A Video- and Case-Based Curriculum on the Management of Alcohol Use Disorder for Internal Medicine Residents

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Abstract

Introduction: Alcohol use disorder (AUD) is commonly undertreated. Physicians cite discomfort with AUD medication as a barrier to treatment. While several curricula teach and assess screening and brief interventions, few teach and assess learner knowledge of treatment options. Methods: We created a video- and case-based curriculum for internal medicine residents delivered by 16 internal medicine faculty in three 30-minute sessions at four clinic sites. Learner knowledge, attitudes, and confidence were assessed before and after the curriculum. We used qualitative methods to evaluate learner reflections. We also assessed faculty satisfaction with the curriculum. Results: Of 153 residents receiving the curriculum, 35 (23%) completed both pre- and postsurveys. Median percent correct on knowledge questions improved from 67% pre- to 80% postcurriculum (p < .001). Confidence increased for all three items assessing it, with a notable increase in confidence with pharmacotherapy (2.9 pre- vs. 4.5 postcurriculum on a 7-point Likert scale with high scores indicating greater confidence, p < .001). Positive attitudes toward people with AUD increased from 3.4 pre- to 3.9 postcurriculum (p < .001) on a 7-point Likert scale. Learners continued to express concerns about prescribing logistics, the role of primary care, and management of ongoing use. Thirteen of 16 faculty (83%) completed the postcurricular survey; all said they would be happy to facilitate again. Discussion: Implementation of this curriculum for the management of AUD improved resident knowledge, attitudes, and confidence in AUD treatment. The curriculum was acceptable to faculty and is ideal for programs looking to expand teaching about AUD.

Keywords
Substance Use, Alcohol Use, Pharmacotherapy, Substance Abuse/Addiction, Internal Medicine, Case-Based Learning

Educational Objectives

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

1. Compare and contrast mutual support group options for management of alcohol use disorder (AUD).
2. Describe the levels of care and the types of services offered in clinical addiction treatment programs.
3. Choose an appropriate medication for chronic management of AUD based on patient goals and comorbidities.
4. Describe monitoring parameters for patients on medications for AUD and discuss markers of effective treatment.

Introduction

Alcohol use disorder (AUD) is a common, chronic, relapsing condition characterized by significant psychological, physical, and social distress. There are almost 100,000 alcohol-attributable deaths annually within the United States, with an average of 29 years of life lost among people with AUD. AUD is treatable with mutual support groups (MSGs), psychosocial counseling, and medication for AUD (MAUD). However, patients with AUD are underreferred for treatment, with only 8% of adults with active AUD receiving addiction counseling or MAUD. Qualitative studies suggest that many people with AUD would be interested in medication and may be more willing to engage in MAUD through primary care than through specialty care. However, even fewer patients are offered pharmacotherapy in primary care than are offered counseling. Nationally, physicians report that they do not prescribe MAUD because of skepticism about efficacy, lack of provider knowledge, and reluctance to continue MAUD started by other providers. Addiction specialists believe that physician education about existing...
medications is the most important next step to increase MAUD prescribing.9

Review of published curricula reveals a relative paucity of curricula on treatment of AUD. Many curricula that address alcohol use focus on screening and brief intervention rather than management of AUD, and these topics are covered elsewhere within our residency.10-16 Available curricula that do teach about MAUD require 5-16 hours of learner time and do not specifically assess learner outcomes related to MAUD.17-19 One recent curriculum specifically addressing medications for both opioid use disorder and AUD was well received by learners, but its impact on resident knowledge is unknown.20 To our knowledge, there are no published curricula that include material on MSG alternatives to Alcoholics Anonymous (AA).

To address these curricular gaps, we developed a three-part curriculum to teach internal medicine (IM) residents how to prescribe MAUD and counsel patients about MSGs and addiction treatment programs. Although we evaluated our curriculum within our IM residency program, due to immediately available curricular time, the management of AUD is shared with multiple other specialties, including family medicine and psychiatry, so this curriculum may be of interest to those programs as well. The curriculum requires 90 minutes total of curricular time and incorporates videos and case-based discussion spread over 3 months using evidence-based educational strategies to enhance learners’ retention of the content.

Methods
Setting and Participants
General IM faculty delivered this curriculum to categorical IM residents at four resident continuity clinic sites at an urban academic medical center between March 2020 and June 2020. Our residency was a hospital-based program with a focus on both general IM and preparation for subspecialization; a majority of residents in our program went on to complete additional fellowship training after graduation.

The curriculum was delivered during three preexisting 30-minute preclinic conference sessions. Faculty were accustomed to teaching short sessions based on standardized curricula during this time and received curricular material by email 1 week before sessions were scheduled. Faculty also had the opportunity to attend an optional 1-hour grand rounds lecture on management of AUD in the primary care setting prior to facilitating these sessions.

