



BURNETT
SCHOOL *of* MEDICINE

PATIENT-CENTERED INQUIRY-BASED LEARNING

STANDARD OPERATING PROCEDURE

20
23



TABLE OF CONTENTS

1	PIBL Weekly Schedule
2	About the PIBL Facilitator Standard Operating Procedures (SOPs)
4	Session 1: Monday
5	Step 1: Orient to the PIBL Process (5-10 minutes)
5	A. Ground Rules (when applicable, 1-5 minutes)
5	B. Assign roles (1-2 minutes)
6	C. Setting up the electronic white board (2-3 minutes)
7	Step 2: Progressive case disclosure (45-60 minutes)
7	A. Identify cues
7	B. Explore pre-existing knowledge
8	C. Generate hypotheses
8	D. Identify and organize learning issues
8	Step 3: Creating actionable learning issues (10-15 minutes)
9	Step 4: Self-directed learning plan (5-10 minutes)
10	Step 5: Debrief (20-25 minutes)
10	A. Facilitators state the prompts (1 minute)
11	B. Think/write about the prompts (5-7 minutes)
11	C. Students report out (10 minutes)
11	D. Facilitator reports out (3 minutes)
12	Virtual Disclosure
13	Session 2: Friday
14	Step 1: Re-orient to the PIBL Process (5-10 minutes)
14	Step 2: Student-led learning activities (80-90 minutes)
15	Step 3: Final case disclosure & teach-back (10-15 minutes)
15	Step 4: Debrief (20-25 minutes)
16	A. Facilitators state the prompts (1 minute)
16	B. Think/write about the prompts (5-7 minutes)
17	C. Students report out (10 minutes)
17	D. Facilitator reports out (3 minutes)
17	Appendix
17	Process-specific PIBL objectives

PIBL WEEKLY SCHEDULE

Session 1: Monday

ORIENT TO THE PIBL PROCESS

Set ground rules
Assign roles
Set up the electronic white board

PROGRESSIVE CASE DISCLOSURE

Identify cues
Explore pre-existing knowledge
Generate hypotheses
Identify learning issues

CREATE ACTIONABLE LEARNING ISSUES

Students derive actionable
Learning issues

SELF-DIRECTED LEARNING PLAN

Students develop plan for gathering
information to address learning issues

Session 2: Friday

SUMMARIZE THE CASE

Review roles and progress
during the week

STUDENT-LED LEARNING ACTIVITIES

Student lead learning activities
Facilitator and peers provide feedback

FINAL DAY DISCLOSURE & TEACH BACK

Students discuss case conclusion
Facilitates student teach-back activity

DEBRIEF

Facilitators state prompts
Think/write about the prompts
Students report out
Facilitator reports out

ABOUT THE FACILITATOR STANDARD OPERATING PROCEDURES (SOPS)



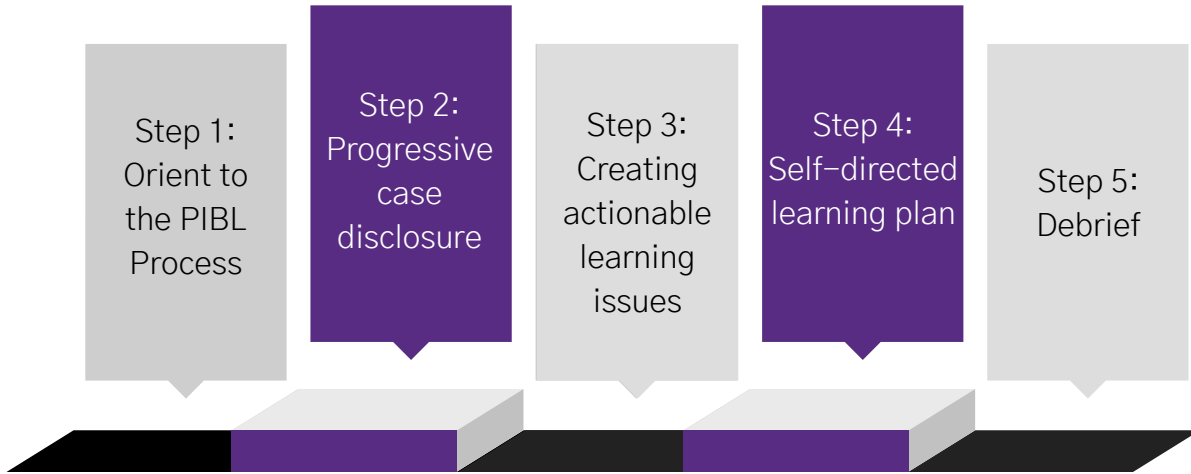
The Facilitator Standard Operating Procedures (SOPs) serves as a guide for facilitators in the Patient-Centered Inquiry-Based Learning (PIBL) process. The SOPs are not meant to be all-encompassing, but rather to be used as a general tool applicable to all PIBL cases. Facilitators guide the self-directed learning process. They do not “teach” content, but rather facilitate the learning process. The SOPs provide the basic elements of the structure and process to promote student self-directed learning. Additional information and guidance are also provided each week in the facilitator version of the case for each PIBL case.

