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# Begin with the End in Mind: Designing and Implementing an Effective System for Evaluation and Feedback of Learners in Regional Medical Campus Residency Settings

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# Begin with the End in Mind: Designing and Implementing an Effective System for Evaluation and Feedback of Learners in Regional Medical Campus Residency Settings

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## Abstract

Developing an evaluation system within a medical education program can be daunting and confusing. The authors present a step by step approach, incorporating education theory, recent trends, and the many facets required by accreditation organizations.

## Introduction

Regional Medical Campus residency programs began documenting progressive achievement of *milestones* soon after the accreditation organizations propagated the new platform.[1,2] The work residency programs and their supporting organizations have done on defining the milestones and competencies is commendable; however, the effort required for an individual residency program at a regional medical campus to implement these can feel overwhelming.

Warm et al documented their experience and recommendations for mapping Entrustable Professional Activities into residency assessment and evaluation systems.[3,4] Their labors demonstrate the tension in making practical *all* items that must be accomplished within the parameters provided by accrediting bodies.

To add to these, here is one program's step-by-step approach built upon prior concepts. The purpose of this paper is to describe the 4 phases involved in creating and applying a complete system for the evaluation of learners in any regional medical campus clinical setting. By sharing these methods, educators will be able to: 1) identify and outline evaluation goals and expectations for learners, 2) develop written evaluations linked to these goals with descriptors that result in a "shared mental model" of entrustable professional activities, competencies, and milestones for learners and evaluators,[5] 3) parcel assessments into everyday clinical situations, creating calendars for evaluators and learners, and 4) implement evaluation sessions, providing face-to-face feedback through the ADAPT[6] or the R2C2[7] feedback model, and assessments using online evaluations.

## Creating the Evaluation System

A rule of thumb for educators and evaluation developers is summed up in Covey's "Seven Habits of Highly Successful People": begin with the end in mind.[8] For a program director, 2 end goals must be met. Our primary job is to develop residents into qualified physicians. Second, we must meet our accreditation requirements.

Throughout this paper, we use as an example the creation of an outpatient general internal medicine continuity clinic evaluation for residents. Our residents spend every fifth week throughout the year in this clinic. We will demonstrate our process by building a summative evaluation of their continuity clinic progress to be used twice yearly.

### Identify evaluation goals and expectations

Using the "Five W's" (where, why, what, who, when, and how), having already stated our *where* (i.e. GIM Continuity Clinic), next we identify:

- the *overall purpose* of this evaluation,
- the *content* being assessed,
- *who* will be the evaluator,
- what *timing intervals* are required or desired, and
- *how* the evaluations should be performed and the specific curricular requirements to be met.

First, we turn to our accrediting body to ensure we meet *their* requirements, building adherence into the daily tools we use.[9] Pulling verbiage from the accreditation requirements, we must assess our residents in *data gathering, clinical reasoning, patient management*, and *procedures*, by *direct observation* and *with feedback*. The timing is *at least semiannually,* with *multiple evaluators,* and must be *progressive*.

### Create the Expectations Document: Linking evaluations to learning goals

The next step is to create our Expectations Document to guide both the evaluator and the learner, and to know what suppositions will be tracked. It should provide: 1) answers to the questions above (the who, where, what, how, when), 2) a narrative description of the type of patient encounter to be observed, 3) a narrative description of the verbal feedback session that should follow the observed encounter, and 4) a

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sample of the expected written summative evaluation. The document should be written so that both parties, the evaluator and the learner, can read the same expectations and anticipate what ought to occur during the evaluation. Here is an example:

**Figure 1: Documenting Learner and Evaluator Expectations**

**Outpatient Clinical Evaluation: Data Gathering**
**Learner and Evaluator Expectations**

**Encounter Description**
**Location:** OU Internal Medicine Clinic
**Duration:** 20 minutes
**Frequency:** Once per semester in PGY-1 year
**Evaluator:** Pre-assigned clinic attending physician
**Educational Methods:** Direct observation, face-to-face feedback, written evaluation
**Goal:** Assess Internal Medicine Resident competence in gathering appropriate information from patient history and electronic medical record necessary for overall patient care for common medical problems in the ambulatory setting.

