

- Improved ability of program director to identify residents of concern, and to intervene sooner via:
  - Individual meetings
  - Meetings with mentors
  - Mandated time off
  - Employee Assistance Program appointment
  - Appointment with hospital clergy
- More rapid identification of scheduling or service issues, enabling quicker solutions
- Ongoing ability to monitor the well-being of the chief residents, who absorb a significant burden of the residency stress
- Chief residents expressed appreciation for the quick proactive approach to handling the residency program during the crisis response

The applicability of the scrum model could be nearly universal in training programs experiencing all manner of crises. The expense to the residency and institution was minimal, as the time spent in the scrums amounted to 10 minutes per day and was estimated to save time in individual meetings that would have occurred throughout the day otherwise.

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# Development of a Novel Hospital Medicine Team-Based Learning and Simulation

## Conference Through Rapid Cycle Quality Improvement

### Setting and Problem

Inpatient medicine requires strong teamwork, yet there is a paucity of educational interventions to develop these skills. Additionally, residents often encounter high-stakes clinical scenarios involving decompensating patients with pathology they may not have managed previously. These scenarios often involve an interdisciplinary rapid response team and leave little room for error. We took an iterative approach in the development of a novel hospital medicine conference that fosters the application of medical knowledge and improves teamwork skills during acute clinical scenarios utilizing quality improvement methodology.

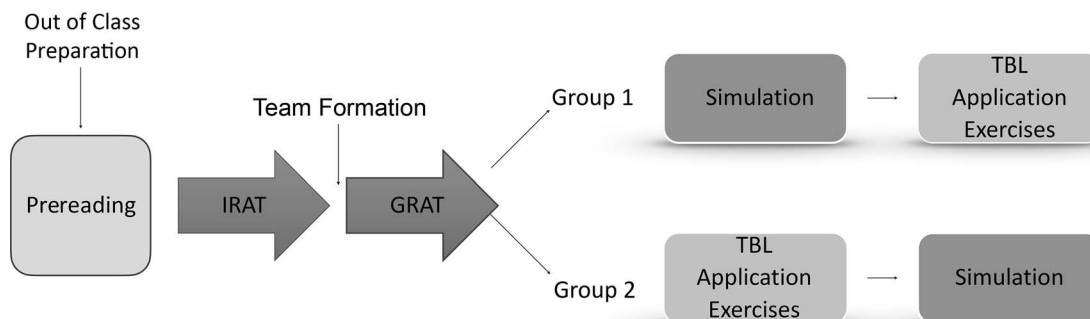
### Intervention

A 60-minute hospital medicine conference was developed combining pedagogic approaches from team-based learning (TBL) and simulation for managing clinical scenarios in the acute care setting (FIGURE). The pilot occurred over 3 sessions and included medical students and postgraduate year 1–3 internal medicine residents; the topics included transfusion reactions and status epilepticus. Each session utilized the simulation center, a conference room, and 2 faculty members—one moderating the simulation room and one moderating the TBL room.

A week before each session, learners were assigned prereading. At the beginning of each session, learners were split into 2 groups, with half starting in the simulation center and the remainder starting in the TBL room.<sup>1</sup> The TBL room first completed a multiple-choice question test known as the Individual Readiness Assessment Test (IRAT). They were then divided into small groups to discuss the same multiple-choice question known as the Group Readiness Assessment Test (GRAT). While in these groups, the TBL learners completed clinical case exercises requiring them to develop differential diagnoses and discuss medical management as a team. Simultaneously, simulation learners managed an unstable patient and then the learners switched rooms.

Combining TBL and simulation in a conference provided a novel experience that enhanced adult

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**FIGURE****Structure of 1-Hour Conference**

Abbreviations: IRAT, Individual Readiness Assessment Test; GRAT, Group Readiness Assessment Test; TBL, team-based learning.

learning. Through the TBL component, learners applied their knowledge by solving clinically relevant problems in teams. The simulation component allowed learners to receive feedback on their medical decision-making.

### Outcomes to Date

Through quality improvement methodology of plan-do-study-act cycles, this conference structure was optimized. After each session, learners submitted anonymous feedback through a post-survey that included open-ended questions asking them to identify the most and least effective portions of the session. Faculty debriefed after every session and made formative adjustments to the session structure based on learner feedback. Our first improvement cycle focused on changing the timing of team formation, our second cycle decreased the number of questions in the IRAT/GRAT, and the third cycle decreased the number of TBL exercises.

