



# Case Writing Handbook

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## CONTENT

WHAT CASE BASED LEARNING (CBL) MEANS AT THE UNIVERSITY OF TASMANIA'S SCHOOL OF MEDICINE .....	3
WHAT IS A CASE?.....	4
WHAT ARE OUTCOMES?.....	5
WRITING LEARNING OUTCOMES .....	6
External Source of Expected Outcomes .....	7
Level .....	7
Response in Outcome Form.....	7
When writing learning outcomes keep the following in mind. They need to be: .....	8
DEVELOPING A CASE.....	9
Original case materials .....	10
Adapted case materials .....	11
Case formats.....	11
Design features of cases.....	12
Case templates, mapping and models.....	12
CAM101 Draft Weekly Timetable.....	13
THE CBL FACILITATOR'S ROLE .....	14
Glossary .....	16
Acknowledgements .....	16
Further Reading.....	17
Texts .....	17
Websites.....	17

Appendix A: Medical Graduate Profile (MGP) and Sub Outcomes of the MGP

Appendix B: Action Verbs for Writing Learning Objectives and Outcomes

Appendix C: Case Based Learning Models at the FEU and the Faculty of Health Science

Appendix D: Case Writing Template

Appendix E: Model of the New Curriculum

## **WHAT CASE BASED LEARNING (CBL) MEANS AT THE UNIVERSITY OF TASMANIA'S SCHOOL OF MEDICINE**

The new 5-year medical curriculum (NC) of the TSoM, to commence in the first semester of 2006, will emphasise contextualised, situated learning as the central focus and stimulus for student learning. The key delivery strategy will be case based learning (CBL). To ensure balance, the NC will be developed around 5 themes, namely:

1. Human Health and Disease
2. Communication and Collaboration
3. Community Health and Disease
4. Personal and Professional Development
5. Integration

Effective learning should be active not passive and it is best implemented in a social context, involving authentic content and processes. The NC will be delivered in a variety of environments, allowing students to experience a range of health-care practices. There will be an emphasis on community, including community placements and seminars and rural based learning. Regular learning activities centred on clinical cases will ensure a patient centred focus; integrate student learning; highlight important concepts and provide an appropriate contextual basis to enhance recall of learning in the graduate's future practice.

### ***Cases will:***

- Be used to organise, focus and structure the delivery of key concepts and learning outcomes through appropriate independent learning and fixed resource sessions. As such cases will provide the main integrative and contextual elements of the course.
- Be the stimulus and focus of student learning
- Allow opportunities for independent learning.
- Provide opportunities for students to evaluate the effectiveness of their learning.

### ***General issues:***

Ideally, cases will be introduced in group setting and then expanded upon in smaller tutorial group sessions. Each week will conclude with a round-up tutorial covering the key concepts and learning outcomes for that case. Total contact time for each week is not expected to be more than 20 hours.

### ***Case Formats***

- Have an overtly stated set of objectives which would define the key concepts and learning outcomes the students would need to cover during the duration of the case. These would be used in the initial introduction to the case, to guide student learning.
- Encompass clinical and basic sciences in each case, and ideally represent elements of all five themes.
- Emphasise wherever possible important medical issues which are significant in the Australian health care context.

- Emphasise application of principles rather than memorisation of details.
- Be linked horizontally and vertically to other cases. Wherever possible the same case will be re-visited further on in the course to reinforce vertical linkage.
- Encourage group interaction and learning.
- Be designed by multidisciplinary teams including input from medical education specialist.
- Be consistent in their style and approach.
- Be presented in a structured, staged format which encourages group learning and which allows opportunities for self-evaluation.
- Incorporate a mechanism for case evaluation and review.
- Makes use of flexible/electronic delivery wherever practical.