**Skills Assessed:** Data Gathering in the outpatient setting, including history taking for acute and chronic illnesses, review of medication list, review of medication compliance and allergy list, focused physical exam, complete physical exam, and review of records on EMR or other sources.
**Competencies Assessed:** PC-1, PC-3, MK-1, ICS-1, ICS-3, PROF-1, PROF-2, PROF-3, SBP-2, SBP-4

**Encounter Narrative**: A pre-assigned outpatient faculty evaluator will accompany the PGY-1 resident in a patient visit to directly observe the resident's competence in data gathering. Upon completion of the history-gathering portion of the visit, direct feedback will be given to the resident based on observed behaviors. A written evaluation of the resident will be completed by the evaluator within 48 hours.

**Expectations of the Learner:** The learner is expected to review the expectation documents prior to the day of the evaluation and be familiar with the skills that will be assessed during the encounter. The learner is expected to review the sample written evaluation prior to the encounter.

**Expectations of the Evaluator:** The evaluator is expected to review expectation documents prior to the encounter and be familiar with the content being assessed. The evaluator is expected accompany the resident during a patient visit to observe the data gathering portions of the visit and provide immediate feedback using the **ADAPT** feedback model (**A**sk learner for feedback on their performance, **D**iscuss observations, **A**sk for ways to improve, **P**lan **T**ogether on how to do things differently the next time) immediately following the observed interaction. The evaluator is expected to complete the written evaluation within 48 hours of the observed patient encounter.

## Create the Evaluation Form

To create the Evaluation Form, begin by sequencing each evaluation's timing in the overall training learning curve. To do so, answer the following checklist:

- Should the content areas be assessed *chronologically*?
- Must a trainee learn something basic (*novice level*) before learning new content (*knowledge building*)?
- Is mastering a certain *skill* required before learning others? Can the knowledge or skill be assessed at any time during training?
- At what *training intervals* is it appropriate to reassess?

To find the answers to these questions we must determine what is considered the standard "entry level" abilities. As reflected in the AAMC Entrustable Professional Activities for graduating medical students, primary care internal medicine interns begin clinic with *baseline competence* in data gathering, clinical reasoning, patient management, and general procedures of a physician.[10]

Next, data gathering is generally *mastered* prior to clinical reasoning and patient management and should be evaluated earlier during training. Procedures, however, occur *throughout* residency and may be assessed at any time. Finally, at least 2 evaluations in each area are necessary throughout the year to demonstrate *progressive* improvement. By knowing these parameters, an educator can design and sequence the evaluations: one evaluation form to be administered at least twice to show progression in each learning area as required by the accreditation requirements. The evaluation form will be populated with *knowledge, attitudes,* and *skill descriptors* (KAS), observable actions and behaviors expected of a licensed practitioner by the completion of training. For GIM Continuity Clinic, we approached our outpatient faculty to describe the KAS required to perform their job. Also, we mined the ACGME's 6 core competencies, subdivided into 22 milestones, as a major source of evaluative descriptors. We recommend no more than 6-8 descriptors per evaluation to avoid evaluator response fatigue. Our final 8 descriptors are in Figure 2.

**Figure 2: Selecting the 6-8 Evaluation Descriptors and the Competency Milestones They Meet**

**Overall Goal:** To assess Internal Medicine Resident competence in gathering appropriate information from patient history and electronic medical record necessary for overall patient care for common medical problems in the ambulatory setting.

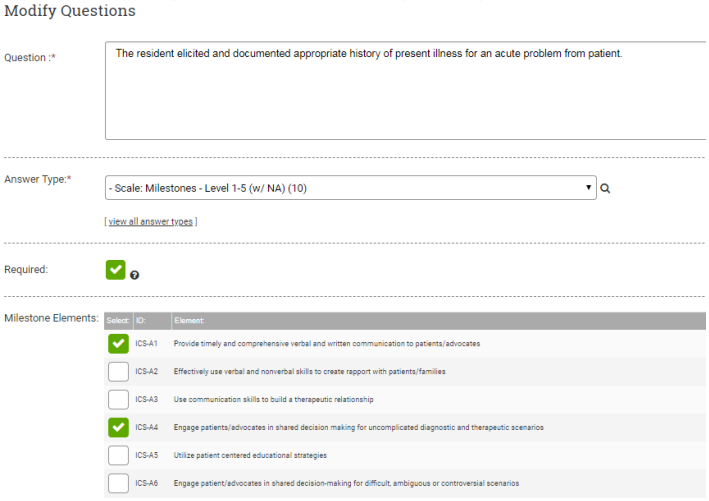
Objectives:

1. Elicit and document appropriate history of present illness for an acute problem from patient. → **PC-1, MK-1, PROF-1**
2. Elicit and document an appropriate history of a chronic disease and the recent management events from patient. → **PC-1, PROF-2, MK-1**
3. Elicit and document accurate medication history and recent/new changes from patient. → **PC-1, ICS-3, SBP-2**
4. Elicit changes in allergies and medication compliance with patient and document in EMR. → **PROF-2, ICS-3, SBP-2**
5. Communicate understanding of history elicited from patient. → **ICS-1, PROF-1**
6. Perform appropriate directed physical exam for an acute problem. → **PC-1, PC-3, PROF-3**
7. Perform an appropriate physical exam for a routine outpatient visit. → **PC-1, PC-3**
8. Review recent hospitalization, office visit, laboratory, radiographic, and consultative data in EMR. → **PC-1, SBP-4, ICS-3**

## Link Descriptors to Milestones

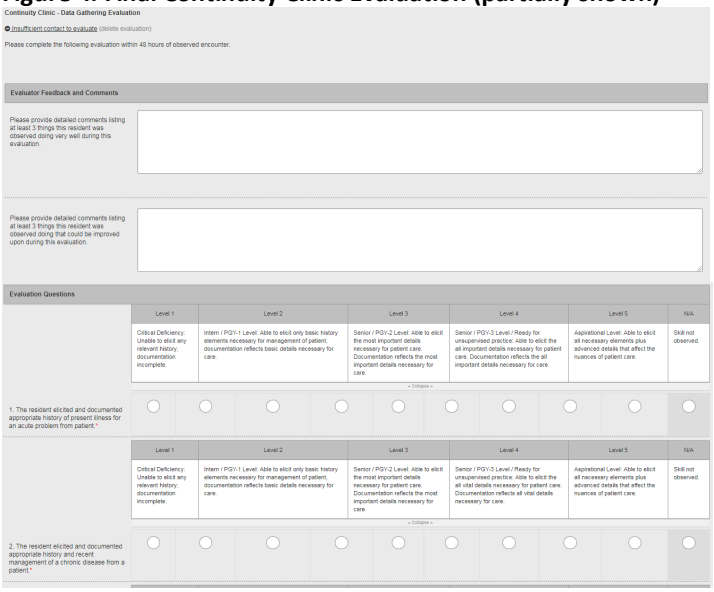
Next, the descriptors must be linked to specific competency assessment milestones.[11] This will be important for demonstrating to the accrediting body that the residency tracks competence in these areas. For instance, the descriptor "the resident elicited and documented appropriate history of present illness for an acute problem from patient" links to the PC-1 milestone for patient care "gathers and emphasizes essential and accurate information to define each patient's clinical problem." Looking further at other milestones, the descriptor also links to MK-1 for medical knowledge. Programs should link each descriptor to as many milestones as appropriate and maintain documentation of these links. See our example in Figure 3.

**Figure 3: Linking Evaluations to Competency Milestones**




As previously described, our accrediting body requires trainee evaluations demonstrate "progressive" learning: the lowest level for the novice learner and the highest for "aspirational competence." As the evaluation form is populated with the KAS descriptors, we use a 1 to 5-point scale grounded by progressive designations: "critical deficiency," "Intern/PGY-1 Level," "Senior/PGY-2 Level," "Senior/PGY-3 Level," and "Aspirational Level." A partial example of our final continuity clinic evaluation is shown below in Figure 4.

**Figure 4: Final Continuity Clinic Evaluation (partially shown)**




As each evaluation is developed, we maintain a Tracking Map demonstrating where each milestone is evaluated in a progressive fashion throughout the course of the entire residency. Our example of our Residency Milestone Evaluation Map in an early stage of documentation is seen below in Figure 5.

