

MEDICAL SCHOOL HOTLINE

The Role of MD1 in the John A. Burns School of Medicine MD Curriculum

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The Medical School Hotline is a monthly column from the John A. Burns School of Medicine and is edited by Satoru Izutsu PhD; HJMPH Contributing Editor. Dr. Izutsu is the vice-dean of the University of Hawai'i John A. Burns School of Medicine and has been the Medical School Hotline editor since 1993.

Introduction

The medical student curriculum at the John A. Burns School of Medicine at the University of Hawai'i at Manoa (UH JAB-SOM) spans four years and is designed to provide students with the experiences essential to developing life-long learning skills, an understanding of the biological sciences relevant to medicine, the skills required to provide outstanding care to patients, the standards of professionalism expected by society, and the skills required to maintain their own health and well-being. The preclinical curriculum consists of Problem-Based Learning (PBL) tutorials, lectures, and laboratories integrated thoughtfully within courses that concentrate on specific organ systems. PBL is a form of case-based learning that requires students to be actively involved in the learning process and fosters self-directed learning. It is complemented by clinical skills, community health, and elective courses. The clinical curriculum consists of clerkships and a lecture series in the

third year followed by both electives and required rotations in Emergency Medicine, Geriatrics, and Palliative Medicine in the fourth year.

The first-year of the medical student curriculum ("MD curriculum") is divided into four discrete blocks of time, ranging from 8-12 weeks in length. The first of these blocks is designated as "MD1." (Table 1)

The Role of MD1 in the JABSOM Curriculum

As described in the introduction, MD1 is the first of a series of six educational experiences that serve as the foundation for the preclinical curriculum. It is designed to emphasize an introduction to the PBL method and basic understanding of the concepts underlying and contributing to health and illness. Subsequent courses in this series focus on organ systems (eg, pulmonary, endocrine, or renal systems) or specific age groups (eg, pediatrics, geriatrics). In MD1, students explore a series

Year 1	MD 1 (9 weeks)	MD 2 (12 weeks)	MD 3 (12 weeks)	MD 4 (12 weeks)
	Health and Illness (PBL and Lecture Series)	Cardiovascular and Pulmonary Problems (PBL and Lecture Series)	Renal and Hematologic Problems (PBL and Lecture Series)	Gastrointestinal and Endocrine Problems (PBL and Lecture Series)
	Clinical Skills	Clinical Skills	Clinical Skills	Clinical Skills
	Community Health	Community Health	Community Health	Community Health
	Electives available during MD 2, MD 3, and MD 4			
Year 2	MD 5 (9 Weeks)	MD 6 (15 weeks)	MD 7 (13 weeks)	MD 8 (10 weeks)
	Student Selectives	Locomotor, Neurological, and Behavioral Problems (PBL and Lecture Series)	The Life Cycle (PBL and Lecture Series)	Basic Science Knowledge Consolidation
		Clinical Skills	Clinical Skills	
			Evidence-Based Medicine	
Electives available during MD6 and MD7				
Year 3	Clerkships - Blocks Separate Clerkships in Family Practice (7 wks), Internal Medicine (11 wks), Obstetrics and Gynecology (7 wks), Pediatrics (7 wks), Psychiatry (7 wks), Surgery (7 wks)			
	Clerkships - Longitudinal Longitudinal Clerkship in Family Practice, Internal Medicine, Obstetrics and Gynecology, Pediatrics, Psychiatry, Surgery			
	Colloquia: Topics in Health and Illness			
Year 4	Senior Rotations Emergency Medicine (4 wks), Geriatrics and Palliative Care (4 wks), and Electives (24 wks)			Senior Seminars (3 weeks)

Table 2. Typical Week in MD1					
	Monday	Tuesday	Wednesday	Thursday	Friday
Morning	PBL session	Community Health	Lectures and laboratories	PBL session	Lectures and laboratories
Afternoon			Introduction to Clinical Skills		

of PBL cases (“health care problems”), attend lectures and participate in laboratory experiences designed to help understand concepts of health, normal form and function, principles and determinants of disease, and the complexity of the human illness experience.

While not structured in a traditional discipline-based format, this educational experience provides both depth and breadth of learning opportunities in a full range of biological sciences as well as coverage of important topics in the behavioral and population sciences. The case-based PBL format provides clinical relevance and meaningfulness, as well as strong emphasis on developing self-directed, lifelong learning skills. Students are expected to accept responsibility for their learning to a degree beyond which is rarely expected in undergraduate education, but to the extent that will be fully necessary in their chosen profession of medicine. PBL case content is organized and introduced around the following themes/framework:

- (1) Common and important health problems. For example, upper respiratory infections, cardiovascular disease, diabetes mellitus, falls in the elderly, abdominal pain, adolescent injuries through motor vehicle crashes, and breast cancer all rank very high in lists of health problems in their respective subpopulations.
- (2) Elements of the health care system (primary care, emergency services, hospitals, community health centers, etc.)
Regional anatomy as it relates to the steps of the basic physical examination.
- (3) The foundational biological principles of inflammation, cell damage/death/repair, cancer/malignancy, and homeostasis (emphasizing blood glucose regulation and blood pressure regulation).
- (4) Key, longitudinal content such as health literacy, adolescent development and aging, health care economics, patient safety, and health care disparities (Native Hawaiian Health, cultural competency, and care of the homeless).

PBL activities are complemented by a carefully-selected and integrated lecture and laboratory series that includes sessions on anatomy, embryology, histology, physiology, pharmacology, genetics, biochemistry, and pathology. Lectures and discussions on topics such as “healthy living,” “homelessness in Hawai‘i,” “health and illness,” and “survivors of cancer” are carefully timed to coincide with key issues in the PBL cases, and provide valuable breadth to the learning experience.

