Road Map: Threading sex and gender based concepts into an inter-professional clinical case exercise

Many health professions programs employ clinical cases as a way to enhance instruction. When optimally structured, they engage the learner to apply knowledge and to problem solve. Clinical cases not only provide relevant examples of scenarios students are likely to encounter in professional practice, but they represent a teaching format that is easily adaptable to a variety of learner environments.

Within a single health profession's curriculum, a clinical case is likely to focus on teaching points specific to that profession's practice. Therefore, within an academic health sciences center, or other community of inter-professional learners, it is plausible that each program may simultaneously maintain archives of clinical cases that overlap with other programs in terms of topic focus, yet differ in terms of the expected learning outcomes.

In addition, while it is common for the example patients in clinical cases to be assigned a sex or gender identity, many cases do not emphasize the importance of that designation as part of the exploration of the case.

This guide provides instruction for adapting clinical cases to an inter-professional group of learners. While cases can be written from scratch for this purpose, this guide will provide suggestions for adapting existing program-specific cases to an inter-professional audience.

Further, this guide will provide suggestions for threading sex or gender concepts into the case presentation, the instructor's facilitation of case discussion, or the rubrics for assessing the group's case performance.

Basic elements needed for adapting a clinical case for an inter-professional audience

Adapting a clinical case for an inter-professional group of learners involves two main tasks:

1) The first involves identifying core, or at least common, learning outcomes that are shared between two or more, or possibly all, participating members of the group. These should be delineated from learning outcomes that are profession-specific.
2) Designing case elements and associated rubrics focused on group interactions

The separation of these two tasks serves a couple of important purposes:

- If we acknowledge that, in any given clinical case, it is likely that the learning outcomes will focus on both knowledge and group skills, it will quickly become apparent that it is the knowledge based learning outcomes that are most likely to be divided into two areas – those that are core to all and those that are profession-specific. (Alternatively, learning outcomes related to group skills may better lend themselves to all professionals.) A case can, and arguably should, include both common and specific learning outcomes. However, it will be important to distinguish between the two, as the distinctions have implications for how the group spends its time and effort and how assessment rubrics are structured.
  Example: Consider a team of instructors drafting a clinical case in which a patient will receive IV vancomycin to treat an infection. The group may decide that knowing the side effects of this drug will be relevant to all learners in the group, as multiple professionals interacting with that patient would need to recognize clinical manifestations of an adverse effect that should be reported back to the team. However, it was determined that learning outcomes related to a specific adverse outcome, "Red man's syndrome," were most relevant to those members of the team that would be involved in recommending/ordering an infusion rate or physically administering the infusion.
  With this in mind, the instructors can craft both the case and rubrics that guide the case facilitator in how to approach each. Common learning objectives should be seen as required elements of case discussion, whereas specific learning objectives could be considered "augmenting" elements. Augmenting elements are still important; in fact, they can be an excellent source of insights regarding what each type of professional can contribute to care; however, the form they take in a given group's discussion would be allowed to be flexible.

- If we also acknowledge that the purpose of delivering an exercise to an inter-professional group of learners is about more than just the therapeutic aspects of the case, there will need to be imbedded techniques for case delivery and assessment that focus on group skills and perceptions. In part, this is about stimulating discussion between group members and observing the negotiating and problem solving skills of a diverse group, but this is also about identifying attitudes and behaviors related to perceptions about inter-professional roles and gauging any changes in these as a result of participation in the activity.
  Example: Consider a group of learners interacting with the completed case described in the previous example involving vancomycin. The pharmacy learner in the case performs pharmacokinetic calculations resulting in a recommended dosing interval of 36 hours. However, the nursing and physical therapy learners in the case identify logistical difficulties in coordinating the timing of infusion around scheduled therapy activities. What interpersonal and problem solving behaviors could be observed regarding how the each learner presented the points specific to their perspective and how a final resolution was negotiated?
  Case elements asking learners to reflect on learning they gained from having access to other professions, and rubric elements that evaluate how inclusive the discussion was for all participants are just two examples of group learning that can be captured.

  Sex and Gender Considerations: In each of the above examples, there are opportunities to further probe learners to consider whether sex or gender would make a difference in the answer or approach. Sex can be threaded into a case by not only assigning the patient a male or female designation but also by giving the patient characteristics that influence their risk of

disease or outcome based on an aspect of their biology. Gender can be threaded into this element by giving the patient characteristics that influence their experiences with care as a result of their gender.