Figure 1. Curricular design. The curriculum involved three 30-minute sessions. Abbreviations: MAUD, medication for alcohol use disorder; MSGs, mutual support groups.

To deliver the curriculum, all faculty had access to a computer with a screen visible to small resident groups of four to 10 learners.

This project was supported by the Office of Academic Affiliations Advanced Fellowship in Women’s Health at the Pittsburgh Veterans Affairs (VA) Healthcare System, and statistical analysis was funded by the University of Pittsburgh Division of General Internal Medicine. The project was deemed not research (educational evaluation) by the University of Pittsburgh and VA Pittsburgh Institutional Review Boards.

Curriculum Design
We developed three 30-minute sessions to teach IM residents how to manage outpatients with AUD (Figure 1). Our curricular content was based on national treatment guidelines and reviewed by local content experts. Faculty received all curricular materials by email in advance of the sessions.

Session 1 introduced psychosocial treatment for AUD using a structured session guide (Appendix A; resident guide, Appendix B; faculty guide). The session opened with a 13-minute didactic concept video (Appendix C) that introduced MSGs, psychotherapy, levels of care, and markers of rehabilitation quality. To promote active engagement, residents were asked to complete a worksheet based on the didactic content (Appendix A) while watching the video. In the second 15 minutes, residents and preceptors discussed an exemplary case of a veteran with AUD and several alcohol-related comorbidities. This case elicited common challenges in caring for people with AUD in the ambulatory setting, including emotional responses...
Session 2 began with a case-based discussion in which learners applied material from the first session about MSGs and psychotherapy to a case about a pregnant veteran with AUD (Appendix D: resident guide, Appendix E: faculty guide). Questions in this case emphasized indications for inpatient detoxification, considerations in choosing residential treatment programs, and barriers to treatment, including cost and parenting responsibilities. The case ended with a comparison between AA and alternative MSGs. The second half of the session was devoted to a 14-minute concept video (Appendix F) that introduced learners to MAUD options. The video focused on FDA-approved medications, naltrexone, acamprosate, and disulfiram, but also presented data on off-label use of topiramate for managing cravings. Facilitators provided learners with a blank table on MAUD options to complete while watching the video.

Session 3 opened with a series of case vignettes that required learners to choose the most appropriate MAUD based on patient goals and comorbidities (Appendix G: resident guide, Appendix H: faculty guide). Then, learners revisited the patient case from Session 1 and discussed a pharmacologic treatment plan. This case was used to generate a discussion about defining treatment success, reinforcing appropriate monitoring, and considering duration of pharmacologic treatment. Finally, residents were asked to provide written short-answer reflections on lessons learned during the curriculum and to set a goal about applying these lessons in future patient encounters.

Sessions 1 and 2 were delivered 1-3 weeks apart, and sessions 2 and 3 were delivered 5-7 weeks apart, depending on clinical site. The curriculum utilized evidence-based educational techniques to enhance retention, including spaced learning, retrieval practice, active learning, and goal setting.

Evaluation
We assessed the impact of our curriculum on residents’ knowledge, confidence, and attitudes using a survey administered both pre- and postcurriculum (Appendix I). To measure knowledge, we developed 30 novel true/false items (22 questions on MAUD, five questions on counseling, and three questions on MSGs). We chose a true/false format because of other evaluation tools using this format, including an assessment of knowledge about naltrexone and the previously validated Student Alcohol Questionnaire designed to measure college students’ knowledge regarding alcohol. To measure confidence, we developed four novel 7-point Likert-scale items (1 = strongly disagree, 7 = strongly agree). To measure attitudes, we adapted the previously validated Survey of Attitudes and Perceptions (SAP), which included 11 items rated on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). We made adaptations only to reflect person-first language, with references to “drinkers” changed to “people with alcohol use disorder.” This survey was reviewed by local content experts to ensure accuracy and breadth of content and was pilot tested with recent IM residency graduates for clarity and to determine the amount of time needed for survey completion. The survey was administered electronically via REDCap. Learners completed the precurriculum survey during the first 10 minutes of session 1 and the postcurriculum survey 1-3 weeks after session 3. To improve response rate, residents received 10 minutes of protected time and two email reminders to complete the postcurriculum survey.

We assessed faculty experiences with delivering the curriculum via a survey 1 week after the final session (Appendix J). Faculty were asked if they would be “happy to facilitate the session again” on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). They were also asked whether facilitating each session changed their confidence in teaching these topics. Finally, faculty were asked how long they needed to prepare for each session. This survey was administered electronically via REDCap, with one reminder email sent to all faculty who had led at least one session.