## WHAT IS A CASE?

The CBL approach to medical education has been based upon the case based applications of learning in the management and education fields. It has many traits in common with Problem Based Learning (PBL) and Inquiry Based Learning (IBL), where problem and/or inquiry actuated learning events are used to stimulate and underpin the acquisition of knowledge, skills and attitudes. For further discussion on this topic visit the Faculty of Health Science case teaching website at:

<http://www.healthsci.utas.edu.au/faculty/cases/newindex.html>

### *The vital signs of a case*

Cases place events in a context or situation that promotes authentic learning. Authenticity means that students can recognise the events, issues or data as having applicability and relevance to the knowledge skills and attitudes they are expected to acquire, develop and practice in their profession. Cases also allow students to develop a collaborative, team-based approach to their education and their profession. They are intended to foster learning for competence and deep level understanding, and provide opportunities for vertical (across pre-clinical and clinical) and horizontal (cross-discipline) integration.

### **Other characteristics of cases include:**

- Cases are narrative and have a plot. If the learning event you wish to initiate cannot be conveyed in this way, it cannot be delivered as a case
- Cases are particular and specific
- Cases frame events and people in time and space
- Cases reflect social and cultural contexts
- Cases train students both to know and how to act
- Cases present situation-specific dilemmas

(Adapted from a seminar on CBL by Heather Smigiel, FEU)

**To view a discussion and staff development presentation on CBL at the School of Medicine, please consult the CD Roms *Case Based Learning for the Lecturer and Teaching Tips for Case Based Learning* located in the pocket at the front of this publication.**

### *Novice/expert interaction*

In CBL the role of staff will differ from methodologies that have informed University teaching in the past. The new interactions between staff and students will involve the staff member acting more as an educational guide than an expert imparting knowledge because CBL facilitators *may* or *may not* be content experts. The CBL event involves the lived experience of the facilitator and the students in situated contexts that encourage deeper learning. The student likewise will be expected to demonstrate active participation in the learning process. Integration of the learning may mean that the CBL facilitator allows novice students more freedom to, as Edinburgh University puts it ‘think forwards from first principles’. This intellectual space will have to be planned for in the development of cases and should be regarded as a motivational tool to underpin the individuals’ acquisition of the knowledge, skills and attitudes mandated by the Medical Graduate Profile. (See Appendix A)

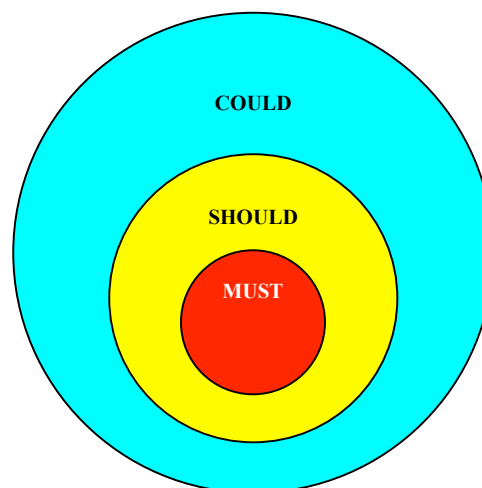
## WHAT ARE OUTCOMES?

The NC as an “outcomes based curriculum” will focus on the outcome of learning events. In practical terms this means that learning objectives will be framed as outcomes, enabling staff and students to measure progress through the course with more certainty.

### *The role of Themes in informing outcomes*

One of the first considerations for case writers is what the student:

- MUST know
- SHOULD know
- COULD know



The Medical Graduate Profile determines what the students MUST know at the TSoM and the attributes they must have are grouped into five themes:

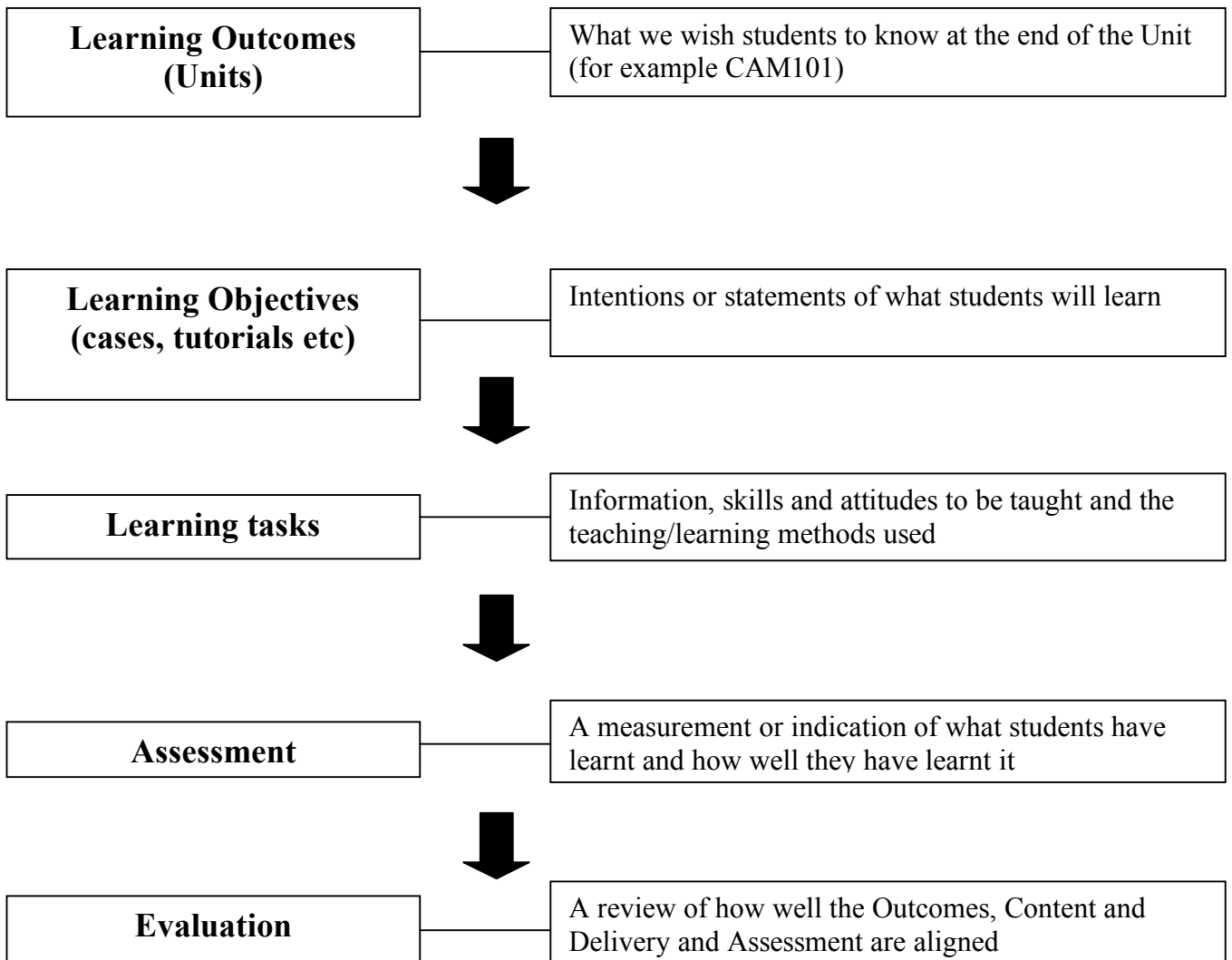
1. Human Health and Disease
2. Communication and Collaboration
3. Community Health and Disease
4. Personal and Professional Development
5. Integration

Each theme is subdivided into Outcomes and Sub Outcomes that describe the key attributes of graduates of the NC (see Appendix A). The Medical Graduate Profile (MGP) will inform all the LOs of the NC and make it possible to design, implement and evaluate CBL events that specifically address the five key themes.

## WRITING LEARNING OUTCOMES

### *The context of writing learning outcomes (LOs)*

To place LOs in the context of curriculum development it is useful to see how they relate to the whole process of teaching and learning.



### ***Levels of outcome writing***

The expected graduate outcomes of student learning within specific courses are generally governed by external sources, such as the AMC's standards for the Assessment and Accreditation of Medical Schools and the University of Tasmania's Generic Graduate Attributes. These expectations guide the way in which LOs are structured at the higher levels – the MGP- and give meaning to how outcomes at the lecture, case, tutorial and Unit level are developed.

The table below gives an overview of the hierarchy of sources that influence the development of LOs at the TSoM.

