

# MEDICAL SCHOOL HOTLINE

## Liaison Committee on Medical Education Accreditation, Part IV: Pre-clerkship Education

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This is the fourth article in a series that will address various aspects of the LCME accreditation process,<sup>1</sup> which JABSOM is scheduled to undergo in early 2017. This installment provides an overview of pre-clerkship education at JABSOM and related LCME standards.

### Introduction

The pre-clerkship segment of the curriculum occurs during the first two years, and is comprised of organ/systems-based (eg, cardiovascular, gastrointestinal, renal, locomotor) or thematic (eg, health and illness, life cycle) units, as well as courses in clinical skills and community health and service, and opportunity for electives (Table 1).

MD 1<sup>2-4</sup> in the MS1 year and MD 6 and 7 in the MS2 year are problem-based learning (PBL) and lecture courses that focus on medical problem solving and critical judgment, utilizing roughly 90 PBL cases that promote learning in four domains—biologi-

cal, clinical, populational and behavioral. MD 5<sup>3</sup> consists of two four-week blocks for one or more selectives, and MD 8 is primarily devoted to the consolidation of basic science content to prepare for the USMLE Step 1 examination. Optional electives provide enrichment of the curricular experience. Oversight of the pre-clerkship curriculum is the responsibility of the Pre-clerkship Education Committee (PEC), a subcommittee of the JABSOM Curriculum Committee.

The PEC is composed of the Course Directors of MDED 551-554, 556-557, the Clinical Skills Co-Course Directors, the Community Health and Service Co-Course Directors, two representatives from the Basic Science Education Committee (a subcommittee of the PEC) and one representative from the Educational Technology Committee (a subcommittee of the Curriculum Committee). The PEC oversees the curricular experiences and the day-to-day operations of MD 1-8. A few of roles of the PEC are:

MS1	MD 1 (9 weeks)	MD 2 (12 weeks)	MD 3 (12 weeks)	MD 4 (12 weeks)
	Health and Illness MDED 551	Cardiovascular and Pulmonary Problems MDED 552	Renal and Hematologic Problems MDED 553	Endocrine and Gastrointestinal Problems MDED 554
	Clinical Skills MDED 571	Clinical Skills MDED 572	Clinical Skills MDED 573	Clinical Skills MDED 574
	Community Health and Service MDED 581	Community Health and Service MDED 582	Community Health and Service MDED 583	Community Health and Service MDED 584
	Electives available in MD 2, MD 3 and MD 4			
MS2	MD 5 (8 weeks)	MD 6 (15 weeks)	MD 7 (12 weeks)	MD 8 (10 weeks)
	Summer Enrichment MDED 595 and others (Required selectives)	Locomotor, Neurological, and Behavioral Problems MDED 556	The Life Cycle MDED 557	Basic Science Knowledge Consolidation MDED 558
		Clinical Skills MDED 576	Clinical Skills MDED 577	
			Evidence Based Medicine MDED 527	
	Electives available in MD 6, MD 7 and MD 8			

- Ensuring horizontal and vertical integration and implementation of curricula across multiple units
- Ensuring that the content of the curriculum advances students towards all seven graduation objectives<sup>4</sup>
- Periodically reviewing the pre-clerkship curriculum for gaps and redundancies.

The PEC works together with the Curriculum Committee and other educational subcommittees, to ensure that the pre-clerkship curriculum at JABSOM is comprehensive, well-coordinated, efficient, effective, and innovative. The following are examples of LCME Elements related to pre-clerkship education and how the PEC has addressed these selected requirements.

### LCME Element 6.3: Self-Directed and Life-Long Learning

LCME Element 6.3 states:

*The faculty of a medical school ensure that the medical curriculum includes self-directed learning experiences and time for independent study to allow medical students to develop the skills of lifelong learning.*

The LCME has defined four components of student self-directed learning as a unified sequence:<sup>5</sup>

1. Identify, analyze, and synthesize information relevant to their learning needs
2. Assess the credibility of information sources
3. Share the information with their peers and supervisors
4. Receive feedback on their information-seeking skills

Learning activities in which pre-clerkship students engage in all components of self-directed learning include problem-based learning, the Triple Jump Examination (an oral exam that evaluates competency in the PBL process), and critical appraisal exercises in evidence-based medicine. Self-directed learning is a hallmark of the JABSOM Educational Philosophy<sup>6</sup> and Objectives for Graduation<sup>4</sup> to train each medical student to develop into a lifelong learner.