Another important part of MD1 is to help students transition from more traditional educational experiences to a PBL system. Special experiences designed to help students develop the needed learning skills, such as; researching learning topics, presenting new information to peers, understanding assessment

and evaluation tools used within the curriculum, and providing feedback are provided throughout the course.

Together, this combination of learning activities and attention to learning skills development make for a rich and supportive learning experience, and an excellent transition to the organ-system-specific curricular blocks that follow.

As shown in Table 2, a “typical week in MD1” PBL sessions are held twice each week (3 hours per session). Lectures and laboratories are provided on two mornings each week (total of about 7 hours weekly). Clinical Skills training, that includes medical communication and physical examination skills training is a four-hour block of time each Wednesday afternoon. Students also participate in weekly Community Health activities. Not shown on the table are “special events” that occur throughout the block, including a one-hour simulation laboratory experience, a standardized-patient encounter, two four-hour “enrichment days” that provide instruction on PBL learning skills, and a mid-course large group course evaluation session.

The goals/content areas covered in MD1 can be summarized as follows:

- (1) **To gain an appreciation for behavioral, populational, biological and clinical issues as they affect health and illness in relation to the assigned health care problems.** An important philosophical and practical guiding principle throughout the medical school’s curriculum is to help students appreciate that physicians must consider behavioral, populational, biological, and clinical perspectives in the study and practice of medicine. Behavioral issues include concepts such as coping with illness, lifestyle modifications to promote health, and achievement of developmental milestones. Populational issues include concepts such as; epidemiology of disease, medicolegal issues, healthcare policy, and biostatistics. Clinical issues span the spectrum of the diagnosis and management of diseases, as well as the communication skills needed to work with patients, families, and other members of the healthcare team. The biological realm includes the scientific disciplines traditionally defined as anatomy, biochemistry, embryology, genetics, histology, immunology, microbiology, pathology, pharmacology, and physiology. As the first of the curricular series, MD1 provides additional emphasis on learning across these four domains in the PBL cases and lectures. The concurrent clinical skills and community health experiences reinforce this important concept.
- (2) **To learn and develop the skills required for effective problem-based learning.** PBL is a cornerstone method of learning used throughout the curriculum. In MD1, students are “coached” on the skills necessary to succeed in a PBL curriculum. In addition to frequent ongoing formative feedback from small group faculty facilitators, formal required sessions on topics including “introduction to the PBL process,” “PBL and the clinical decision making process,” “finding resources for your learning,” “presenting learning issues,” “case mapping,” “delivering and accepting

feedback,” and ethical issues that might be encountered are provided. Students are formally evaluated on their performance in PBL sessions by their faculty and peers.

(3) **To understand the biological sciences highlighted in the assigned PBL cases, lecture and laboratories, and related learning activities.** Basic sciences are important in any curriculum model. While in a PBL environment student learning is not bound by specific disciplines, the basic sciences maintain a prominent position in the learning opportunities offered by the PBL cases and lectures/laboratories. PBL cases, lectures and laboratories in MD1 introduce students to a wide range of basic science topics.

(4) **To develop students’ “communication in medicine” skills.** Medical students must learn to communicate effectively with peers, supervisors, team members, patients, families and community groups. In MD1, opportunities are provided for students to begin developing these skills in their PBL cases, lecture series, clinical skills instruction, and standardized patient encounter. A sampling of topics in this area include interviewing and counseling adolescents; reassuring patients in times of medical crisis; counseling patients about smoking cessation and cardiovascular lifestyle modifications, including diet and exercise; fostering adherence/compliance with medical treatment; educating patients about exercise safety; counseling patients about new and/or popular diets; and counseling patients about the use of complementary or alternative treatments.

Assessment and Evaluation of Students

Evaluation methods are consistent with those used in the other courses in the two-year series. There are separate short answer and multiple-choice question examinations which cover the material from the PBL cases, lecture series, and clinical skills laboratories. PBL tutorial performance is also evaluated by the faculty member managing that particular group.

There is a strong emphasis on formative feedback throughout the block, including formal mid-course feedback and PBL evaluation sessions, and practice short-answer and multiple-choice-question examinations.

Student Perceptions of MD1

Student feedback suggests that they consistently look back and see MD1 as a valuable transition period into medical school in terms of content, pace and intensity. The moderate starting pace is strategic, as it allows for the following:

- (1) Non-pressured approach to learning the PBL process under the guidance of their PBL tutors. An example would be the expected inefficiency of researching and preparing learning issues that improve with time and experience.
- (2) Acculturation to the JABSOM educational environment.
- (3) Building of collegial relationships with fellow students.
- (4) Development of study skills, strategies, and plans, with the assistance of the Office of Student Affairs.
- (5) Development of skills in accessing learning resources and gaining familiarity with the resources they find most useful at their level of learning.
- (6) Familiarity and comfort in interacting with their faculty, as well as staff from the Office of Medical Education, Office of Student Affairs, and Health Sciences Library.

The Future of MD1 at JABSOM

MD1 has been an effective introduction to problem-based learning and transition into the model and culture of the medical school’s curriculum. Like all components of the JABSOM MD curriculum, continuous effort is expended to improve all aspects of the educational experience. PBL case material is reviewed and updated constantly with the latest advances in medicine. Also being considered are progressive educational methods and ways to effectively incorporate current educational technology. These ongoing quality improvement efforts should ensure that the course continues to provide students with a high-quality, memorable and rewarding learning experience.

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