Supplemental Digital Appendix 1

Interview Questions

Select Questions from the Site Leader and Student Interview Guides

Site Leader Questions (Phase 2, many were similar in Phase 1 interviews except #3)

DEFINITION OF SYSTEMS-ORIENTED WORKPLACE LEARNING
EXPERIENCES (SOWLEs)
1. One of the goals of the new [name] Curriculum is to provide authentic Systems-Oriented Workplace Learning Experiences for students. What does a systems-oriented learning experience mean to you?
    a. What kinds of activities support systems-oriented learning?

SITE LEADER TRAINING IN / EXPERIENCE WITH QI/SYSTEMS
2. How have you learned about systems / QI?
    a. Have you received any formal training in QI / Systems Thinking?
    b. Have you participated in QI or systems thinking efforts prior to this project?

DESIGN / DEVELOPMENT OF EXPERIENCE
3. Which of the following 4 categories (if any) would you characterize your site or experience as fitting into? [PROVIDE HANDOUT FOR INTERVIEWEE TO REVIEW]
    1) Immersion in a system, focus on usual clinical skills
    2) Immersion in a system, focus on non-traditional clinical skills (health coaching, med rec)
    3) Immersion in a system, learning how the system works and where the gaps/problems are (problem identification, needs assessment – pre- intervention; OR evaluation of a intervention – post-intervention)
    4) Immersion in a system to help design, implement and/or evaluate an intervention
    *IF none fit, how would you characterize the experience at your site? Please explain.

    a. Were any QI / systems-oriented activities occurring at your site prior to the student? [in other words, how much did you have to create vs. integrate students into something that already exists]
    b. Did creating the experience help fill a gap? [something identified as a need or goal, but not implemented]

WORKPLACE LEARNING ACTIVITIES
4. Supervision / Guidance: Who supervised the student in the workplace? Who helped teach / guide them?

    a. If multiple supervisors, how did you coordinate efforts, make sure everyone was on the same page about what students would be doing, scheduling, etc.?

    b. Are there things students were able to do with minimal supervision? At what point?

    c. Are there activities that required significant levels of guidance and supervision?

    d. How much guidance did you need to give the students and how much did they propose ideas/activities to you based on what they were learning and doing at the site or in training off-site (in CA-program or on their own)? [NOTE: Students said they often felt they needed to set the agenda, propose a plan rather than waiting for someone to tell them what to do. Check to see if supervisors realized this, felt the students' assertiveness was appropriate]

- Was students level of self-directedness / pro-activeness: too little, just right, too much? Please explain and give an example if possible.

5. <u>Sequencing</u>: What activities did you have students start off with and what made you choose these activities?

    a. What did you do next? Was there any kind of framework that guided your thinking about how to structure these activities? (might be based on the typical steps in a PDSA or QI cycle, or might be based on complexity or on an understanding of what students need to know and do first

    b. How did you identify activities for students from week to week to allow graduated responsibility?

    c. Did you need to do anything to reduce complexity for the students related to QI/Systems? How did you do that?

[NOTE: many sites started off by having students observe the system or the process they were going to help improve]

LEARNER ENGAGEMENT

6. What activities do you think are most high-yield for students' learning? [If they ask for Systems/QI or for clinical, you can say "just in general, as a first year student" and see what they say; also can acknowledge that this may be different for systems vs. clinical]

    a. IF SYSTEMS IS NOT MENTIONED: Which activities are most high-yield for first year students' learning about systems?

    b. Is there a desirable balance between clinical and systems-oriented learning experience? How did you balance the two at your site?

- Is it realistic to try to provide an experience in which students learn both clinical knowledge and skills as well as systems?

REFLECTION / DEBRIEF
7. Did students have opportunities to reflect with you or someone else at the site about their experience?

OUTCOMES
8. What was the impact of the experience on the site / staff / patients?
    a. What was the value to the site / staff / patients?
    b. Any surprises about what students were able to accomplish?

