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Fitting It All In: An Interactive Workshop for Clinician-Educators to Improve Medical Education in the Ambulatory Setting

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Abstract

Introduction: Despite the demonstrated benefits that ambulatory teaching has for patients, learners, and preceptors, there have recently been significant reductions in time allocated to bedside teaching. In response to this decline, multiple techniques have been developed to improve the ability of clinician-educators to teach effectively within busy learner-focused continuity clinics. **Methods:** This 90-minute interactive workshop helps participants improve their ability to effectively teach in the ambulatory care setting. The session opens with learners exploring the benefits of and barriers to ambulatory teaching within their unique environment. Two evidence-based techniques are then presented: the Five Microskills model and Summarize, Narrow, Analyze, Probe, Plan, Select (SNAPPS) model. Participants analyze videos depicting these techniques, then practice in structured role-plays. Participants then revisit their initial reflections and discuss ways to both overcome common challenges and integrate the newly learned skills into their roles as clinician-educators. **Results:** This workshop has been presented five times at academic medical centers, at a medical school in the U.S. during departmental and divisional grand rounds, and at an internationally attended medical education conference. Institutional survey data are available from 98 learners. Over 90% of respondents rated the session very good or excellent. Comments suggested the need for more detailed techniques to overcome barriers and additional time for practice. These suggestions have been included in the current session. **Discussion:** This interactive workshop is designed for clinician-educators in ambulatory medical education. It has been well received in a variety of national academic settings and modified to be applicable in a variety of educational environments.

Keywords

Ambulatory Education, Outpatient Education, Five Microskills, SNAPPS

Educational Objectives

By the end of this session, learners will be able to:

1. Identify common barriers to effective teaching in the ambulatory setting and develop practical solutions to these barriers.
2. Demonstrate specific teaching models that enhance efficiency in the ambulatory setting, ensuring essentials such as critical thinking and feedback.
3. Discuss the differences and similarities between common precepting techniques.

Introduction

Decades ago, when patients were cared for primarily in the inpatient setting, bedside medical education existed almost entirely in the hospital. Although such bedside teaching improved learning for students and trainees, with recent health care changes and the shortening of hospital stays, the focus of patient care has shifted to the ambulatory setting.¹⁻⁴

Ambulatory care can be defined as patient care that occurs without the patient being admitted to the hospital and may be delivered in a variety of settings, including hospital-based clinics, outpatient offices,

Appendices

- A. Ambulatory Teaching Slides.pptx
- B. Unstructured Approach Video.mp4
- C. Unstructured Approach Script.docx
- D. Five Microskills Video.mp4
- E. Five Microskills Script.docx
- F. SNAPPS Video.mp4
- G. SNAPPS Script.docx
- H. Role-Play Handout Case 1 .docx
- I. Role-Play Handout Case 2 .docx
- J. Optional Role-Play Cases .docx
- K. Facilitator Guide.docx
- L. Model Evaluation Form .docx

All appendices are peer reviewed as integral parts of the Original Publication.

and home visits. When ambulatory care is delivered by a learner (including medical students, residents, and fellows), a triad of ambulatory teaching exists between the patient, the learner, and the preceptor. The preceptor is therefore responsible for balancing both the care of the patient and the education of the learner. Although ambulatory teaching has been shown to benefit patients, learners, and preceptors, because of time constraints, space limitations, increased demand for paperwork, and many other challenges, ambulatory preceptors have encountered many difficulties providing effective bedside education for learners.^{5,6} In response to this increase in ambulatory-based education and the documented challenges, multiple techniques have been developed to improve the ability of preceptors to teach learners effectively in their busy continuity clinics.

