



Internists, pharmacists, and psychologists on learning teams: An interprofessional team-based learning experience in graduate medical education



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A B S T R A C T

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Background: Curricula in graduate medical education should include active learning, enhance critical thinking skills, and promote team-work. Team-based learning (TBL) is an active learning strategy shown to improve both test scores and participants' attitudes about teamwork.

Purpose: We sought to determine the feasibility of using TBL to enhance the ambulatory education of medical residents, pharmacy residents, and psychology graduate students. These learners often manage outpatients in parallel, but rarely have the opportunity to learn together in teams.

Method: We delivered three interprofessional TBL modules over the course of one academic year. We assessed learners' self-perceived improvements in knowledge, skills, and attitudes related to the objectives of each module, using a retrospective pre-post survey.

Discussion: Learners reported improvements in their knowledge, skills, and attitudes after each modules.

Conclusions: Interprofessional TBL appears to improve learning and participants' perception of managing patients in teams. Challenges include the time to develop modules and coordinating schedules for interprofessional learners.

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Graduate medical education (GME) curriculum development presents many challenges: the need for practices informed by adult learning theory, the requirement to deliver patient management content, and the importance of teaching information management skills and fostering critical thinking. Team-Based Learning (TBL) is a strategy that has the potential to solve many of these challenges.[1] TBL is a prescribed active learning methodology that consists of several discrete components: a preparatory work phase where learners review selected foundational material (such as a textbook chapter); a readiness assurance phase where learners take a quiz on this foundational knowledge, first individually and then with their

assigned learning team; and, finally a group application phase where learning teams work together to solve complex problems that require them to apply the facts or skills they have mastered in the preparatory and readiness assurance phases.[1]

This instructional strategy is associated with improved test outcomes, enhanced problem-solving, and improved attitudes toward teamwork, making TBL an attractive instructional strategy for GME.[2] TBL is mostly utilized at the undergraduate medical education (UME) level as an alternative to traditional lectures and has not been extensively evaluated at the GME level. It is even less described as a method to introduce interprofessional education in GME. Interprofessional education and collaboration are becoming increasingly important competencies at both the UME and GME levels.[3–5] Creating interprofessionally trained primary care providers will be critical as providers find themselves managing increasingly complicated patients with significant pharmacologic and biopsychosocial elements affecting their health.[6,7]

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While internal medicine GME trainees do occasionally interact with pharmacists and psychologists to complete parallel patient care activities (e.g. such as when the same panel of patients are referred to pharmacy and psychology providers in the same outpatient practice), coordinated educational activities with all of these disciplines is uncommon. Growing out of an interprofessional outpatient continuity residency clinic where pharmacists, psychologists and physicians manage shared patients, our institution developed a series of team-based learning (TBL) activities with learning teams composed of medical residents, pharmacy residents, and clinical psychology doctoral students. The goal of this series was to foster interprofessional collaboration by focusing on ambulatory topics encountered by trainees in all of the represented fields. We describe here the implementation and evaluation of three TBL modules on conditions best managed by a team: dementia, delirium, and depression in the geriatric patient; chronic non-cancer pain; and obesity. At the conclusion of each TBL module, learners completed a retrospective pre-post self-assessment on the stated learning objectives. All TBL module materials are available on MedEdPortal.

Format

Each of the TBL modules in the series was developed collaboratively by faculty content experts from all three disciplines. A planning committee consisting of both content and TBL facilitation experts from each of the three fields of practice, collaboratively developed the learning objectives, readiness assurance questions, and group application exercises for each module. To prepare for each module, facilitators sent participants pre-reading assignments in advance (preparatory work). Readings consisted of topic-related guidelines or review articles. Facilitators ensured all learning teams included at least one pharmacy and one psychology trainee in addition to the five to seven medicine learners. During the session, teams completed a quiz on the reading, first individually and then as a team (readiness assurance test), followed by facilitated discussion of interactive cases requiring complex patient care decisions (group application exercises). Each case was constructed to require input from all professions in order to develop an appropriate answer. A total of three sessions were held in the interprofessional series during a single academic year.

Haidet et al have recommended that educators report the following details when publishing curricula related to the implementation of a TBL module: context and scope, team formation, readiness assurance process, incentive structure, peer review, and session sequence.^[8]

We report here those details of our TBL curriculum:

Context and scope

The TBL modules were designed to be administered at the GME level and are written at that level of complexity. Each module is designed to take approximately 2 h to complete. The modules may be completed in any order by the instructor and do not need to be done sequentially. Each module is an independent topic and does not require knowledge from the other modules in order to be completed by the participants. As such, they may be used alone or in any desired combination suitable to the instructor's needs.

Team formation

Teams consisted of residents of all levels (post-graduate year one through three), at least one pharmacy resident (post-graduate years one and two), and at least one psychology graduate student. Medical and pharmacy students were permitted to sit in on teams but were not included in the program evaluation.

Readiness assurance process

Participants were sent the preparatory reading assignment about 1 week in advance of the TBL session. As a general rule, reading assignments consisted of guidelines or review articles focused on the topic to be covered.

Incentive structure

All participants were post-graduate learners and therefore there was no formal grading structure; learners are, however, required to attend conferences as part of their professionalism requirements.

Peer review

We did not use a systematic method of peer evaluation in association with these TBL modules. We chose not to do this at this time because each TBL session is unique and teams remain together for only a single session in this model.

Session sequence

Each TBL session was set in the context of an “academic afternoon” in the residency program where a block of 2 h was available for instruction on the topic to be covered. The following is a representative timeline of a typical session: 15 min for introductions and team formation; 10 min for the individual readiness assurance test; 20 min for the group readiness test; and 70 min for group application exercises and wrap-up. All group application exercises were based on a case vignette and followed by either a question requiring a specific response (either multiple choice or “listing” type questions). All groups answered the same questions and were encouraged to report answers simultaneously.

Target audience

Internal medicine residents (PGY 1–3), pharmacy residents (PGY 1–2), psychology graduate students.

Objectives

Module 1: dementia, delirium, and depression

Attitudes

1. Assume responsibility as a provider for developing a non-biased attitude toward patients with delirium, dementia, and depression.
2. Embrace and recognize the necessity of a team-oriented approach toward patients with delirium, dementia, and depression.

Knowledge

1. Recognize risk factors for delirium, dementia, and depression in geriatric patients.
2. Differentiate between delirium, dementia, and depression in geriatric patients.
3. Recognize the utility of common practice tools for assessing patients with delirium, dementia, and depression (e.g. CAM, Mini-Cog, GDS, and PHQ-9).

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