SUPPORTING INFRASTRUCTURE / RESOURCES
9. What does the Medical school need to provide to ensure success and sustainability of working with early medical students in at your site?
    a. Human
    b. Financial
    c. Structural
    d. Time
    e. Other

10. Lessons Learned: Anything you would do differently next time? [IMPORTANT to acknowledge that this is a pilot – not expected to be perfect]
    a. Did the experience / project change at all along the way? In what ways (give examples)? What prompted these changes?
    b. What advice and suggestions do you have for Bridges curriculum leaders in planning a curriculum that includes early medical students as team members at clinical site?

Student Interview Questions (Phase 2 only)

DEFINITION OF AND ATTITUDE TOWARD SOWLEs; PERCEIVED VALUE OF SOWLEs ACTIVITIES
1. One of the goals of [name] Curriculum is to provide authentic Systems-Oriented Workplace Learning Experiences for students. What does a systems-oriented learning experience mean to you? [NOTE: if they are having trouble describing, suggest they give some examples of activities they might do in a systems-oriented workplace learning experience]

2. What value, if any, do you see in participating in a systems-oriented workplace learning experience as a medical student?
    [ASK EACH OF THE FOLLOWING]
    a. Which systems-oriented workplace activities were most interesting to you? Please explain. [NOTE: Asking this to try to understand more about student engagement]

    b. Which systems-oriented workplace activities were most valuable for your learning about systems/ QI? Please explain.
- PROBE if not mentioned: Did this change over time?

    c. Which systems-oriented workplace activities were least valuable for your learning about systems/QI? Please explain.
- PROBE if not mentioned: Did this change over time?

    d. Did you also have opportunities to learn clinical knowledge and skills?
- Can you provide some examples?
- How important was this to you?

3. How would you characterize the level of guidance (teaching, coaching, feedback) you received during your experience in the workplace – too much, too little, just right?

    a. Did this vary by task/activity?
- If so, which tasks required more guidance and which could you perform more independently?
- Were there times when you felt you needed more guidance?

    b. Did the level of guidance change at all over time? Please explain what changed.

4. How would you characterize the level of pro-activeness required for your workplace learning experience? (requires lots of pro-activeness, moderate pro-activeness, or low proactiveness to ensure learning)

    a. How did you feel about this level of pro-activeness? (too much, too little, just right) Can you give some examples of ways in which you were pro-active?

    b. How could the skill of pro-activeness be encouraged among future students?

5. How were the tasks and activities that you participated in selected? [To get at sequencing and scaffolding; If student doesn't know, it's okay but do make sure to ask if they had any choice in the activities.]

    a. PROBE if not mentioned: Who selected and was there any kind of rationale?
[e.g. Did you self-select or did someone tell you what to do or was it a combination / negotiation?]

PROJECTS – OWNERSHIP AND EVOLUTION

6. Many projects and experiences evolved over the 8 weeks of the program. Did the focus or goals of your project or experience change? Can you tell me a bit about that? What changed? What prompted the change?

    a. PROBE if not mentioned: Several students mentioned the need to set boundaries or focus their project and/or to give feedback to their supervisor. Did this come up for you?

- Can you give me some examples of time when this (setting boundaries, focusing, and/or giving feedback) came up and how you handled it?
- This might be an even bigger challenge for first year students who don't know what to expect. Any suggestions for helping them know what to expect?

7. Students had different types of projects this summer, in different phases of the project lifestyle, and different roles in the project. This might influence your perceived contributions to the project.
   a. To what extent did you feel a sense of ownership of your project? How important was this to you?
   b. What factors were most important for you to feel like the project could be mutually beneficial to the site at which you were working and to your own learning?

CURRICULAR DESIGN
8. Which of the following 4 categories (if any) would you characterize your site or experience as fitting into?
   1. Immersion in a system, focus on usual clinical skills
   2. Immersion in a system, focus on non-traditional clinical skills (health coaching, med rec)
   3. Immersion in a system, learning how the system works and where the gaps/problems are (problem identification, needs assessment – pre-intervention; OR evaluation of a intervention – post-intervention)
   4. Immersion in a system to help design, implement and/or evaluate an intervention

CLOSING QUESTION:
9. Is there anything else you would like to mention that wasn't covered in the interview?

