

## **A Guide to Case Based Learning**

Case Based Learning, (CBL), at the Faculty of Medicine is a form of small group learning. As such, it incorporates features of small group learning such as:

- Group discussion of case scenarios presenting a problem
- Working and actively learning in groups
- Integration of prior and newly acquired knowledge
- Development and improvement problem solving skills and critical thinking
- Use of self study to consolidate learning that occurred in groups

The advantage of this process compared to lectures and self learning activities is its ability to model the process of accessing information and solving medical problems which are the core activities of most physicians.

### **The Structure of CBL:**

- CBL groups consist of 8 students and one tutor.
- CBL sessions take place in specialized small group learning rooms.
- A CBL module provides case information for two sessions per week which is presented in a web based format accessible on any computer. This information is the basis of the small group discussion.

Groups meet at the beginning of each week for the first session, (CBL1) and again at end of the week for the second CBL session, (CBL2). During the CBL2 session a variation of the case that the group saw in CBL1 or a new case is introduced. Together the two sessions cover the set of learning objectives designated for the CBL of the week. CBL1 sessions are two hours long. CBL2 sessions are three hours long in first year and two hours long in year two.

### **Small group processes which occur during CBL:**

- Students work as a together as a group
- The group attempts to solve problems using critical thinking
- The discussion is student centred
- The discussion allows the students to integrate knowledge gained while exploring the case

- The tutor helps facilitate group discussion
- The tutor helps by correcting incorrect statements the students may make and by helping to explain difficult concepts
- The tutor does not lecture, dominate discussion or become the focus of group discussion

## Major differences between CBL and Problem Based Learning

Many people are familiar with Problem Based Learning, (PBL), a commonly used form of small group learning. Our form of CBL, an adaptation of that used at UCLA <sup>1</sup> differs from classical PBL <sup>2</sup> in the following major ways:

1) Learning objectives for the session, (these are a subset of objectives from those of the place in the Curriculum in which the CBL resides), are provided to the students before they see the case. However, students do not see the actual case until the CBL session begins.

2) Information in the form of lectures and/or other material is made available to the students prior to the CBL1 session. This allows some advance preparation to take place before the students see the case. This information will not be enough for the students to master all or possibly even any of the learning objectives during CBL1, but it will allow the students to have some knowledge upon which to build during CBL1.

It is noted that although each CBL module is based on a case, it does not necessarily need to be based on a clinical case. A basic physiology problem could easily be used as the basis for a CBL case.

### **Steps involved in CBL:**

#### Prior to the CBL1 session:

A) The learning objectives for each CBL case are available to the students in advance of the CBL1 session.

B) Each CBL module lists designated preparation tasks expected to take approximately one hour which cover some material that will assist students in working on the case they see in CBL1 session.

#### During the CBL1 session:

C) The case or problem for the CBL1 session is opened by the tutor and shown on the large screen in the CBL room. Students from the group take turns reading the on screen text. The group defines terms and concepts they do not know. The group decides what the major problems in the case are and tries to solve them. A focus of CBL is on problem solving, to model what will occur in the future when students encounter real clinical problems.

The tutor guides the flow of discussion and also controls which part of the case is presented to the group, according to the needs and suggestions of the group and to suggestions from the Tutor Guide for the CBL case.

D) At the end of the CBL1 session, the students will decide what learning objectives they will need to work on during the time before the second CBL session of that week. One student volunteers to record this information in a brief list and should distribute this to all group members.

Between CBL1 session and CBL2 session:

E) Group members use the time between CBL 1 and CBL2 sessions to work on what was identified at the end of CBL1. There will be formal teaching activities such as lectures and seminars and labs that will help with this.

During the CBL2 session:

F) At the start of the CBL2 session of the week, the group reviews the topics and learning objectives they had identified for review at the end of the CBL1 session.

G) After this review, depending on the design of the CBL case for a given week, a second case or a variation of the CBL1 case will be introduced during the CBL2 session. During this session the group will work toward achieving all of the learning objectives for the case.

CBL2 allows integration of further information that students sought after the CBL1 session was completed and it allows the students to raise new questions about the case.

H) At the end of CBL2 the group reviews the learning objectives or the entire CBL and makes sure they have achieved them.

- 1) Malathi Srinivasan, MD, Michael Wilkes, MD, PhD, Frazier Stevenson, MD, Thuan Nguyen, MS, MD, and Stuart Slavin, MD  
Comparing Problem-Based Learning with Case-Based Learning: Effects of a Major Curricular Shift at Two Institutions  
Academic Medicine, Vol. 82, No. 1 / January 2007
- 2) Barrows HS. A taxonomy of problem-based learning concepts.  
Med Educ. 1986;20:481-486.