- To do this, case authors can identify published literature delineating how sex influences risk of developing the disease or alters the pharmacokinetics or dynamics of the therapy used to treat the disease. Based on this, the case author might choose to include elements in the patient case data that could be fodder for learner discussion of this literature as they work with the case. Similarly, the case author might identify literature that delineates how gender affects symptom reporting behaviors or access to care or health coverage. Again, the case author might choose to include elements in the patient case data that might prompt learner discussion on these points.
- The case facilitator should observe the group interaction to identify whether sex or gender considerations are discussed. If not, the facilitator can probe the group at each step with questions like, "How does this patient's sex affect their risk for the disease?", "Does this patient's gender affect how some aspect of care can be accessed or delivered?", or "Is there data to show that the magnitude of treatment response would be different because of sex?". The answer to the question, "Does gender make a difference?" might be "no" (or at least "unknown, due to paucity of data"), but it is important for the learner to consider it at each step of the process.

Principles of case design and delivery

In order for a clinical case to fully simulate the experience of problem solving in clinical care, it should be structured in a manner that requires the learner to work through all the steps of gathering subjective and objective data, assessing the problem, and formulating a plan. In many classroom environments, clinical cases are written in such a way that the relevant subjective and objective data is already compiled and provided in a vignette. In some cases, the vignette may include both relevant and irrelevant details to allow the learner to practice the step of identifying the data most germane to their problem solving. However, even if this is true, in a case written for a specific health profession's audience, the data provided is still likely to be geared to support specific problem solving in a focused area. In addition, there are aspects of clinical problem solving that are lost when the data is provided. This may be completely acceptable if the main learning objectives involve assessing the problem or formulating the plan (determine the diagnosis, recommend an appropriate therapy). However, consider the additional learning objectives that are possible when the learner must seek the data and evaluate its source:

- Which data is needed by which health professionals? Which data is needed by many/all health professionals?
- What is the best source for the data needed? The clinical record or the patient / responsible party encounter?
    - If the source is the clinical record, what section of the record would the data come from? Who would provide it? Can the learner interpret the terminology that the other

professional employs? Is the needed data available? Is it complete? Legible? Timely? If not, is it still relevant? Or are there other sources to obtain the necessary information?
    - If the source is an encounter with the patient, what assessments need to be performed or what questions need to be asked?
- When the needed data is not available, how should the learner proceed? What data can be assessed on their own, and what data would need to be clarified by a peer health professional?

Because optimizing the delivery of team care is such an important outcome of inter-professional learning, the learning points described above are incredibly important elements of inter-professional case learning. Understanding that much of health care delivery occurs asynchronously (even for care delivered within a single venue) inter-professional team behaviors are not only about the interpersonal interactions that occur face to face, they are also about data each health professional documents and how that data will be used by peer health professionals. It must be appreciated that retrospective documentation to satisfy regulatory or billing requirements is only part of the reason for clinical documentation. The other part reason is prospective communication to other team members to facilitate common understanding of the patient's needs and plans. It is vital that each health professional understand how other health professionals use this data and whether their documentation behaviors are optimally serving that need.

Based on the above premise, this guide poses a hierarchy of teaching potential with various forms of clinical cases:

1. Single-profession cases delivered to inter-professional learners
   This option is the easiest to create and deliver, but is also the most limited in terms of learning outcomes. A case such as this may not even require rewriting but, rather, uses an existing case written for one professional and invites members of another profession to participate in the discussion. The benefit of this option is that it showcases for the "visiting" professionals the specific processing, data sources, and considerations employed by the professionals for which the case was written.
   Example: Consider a case in which a male patient with peripheral neuropathy associated with diabetes now requires therapy in a Medicare Part A SNF following hip fracture. The case as originally written was designed for occupational therapy students, but medical students are invited to participate. In the case, the patient's progress with physical therapy has plateaued because orders for weight bearing status have not changed. In the meantime, the occupational therapist has been asked to report what gains, and what potential for future progress, the patient has with activities of daily living to determine whether the patient continues to be eligible for SNF care.
   By participating in a case written for occupational therapy learners, the medical learners may not only observe distinctions between physical therapy and occupational therapy but may also glean insights with respect to how assessments and orders by the physician affects therapy progress and funding eligibility. However, while the medical learners may actively participate in the discussion, it may be that the primary source of learning for the visiting professional is listening to or observing the problem solving of the occupational therapy learners for whom the case was written.
   Sex and Gender Considerations: Sex or gender can be threaded into this by including variables in the case that influence care provision or outcomes.