We qualitatively assessed the impact of the curriculum on residents’ future practice and future directions through an open-ended written-response reflection handed out and collected at the end of the final session. Residents were asked (1) one thing they learned, (2) one thing they would like to try in a future encounter, and (3) what questions they still had about management of AUD.

Data Analysis
Data analysis was performed using STATA 16.0 (StataCorp). All residents who completed the pre- and postsurveys were included in the analysis of knowledge, confidence, and attitudes. We compared median percent correct on the knowledge items pre- and postcurriculum using the Wilcoxon signed rank test. We compared the mean composite Likert scores for confidence and attitudes pre- and postcurriculum using paired Student t tests. Descriptive statistics were used to report faculty facilitator
responses. Qualitative themes from the residents’ open-ended written responses were identified by two reviewers (Sara A. Spinella and Diana Samberg), and all reflections were categorized by theme. Discrepancies were resolved by consensus.

Results

Participant Characteristics

The curriculum was delivered to 153 categorical IM residents across four clinical sites. Of these, 97 (64%) completed the pretest, and 53 (35%) completed the posttest; 35 (23%) completed both the pre- and posttests and were included in our analysis. Our sample featured broad representation of all clinical years and a variety of postgraduation career plans among residents included in the final analysis (Table 1). Three of four clinical sites were represented in our sample; only six of 153 residents had clinic at the site that did not provide any data. Of the 35 residents included in the analysis, the majority reported being present for at least two sessions, although nine (26%) attended just one session and two (6%) reported they did not attend any sessions. Residents who missed sessions were not expected to make them up. The pre- and posttests were emailed to the entire residency class regardless of session attendance because session attendance was not monitored.

Curricular Impact

Median percent correct on the 30-question true/false knowledge items improved from 67% (interquartile range [IQR]: 60%-73%) precurriculum to 80% postcurriculum (IQR: 70%-83%; p < .001; Figure 2). There was a significant improvement in the 22 MAUD questions (p < .001), while there was no significant change in the three questions about MSGs (p = 1.00) and five questions about psychosocial treatments (p = .133). The scores of all four confidence questions were combined to form a composite mean confidence score, which improved from 3.7 (SD = 0.94) precurriculum to 4.9 (SD = 0.76) postcurriculum on the 7-point Likert scale (p < .001; Figure 2). Notably, we observed the most dramatic improvement in confidence about MAUD, which went from 2.8 (SD = 1.30) to 4.5 (SD = 1.30; p < .001). Attitude questions were also combined to form a composite mean attitude score, which improved from 4.5 (SD = 0.85) pre- to 5.1 (SD = 0.69) postcurriculum on the 7-point-Likert scale (p < .001; Figure 2).

Qualitative Analysis

In an open-ended reflection on one learning point gained from the curriculum, residents identified learning around all curricular domains except clinical psychosocial addiction treatment. Residents set goals about prescribing MAUD, counseling on MAUD, counseling on MSGs, and eliciting or understanding patient-centered goals for treatment. Residents’ reflections on ongoing areas of uncertainty were most diverse; many residents asked questions about prescribing logistics, the role of primary care versus specialty addiction services, and management of relapse or nonabstinence (Table 2).

Faculty Experiences With the Curriculum

Of the 16 faculty who delivered at least one session, 13 (81%) completed the facilitator survey. Four faculty facilitated one session, three facilitated two sessions, and six facilitated all three sessions. All faculty agreed or strongly agreed they would be happy to facilitate again for all three sessions. The majority of faculty needed less than 10 minutes to prepare for each session. All faculty who facilitated sessions 2 or 3, which addressed MAUD, reported that facilitating the session increased their confidence discussing pharmacotherapy with trainees. In contrast, faculty were divided about whether sessions that addressed MSGs increased their confidence discussing MSGs with trainees.

Discussion

AUD is a common and debilitating disease that is frequently diagnosed in the primary care setting, yet many generalists feel uncomfortable with MAUD prescribing or referrals to treatment programs or MSGs, and few curricula teach this content. To address this gap, we developed a case- and video-based curriculum for IM residents with a focus on MAUD, psychosocial treatment options, and the range of available MSGs. Our curriculum improved resident knowledge, attitudes, and confidence about management of AUD and was highly acceptable to faculty facilitators. Qualitatively, residents identified
knowledge gains about MSGs and MAUD and reflected that elicitation of patient goals was a key feature of this intervention. This is the first curriculum that demonstrates an impact on knowledge about MAUD. The deliberate inclusion of adult learning principles such as spaced learning and retrieval practice was designed to increase learner retention and ensure that a large proportion of our residents were exposed to the material, even if they were absent for any given session. We also used short periods of preexisting protected curricular time to prevent...
competing demands on resident time without needing resident coverage or additional faculty teaching time.