Five Microskills and Summarize, Narrow, Analyze, Probe, Plan, Select (SNAPPS) are two techniques that have been well validated to improve clinical teaching in the ambulatory setting. Five Microskills allows the preceptor to diagnose both the patient and the learner while teaching a selection of clinical pearls targeted towards the learner's level of knowledge and clinical reasoning.⁷⁻⁹ SNAPPS is a learner-driven approach that emphasizes critical thinking as well as a clear follow-up plan for learning.¹⁰ Despite the documented benefits of these methods, few curricula exist to train clinician-educators how to efficiently and effectively precept learners in the difficult ambulatory setting while still ensuring successful patient care. A search of MedEdPORTAL using the terms "ambulatory education," "SNAPPS," and "Microskills" revealed eight curricula.¹¹⁻¹⁸ Only five of these are still in print: Swigris and Combs¹¹ present a narrative medicine approach to peer teaching, Miller¹² presents a self-reflection questionnaire, Rogers and colleagues¹³ present a complete module for students and residents as opposed to faculty, Gaufberg and colleagues¹⁴ present a curriculum specific to chronic pain, and Magana and Beck¹⁵ present the use of SNAPPS in a morning report format. None of the five current MedEdPORTAL curricula present clinical teaching techniques to address barriers to effective ambulatory medical education.¹¹⁻¹⁵

We the authors are both clinician-educators in large, academic outpatient practices where we provide patient care alongside medical students, residents, and fellows in internal medicine, pediatrics, and endocrinology, diabetes, and metabolism. In addition to directly precepting trainees, we also train residents and fellows to be leading medical educators. We have experienced firsthand the benefits of these techniques and their application to a wide variety of clinical and educational environments. We developed this resource for clinician-educators to improve their ambulatory teaching skills within their own unique environments. After delivering the session at multiple institutions around the country and at a national medical education conference, we incorporated learner feedback into it. The intended audience is clinician-educators with any level of educational experience. A portion of the session calls on prior ambulatory education experience, but no prerequisites are required.

Methods

Description of Intervention

This 90-minute interactive workshop helps participants improve their ability to effectively teach in ambulatory care settings. Educational methods include a brief didactic overview of key concepts, time for guided reflection, discussion of individual experiences, analysis of educational videos, and role-playing wherein learners actively experiment with the newly learned techniques. The target audience is clinician-educators with experience or interest in ambulatory medical education. The session therefore follows the Kolb cycle of experiential learning in its format and methodology.¹⁹ The Kolb cycle includes a concrete experience, reflective observation, abstract conceptualization, and active experimentation.

Participants all enter with concrete experiences in ambulatory medical education. The session opens with learners reflecting on their past experiences and exploring the benefits and challenges of ambulatory teaching within their own unique clinical and educational environments. These reflections are noted for reference later in the session. A brief overview of the historical context of ambulatory education is provided to frame these reflections. Next, participants view and analyze a custom-made video showing a nonstructured preceptor-trainee interaction (Appendix B). Two evidence-based techniques for bedside education (Five Microskills and SNAPPS) are then presented. The techniques are initially described via a brief didactic overview, calling on any prior experiences participants may have with these or similar techniques. Participants view and analyze two videos wherein the earlier preceptor-trainee interaction is replayed using Five Microskills (Appendix D) and SNAPPS (Appendix F). Having learned about the new techniques, participants test out these approaches via active experimentation. One participant role-plays as the preceptor, while the other participant acts as the learner (Appendices H & I, with optional specialty-specific cases in Appendix J). After experiencing Five Microskills, the participants switch roles, so that each gets an opportunity to be a preceptor and a learner. A subsequent facilitated discussion on the positive and negative aspects of the techniques allows participants to reevaluate best practices in their educational settings. Finally, breakout consult teams revisit some of the challenges that were brought up in the beginning of the session and lead a large-group discussion by offering recommendations for common educational challenges. Slide notes, background information, and tips are included in the notes of Appendix A. These notes walk the facilitator through the session slide by slide. Suggested talking points and facilitation techniques are included throughout. In addition to the curriculum, the slide set includes links to the three videos for use during the exercise. If no internet is available in the presenting room, the videos should be downloaded in advance. An additional facilitator's guide (Appendix K) provides an overview of the session along with a suggested time line and tips for successful facilitation of each portion of the session. We suggest it be used in conjunction with the slide notes from Appendix A.