Some key principles include:

- The weekly facilitator version of the case begins with the learning objectives for the case. These objectives are not provided to students. As students work through the case, the facilitator may consider open-ended prompts to draw attention to unresolved problems or challenges in the case; however, students may not identify all of the learning issues. This is natural and to be expected! One of the important goals of self-directed learning is for students to identify for themselves what they need to know to understand and ‘solve’ the case; the author-derived objectives may or may not match exactly what the group generates. At the end of each week, we ask you as the facilitator to provide feedback on the case and how effectively it generated learning issues for the students. We provide this feedback to the case author for consideration and opportunities for quality improvement for the case.

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- We distinguish between the term ‘learning objective’ and ‘learning issue.’ When referring to student–created learning issues, please use the term ‘learning issues.’ When referring to faculty–written objectives, please use the term ‘learning objectives.’
 - Self–directed and self–regulated learning occurs throughout the process. Each student is responsible for generating hypotheses, actionable learning issues, and addressing each learning issue generated by the group.
 - Depending on the case, there may be a virtual disclosure of additional information between Session 1 and Session 2, which may generate additional hypotheses and learning issues for students.
 - Each student is expected to share resources and information about the actionable learning issues using the Canvas discussion board OR a similar tool (Google Doc, One Note, etc.) by Thursday at noon at the latest. If the group agrees to use a note–sharing tool other than Canvas, the group must invite their PIBL facilitator to view the notes. If groups choose to use a tool other than Canvas, the group’s scribe is still expected to post their list of actionable learning issues on the Canvas discussion board.
 - Students may use their laptops or other technology if it adds to and does not distract from the learning taking place. Groups should use their discretion and create their own rules about when or when not to use technology during the session.
 - A note about observers: from time to time, you may have an observer in your PIBL session. If you have an observer, be sure to check in with them prior to the session and ensure their role as an observer is clear to the group. After a brief introduction and explanation that they are present to observe and learn, observers do not participate in or interfere with the group process in any way. After the session, the facilitator can check in with the observer in private to exchange ideas about the PIBL session.

SESSION 1: MONDAY



STEP 1: ORIENT TO THE PIBL PROCESS (5-10 MINUTES)

A. Ground rules (when applicable, 1-5 minutes)



Learner Task: Set ground rules.

Facilitator Task: Facilitate setting ground rules.

This step needs to be completed whenever a new PIBL group is formed. It may also be important to revisit the ground rules from time to time, and the facilitator may choose to ask the group if they wish to revisit their ground rules. If students do not initiate, guide them.

Guide the process (if needed):

- What are the team's ground rules for the current PIBL case?

Examples of ground rules to include:

- We will arrive on time to all sessions.
- We treat each other with respect.
- We listen to each other.
- We welcome all questions.
- We encourage all members to participate.

Funnel down (if really needed):

- What are possible ground rules that might help with [identified team deficit]?

B. Assign roles (1-2 minutes)



Learner Task: Assign roles.

Facilitator Task: Facilitate role assignment process, as needed.

If students are not rotating through all roles, remind your team that this is expected.