Example: If a female occupational therapist must provide education to a married male patient regarding adaptive techniques to accomplish lower body dressing, there may be an opportunity to discuss whether it can be advantageous to extend an invitation to provide the training to the patient and his wife.

2. Multi-profession cases delivered in vignette form

   These types of cases can be more challenging to write than they may first appear. Not only must they contain enough background information in the vignette to provide each type of learner the data necessary to problem solve, but they also need to be carefully reviewed to ensure the absence of language or data that may be conflicting, missing, leading, or misleading. Therefore, this type of case requires inter-professional authorship and review and requires an a priori agreement about what learning objectives are considered required learning for the participating learners.

   Example: The physical exam portion of a case describes a patient as underweight and malnourished. For some learners, having this interpretation provided may not detract from the case learning as it serves as background information; however, there may be other learners for whom their contribution to the case would be to assess the appropriateness of the weight and nutritional status.

   Example: A case involving a patient with uncontrolled hypertension provides a list of prescribed medications but no data evaluating medication adherence. The case authors may have anticipated that the learner action would be to adjust the dose of the antihypertensive medication or add an augmenting antihypertensive drug. However, if it was not anticipated that a pharmacy learner would evaluate adherence, the case may lack pertinent data such as refill history, pill count, or patient report of adherence.

   It must be determined in advance which types of learners will be participating in the case and what their expected learning outcomes will be. Otherwise, it may prove potentially frustrating for learners. In this situation, a learner can point out incongruities from their perspective or describe what kinds of information they would have needed to optimally contribute, but this is not quite the same as providing the opportunity to demonstrate that contribution.

   Sex and Gender Considerations: In either of the above examples, sex or gender could be emphasized if the case facilitator asked how sex might influence the assessment of ideal body weight or nutritional status or if sex might have contributed to a blunted/augmented pharmacokinetic or dynamic response to the antihypertensive chosen.

3. Multi-professional cases using simulation techniques

   The optimal and most interactive format for inter-professional case learning involves open ended cases with ill-defined problems, where each learner will have to either observe a patient encounter or navigate a clinical record (or both), determine the data relevant to their perspective, and share those observations with the group.

   - Videos of patient encounters allow learners to observe patient presentations and assessments.
   - Simulated patient encounters, using either mannequins or actors, are even richer experiences allowing the learner to perform their own assessment or formulate their own questions.

- Similarly, simulated patient records, either in the form of individual documents (history and physical documents, lab reports, or other clinical notations) or in the form of an interactive paper or electronic medical record, allow the learner to explore data as it would appear in professional practice.

While these elements may seem labor intensive to create, in some ways they provide fewer opportunities for case authors to make the mistake of focusing the case too much toward a specific audience or writing leading interpretation into the vignette. A group of inter-professional authors could each supply and review the elements that their respective profession would either contribute, or work with, in a real patient encounter. With all the patient data in raw form, a variety of learners could interact with a well written case with little adaptation as the mix of learners changed. One a priori decision that should be made, however, is to determine whether the data provided will represent ideal circumstances, with all of the data in its most complete and easy to navigate form, or real world circumstances where each learner would have most information needed but experience some gaps, or perhaps even include imbedded, intentional errors that a learner must catch.

Sex and Gender Considerations: Sex or gender can be threaded into both simulated patient encounters and simulated medical records. Simulated encounters may be an especially opportune medium to display ways in which gender influences interpersonal interactions. In the same manner as with a case vignette, biologic influences of sex on risk of disease or response to therapy can be imbedded in the clinical records data.

To accomplish the above, simulated encounters can be created by extracting the data from the "History of Present Illness" and "Review of Systems" sections of a typical vignette and reformatting these into a script of dialogue (or scripted responses to anticipated learner questions). Case authors should review the other sections of the vignette to anticipate questions that might arise. For example, the medical record may document an allergy to codeine, but the learner may ask the patient "What did you experience when you took codeine?" Choices about whether to include this as dialogue in the patient encounter or script responses for direct learner questioning can then be made.