Three videos that highlight the main themes of our objectives were made specifically for this session. The first of these (Appendix B), a 4-minute realistic and unstructured preceptor-learner interaction, is designed for the participants to discuss the positive and negative aspects of the teaching experience. The other two, one based on Five Microskills (Appendix D, approximately 2.5 minutes) and the other on SNAPPS (Appendix F, approximately 3 minutes), are ideal scenarios that depict the preceptor and the learner utilizing those two strategies. The actors in the video (a faculty member and a trainee) are reenacting a prior teaching encounter about a real patient that they had seen together in the ambulatory setting. Scripts are provided for each video (Appendices C, E, and G).

Equipment and Personnel

This session is designed to be delivered by a single faculty preceptor, with a minimum of four and a maximum of 40 learners. Faculty should have experience in ambulatory education and small-group facilitation, including facilitation of role-plays. The session should be delivered in a room with chairs that can be rearranged into circles or semi-circles during the role-play. Audiovisual requirements include a computer with projector and PowerPoint setup. If the presenter wishes to use a live audience response system for portions of the didactic sections, an internet connection will be required. The model evaluation form (Appendix L) can be personalized with presenter's name and date of presentation and printed for use at the end of the session.

Assessment

This workshop has been presented five times at academic medical centers, at a medical school in the U.S.

during departmental and divisional grand rounds, and at an internationally attended medical education conference. Participants included health care professionals (physicians, veterinarians, nurses, physician assistants, and nurse practitioners), educators, trainees (residents and fellows), and medical students. Represented medical specialties included but were not limited to internal medicine, emergency medicine, family medicine, neurology, psychiatry, dermatology, plastic surgery, otolaryngology, radiology, ophthalmology, pathology, urology, obstetrics and gynecology, pediatrics, surgery, anesthesiology, and optometry. Institutional postsession surveys were collected from 98 participants and included quantitative ratings and qualitative comments.

Modifications

Initial versions of this session included a more detailed overview of the history of inpatient and ambulatory bedside teaching. In response to qualitative feedback, that section was shortened to allow for more detailed discussions of barriers and potential solutions and more time practicing in role-plays. The original session also included one video of Five Microskills and a role-play for SNAPPS. The current version has been modified to be more versatile and includes a video and role-play for both Five Microskills and SNAPPS that can be used based on learner needs and preferences.

Results

Our ambulatory teaching workshop has consistently been well received at several institutions and by learners of varying levels of educational experience and clinical backgrounds. Table 1 shows the institutions and venues where this workshop has been delivered and includes information on the type of learner and total number of evaluations completed at each site. Institutional postsession survey data are available from 98 learners from three different institutions in four different venues.

Table 1. Settings for Ambulatory Education Presentation

Institution	Venue	Type of Learner	Evaluations Completed
BIDMC, Boston, MA	BIDMC Academy of Medical Educators Grand Rounds	MD (attending physicians)	8
BIDMC, Boston, MA	Department of Endocrinology Grand Rounds	MD (medical students, residents, fellows, and attending physicians)	7
HMS, Boston, MA	Principles of Medical Education: Maximizing Your Teaching Skills CME Course 1	MD, DO, MPH, PA, PhD, DVM, CCFP, MHA, EdD, RN, LPC, and MBA	45
HMS, Boston, MA	Principles of Medical Education: Maximizing Your Teaching Skills CME Course 2	MD, DO, MPH, PA, PhD, DVM, CCFP, MHA, EdD, RN, LPC, and MBA	32
Icahn School of Medicine at Mount Sinai, New York, NY	Division of General Internal Medicine Divisional Grand Rounds	Medical students, residents, fellows, and attending physicians	6
Total			98

Abbreviations: BIDMC, Beth Israel Deaconess Medical Center; CME, continuing medical education; HMS, Harvard Medical School.

