Overview of Session

- What is CBL? Why use CBL?

- Practical Implementation of CBL

- Challenges and Potential Solutions

What is Case-based Learning (CBL)?

'CBL is a learning and teaching approach that aims to prepare students for clinical practice, through the use of authentic clinical cases. These cases link theory to practice, through the application of knowledge to the cases, and encourage the use of inquiry-based learning methods.'

The effectiveness of case-based learning in health professional education, Thistlethwaite J et al. *Medical Teacher*, 2012;34(6)e421-e444. www.bemecollaboration.org

? Does CBL = Group-based learning

Why use Case-based Learning (CBL)?

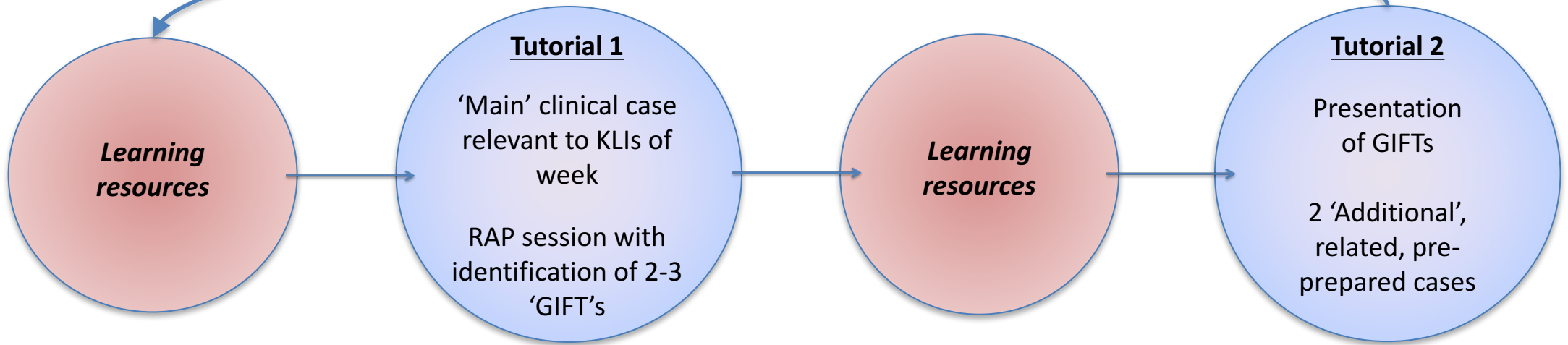# Why use Case-based Learning (CBL) in the Medicine Program?

- Places early learning in a clinical (graduate) context
- Facilitates integration of existing knowledge with new knowledge
- Facilitates integration of knowledge from multiple disciplines
- Develop clinical (critical) reasoning skills
- Develop skills for working effectively in health-care teams
- Preparation for clinical practice
- The majority of health professional students and teachers report that they enjoy learning via CBL

CBL in the Medicine Program

- Graduate entry, 4-year, Doctor of Medicine (MD) Program
- CBL is the cornerstone of the curriculum in years 1 & 2
- 500 students per year -> 50 CBL groups
- Groups meet twice a week for 2-2.5 hours each tutorial
- Facilitated by an industry-qualified tutor

CBL Cycle

CBL

Learning resources	**Tutorial 1** 'Main' clinical case relevant to KLIs of week RAP session with identification of 2-3 'GIFT's	*Learning resources*	**Tutorial 2** Presentation of GIFTs 2 'Additional', related, pre-prepared cases

PBL

Tutorial 1 Commence clinical 'case' relevant to KLIs of week Group identification of 8-10 'FQ's	*Learning resources*	**Tutorial 2** Presentation of FQs Final case triggers for discussion and closure

RAP: Reflection & Planning
GIFTs: Group Identified Focus Tasks
FQs: Focus Questions

Trigger 1

- You are the intern on duty in the Emergency Department at a metropolitan hospital when a man in his early 30s is brought to you. He looks distressed and is bending over with both arms wrapped around his abdomen. He apparently speaks no English, but is accompanied by a male family member who points to the patient's abdomen and says "belly ache!"

