Aquifer: Family Medicine 06: 57-year-old female diabetes care visit
Headache / Migraine	Participated	Outpatient	Aquifer: Family Medicine 18: 24-year-old female with headaches
Hyperlipidemia	Participated	Outpatient	Aquifer: Family Medicine 02: 55-year-old male wellness visit
Hypertension	Participated	Outpatient	Aquifer: Internal Medicine 06: 45-year-old male with hypertension
Musculoskeletal issue	Participated	Outpatient	Aquifer: High Value Care 01: 45-year-old male - The importance of clinical reasoning
Pharyngitis	Participated	Outpatient	Aquifer: Family Medicine 23: 5-year-old female with sore throat

Skin lesion / Rash	Participated	Outpatient	Aquifer: Pediatrics 32: A day in pediatric dermatology clinic
Upper respiratory infection, acute	Participated	Outpatient	Aquifer: Family Medicine 21: 12-year-old female with fever
Urinary tract infection	Participated	Outpatient	Aquifer: Geriatrics 18: 83-year-old female with urinary tract symptoms
Wellness visit – adult female	Participated	Outpatient	Aquifer: Family Medicine 01: 45-year-old female wellness visit
Wellness visit – adult male	Participated	Outpatient	Aquifer: Family Medicine 02: 55-year-old male wellness visit
Wellness visit – adult child	Participated	Outpatient	Aquifer: Pediatrics 02: Well Child Visit