Guide the process (if needed):

- Student roles and responsibilities are:
 - Leader:
 - Encourage participation from all group members
 - Keeps group on task
 - Coordinates group discussion after virtual disclosure is released

- Student roles and responsibilities are (*continued*):
 - Scribe:
 - Record notes on the whiteboard
 - Reader (case dependent):
 - Read the case for the group
 - Role-play, when applicable and appropriate
 - Timekeeper:
 - Ensure the group stays on track during the sessions to accomplish goals
 - Presenters (3-4):
 - Lead learning activities during session 2. More information is included in the Self-Directed Learning Plan section
 - Communicator(s): To be assigned on Friday (or as decided by the group):
 - Address given teach-back/communication instructions in session 2

C. Setting up the electronic white board (2-3 minutes)



Learner Task: The scribe sets up the electronic white board.

Facilitator Task: Facilitate setting up the electronic white board.

Reminder: The whiteboard should have the following headers:

- Cues (what we know)
- Hypotheses
- What we would like to know (WWWLTK)
- Learning Issues (LI)


Cues (what we know): Information the students identify as important to understanding the patient, forming hypotheses, identifying learning issues, and ultimately acquiring the knowledge to understand the problems presented in the case. Examples may include patient information, diagnostic studies, and environmental, psychosocial, and socioeconomic factors.

Hypotheses: Underlying basic science mechanisms or differential diagnoses based on the cues in the case. Hypotheses should articulate what might be going on or explain what is happening in a case, such as explaining why certain findings are present, or why certain tests or treatments are performed, and what they mean. Students should update and revise their hypotheses as more information about the case is presented. It is not expected that students will come up with correct hypotheses initially, but they should ultimately critique and revise their hypotheses as they update their own knowledge and understanding.

What we would like to know (WWLTK): What additional information about the patient would be helpful to know? For example, what additional history, exam, or contextual information about the patient or scenario is needed to better understand what is happening, or to determine if the hypotheses are accurate?

Learning Issues: Topics or questions that the group needs to learn more about. These can be often be framed initially as a question, and often benefit from critique in order to provide appropriate focus. For example, “learn about microbes” is unlikely to be a helpful learning issue. Instead, “How do microbes that infect the respiratory tract develop resistance to penicillin?”, and then, “Describe how respiratory microbes develop resistance to penicillin” may more accurately capture the learning issue identified by the students.

STEP 2: PROGRESSIVE CASE DISCLOSURE (45-60 MINUTES)



Learner Task: Student will identify, observe, and synthesize self-directed learning topics.
Facilitator Task: Facilitate identifying learning issues, which includes identifying cues, exploring previous knowledge, and generating hypotheses. This is an iterative process and should be done for each 'cue' if needed.

Reminder: Facilitators will progressively disclose case information throughout session 1. Each facilitator case-specific guide will have prompts and information tailored for that case.

A. Identify cues

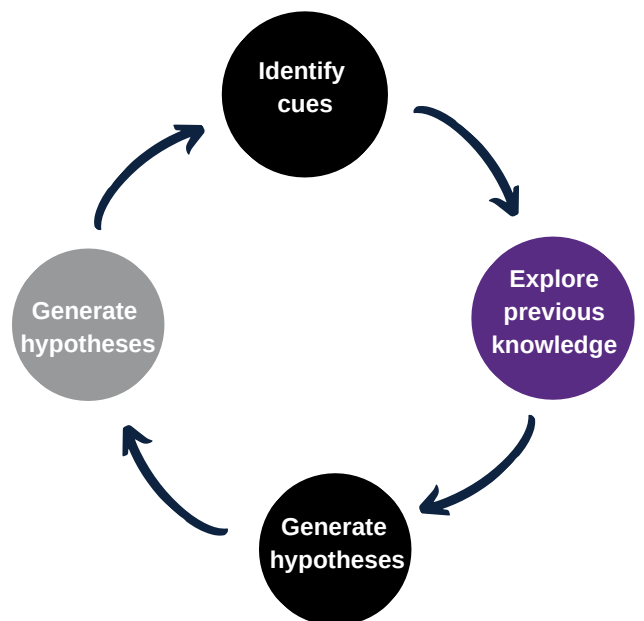
Guide the process (if needed):

- What do you observe or identify within the information presented?

B. Explore pre-existing knowledge

Guide the process (if needed):

- What do you know about the patient's problem(s) based on previous courses or your own experience?
- How confident is the team that you know the term?