<b>External Source of Expected Outcomes</b>	<b>Level</b>	<b>Response in Outcome Form</b>
The University of Tasmania Australian Medical Council (AMC) ↓	Level 1	Mission Statement of University Standards and Procedures for Assessment and Accreditation of Medical Schools
The Faculty of the Health Science ↓	Level 2	Statement of Purpose/Vision of Faculty
The School of Medicine (Guided by AMC & MEC) ↓	Level 3	Medical Graduate Profile (MGP) - student outcomes for the whole course
Learning Outcomes of the Unit ↓	Level 4	Statements about what students will gain from the Unit
Learning Objectives of the Sessions	Level 5	Statements from teacher of what students will gain from session

### ***The purpose of learning outcomes is to:***

1. Provide direction for planning, designing and implementing educationally effective activities.
2. Convey instructional intent to others.
3. Provide a basis for the evaluation and assessment of the learning process.

### ***Learning outcomes are a statement of what a learner:***

- is expected to know - knowledge (K) or Cognitive Domain
- is able to do - skill (S) or Psychomotor Domain
- can demonstrate the value of - attitude (A) or Affective Domain

**LOs state observable behaviours that indicate how well (effectively) a student has performed.**

***Factors involved in writing learning outcomes***

- 1.They involve a statement about the learner knowing, doing or valuing something.
- 2.They start with an opening statement:  
E.g. **“The student will...**
- 3.They involve action verbs:  
E.g. **...describe, demonstrate, compare, analyse...**
- 4.They describe the content of the subject being taught.  
E.g. **...the principles of cardiopulmonary resuscitation...**
- 5.They indicate the level of expertise required from the student  
E.g. **...as practised in an Emergency Department of a major teaching Hospital”**

It is also possible, in some select instances, to develop a set of cases based around a common set of LOs where, for instance, a particular aspect of a theme or themes is to be illustrated by the cases. These are usually longitudinal in nature and intended to reveal, over time, different layers of the same topics.

**When writing learning outcomes keep the following in mind. They need to be:**

- S**– specific
- M**– measurable
- A**– achievable
- R**– relevant
- T**– time specific

They also need to have the appropriate action verbs to describe the intent of the LOs accurately (See Appendix B for examples of action verbs and their typology)

***The following is a simple process that can be used when writing learning outcomes:***

**Step 1**

Establish the type of LOs you are responsible for writing i.e. for CBL or tutorial

**Step 2**

List main topics to be taught and related elements to the topic

**Step 3**

Determine which of the following 3 things you want students to produce as a result of being involved in the learning process – knowledge (know), skills (do) &/or attitudes (value).

**Step 4**

Establish the level of KSA that you want students to acquire

**Step 5**

Write 4-6 outcomes that incorporate what the student is expected

- To know,

- To do; or
  - To value
- In line with the expected level of achievement as a result of a learning process.

***Examples of action verbs for LOs (suitable for both outcomes and objectives) are included in Appendix B.***

**The LOs frame the learning event and help to establish how that learning event is best delivered, for example as a lecture, a tutorial, or a case.**

## **DEVELOPING A CASE**

LOs should be defined before any case is chosen and/or case development begins. The LOs should be measurable and achievable, overt and traceable at every stage of CBL design and delivery.

At each stage in the new curriculum acquisition of knowledge and skills will be linked to cases. As curriculum content becomes more clinically focused in the later part of the course cases in this part of the curriculum will naturally differ from cases covered in the early part of the course. This leads us to the concept of case flexibility with cases at any point in the curriculum having outcomes and structure tailored to the stage in the curriculum in which it will be delivered.