General Process

CUES	HYPOTHESES	MECHANISMS	NEED TO KNOW	GIFTS
Male Approx. 30 yrs Abdo pain No English Accompanied by family member	<u>Systems/Organs</u> Stomach; Small intestine; Large intestine; Liver; Gallbladder; Pancreas; Heart/Aorta; Kidneys; Reproductive <u>Pathological processes</u> Vascular – ischaemic colitis Infective - gastroenteritis Inflammatory – Crohn's Neoplastic – bowel cancer *Etc.*	Neoplastic growth ↓ Obstructed bowel lumen ↓ Build-up of gas/fluid proximally ↓ Stimulation of stretch receptors ↓ Pain	Location, nature, timing, severity Associated - diarrhoea? - vomiting? - fever? - bleeding? Past medical hx Meds / allergies? Social & cultural background Interpreter? *Etc.*	

Discussion Starters

- What systems/organs may be responsible for this patient's pain?

- How does visceral pain differ from somatic pain?

- What should we ask when taking a history to help us work out what the problem is?

- What constraints are placed on the history-taking process by the fact that the patient is unable to speak English?

- What additional difficulties face patients of CALD (culturally and linguistically diverse) backgrounds who present for medical treatment?

What our students say about CBL

What our students say about CBL

- "CBLs get you thinking and applying principles learned in lectures and in learning materials. I like that mental/cognitive exercise."

- "The CBL case learning linked to the topics of the week allowed practical application of the week's content."

- "CBL tutorials were fantastic; a great learning opportunity and an excellent way to develop clinical reasoning."

- "The CBL setup is brilliant. Such a good environment for learning."

- "The CBL sessions were very helpful for deepening my understanding of the course material…"

- "I really enjoyed the CBL as I felt it helped draw together all that we were learning into the clinical environment."

What our students say about CBL

- "(CBL) seemed to put into practice what we learned in our lectures which is very different to most undergraduate courses, as it made us collate all the material in our minds which not only helped the learning but also started making us feel like 'real doctors' and a sense of what we're working toward."

What our students say about CBL

- Removes the 'tunnel vision' effect of PBL

- More opportunities for development of clinical reasoning skills

- More efficient utilisation of time

- Enhanced student engagement and enjoyment

  "CBL is the best thing ever!"

PBL
12%

CBL
88%
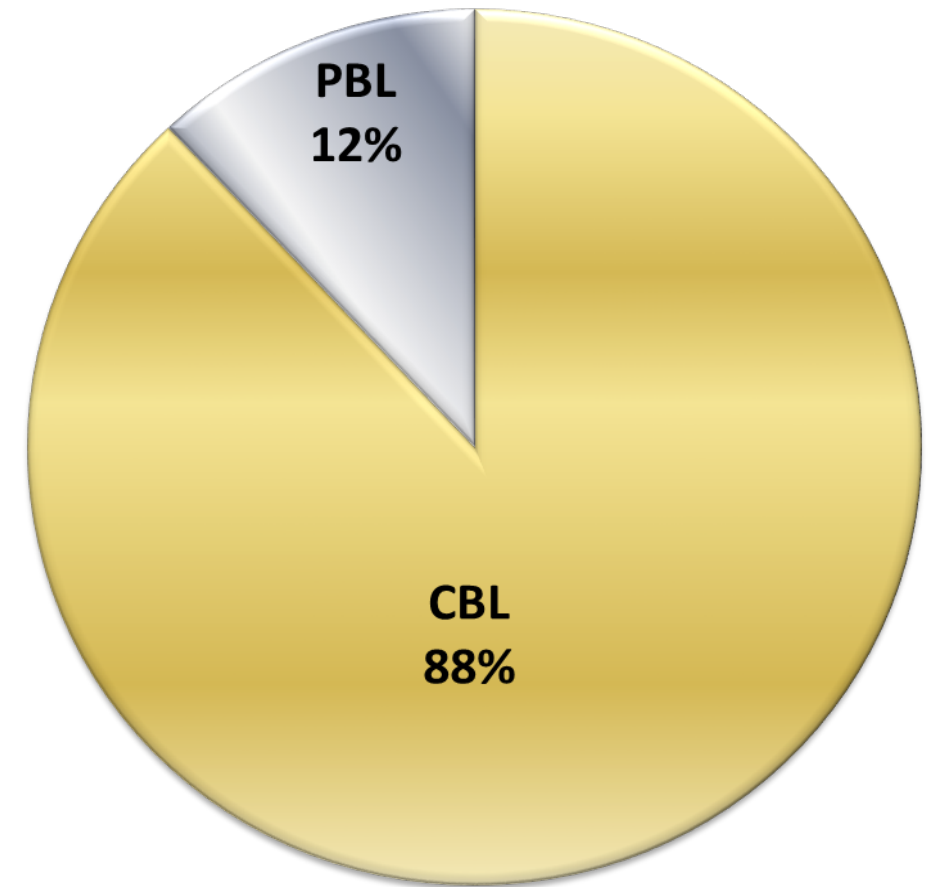
Student preference (n=225)