Table 2, Table 3, and Table 4 show quantitative data from institutional postsession surveys. These data demonstrate learner satisfaction with the quality and relevance of this session. Overall, more than 90% of respondents rated the session as very good or excellent. Additionally, more than 95% of participants stated that the session had very good or excellent relevance to their practice.

Table 2. Numbers of Evaluations Describing Overall Rating and Quality of Presentation

Venue	Poor	Fair	Good	Very Good/Excellent	Weighted Average ^a
BIDMC Academy of Medical Educators Grand Rounds (n = 8)	0	0	1	7	3.88
BIDMC Endocrinology Grand Rounds (n = 7)	0	0	0	7	4
HMS Principles of Medical Education CME Courses (n = 77)	0	1	7	69	3.88
Overall (n = 92)	0	1	8	83	3.89

Abbreviations: BIDMC, Beth Israel Deaconess Medical Center; CME, continuing medical education; HMS, Harvard Medical School.

^aWeighted average scale anchors: 1 = poor, 4 = very good/excellent.

Table 3. Numbers of Evaluations Describing Relevance to Practice

Venue	Poor	Fair	Good	Very Good/ Excellent	Weighted Average ^a
HMS Principles of Medical Education CME Courses (n = 77)	1	1	7	68	3.84

Abbreviations: CME, continuing medical education; HMS, Harvard Medical School.

^aWeighted average scale anchors: 1 = *poor*, 4 = *very good/excellent*.

Table 4. Numbers of Evaluations From Icahn School of Medicine at Mount Sinai, Division of General Internal Medicine Grand Rounds

Item	Poor	Fair	Satisfactory	Very Good/ Excellent	Weighted Average ^a
Quality of presenter	0	0	0	6	4
Amount of new information	0	0	1	5	3.83
Depth of coverage	0	0	1	5	3.83
Relevance to my practice	0	0	0	6	4
Use of audiovisuals	0	0	0	6	4

^aWeighted average scale anchors: 1 = *poor*, 4 = *very good/excellent*.

Qualitative comments included the following:

- “Excellent session with great methods I plan to try. Lots of participation.”
- “Practical and great teaching suggestions that I plan to use.”

Constructive feedback pointed to the need for more detailed techniques to overcome specific barriers and for additional time for practice. These suggestions have been included in the current session.

Discussion

This workshop was designed for clinician-educators with varying levels of experience in ambulatory medical education. Over the past 2 years, it has been well received at multiple institutions and modified to be applicable in a variety of educational settings. This is a very interactive session with minimal didactic teaching, an aspect that was very well received. Time was allotted for participants to reflect on their concrete experiences as educators in the ambulatory setting. They then engaged in an active discussion about why they enjoyed teaching; why it was effective for them as preceptors, for the learners, and for the patients; and the many common challenges they faced as clinician-educators. Another strength of the session was the variety of teaching modalities used, including active note taking about participant experiences and reflection, use of educational videos prepared specifically for the session, role-playing, and a small-group breakout.

The first version of the session included a longer didactic portion reviewing the historical context of bedside teaching, as well as various factors contributing to the transition from inpatient to ambulatory education. Initially, it was felt this background provided valuable context to help participants understand the shifting landscape of medical education. However, qualitative feedback from early sessions pointed to the need for more time practicing in role-plays. We also found that participants often required additional time in the breakout portion to discuss common challenges and potential solutions unique to their own experiences. In response, we abbreviated the didactic portion of the session and increased the role-play and problem-solving breakout groups.

A complex aspect of this workshop has been facilitating the final discussion on challenges and potential solutions in ambulatory education. At times, learners would raise very real challenges to effective teaching, and as a group, it would be difficult to develop realistic solutions within the time allotted for discussion. To aid in facilitation, six of the most commonly discussed challenges, along with potential solutions generated by the groups, have been collected and included in [Table 5](#).