**It is envisaged cases presented earlier in the curriculum will provide a high level of student support and emphasise normal function and that there will be a natural progression over time to cases with a greater focus on clinical skills and real patients. Cases presented at both ends of the curriculum will have a similar contextual structure, but will obviously focus on differing learning outcomes.**

### ***Earlier cases will:***

- Emphasise normal function, core concepts, understanding of the underlying scientific principles of normality and disorder and recognition of situations that are likely to be abnormal
- Enable acquisition of generic learning skills
- Enable acquisition of basic clinical skills
- Enable exposure to the context of medical practice
- Emphasise the importance of communication with patients and peers

### ***Later cases will:***

- Emphasise abnormal function, differentiation amongst possible causes of abnormality and management
- Enable learning and working within the context of real medical practice
- Promote the acquisition of integrative clinical skills
- Provide support for the transition from paper cases to a reliance on real cases
- Provide support for the transition from work within student groups to work within healthcare teams

### ***Original cases and cases adapted from other sources***

Cases for a curriculum can either be developed as original material or they can be sourced from other areas. These include:

- Local or overseas Universities
- Professional organisations
- Commercial case writing bodies
- Libraries

Each method of developing cases has its own advantages and disadvantages. Some of these are:

### **Original case materials**

<b>Advantages</b>	<b>Disadvantages</b>
Localised focus with relevance to local conditions/issues.	Time for development: staff need to write cases themselves.
Control of content: may be edited/revised at short notice and on site and the review mechanisms are in the control of the School/Faculty.	May be constrained by the resources of the School: eg resources, class sizes.
Case formats and access can be centrally controlled.	Need regular and systematic review to check for outdated or incorrect materials.
Can be written to fulfil a specific need and fill identified gaps in the curriculum at short notice.	May not exhibit variety of range or content of external sources.
Any editing or adaptation of the cases can be done without copyright issues or permission intervening in the process.	May not have extensive experience base of case writers in a particular area of the curriculum.
Can be loaded speedily and easily to in-house IT platforms that students already use.	May not have extensive flexible delivery options available due to local focus eg web based delivery options, IT/AV elements incorporated due to local teaching method for case.
Cases can be easily mapped to databases for searchable elements, eg keywords, delivery options etc.	Extensive support and staff development may be required to support case development on site. This includes infrastructure for development, flexible delivery and review of cases.
Staffs develop suites of skills that are valuable and transferable.	
Quality control of the cases in the curriculum is more immediate and “hands on”.	

## Adapted case materials

Advantages	Disadvantages
Rich source of content with coverage across all areas of the curriculum.	May need to be extensively adapted for local use. This may take as much time as developing an original case.
Can be given to students as additional study material.	Copyright permission may be required for use and/or adaptation.
Complex and AV rich material can be provided as curriculum content at low cost in time and development funds.	Cannot necessarily mediate access if the case is web based. Students may be able to access cases when it is not appropriate.
Reputable sources provide cases that can provide a wider and deeper set of case experiences for the students.	Time required to source and review the quality of external sources of cases. Ongoing review of quality also necessary.
Can be used as an adjunct to in-house cases, particularly as further study materials.	Download and IT compatibility issues arise for web-based resources. Students and staff may not be able to use material in its intended form.
Staff time may be freed up by using adapted cases.	<b>Copyright!</b> Staff need to be educated on the rights of copyright owners. Adapting does not make the case "original". Permission of the original author still needs to be sought for use of the adapted version of their case.
Adapted cases can bolster areas of weakness where School has a gap in its knowledge base.	

Both these types of case development need not be seen in isolation. Whilst a School may write most of its cases, adapting material from other sources may provide an answer to addressing areas of weakness in the case coverage and also may provide ideas for scenarios that staff can then use as template guides to case development.

## Case formats

### Cases can be:

- A "finished" case that is based on the facts where the answers to a scenario, situation or problem are either indicated or suggested to the students
- An "unfinished" open-ended case that does not give a clear indication of the answers or results for students, and where they are asked to make suggestions, choices or predictions that may influence how the case concludes.
- A fictional case written for the students by the staff as a deliberate exercise in focussing on particular issues. The case will mimic reality but also provide false leads or "red herrings" that may obscure the purpose of the exercise at times.
- A case based on original documents, giving students the opportunity to contrast different approaches to the same scenarios and/or events and allowing both synthesis and analysis of the knowledge, skills and attitudes inherent in them.

Adapted from the *Teaching Handbook* of the University of Indiana:

[http://www.iub.edu/~teaching/handbook\\_2.shtml](http://www.iub.edu/~teaching/handbook_2.shtml)

The Faculty of Health Science at the University of Tasmania employs a variety of case models across its Schools. If you would like to know more about case-based learning in general and how it can help in your teaching, then look at the "Teaching using cases in the FHS" pages on the Faculty web site (see earlier reference and link on Page 4).