**Figure 5: Residency Milestone Evaluation Map**

IM Residency Rotation Milestone Evaluation Map

| Rotation | Milestone | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC1 | PC2 | PC3 | PC4 | PC5 | MK1 | MK2 | SBP1 | SBP2 | SBP3 | SBP4 | PBLI 1 | PBLI 2 | PBLI 3 | PBLI 4 | PROF1 |
| Intern Wards 1 | X | X | X | | | X | | X | X | | X | X | | X | X | |
| Intern Wards 2 | X | X | X | | | X | X | | | | X | X | | X | X | |
| Intern Wards 3 | X | | X | | X | X | X | | | X | X | | | | X | X |
| Intern Wards 4 | X | | X | | X | X | X | | | X | | | | X | X | X |
| Intern Night Float 1 | | | | | | | | | | | | | | | | |
| Intern Night Float 2 | | | | | | | | | | | | | | | | |
| Senior Wards 1 | | | | | | | | | | | | | | | | |
| Senior Wards 2 | | | | | | | | | | | | | | | | |
| Senior Wards 3 | | | | | | | | | | | | | | | | |
| Senior Wards 4 | | | | | | | | | | | | | | | | |
| Senior Night Float 1 | | | | | | | | | | | | | | | | |

Organized Implementation: Scheduling Evaluations

Creating an academic evaluation schedule is important, including *when* your evaluations are going to be administered, *which* evaluators are needed, *how many learners* you have, and *how many evaluators* are required. Sometimes, all portions of an evaluation may NOT be completed in one session and might require separating them into shorter mini evaluations.

For example, in our academic calendar during the first year, we assess interns on "data gathering" in the first 6 months, and again in the following 6 months; however, "clinical reasoning" will be assessed at the beginning of their second year and again at the beginning of their third year. Additionally, it may be advantageous to have one particular evaluator assess a resident's clinical reasoning at 2 to 3 different points in time to ensure the resident is progressing. Therefore, we maintain a chronological evaluation schedule. To achieve this, the evaluation appointment must be scheduled on individual evaluators' calendars. If evaluators are unaware that they are expected to evaluate a resident, it will not happen. We distribute our expectation documents prior to the scheduled evaluation sessions and set reminders. Reminders should be sent soon after the evaluation encounter if deadlines are not met and repeated at short intervals to ensure evaluators recall the resident's performance when completing the evaluation. We recommend providing faculty development sessions prior to asking faculty to evaluate your residents, training them in the ADAPT or the S2C2 feedback model.[12] Additionally, the faculty development should provide time for faculty to discuss the required skills and behaviors and the levels of performance for each post-graduate year to improve inter-rater reliability.

## Discussion

The time required to implement this system depends on the type and number of evaluations needed for a given training experience and whether only one person or a team is working on it. For a longitudinal evaluation of the Ambulatory Clinic Experience as described above, it required we consider learner advancement along the continuum of training. We require our faculty to "check out" each resident in the room in front of the patient, often reviewing their history,

exam, and assessments in real time with allowance for the progression through residency, so that interns provide us more detailed information in the room than third year residents. This provides each faculty member with a "daily" understanding and knowledge of how our residents perform. We believe this likely precludes a "game-day" change in how our residents behave.

We developed the evaluations sequentially, first for interns, then PGY2, then PGY3. The whole development process required 5-15 hours of work, resulting in 6 different evaluations for Ambulatory Clinic throughout residency. Overall, revamping the evaluation system for the whole residency is a large effort that warrants a team/committee to take this on with a one-year aim for completion.

## Conclusion

We believe the benefits of this system are substantial. First, it highlights the formative progression of a resident through training. Second, it ensures the training program is in compliance with accreditation regulations around evaluation and feedback. Third, it demarcates *where and when* resident milestones and competencies are expected to be achieved and demonstrated. Fourth, it results in greater objectivity in evaluations rather than subjective impressions of trainees by evaluating faculty. Finally, faculty assignments and clear expectations can be scheduled and tracked for the department.

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