Table 5. Challenges to Teaching in the Ambulatory Setting and Solutions Generated by Participants

Challenge	Solution
Time constraints/competing priorities (relative value units, notes, research, family)	<ul style="list-style-type: none"> Utilize SNAPPS and Five Microskills as techniques to streamline precepting time, making the encounter more efficient Orient the learner to the patient's reasons for the visit ahead of time so that the learner can become familiar with the medical concern
Preceptor takes ownership over the patient and undermines the learner's role	<ul style="list-style-type: none"> Obtain feedback from the learner about one's performance as preceptor Ensure that the learner is addressing the patient as much as possible, including discussion of plan and giving prescriptions Utilize body language, such as allowing the learner to enter the room first, directing the patient's questions to the learner, and stepping out of the line of sight between the patient and the learner
Lack of independence for the learner	<ul style="list-style-type: none"> SNAPPS naturally encourages independence in learning; preceptor can encourage appropriate independence in management Five Microskills' "getting a commitment" can foster independent thinking and at times boost confidence; "probe for supporting evidence" provides an opportunity to identify potential reasons for lack of independent thought/action
Lack of preceptor confidence in own knowledge, skills, and/or experience	<ul style="list-style-type: none"> Role-model appropriate question asking and turning to literature to answer clinical questions Utilize own experience as a clinician
Lack of learner knowledge, interest, or experience	<ul style="list-style-type: none"> Both SNAPPS and Five Microskills build learner knowledge over time Stress learning of small chunks of information rather than expecting the learner to become an expert after one session Engage the learner to find out what interests him/her, and direct the learning towards that area
Unpredictable chief complaints/cannot always prepare for content of encounters	<ul style="list-style-type: none"> Fall back on medical education topics common to all patient scenarios, such as physical exam, communication, preventive health, and psychosocial care
Patient refuses learner involvement in his/her care	<ul style="list-style-type: none"> Contact the patient ahead of time to alert him/her that a learner will be participating in the medical care Stress the quality, experience, and effectiveness of the learner as a caretaker Prepare the learner ahead of time to ensure his/her role as a knowledgeable caretaker

The initial session featured educational videos depicting use of Five Microskills and SNAPPS in clinical medical education, but they were made by an outside source and took place in the inpatient setting. We produced new videos that are specific to the ambulatory setting, are shorter in duration, and more clearly demonstrate the skills we hope to teach. Overall, we feel the final product is a successful workshop that can be deployed in a variety of settings with a wide range of learners.

This session was presented to a wide variety of clinician-educators in many different fields of medicine and other health care professionals, at all levels of medical training, in both academic and nonacademic backgrounds. Overall, the session was incredibly well received. Quality of the content and presentation was rated as very good or excellent by more than 90% of the respondents, and the session had very good or excellent relevance to their practice, as stated by more than 95% of respondents. Limitations include the lack of objective data regarding improved teaching in participants and poor applicability to procedural fields.

Future directions include expanding details provided in the role-plays to include challenge scenarios for more experienced preceptors. We would like to produce similar subspecialty-specific ambulatory education content as well as content for procedural fields grounded in the cognitive theory of learning technical skills. Creation of online seminars featuring modules that participants could complete on their own would increase access for those who are unable to attend medical education conferences. Finally, given that the techniques taught in this session require practice, development of training modules to help learners understand how to use these techniques (especially SNAPPS as it is so learner-driven) would expand on what is introduced in the session.

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Informed Consent

All identifiable persons in this resource have granted their permission.

Ethical Approval

Reported as not applicable.