The Medical Education Unit's website also has a page on Case Based Learning at:

[http://www.healthsci.utas.edu.au/medicine/meu/CBL/CBL\\_home.html](http://www.healthsci.utas.edu.au/medicine/meu/CBL/CBL_home.html)

There are links on this page to the Teaching Pages of the Clinical Schools of the University at Hobart, Launceston and Burnie, and these pages incorporate the Year 5 and 6 clinical cases and their support material. Hard copies of case models, compiled by FEU and Faculty of Health Science staff, appear in Appendix C.

#### Design features of cases

Cases are generally structured so that they may be delivered to small groups of students rather than to whole lecture theatres. Earlier cases may differ from later cases in the curriculum as to the size of group and the type of group that may be suitable for the CBL event.

#### Case designs should include:

- The possible use of small tutorial groups to examine cases (between 6-9 students is ideal).
- Case events where students are asked to reach a judgement or a decision, make a prediction, or forecast some other possibility.
- Cases need to be grounded in currency and relevance, with believable elements of narration that allow the students to engage fully in the learning event.
- Notes, where necessary, for facilitators. This may include samples of guidance or questions that can assist in the delivery of the case.
- LOs framed so that:
  - No “assessment by stealth” occurs, where the learning tasks do not match LOs.
  - Students can be sure what the case covers, its scope.
  - The context of the case event is clear, and its place in the curriculum is clear.

Adapted from the *Teaching Handbook* of the University of Indiana:

[http://www.iub.edu/~teaching/handbook\\_2.shtml](http://www.iub.edu/~teaching/handbook_2.shtml)

And

The *Case Writers Workbook* of the Flinders University of South Australia

#### Case templates, mapping and models

The Medical Education Unit at the School of Medicine has developed a new case template to allow staff to develop cases with recognisable structures and data elements so that the NC cases can be searched via a Google search engine. This will assist staff of the Medical School to integrate cases more effectively and to make sure that the five Themes of the NC are addressed in an integrated and logical manner.

The database will allow staff to track:

- Prerequisites
- LOs
- Keywords
- Delivery strategies
- Blocks
- Themes
- Case identification code

A case template for the School of Medicine is shown in Appendix D. The MEU web pages also contain advice on CBL and case models:

[http://www.healthsci.utas.edu.au/medicine/meu/case\\_workbook/index.html](http://www.healthsci.utas.edu.au/medicine/meu/case_workbook/index.html)

References to additional material to assist staff in the development of cases, including texts and website addresses, are located in the final section of this Handbook.

***Example week based around case teaching***

<b>CAM101 Draft Weekly Timetable</b>					
	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
<b>0900 – 1000</b>	Lecture 1: Clinician Case intro & LO's Themes 1, 2, 3, 4, 5	Lecture 4: Theme 1 SoM staff	Lecture 6: Theme 1 SoM staff	Lecture 7: Theme 1 SoM staff	Self-directed and on-line learning
<b>1000 – 1100</b>	Small Group Facilitated Groups A, B, C Themes 1, 2, 3, 4,5.	Self-directed and on-line learning	Tutorial 1: SoM staff Theme 1 Groups A, B, C Tutorial 2 Theme 2-5 Groups D, E, F	Practical: Groups A, B, C Theme 1 Groups D, E, F Communication & clinical skills	Small Group Facilitated: Groups A, B, C Themes 1, 2, 3, 4, 5
<b>1100 – 1200</b>	Small Group Facilitated Groups D, E, F Themes 1, 2, 3, 4, 5		Tutorial 2: SoM staff Theme 1 Groups D, E, F Tutorial 2 Themes 2-5 groups A, B, C		Small Group Facilitated: Groups D, E, F Themes 1, 2, 3, 4, 5,
<b>1200 – 1300</b>	Lecture 2: Theme 1 SoM staff	Lecture 5: Theme 1 SoM staff	Self-directed and on-line learning	Self-directed and on-line learning	Self-directed and on-line learning
<b>Lunch</b>					
<b>1400 – 1500</b>	Seminar/Lecture Theme 4	Information Literacy Development: Theme 5	First Aid Course wks 2-6 and Career choice seminars and/or practicals wks 7-12 Theme 3	Practical: Groups D, E, F Theme 1 Groups A, B, C Communication & clinical skills	Case Wrap- up & student presentations: Themes 1, 2, 3, 4 and 5
<b>1500 – 1600</b>	Lecture 3: Various Professional &/or personal perspectives on the case				
<b>1600 – 1700</b>	Self-directed and on-line learning	Self-directed and on-line learning	Self-directed and on-line learning	Self-directed and on-line learning	