C. Generate hypotheses

Guide the process (if needed):

- Are there relationships among these problems?
- What are possible explanations for the information that you have received so far?
- Are we confident that everyone on the team understands all of the terms that have been presented?
- What caused the sequence of events that seems to have occurred?

D. Identify and organize learning issues

Guide the process (if needed):

- Do we need to revise learning issues? Prioritize learning issues?
- What might be happening at the cellular or molecular level in this patient?
- Can you summarize/diagram a mechanism explaining what might be underlying the problems this patient is having? (At the organ level? At the molecular level? Socially?)

STEP 3: CREATING ACTIONABLE LEARNING ISSUES (10-15 MINUTES)



Learner Task: Students will derive actionable learning issues. Learning issues should begin with an action verb using Bloom's taxonomy and must be specific and measurable.

Facilitator Task: Facilitate students deriving actionable learning issues.

Reminder: The student with the scribe role will be responsible for taking a picture of the board, typing the learning issues list, and posting it to the Canvas discussion board at the end of the sessions.

Guide the process (if needed):

- What do you need to know for the learning issue?
- How will you demonstrate you addressed the learning issue?



STEP 4: SELF-DIRECTED LEARNING PLAN (5-10 MINUTES)



Learner Task: Students will develop a plan for the gathering of information to address their learning issues during their SDL time. Student presenters should decide at this time how to approach their presentations (which objectives + modality).

Reminder: Student-led learning activities can take many forms. Students are told the goals of the learning activities are to:

- 1.) Apply learning issues to the big picture
- 2.) Synthesize the major problem(s)
- 3.) Engage their peers
- 4.) Provide opportunities to assess and evaluate their understanding
- 5.) Be concise and clear



Facilitator Task: Facilitate planning for next session.

Guide the process (if needed):

- What resources do you need to complete this?
- How should you prepare for session 2?
- What do you need to do to resolve my confusion?

Funnel down (if really needed):

- What elements should you prioritize?
- What strategies should you use to study?
- Why is this content important?
- What do you most want to know or be able to do related to this case?

STEP 5: DEBRIEF (20-25 MINUTES)



Learner Task: Debrief the session.

Facilitator Task: Facilitate monitoring of progress.

Reminder: The debrief is an important part of the PIBL process for students to plan, monitor, and evaluate their own learning. Facilitators should model this behavior for students. Students are given process-specific objectives for PIBL (see Appendix). These can be referenced as needed during the debrief portion of the session.



A. Facilitators state the prompts (1 minute)



Facilitator Task: Choose one or more prompts for the group.

Reminder: Facilitators will invite to the group to reflect on the group's process and its impact on their learning. We encourage the facilitator to begin each debrief with an open-ended prompt asking students **how they felt the group did**, and **how each student feels they did**. The facilitator will identify additional debriefing prompts based on how the students engaged with the case. Some additional prompts might include:

- What insights did you have today?
- What about this case is confusing?
- How is this case relevant to what's happening this week?
- What strategies did you use today and were they effective?
- Are you able to identify what is important in this case?
- Were you organized and systematic about your thinking today?
- In what ways is the case modeling knowledge and skills that you need?
- What is inhibiting you from doing well on this case?
- How confident are you in your ability to perform well on this case?
- What interferes with your interest or motivation for this case?
- What is one aspect of your action plan moving forward?

B. Think/write about the prompts (5-7 minutes)



Facilitators and students will both complete this task. Model appropriate behavior for the students, including writing. Be specific and provide examples when responding to prompts.

C. Students report out (10 minutes)



Facilitator Task: Prompt further if students offer vague answers.

Guess the process (if needed):

- Why is that?
- Can you provide an example?

D. Facilitator reports out (3 minutes)



Facilitator Task: Report out in the same manner as students. Demonstrate specific formative feedback. The facilitator may report on their own action plan or give the students an action plan as part of the specific, formative feedback.

VIRTUAL DISCLOSURE



Learner Task: Students will identify and derive 1-2 actionable learning issues based on information provided.

Facilitator Task: Facilitators will check the Canvas discussion board or other note sharing tool prior to Friday but will not intervene.