References

1. Reichsman F, Browning FE, Hinshaw JR. Observations of undergraduate clinical teaching in action. *J Med Educ.* 1964;39(2):147-163.
2. LaCombe MA. On bedside teaching. *Ann Intern Med.* 1997;126(3):217-220. <https://doi.org/10.7326/0003-4819-126-3-199702010-00007>
3. Nair BR, Coughlan JL, Hensley MJ. Student and patient perspectives on bedside teaching. *Med Educ.* 1997;31(5):341-346. <https://doi.org/10.1046/j.1365-2923.1997.00673.x>
4. Crumlish CM, Yialamas MA, McMahon GT. Quantification of bedside teaching by an academic hospitalist group. *J Hosp Med.* 2009;4(5):304-307. <https://doi.org/10.1002/jhm.540>
5. Dent JA. AMEE Guide No 26: clinical teaching in ambulatory care settings: making the most of learning opportunities with outpatients. *Med Teach.* 2005;27(4):302-315. <https://doi.org/10.1080/01421590500150999>
6. McGee SR, Irby DM. Teaching in the outpatient clinic: practical tips. *J Gen Intern Med.* 1997;12(suppl 2):S34-S40. <https://doi.org/10.1046/j.1525-1497.12.s2.5.x>
7. Aagaard E, Teherani A, Irby DM. Effectiveness of the One-Minute Preceptor model for diagnosing the patient and the learner: proof of concept. *Acad Med.* 2004;79(1):42-49. <https://doi.org/10.1097/00001888-200401000-00010>
8. Neher JO, Gordon KC, Meyer B, Stevens N. A five-step "microskills" model of clinical teaching. *J Am Board Fam Pract.* 1992;5(4):419-424.
9. Parrott S, Dobbie A, Chumley H, Tysinger JW. Evidence-based office teaching—the five-step microskills model of clinical teaching. *Fam Med.* 2006;38(3):164-167.
10. Wolpaw TM, Wolpaw DR, Papp KK. SNAPPS: a learner-centered model for outpatient education. *Acad Med.* 2003;78(9):893-898. <https://doi.org/10.1097/00001888-200309000-00010>
11. Swigris R, Combs B. Heart of medicine and do no harm narratives for internal medicine residents: a novel approach to peer teaching in the ambulatory setting. *MedEdPORTAL Publications.* 2014;10:9699. http://doi.org/10.15766/mep_2374-8265.9699
12. Miller K. Critical synthesis package: questionnaire of site characteristics and teaching behaviours that enhance learning in the ambulatory setting. *MedEdPORTAL Publications.* 2013;9:9408. http://doi.org/10.15766/mep_2374-8265.9408
13. Rogers J, Corboy J, Huang W, Monteiro F. Task-oriented processes in care (TOPIC) model for ambulatory care. *MedEdPORTAL Publications.* 2006;2:306. http://doi.org/10.15766/mep_2374-8265.306
14. Gaufberg E, Barnes H, Albanese M, Cohen P. A faculty development workshop for primary care preceptors: helping your residents care for patients requesting opioids for chronic pain. *MedEdPORTAL Publications.* 2011;7:8396. http://doi.org/10.15766/mep_2374-8265.8396
15. Magana J, Beck J. Closing the loop: integrating SNAPPS into an outpatient morning report to foster self-directed learning and encourage use of evidence based medicine. *MedEdPORTAL Publications.* 2012;8:9142. http://doi.org/10.15766/mep_2374-8265.9142
16. Hosokawa M. Teaching and learning education for new teachers (TALENT) (out of print). *MedEdPORTAL Publications.* 2006;2:198. http://doi.org/10.15766/mep_2374-8265.198
17. Sadownik L. Teaching skills for community based preceptors (out of print). *MedEdPORTAL Publications.* 2006;2:219. http://doi.org/10.15766/mep_2374-8265.219

18. Tresolini C. Expert Preceptor Interactive Curriculum (out of print). *MedEdPORTAL Publications*. 2006;2:190.
http://doi.org/10.15766/mep_2374-8265.190
 19. Kolb DA. *Experiential Learning: Experience as the Source of Learning and Development*. Upper Saddle River, NJ: Prentice-Hall; 1984.
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