Teaching in a typical week would be based around the five themes outlined in the MGP:

1. Human Health and Disease
2. Communication and Collaboration
3. Community Health and Disease
4. Personal and Professional Development
5. Integration

#### **Case introduction – setting learning objectives**

Lecture 1 would introduce case and define learning objectives for the week (theme 5). Students would then split off into tutorial groups (tutorial 1) to discuss topics and assign tasks between themselves (theme 5).

#### **Fixed resource sessions**

Lectures 2-4, PPD session, clinical session, tutorials and practical (themes 1-4) would relate to learning objectives set out in the case introduction. Clinical session in year 1 would be based around a Foundation Medical Studies type format and be hospital-based in years 2 & 3.

#### **Guidance tutorial**

In the first three years of the course a mid-week guidance tutorial will be scheduled to support and guide students in meeting that weeks learning objectives (tutorial 3)

#### **Case summary**

Lecture 5 (theme 5) would give case outcomes and introduce the case for the following week. In tutorial 4 (theme 4) students would review learning objectives for that week, obtain formative feedback, review their reflective journals and link to the following weeks case.

## **THE CBL FACILITATOR'S ROLE**

Cases in the NC will require a facilitator to provide structure and guide the delivery of cases. Facilitators will predominantly be experts on the content of the case but more importantly will be expected to support the learning processes of the students by guiding them and by helping to structure discussion and questions about the case. Staff will need to become familiar with the basic skills of facilitation and with the dynamics of small group work inherent in CBL.

#### ***Facilitators can emphasise:***

- Teamwork. Doctors are increasingly part of health care teams, and early training in teamwork can stand students in good stead for later practice.
- The progress of students from the role of passive learner to a more self-directed and self-aware learning paradigm.
- The positive dialogue between students, building their confidence in collaborative learning. CBL is a process of personal development as much as learning experience.

***Facilitators should engage in:***

Debriefing the discussion to compare group responses. Help the whole class to interpret and understand the implications of their solutions.

- Minimal interference. The facilitator should be comfortable with ambiguity and with adopting the non-traditional roles of witness and resource, rather than authority.
- Monitoring and evaluation of the group dynamic and the mechanisms of students' discussions and enquiries.

Adapted from the *Guide for Facilitators in Case-Based Learning in the Edinburgh MBCHB* programme, University of Edinburgh, Faculty of Medicine, Medical Teaching Organisation 2001

***Working in small groups***

The MEU has run a staff development session on working in small groups and the summary of this session can be found at:

[http://www.healthsci.utas.edu.au/medicine/meu/data\\_files/meumann1.mov](http://www.healthsci.utas.edu.au/medicine/meu/data_files/meumann1.mov)

For group work it is advisable to have students assigned specific roles such as Chair and Scribe so that the group has a referee for its processes and a record of its discussions and decisions. These roles can be rotated as case events are rolled out so that individuals in each group have an opportunity to fill these roles. Students may be asked to review the roles and to review contributions to the group's work, so that reflection may inform better group dynamics and procedures in the future.