Our approach has strengths that may facilitate broader curricular dissemination. We used guided videos to standardize the teaching of key content and to enable general IM faculty to facilitate sessions with minimal preparation. Additionally, standardized didactics were intended to address concerns faculty may have had about their own knowledge and skills regarding MAUD, given nationally low rates of MAUD prescribing in primary care.5,6 The fact that faculty did not require additional training or significant preparation time for this curriculum was essential to making it a feasible intervention. We coupled didactic videos with guided, case-based discussions to give learners the opportunity to apply material to challenging cases reflecting resident clinic populations.

Our study also had several limitations. Although our curriculum was delivered at multiple clinical sites, including both hospital-based academic clinics and VA clinics, all residents came from a single residency program, and our sample size was small and was further limited by response rate. The response rate to our pre- and posttests was relatively low. Furthermore, only a minority of learners were able to attend all three sessions. Our curriculum was designed such that key content was repeated at multiple sessions to improve retention, but learners who attended only one or two sessions likely did not benefit from this design. Additionally, two residents who completed the survey reported they did not attend any sessions; they may have reviewed the materials sent out via email asynchronously, although we did not ask this specifically in our postsurvey. Due to the small sample size, we were unable to assess whether future career plans or clinic site affected efficacy. While the SAP was a previously validated measure of attitudes toward people with AUD, validation of the knowledge and confidence assessments was limited to review by content experts and brief pilot testing for clarity. The small number of questions about MSGs and psychosocial support limited our ability to evaluate knowledge change in those domains. Similarly, our faculty survey was not previously validated.

Interestingly, our residents received a median of 68% correct on the preintervention knowledge survey, despite reporting a lack of confidence about MAUD prescribing. The true/false format was chosen to reflect other assessments of knowledge about alcohol use in the literature, but it had limited sensitivity for detecting change because residents were expected to receive 50% correct by chance alone. Alternately, our relatively high precursricular knowledge rates may have reflected a residency program already invested in addiction medicine teaching, with a robust addiction medicine consult service, an addiction medicine fellowship program, previously described AA28 and brief intervention curricula, and an addiction medicine elective. Additionally, education around substance use disorders is a public health priority, and several innovative curricula for medical students have been funded by the Association of American Medical Colleges29 or highlighted in recent publications.30 While the majority of these efforts focus specifically on prevention and treatment of opioid use disorder, rather than AUD, it is possible that increased attention to substance use disorders at the undergraduate medical level has led to reasonably high baseline medical knowledge. Importantly, however, residents themselves do not feel confident in their medical knowledge around MAUD, which is likely a key barrier to treating AUD in practice.

Our qualitative data hint at ongoing questions about logistical aspects of MAUD prescribing and the role of generalists in addiction management. While knowledge gaps are a key feature in attending reluctance to prescribe MAUD, these data imply that further quality improvement efforts may be necessary to change practice patterns. Indeed, published quality improvement efforts to improve MAUD prescribing have had variable success; intensive one-on-one training with an individualized review of eligible patients improved prescribing rates, while an emailed curriculum with access to local addiction experts did not. Future studies of this curriculum could evaluate resident practice patterns and consider systems-level facilitators and barriers to AUD treatment in IM academic practices, including financial considerations, communication strategies for reluctant patients, attending practices, and formal partnerships with specialty addiction services.

In conclusion, our feasible curricular intervention for IM residents effectively increases knowledge, confidence, and attitudes in the management of AUD.

Appendices

A. Session 1 Learner Guide.docx
B. Session 1 Facilitator Guide.docx
C. Session 1 Concept Video.mp4
D. Session 2 Learner Guide.docx
E. Session 2 Facilitator Guide.docx
F. Session 2 Concept Video.mp4
G. Session 3 Learner Guide.docx
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Acknowledgments
We would like to acknowledge our funding sources: Veterans Health Administration Office of Academic Affiliations Advanced Fellowship in Women’s Health and University of Pittsburgh Medical Center Department of General Internal Medicine.

Disclosures
None to report.

Funding/Support
Dr. Sara A. Spinella received funding from the Office of Academic Affiliations, Department of Veterans Affairs.

Prior Presentations
Spinella SA, Samberg D, McNeil M, Roy PJ, Carter AE. A video- and case-based curriculum on the management of alcohol use disorder for internal medicine residents during ambulatory pre-clinic conference. Poster presented virtually at: 2021 Society of General Internal Medicine; April 20, 2021.

Ethical Approval
The University of Pittsburgh and Veterans Affairs Pittsburgh Institutional Review Boards deemed further review of this project not necessary.
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Received: July 3, 2021  
Accepted: January 8, 2022  
Published: March 31, 2022