Supplemental Digital Appendix 2

SOWLEs Design Template

The purpose of this template is to:
1) Collect a description of each student's or team of students' experience at a SOWLEs pilot site
2) Identify items that site leaders need to consider when planning and designing a SOWLEs at their site
3) Frame reflection on what works well and what needs improvement in subsequent iterations

The items in the template are based on key principles identified by Stephen Billett for successful practice-based learning experiences and on themes from interviews with site leaders and other faculty who direct SOWLEs-like experiences. The items are organized into three categories:
1) Preparation for workplace learning experiences
2) Workplace supports and experiences
3) Reflection, debriefing and feedback.

Students will be introduced to the template during the first week of the pilot program. They will receive instruction and guidance on how to complete the template and will have an opportunity to ask questions. Over the course of the pilot program they will work on completing the template. Each section will have target completion dates, but students will be able to fill in sections at any point and revise as they go along. Sections will be presented during weekly Works In Progress sessions. The information collected in the template will be supplemented with interview data collected from students, faculty, and staff and with observational data.

The final product resulting from the templates will be:
a) A completed template providing Key Findings and Recommendations that will be used to inform the next design cycle in the SOWLEs Curriculum. Site leaders and staff will not have access to the template. It will be reviewed by [Names] to identify themes, strategies and recommendations.
b) A description of the workplace learning experience provided by each site

Due Date	Key Considerations	Prompts	Data Collection Plan & Notes (who do you need to ask for this info, by when)	Student Findings (describe relevant information, reflections, examples)	Recommendations (keep, stop, start)
I. PREPARATION					
Ia. Preparing Sites / Clinical Settings					
6/25	1. How does the Bridges Leadership describe the purpose of the experience from the school's perspective?	Describe purpose(s) for student learning as well as purpose(s) for sites and/or for the School of Medicine.			
7/2	2. How does the site leader describe the purpose of the experience from the site perspective?	Describe purpose(s) for student learning as well as purpose(s) for sites (including faculty, staff, patients).			
7/2	3. What resources and training have been committed to the experience by the site and the school?	What resources and training do faculty and staff at the site need? Does the site or the school provide these resources?			
7/9	4. How does communication occur between sites, Bridges program, and students?	Schedule changes or updates			
7/9	5. What is the infrastructure to support systems-improvement efforts at the site ?	How invested in QI/PI are the people who work in the setting? What experience do they have with QI/PI?			

Due Date	Key Considerations	Prompts	Data Collection Plan & Notes (who do you need to ask for this info, by when)	Student Findings (describe relevant information, reflections, examples)	Recommendations (keep, stop, start)
		What approach (if any) do they use and how does that relate to the approach students will learn?			
Ib. Preparing Faculty Leads, Preceptors, Other Faculty & Staff					
7/9	6. How was buy-in from staff, faculty and administrators established?	How aware are site faculty, staff, and administrators of student's involvement at their site? How do they show support for the student's efforts?			
7/9	7. What are the roles and responsibilities of the Site Leader?	Some roles to consider: supervision, teaching, mentoring, soliciting and responding to feedback from students, faculty, staff			
7/16	8. What are the roles and responsibilities of Preceptors with respect to Bridges experiences? (if relevant)	Some roles to consider: supervision, teaching, mentoring, soliciting and responding to feedback from students, faculty, staff			
7/16	9. What are the roles	Some roles to			