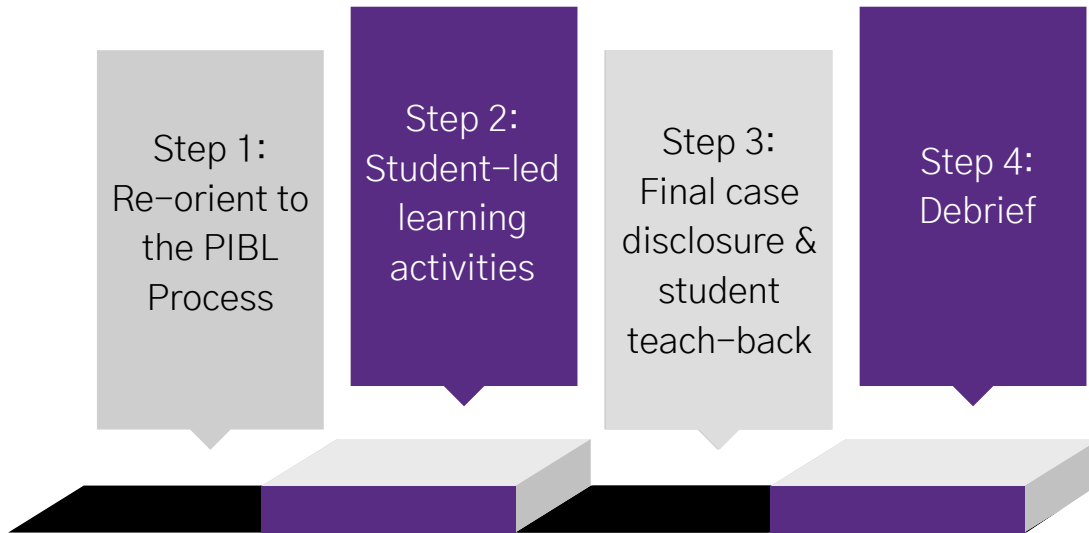
Reminder: The virtually disclosed information will be released by Tuesday at noon at the latest. Students will be required to post a least one entry with either a learning issue or resource on the Canvas discussion board by Thursday at noon.

On the discussion board, look for gaps in the team's learning issues and the quality of resources. If students are not identifying the cues, new learning issues, or choosing quality resources, make a note for possible prompts to use during session 2.

- What were the implications of this information for how you are thinking about this patient?
- Does this information increase or decrease the likelihood of any of the mechanisms you are considering?
- What was the source of this information?



SESSION 2: FRIDAY



STEP 1: RE-ORIENT TO THE PIBL PROCESS (5-10 MINUTES)



Learner Task: Students will re-orient to the problem by reviewing what happened in session 1 and virtual disclosure.

Facilitator Task: Facilitate re-orientation to the problem.

Guess the process (if needed):

- What happened during session 1?
- What new learning issues were identified after virtual disclosure?

STEP 2: STUDENT-LED LEARNING ACTIVITIES (80-90 MINUTES)



Learner Task: 3-4 students with the "presenter" role will present their learning activity.

Facilitator Task: Guide students through the learning activities, if needed. Facilitators and peers may ask more questions, if needed.

Guess the process (if needed):

- What new insights can add to the understanding of the patient's problem?
- What is the source of the information you are sharing?
- What is the quality of this source?
- Are there any additional resources?
- What issues are still unclear?

Facilitator and peers will provide feedback on student-led learning activities either immediately or through the end-of-session debrief activity depending on the group's progress. Peers may provide feedback without facilitator prompting through assessment of self-performance, assessment of group performance, or action plans moving forward. Where appropriate, facilitators may prompt students to assess and provide feedback on presentations during debrief (prompts listed in debrief sections).

STEP 3: FINAL CASE DISCLOSURE & TEACH BACK (10-15 MINTUES)



Learner Task: Students will discuss the final day case disclosure and problem. For the teach-back section, the student's role (communicator) will be to teach back a concept or diagnosis to a certain audience by translating their new vocabulary into language specific to the audience.

Facilitator Task: Facilitate discussion about the case conclusion and student teach-back.

Reminder: There may not always be a formal "case conclusion" wrap-up. The case may end without a specific resolution. Specific instructions will be given for the teach-back in the facilitator version of the case, if applicable. Otherwise, facilitators may use their discretion to determine the format of the teach-back as long as the format supports constructive student practice and/or feedback.

Guide the process (if needed):

- How does the conclusion add to the understanding of the patient's problem?