To provide adequate time for students to engage in self-directed learning and independent study, the PEC approved a policy entitled, *Self-Directed Learning and Independent Study Time in the Pre-clerkship Curriculum*.<sup>7</sup> The policy limits structured educational experiences (eg, PBL tutorial, lectures, clinical skills, community health and service) to seven half-days or 28 hours per week, averaged over the course of the unit. The PEC reviewed the MS1 and MS2 academic calendars for Academic Year 2014-2015, and found that structured educational experiences ranged between 14.7 hours per week in MD 7 to 20.9 hours per week in MD 1, with an average of 18.8 hours per week overall, which fell well-within the policy guidelines.

The policy also limits required, unstructured educational assignments (eg, preparation of learning issues for PBL, clinical skills write-ups, community health essays) to three half-days or 12 hours per week. An estimate of these activities, based on a yearly MS 1 PBL skills survey conducted from Fall 2011 to Spring 2014, was an average of 7.8 hours per week overall, also well-within the parameters of the policy guidelines.

Adherence to the policy is assessed on each end-of-course program evaluation survey. The following are the most recent results from the Class of 2018 and Class of 2019.

	Strongly Disagree	Some-what Disagree	Some-what Agree	Strongly Agree	Mean	SD
Class of 2018 MD 4 2015 N=64	0	1	10	53	3.8	0.4
Class of 2019 MD 1 2015 N=65	0	1	19	45	3.7	0.5

All the data above indicate that there is ample opportunity for pre-clerkship students to participate in self-directed learning.

### LCME Element 7.5: Societal Problems

LCME Element 7.5 states:

*The faculty of a medical school ensure that the medical curriculum includes instruction in the diagnosis, prevention, appropriate reporting, and treatment of the medical consequences of common societal problems.*

The PEC approved the criteria and process used to select the societal problems included in the curriculum. The criteria are:

- The societal problem has health consequences that can be addressed by physicians.
- The health consequences of the societal problem create a significant burden.
- The societal problem has major implications for Hawai'i.
- Addressing the societal problem is aligned with the mission of JABSOM.

Every three years, the PEC reviews the societal problems included in the curriculum, and determines if changes are needed. Once selected, the content is reported to the Curriculum Committee. The PEC last reviewed societal problems in Fall 2015, and determined 6 general themes that thread through the curriculum:

- Substance Use Disorders
- Lifestyle Modification
- Socio/Ethno/Cultural Disparities
- Maldistribution of/ Access to Health Care Resources
- Violence at Home and Work/School
- End of Life Care/Issues

Each PBL-based unit contains at least four of the six themes. They are taught using PBL, lectures, colloquiums and patient panels. The societal problems chosen by the PEC overlap with LCME Element 7.6: Cultural Competence and Health Care Disparities, which states:

*The faculty of a medical school ensure that the medical curriculum provides opportunities for medical students to learn to recognize and appropriately address gender and cultural biases in themselves, in others, and in the health care delivery process.*

The PEC has approved a similar criteria and process for gender and cultural biases in the curriculum.

### **LCME Element 6.6: Service-Learning**

LCME Element 6.6 states:

*The faculty of a medical school ensure that the medical education program provides sufficient opportunities for, encourages, and supports medical student participation in service-learning and community service activities.*

Service-learning and community service are required elements in the JABSOM curriculum, and are a part of the Objectives for Graduation.<sup>4</sup> All MS 1 students enroll in a course series called Community Health and Service (Table 1) that runs throughout the entire academic year. Students are matched with school- or community-sponsored programs, and participate with their program for approximately 4 hours per week. Currently, there are 14 Community Health and Service options for students that include the Hawai'i Homeless Outreach and Medical Education (HOME) Project,<sup>8</sup> Healthy Keiki Can, Native Hawaiian Health, Rural Health, Teen Mentorship Academy, and Wellness Initiative for Seniors in Hawai'i (WISH). Many of the programs promote healthy living or an interest in health care fields. The target populations include the underserved, homeless, youth at risk, rural communities and Native Hawaiians.

