



Medical School Hotline

Hamilton to Honolulu: Problem Based Learning Local Style

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In 1989, The John A. Burns School of Medicine (JABSOM) adopted the McMaster University (Hamilton, Ontario) model of small group, self-directed, tutorial-based learning as its instructional model for its medical education curriculum¹. Under this Problem Based Learning (PBL) model, the foundation for learning during the pre-clinical years is the Health Care Problems (HCP). Each week 1-2 HCPs are covered in small group sessions with supportive information presented in conferences, colloquia, and laboratory sessions. From the faculty's standpoint, one of the advantages of PBL is that the HCPs can be modified and adapted to fit the profile of the local demographics and cultures.

HCPs provide the forum for examining a clinical condition from 4 perspectives: biological, clinical, populational and behavioral. Thus the students not only investigate a clinical condition, but also explore the base science concepts of that condition, the epidemiology of the disease and how the disease affects the patient and his/her family in a cultural context. Therefore, a HCP written for a Canadian population can be modified to fit our local situation in Hawaii or new HCPs can be written for diseases more commonly found in Hawaii. PBL is going into its fourteenth year at JABSOM. It might be interesting, at this point in time, to examine how the curriculum has changed over the years by having a closer look at Unit 1 (the first three months of a PBL at both McMaster University and JABSOM). Part of the original agreement between JABSOM and McMaster University was that JABSOM would initiate its PBL program with the HCPs developed and utilized at McMaster University.

Unit 1 at McMaster University is 12 weeks in length and provides an opportunity for the students to become adjusted to the PBL process. It is divided into three subunits: 1) reproduction and the mechanisms of early development, 2) the examination of the development of biological, social and emotional independence, and 3) an in-depth examination of behavioral aspects of subunit two². (Note: These subunit topics are covered in Unit 5 of the JABSOM curriculum). Unit 1 at JABSOM is a 14-week course. During the first two weeks of the Unit, the conferences and colloquia are devoted to the development of the skills important to the PBL process. The Unit is not broken up into subunits, but the HCPs are arranged in the order of a clinical examination: head and neck, chest, abdomen and extremities. This sequence is coordinated with an integrated gross anatomy and physical examination laboratory sessions that follow the same clinical examination sequence. The goals of Unit 1 at JABSOM are: 1) to begin to appreciate the experience of being a physician and the role of the physician in the community and in the delivery of health care, 2) to gain a fundamental understanding of the complete patient history, basic physical examination sequence and

related clinical anatomy and diagnostic imaging, 3) to gain a fundamental understanding of the basic sciences highlighted in the HCPs as an introduction to future Units, and 4) to begin to develop communication skills important to medicine³. From the above descriptions, it is apparent that Unit 1 at JABSOM has been modified from the McMaster University's design with an increased integration between the HCPs, clinical skills and clinical anatomy.

In 1989, Unit 1 in the McMaster's program contained 18 cases with 25 patients⁴. The ethnicity of 22 patients was not stated but assumed to be Caucasian. The remaining patients are defined as a Jamaican, an Asian and a Cree Indian. Fourteen are male and 11 are female. The patients range in age from an unborn with a possible genetic defect to a 75-year-old female with visual problems. In 2001, Unit 1 at JABSOM covered 11 patients and their families. The ethnicities of the patients were Samoan, Southeast Asian, part-Hawaiian (n=2), Filipino-Chinese, Caucasian (n=4), Japanese and Filipino. Six patients were male and five were female. The patients ranged in age from a 1-month-old newborn male with a possible genetic abnormality to a 62-year-old part Hawaiian man with chest pain and shortness of breath.

Seven of the cases from both programs were easily matched and will be compared here. In the McMaster's program Charles Brown was a 60-year-old chemical plant worker with chest pain and shortness of breath after exertion. At JABSOM, the same issues were examined with Charles Browning, a 62-year-old part Hawaiian warehouse foreman with a love for plate lunches. In the McMaster's program, Jane Evans was an 18-year-old high school student involved in a motor vehicle accident (MVA). At JABSOM Jane became Julia Huang, a 17-year-old Punahou student who in addition to chest injuries suffered in the MVA also has problems with alcohol, her parents and boyfriend. In the McMaster's program, Kim Harner was a 12-year-old female with a sore throat that progressed to bacterial pneumonia. At JABSOM Kim became Ese Saipaia, a 16-year-old Samoan female with a sore throat and who was non-compliant with her prescribed medications. In the McMaster's program Mary Cornell was a 27-month-old toddler who suffered accidental burn injuries at home. Child development and issues of child neglect and abuse at JABSOM were examined using Kili Kahipa, a 30-month-old female toddler. The psychological consequences of a patient finding an new subcutaneous lump on her body and the medical procedures for diagnosing the problem were explored at McMaster using Doreen Cooper, a 57-year-old nurse and at JABSOM using Doreen Cooperson, a 57-year-old Filipino-Chinese bank executive. Issues of systemic infections were examined at McMaster using Joseph Smith, a 67-year-old office worker, while at JABSOM the issue of infection and access to quality health care were examined using Phil Collins, a 62-year-old homeless individual. Issues of genetic abnormalities and childhood development were explored at McMaster using the Cheng Family. Mrs Cheng was 40 years old and 10 weeks pregnant. She has two living children with genetic disabilities and was concerned about her unborn child. At JABSOM these issues were examined using Terry Shoma, a newborn boy brought to the his pediatrician for a one month well baby check by his parents who were concerned about his development.

Many of the cases at JABSOM involved patients or family members, which reappear in other Units. Julia Huang's father and

mother appear in Units 2 and 3 respectively. Esa Saipaia's relatives also appear in subsequent Units. Introducing family members throughout the first year of medical school reinforces this concept of treating both the patient and family. Finally, Gerhard Ganiron was a 23-year-old Filipino male who has recently immigrated to Hawaii. He comes to the clinic complaining of numbness and tingling in his hands. This case was written by the Co-Chairs of Unit 1 to introduce neurology, examination of extremities and to provide the opportunity to explore the historical aspects of a disease.

An academic advantage of PBL is the students' early exposure to clinical situations and patients. Using clinical situations set up in the HCPs, the students learn to integrate knowledge through the practical application of concepts in the basic sciences, epidemiology and behavioral sciences as well as to begin to understand a culturally sensitive approach to medicine. These skills at McMaster and JABSOM are learned and refined using HCPs, simulated patients and real patients before students begin their clinical years. HCPs written with local patients in mind can smooth the transition from the pre-clinical years to the clinical years. On the other hand, a perceived weakness of PBL is the lack of traditional discipline-based structure and progression. How-

ever, appropriately organized Units, well-written HCPs, combined with the proper approach to PBL by the students along with guidance by the faculty can overcome this obstacle and provide a challenging and enjoyable pre-clinical experience.

References

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