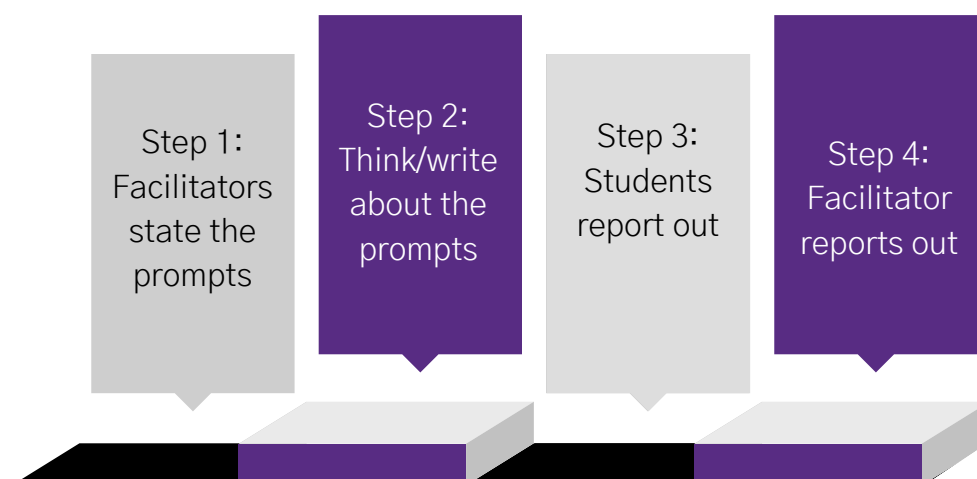
STEP 4: DEBRIEF (20-25 MINUTES)



Learner Task: Debrief the session.

Facilitator Task: Facilitate evaluation of process.

Reminder: The debrief is an important part of the PIBL process for students to plan, monitor, and evaluate their own learning. Facilitators should model this behavior for students. Students are given process-specific objectives for PIBL (see Appendix). These can be referenced as needed during the debrief portion of the session.



A. Facilitators state the prompts (1 minute)



Facilitator Task: Choose one or more prompts for the group.

Reminder: Similar to the first session, facilitators should invite to the group to reflect on the group's process and its impact on their learning. We encourage the facilitator to begin each debrief with an open-ended prompt asking students how they felt the group did, and how each student feels they did. The facilitator will identify additional debriefing prompts based on how the students engaged with the case. Some additional prompts might include:

- What was this case about?
- What did I learn that was in conflict with previous beliefs?
- How did our discussion of this case relate to previous content?
- What were the most and least interesting parts of this case for me?
- What can I do to resolve the remaining confusion or questions?
- To what extent did I succeed in the goals I set for myself?
- Did I use my resources well?
- What will I do differently in the future?
- What features of my study activities did not work well?
- What will I remember from this case in four years?
- What advice would I give to next year's class to do well on this case?
- Prompts specific to student-led learning activities:
 - How did today's activities support application of knowledge related to this case?
 - How, as a group, do you evaluate your performance in meeting the case goals?
 - As a group, did you spend your time wisely today? What criteria do you use to determine this?
 - Is it necessary to address all the learning objectives through activities? If not, how do you decide?
 - What is one aspect of your action plan moving forward?

B. Think/write about the prompts (5-7 minutes)



Facilitators and students will both complete this task. Model appropriate behavior for the students, including writing. Be specific and provide examples when responding to prompts.

C. Students report out (10 minutes)



Facilitator Task: Prompt further if students offer vague answers.

Guide the process (if needed):

- Why is that?
- Can you provide an example?

D. Facilitator reports out (3 minutes)



Facilitator Task: Report out in the same manner as students. Demonstrates specific formative feedback. The facilitator may report on their own action plan or give the students an action plan as part of the specific, formative feedback.



APPENDIX

Process-specific PIBL Objectives

- 1.) Evaluate and synthesize knowledge and apply it to patient care.
- 2.) Engage in critical thinking and problem-solving.
- 3.) Critically appraise medical literature, including assessing credibility of information sources.
- 4.) Effectively communicate with others and participate in shared decision making.
- 5.) Plan, monitor, and evaluate one's self-directed learning.
- 6.) Give, receive, and incorporate feedback.