Due Date	Key Considerations	Prompts	Data Collection Plan & Notes (who do you need to ask for this info, by when)	Student Findings (describe relevant information, reflections, examples)	Recommendations (keep, stop, start)
	and responsibilities of other professionals and staff in the workplace with respect to Bridges experiences?	consider: coaching or mentoring students, orienting students, participating in QI/PI efforts			
7/16	10. What information or training did faculty & staff need and receive about the Bridges experience?	Discuss what faculty and staff received as well as what they need			
Ic. Preparing Students					
7/16	11. What foundational knowledge / skills do students need prior to coming to the site?	What general knowledge / skills is most relevant and valuable prior to entering the workplace?			
7/16	12. What site specific / specialized knowledge and skills need to be learned at the site before beginning the work?	What site-specific knowledge / skills is most relevant and valuable to learn on first day in the workplace? Was this provided? How? If not, how could it be provided?			
7/23	13. What do faculty and staff at the site do to build upon student interests and prior experiences?	What knowledge, skills, experience, motivation do students bring to the experience? How does site personnel			

Due Date	Key Considerations	Prompts	Data Collection Plan & Notes (who do you need to ask for this info, by when)	Student Findings (describe relevant information, reflections, examples)	Recommendations (keep, stop, start)
		capitalize on these?			
II.WORKPLACE LEARNING & SUPPORTING LEARNING EXPERIENCES					
IIa. Scheduling					
7/30	14. What is the ideal schedule for the workplace experience?	Days, times, number of sessions Do students have continuity with faculty, staff and patients at the site? How important is this continuity? Would more, less, or the same be optimal?			
IIb.Design of Workplace Experiences					
7/2	15. What did faculty and/or staff do to create an inviting, or positive, learning environment for students?	What made it inviting (or not)? How could this be improved? Have first year medical students been at the site in the past?			
7/23	16. What site specific / specialized knowledge and skills needed to be learned on-the-job?	What site-specific knowledge / skills is most relevant and valuable concurrent with workplace experiences?			
7/23	17. What opportunities are there to interact with other learners in	Describe these learners (peers, residents, other			

Due Date	Key Considerations	Prompts	Data Collection Plan & Notes (who do you need to ask for this info, by when)	Student Findings (describe relevant information, reflections, examples)	Recommendations (keep, stop, start)
	the workplace?	health professionals) and how you interacted with each.			
7/30	18. How was your time at the site generally structured?	What did you do when you first arrived? What did you do during the day and who did you interact with? What did you do at the end of the day?			
7/30	19. Who guided or supported your learning?	This could be faculty and/or staff. For each person, describe what they did to guide or support your learning. If students were performing an activity new to the site, how was guidance provided.			
7/30	20. What was the progression and sequencing of activities during your experience?	Did you do the same or different things each time? Did the complexity of tasks increase each time?			
8/6	21. What missed opportunities for learning occurred at the	Examples – -no one had time / willingness to			

Due Date	Key Considerations	Prompts	Data Collection Plan & Notes (who do you need to ask for this info, by when)	Student Findings (describe relevant information, reflections, examples)	Recommendations (keep, stop, start)
	site?	explain or coach you through an activity; -at the time you didn't realize it was a learning opportunity			
IIc. Non-workplace activities					
7/30	22. What learning should be done outside of the workplace to support students' activities in the workplace?	Distinguish between things you do on your own vs. things required by the school. What motivates you to do this learning outside the workplace?			
IId. Communication / Feedback					
8/6	23. How are learners' experiences monitored?	What is the appropriate frequency?			
8/6	24. How was feedback incorporated?	Describe changes.			
III.	**REFLECTION / DEBRIEF**				
IIIa. Opportunities for Reflection / Debrief					
8/6	25. What are the opportunities for students to reflect upon / debrief their experiences	With site faculty and staff, with school faculty, with peers			
IIIb. Program Evaluation / Feedback					
8/13	26. What are the expectations for providing feedback to the site, to specific faculty and staff, and to				

Due Date	Key Considerations	Prompts	Data Collection Plan & Notes (who do you need to ask for this info, by when)	Student Findings (describe relevant information, reflections, examples)	Recommendations (keep, stop, start)
	the students?				
8/13	27. How is it determined whether the experience achieved the purposes and expectations identified by the Site Leader?				
8/13	28. How is it determined whether the experience achieved the purposes and expectations identified by the Bridges leadership?				
8/13	29. How is it determined whether the experience achieved the purposes and expectations identified by students?				