### **Ongoing Initiatives in Pre-clerkship Education**

There are multiple initiatives that are ongoing in the pre-clerkship curriculum. The following are some examples of recent initiatives:

**Course assessment:** The pre-clerkship examinations are transitioning from short essay exam questions plus multiple choice questions (MCQs) to exams that consist entirely of MCQs. The

software implemented by the Office of Medical Education is ExamSoft<sup>®</sup>, which allows the banking of MCQs, exam creation, administration of exams on iPads, exam scoring and analysis, and generation of exam keys and individual student reports. MCQs in ExamSoft<sup>®</sup> can be linked to searchable items such as the AAMC Entrustable Professional Activities (EPAs) and JABSOM Objectives for Graduation, and allows for creation of an exam blueprint of topics. ExamSoft<sup>®</sup> allows for faster grading, less inter-grader variation, and analysis of student performance to help set standards of achievement.

**Setting standards of achievement:** Working groups for each unit consist of previous, present, and subsequent Course Directors (eg, the MD 1, MD 2, and MD 3 Course Directors would comprise this team for the MD 2 unit). Each member individually rates the MCQ items by estimating the percentage of minimally qualified performers/borderline students who would correctly answer the item. The ratings are flagged for secondary review if there is a large inter-rater variation or large variation between rating and actual student performance. The final ratings will be used in Academic Year 2016-2017 to set appropriate and justifiable pass/fail scores based on the MCQs on the exam. This helps address LCME Element 9.6 which states: *A medical school ensures that faculty members with appropriate knowledge and expertise set standards of achievement in each required learning experience in the medical education program.*

**Continuous improvement of the curriculum:** There are two task forces that have recently been convened: (1) The Professional Identity Development Task Force is charged with organizing a comprehensive "professional identity development" curriculum that includes professionalism, personal effectiveness, humanism, ethics, and other aspects of professional identity formation; (2) The Clinical Skills Task Force aims to modernize the content, delivery and evaluation of clinical skills, and meet the AAMC EPAs and ACGME Milestones. In addition, a new sub-committee of the Curriculum Committee, the Educational Technology Committee, has been formed, and is responsible for providing information technology resources to faculty, staff and students, necessary to support the school's medical student educational mission. There are PEC and pre-clerkship faculty representatives involved in all these initiatives.

**Enhancement of learning activities:** Presenters in the large group sessions are encouraged to increase the amount of active learning for greater student engagement. PBL case enhancements such as the incorporation of pictures of physical exam findings, EKGs, CXRs, blood smears, and pathology slides; as well as audio clips of abnormal heart, lung, and abdominal sounds within the cases using iAnnotate<sup>®</sup>, allow students greater opportunity to identify, analyze, and synthesize information. SimScopes<sup>™</sup> are used to simulate heart, lung, and bowel sounds, specific to each correct anatomical location on a manikin. The SimScopes<sup>™</sup> enable a more realistic encounter and analysis of findings. Manikin-based simulation experiences permit students

to recognize signs of a disease state, deliver appropriate treatment, and see the manikin's response to treatment, to promote clinical skills and reasoning process.

### Final Thoughts

JABSOM's pre-clerkship curriculum is in a continuous state of evaluation, adjustment, and improvement, that is designed to provide medical students a curricular experience that not only meets or exceeds LCME accreditation criteria, but promotes the development of a well-rounded student who is prepared to enter and succeed in the clerkship years. The Pre-clerkship Education Committee helps to coordinate the efforts of many committed faculty and talented staff to achieve these goals, and provides effective oversight of this important segment of the JABSOM medical student curriculum.

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