

Supplemental Digital Appendix 1

University of California, San Francisco Clinical Microsystems Clerkship Microsystem Design Workbook

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Preparing Your Microsystem/s

1. What is the microsystem/s where your students will be working?
2. What will be the role of the student in quality improvement (QI) or systems improvement (SI)? List specific learning objectives and learning activities for each improvement effort.
3. What resources are needed to support student engagement and how will the student access them?
4. Does a systems/quality improvement office exist at your microsystem? What is the SI or QI infrastructure external to the microsystem that students can connect with? How?

Preparing Other Faculty & Staff

1. Identify additional faculty and staff (at each microsystem) that will need to know about the incoming students. List their individual titles.
2. Identify additional faculty and staff that will be working closely with the students. List their individual titles.
3. How will the additional staff and faculty engage with the students? (i.e. orientation, supervision, coaching or mentoring, participation in QI efforts)
4. What faculty development is needed for these additional team members? What is the plan for engaging them in such development?
5. How will you inform these individuals about CMC, student's roles, and learning objectives?

Preparing Students

1. What microsystem-specific knowledge and skills do students need to learn on their first day(s)?
 - On-boarding requirements
 - Rules of the workplace
 - Patient population overview
 - Learning objectives for each QI or systems improvement effort.
 - Other
2. How will the students share any prior QI or SI experiences? How could this add value to the student's role within each microsystem?
3. How will students participate in selection of a QI or SI project if there is more than one option?

Scheduling

1. What is the schedule breakdown of a typical CMC day from the perspective of your students? (Include hourly breakdown from 8am-5pm, locations, day of the week, etc).
2. How will students have continuity with faculty, staff, and patients in the microsystem?

Design of the Workplace Experience

1. What will be done to provide a welcoming and inviting environment for students?
2. How will the students be integrated into the microsystem/s to contribute in meaningful ways?
3. How independently/proactively should the students act?
4. What knowledge and skills are students expected to develop while in the microsystem and who will guide this?
5. What other learners (peers, residents, other health professionals) will be in the microsystem and how will interactions be encouraged?
6. How will the students' time in the microsystem generally be structured?
7. What will be the students' progression of activities? What is the optimal sequence for these activities?
8. What clinical and systems-oriented activities will be incorporated?
9. Which important microsystem/staff meetings should the students attend? Do they fit with the students' schedule?
10. List the names and roles of faculty and staff responsible for guiding and supporting student learning in the microsystem.
11. If the microsystem supervisor is not directly available on site at all times, who will be available to the student?

Non-Workplace Activities

1. What learning will students do outside of the workplace to support their activities in the workplace?
2. How and how frequently will the microsystem supervisor check in on students' experiences?

Outcomes/Impact

1. What do you expect CMC students to get from their experience within your microsystem/s?
2. What do you expect CMC students to produce or contribute during the CMC experience? (Identify specific products, impact, or outcomes)
3. What information will you or the students collect as evidence of these contributions? (Think big data)

Opportunities for Reflection/Debrief

1. What opportunities will students have to reflect upon/debrief their experiences with peers?
2. What opportunities will students have to reflect upon/debrief their experiences with faculty/staff in the microsystem?

Supplemental Digital Appendix 2

University of California, San Francisco Clinical Microsystems Clerkship Coach Survey: Semistructured Interview Guide, 2017

Introduction:

Thank you for participating in this interview. We appreciate you giving us your time and sharing your expertise. We are asking you to take part in a research study being done by Monica Harbell, Descartes Li, Karen Hauer, Christy Boscardin and Edgar Pierluissi at UCSF.

Our goal is to understand how Bridges Coaches engaged early learners in quality improvement (QI) and systems improvement (SI) projects. During this interview, we will refer to QI and SI projects collectively as SI projects. This interview will last about 30-60 minutes and will be recorded and transcribed.

You can skip questions that you do not want to answer or stop the interview at any time.

We will keep the data we collect confidential, and we will not share your personal information with anyone outside the research team.

Being in this study is optional. **Please let us know if do not want to participate.**

In return for your time, you will be given a \$25 Amazon gift card. We will give you separate instructions on how to obtain the gift card.

Questions? Please contact Dr. Monica Harbell (Monica.Harbell@ucsf.edu) or Dr. Descartes Li (Descartes.Li@ucsf.edu). If you have questions or concerns about your rights as a research participant, you can call the UCSF Institutional Review Board at 415-476-1814.

Prior experience with teaching, with SI work

Describe your previous experience with SI work/training prior to becoming a coach.

Probes for further description:

- How experienced were you in conducting systems improvement work in the clinical environment in which you carried out the SI projects?
- How familiar were you with institutional SI efforts in your microsystem?
- How familiar were you with other individuals who play key roles in SI efforts in your clinical microsystem?

Describe your previous teaching experience with early medical students (MS1-2) prior to becoming a coach.

Probes:

- How familiar were you with MS1-2 medical students and their characteristics?
- How well did you understand their skills and prior knowledge?

Initial engagement

There are many potential ways to engage early learners in systems improvement projects.

What was your initial approach to engaging students in SI projects?

Probes:

- How were the SI projects initially conceptualized? Who was involved?
- Were the projects already developed before the students started?
- Did the students decide on which projects they would work on, or was it decided for them?
- How did you determine which student would work on a given project?
- Did you match students based on their backgrounds?
- How did you decide about what activities would be appropriate for first year medical students?

How did you teach systems improvement to your students?

- What teaching methods or tools were helpful in teaching SI?
- What teaching methods or tools were less effective in teaching SI?

Course of the SI project

How was the course of SI work over time for the students?

Probes:

- Can you describe a challenge your students encountered in their SI work? How did you respond?
- Did students compare their projects to other students' projects? Can you tell me about that?

Results of Project

Let's talk about the results of your students' SI work.

Can you tell me about impact of the projects on your clinical microsystem?

Probes:

- How did people react to the students and their work?
- What changes to the microsystem resulted from the students' work?

What did the students learn about systems improvement in your microsystem?

Probes:

- Which methods worked better? Which worked less well?
- What, if anything, surprised you about what the students learned?

Tell me about your students' attitudes about SI work over the year

Probes:

- Did their attitudes about SI work change over the year? If so, how?

Definition of Success

How have you assessed the success of your students' SI work?

Probes:

- What evidence do you use?
- What contributed to their successes?
- What contributed to any challenges?

Other questions

Now I would like to ask you to think into the future.

What advice would you give to incoming coaches about engaging students in SI projects?

Probes:

What areas would you like further training on to facilitate your role as a coach for systems improvement work?