The facilitator as a key role in monitoring group dynamics and in providing stimulus to groups that may verge on being dysfunctional. Their task is to refocus the group and to provide suggestions for groups that may have become stuck in part of a case or a problem. Further suggestions for facilitators can be found in:

*Guide for Facilitators in Case-Based Learning in the Edinburgh MBCHB* programme, University of Edinburgh, Faculty of Medicine, Medical Teaching Organisation 2001

## Glossary

<b>AMC</b>	Australian Medical Council
<b>ATG</b>	Assessment Task Group, School of Medicine
<b>CBL</b>	Case Based Learning
<b>CCCTG</b>	Curriculum Content Coordination Task Group, School of Medicine
<b>FEU</b>	Flexible Education Unit, University of Tasmania
<b>IBL</b>	Inquiry Based Learning
<b>IT</b>	Information Technology
<b>KSA</b>	Knowledge, Skills, Attitudes (also known as cognitive, psychomotor and affective)
<b>LOs</b>	Learning Outcomes
<b>LOGs</b>	Learning Outcomes Groups
<b>MEC</b>	Medical Education Committee, School of Medicine
<b>MEU</b>	Medical Education Unit, School of Medicine
<b>MGP</b>	Medical Graduate Profile
<b>NC</b>	New Curriculum, School of Medicine
<b>NCWG</b>	New Curriculum Working Group, School of Medicine
<b>PBL</b>	Problem Based Learning
<b>SDL</b>	Self Directed Learning
<b>TTG</b>	Themes Task Group, School of Medicine

**Please also refer to the *IIME Glossary of Medical Education Terms* located at:**

<http://www.iime.org/glossary.htm>

The AMEE Glossary of Terms in Medical Education is available in hard copy from the MEU.

## Acknowledgements

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## Further Reading

### Texts

Caffarella, Rosemary S. 2002, *Planning programs for adult learners*, 2<sup>nd</sup> ed., Jossey-Bass, San Francisco. Held at the Clinical Library and in Launceston.

Case Writing Workbook: a guide to writing PBL cases for the Flinders Graduate Entry *Medical Program* 1997, Flinders University of South Australia, Bedford Park SA. Held by the MEU.

Indiana University Teaching Handbook: Section 2 –Teaching Methods 2001, *Indiana State University*, Bloomington, Indiana.

Medical Teaching Organisation, University of Edinburgh 2001, *A Guide for facilitators in Case-Based Learning in the Edinburgh MBCHB programme*, Faculty of Medicine, University of Edinburgh.

### Websites

The following websites are only a small selection of those available on CBL and LOs.

Case-Oriented, Problem-Stimulated (COPS) Curriculum, Dalhousie University  
Dalhousie, in Canada, uses a case based format in a curriculum that is delivered through typical case weeks. The links to its curriculum and resource pages are particularly useful.  
<http://undergraduate.medicine.dal.ca/curriculum/index.htm>

Case Studies in Science, State University of New York at Buffalo  
This website contains papers from Clyde Freeman Herreid on CBL methods. Herreid is a noted proponent of CBL in the USA and this site contains examples of case methods, good and bad case events, and useful links.  
<http://ublib.buffalo.edu/libraries/projects/cases/teaching/teaching.html>

Also available from this source are examples of cases:  
<http://ublib.buffalo.edu/libraries/projects/cases/ubcase.htm>

Clinical Case Studies from the Karolinska Institute  
A long and very useful set of links to cases from the Karolinska Institute in Sweden. The examples of cases are wide ranging and across many disciplines.  
<http://www.mic.ki.se/MEDCASES.html>

Goals and Objectives, University of Toronto  
A guide to developing learning outcome statements from the University of Toronto.  
<http://www.library.utoronto.ca/medicine/med/ce/GORcap.htm>

*Outcomes(Competency)-Based Curriculum and Assessment*, James Shumway, Associate Dean for Medical Education, West Virginia University  
This web available set of PowerPoint slides explains how the outcomes based model of medical education works and how places such as the Brown University and the University of Dundee have implemented competency based curricula.

<http://www.hsc.wvu.edu/som/ome/presentations/currcom2001.htm>

*Outcomes Based Education, Centre for the Advancement of Teaching and Learning (CATL)  
University of Western Australia*

CATL has put together a comprehensive discussion of outcomes based education and its formulation.

<http://www.catl.uwa.edu.au/obe/>

St. Edwards University Learning Outcomes Initiative

A comprehensive guide to developing LOs from St. Edwards University in the USA.

<http://www.stedwards.edu/cte/resources/learningout.htm#three>

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