A total of 40 learner surveys were completed over the 3 sessions (session 1:  $n=13$ , session 2:  $n=13$ , session 3:  $n=14$ ); approximately 4 to 6 medical students participated in each session, but were not asked to identify themselves separately on the survey. Three questions were assessed in addition to the open-ended feedback. Question topics included (1) learner preference for TBL/simulation versus traditional lecture; (2) learner engagement; and (3) learner comfort level in caring for the clinical condition in the future. Post-survey results suggest that 92.5% (37 of 40) of learners agreed or strongly agreed that they preferred this style of conference over a traditional didactic lecture, 82.5% (33 of 40) agreed or strongly agreed that they were engaged, and 97.5% (39 of 40) responded that they felt at least moderately comfortable managing these acute clinical care scenarios.

Results suggest this conference may increase learner engagement and may be preferred over a traditional

didactic lecture. It also may increase learner comfort managing acute clinical scenarios in hospital medicine.

Future goals include adding interprofessional learners to teams (eg, pharmacy, nursing) and expanding curriculum topics. This innovation will have additional evaluations to assess its effect on interprofessional learning in hospital scenarios and whether it has applicability to other specialties.

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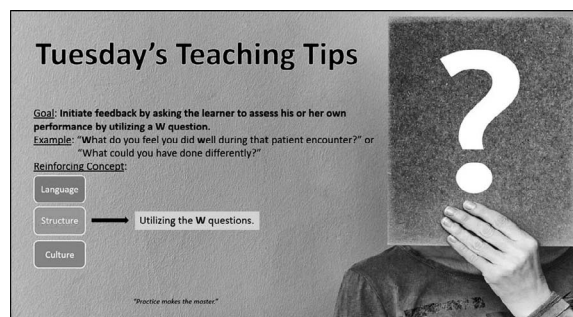
# Tuesdays Are Great for Teaching Tips: A Spaced Education Strategy for Faculty Development

## Setting and Problem

Annual faculty development programs structured to improve knowledge, skills, and behaviors of faculty as educators is one of the required Accreditation Council for Graduate Medical Education topic areas for core faculty. Difficulty in meeting faculty development requirements is consistently reported in the literature due to competing workload requirements. The COVID-19 pandemic has increased the challenge for faculty to attend faculty development sessions and while the use of virtual sessions has skyrocketed, so too has “Zoom fatigue.” We sought to develop an innovative faculty development program via email utilizing spaced education as a strategy to reimagine delivering course content with evaluation and feedback as our first topic.

## Intervention

Spaced education suggests that when information is presented and then repeated in small intervals (spacing effect) versus a bolus of information, knowledge, skills, and behaviors are more easily retained and available for use. Building off Pernar and colleagues who sought to utilize spaced education with surgical interns to improve teaching skills with medical students by emailing weekly statements for a year regarding effective teaching strategies, our Tuesday’s Teaching Tips (TTT) program had several differences. First, our program targeted faculty teaching residents or fellows and was developed as a 14-week encapsulated course and approved for continuing medical education (CME) credit. Further,



FIGURE

Example of Tuesday's Teaching Tips

we (1) focused our teaching topic on evaluation and feedback only and relevant for faculty of all specialties; (2) developed a foundational 14-minute micro-lecture recorded on a green screen; (3) revamped and developed emailed spaced education statements using visuospatial triggers to assist with encoding and connection back to the micro-lecture; (4) required faculty to “accept” the email for attendance tracking; and (5) asked faculty to complete a course evaluation and a reflective statement regarding perceived benefits they experienced as part of the program. Faculty were required to complete the micro-lecture, attest to practicing 80% of the course (weekly statements) with trainees, and submit their course evaluation and reflective statement for full CME credit (partial CME credit could also be awarded). Evaluation and feedback statements were adapted from Pernar et al and the literature by one physician expert in clinical teaching and reviewed by a doctoral educator who also designed the visuospatial cues. Emails were sent out each Tuesday morning via an automated list serve of participants between February and May 2020, amid the COVID-19 shutdown (FIGURE).

## Outcomes to Date

A total of 84 faculty across 15 specialties signed up for the course; 64 completed the first week of watching the micro-lecture, and 31 completed the entire course. Course evaluations revealed that 98% of faculty rated the program as good to excellent, 98% felt the information gained would enhance patient care or medical education, 97% had moderate (22%) to high confidence (75%) in implementing changes in their teaching, nearly a third thought COVID-19 affected their ability to fully participate in the course, and 100% reported wanting more TTT courses. The majority of narrative comments were very positive, and included “was wonderful,” “great format,” “prompted me each week to think

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