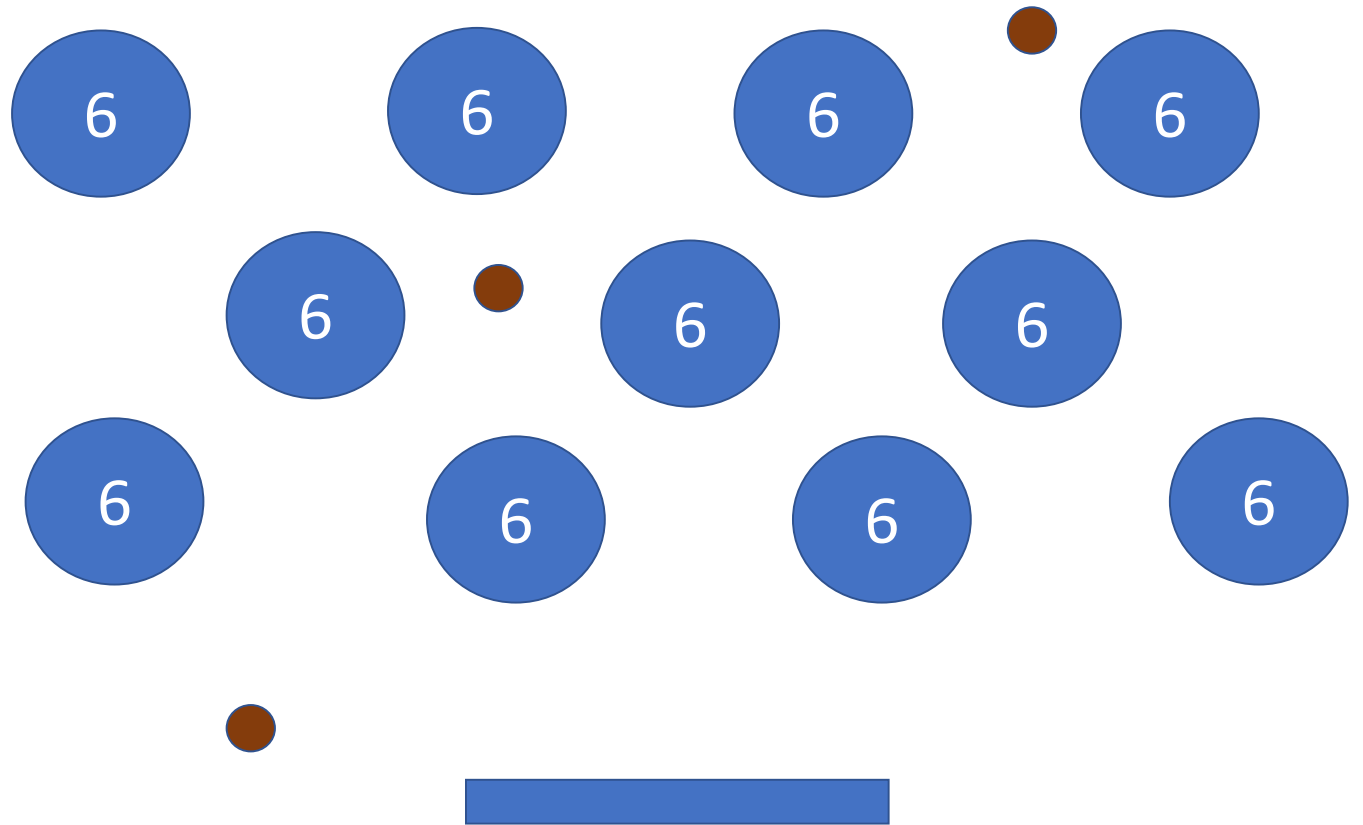# Alternate CBL settings?

- Individual student format? Online?

Alternate CBL settings?

- Individual student format? Online?
- Team-based Learning model? (TBL)

Team-based Learning

- In lecture
- Students in e.g. 10x teams of 6
- Triggers presented from the front
- 2-3 "roving" facilitators

Practical Implementation of CBL

1. Decide your setting

- **Learning environment**
  - ➢Tutorial, lecture, online….

- **Group size**
  - ➢Individual, pairs, small vs. large group….

- **Frequency**
  - ➢'1 plus 2' model, weekly, end of course 'module'….

- **Facilitation**
  - ➢Lecturer, tutors, peer-led, written….

- **Time allocation**

2. Identify your objectives ... and therefore your case

- "Start with the end in mind"

- Consider Learning Outcomes

- Consider prior knowledge – pre-requisites, earlier learning in the same course, what preparation will be set

- Consider opportunity for integration – within own course, with other courses/disciplines

- Consider common and important graduate scenarios

For consideration …

- Will you mandate participation?
- Will you assess?

3. Writing Your Scenario - Triggers

- Keep **time allocation** in mind from the start
  - MD program usually around 4 triggers per hour in small group tutorial setting

- Have an **overall idea** of the scenario: think objectives & relevance
  - start with the skeleton, then flesh it out with the details

- Keep **initial trigger broad**; drip feed with subsequent triggers

- **Don't overload** the triggers with information but ensure enough is provided for students to address objectives (and is realistic)

- Provide some form of **scenario closure**
  - Expected/unexpected outcome? Scenario to be picked up again at a later date?

- **Review** and review again!
  - Content experts, typos and grammatical errors….

4. Writing Your Scenario – Discussion Process / Discussion Questions

- General Process – what do "hypotheses" and "mechanisms" mean in your discipline?
- Consider the purpose of Discussion Questions
- Remember Bloom's Taxonomy
- Pose questions that promote deep learning

Finish Well – Reflection and Planning (RAP)

At the end of *each* session:

- reflect on group process and dynamics – any areas to improve?
- identify "gaps" in learning and how these will be addressed

Challenges? Questions?

Some Challenges and Potential Solutions

Challenges	Potential Solutions
Large cohort, resource limitations	Student facilitated CBL, Team-based CBL or "debrief" format
Tutor diversity	Tutor training; facilitation rather than "content expert" approach
Integration with other modules and courses	Effective academic teamwork
Student Participation	Consider participation assessment options
Difficult group dynamics	Student training in teamwork; have tutors facilitate CBLs; tutor training

10 TIPS

- Our own top tips from our own CBL implementation experience for you to take away!

- Please contact us with any queries: l.green4@uq.edu.au or sharon.darlington@uq.edu.au

References and Resources

David A. Cohen, Lori R. Newman & Laurie N. Fishman (2017) Twelve tips on writing a discussion case that facilitates teaching and engages learners, Medical Teacher, 39:2, 147-152, DOI: 10.1080/0142159X.2017.1266315

http://dx.doi.org/10.1080/0142159X.2017.1266315

Jill E. Thistlethwaite, David Davies, Samilia Ekeocha, Jane M. Kidd, Colin MacDougall, Paul Matthews, Judith Purkis & Diane Clay (2012) The effectiveness of case-based learning in health professional education. A BEME systematic review: BEME Guide No. 23, Medical Teacher, 34:6, e421-e444, DOI: 10.3109/0142159X.2012.680939

http://dx.doi.org/10.3109/0142159X.2012.680939

Louise Green: l.green4@uq.edu.au
Sharon Darlington: sharon.darlington@uq.edu.au