A Novel Online Curriculum and Coaching Strategy to Expand the Addiction Medicine Workforce: The Michigan Collaborative Addiction Resources and Education System

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Abstract

Problem

There is a shortage of addiction medicine (AM) physicians and a 9-year period (2017–2025) in which to build the workforce via a practice pathway enabling physicians to combine experiential hours with passing a board exam to become board-certified AM physicians. Afterward, AM specialists will need to complete the traditional fellowship pathway, requiring additional training.

Approach

The Michigan Collaborative Addiction Resources and Education System (MI CARES) was developed from February to June 2019 to support physicians in obtaining AM certification via the practice pathway. This program was originally planned for Michigan physicians but was quickly expanded nationally. This novel, asynchronous, self-directed online curriculum follows the knowledge blueprint for the board exam, including continuing medical education credits. The program also provides 1:1 coaching support to educate physicians on how to properly document their experiential hours on the application for the AM board exam. The first module, which describes the practice pathway, was released in January 2020, and 7 substance-specific content modules were released monthly from February to August 2020.

Outcomes

As of October 31, 2020, 231 physicians from 13 American Board of Medical Specialties in 37 U.S. states were enrolled in MI CARES. The longer a module was available, the more participants visited the module. Three early program adopters were approved to sit for the 2019 board exam, and 51 participants passed the board exam in 2020. Of these 51, 5 had previously been denied approval before participating in MI CARES.

Next Steps

It will be important to replicate preliminary evidence of feasibility for this novel model for expanding the workforce in a newly approved and underrepresented specialty to see if it holds promise for replication as other subspecialties are identified. The curriculum is being expanded to include modules on additional topics and adapted for graduate and undergraduate medical education students.

Problem

The consequences of tobacco, alcohol, and other substance use constitute the largest preventable and most costly health problem in the United States.[1] With 7.4% of people in the United States who are age 12 or older meeting criteria for a substance use disorder (SUD) and another third of the population having problematic substance use,[2] there remains a substantial unmet need for SUD treatment. In 2019, about 21.6 million persons age 12 or older in the United States needed SUD treatment, but only 4.2 million received it.[2] Low SUD treatment participation reflects both patient-level factors and structural barriers, including inadequate numbers of physicians trained in evidence-based practices for SUD treatment; a need for better integration of SUD services with primary health care; a lack of fiscal resources devoted to SUD prevention, diagnosis, and treatment; sociocultural disparities; and stigma associated with substance use.[3] Given these problems, there is an urgent need to increase the number of highly trained and skilled physicians available to meet population demand for SUD treatment, as it is estimated that the United States will need over 7,500 addiction medicine (AM) physicians in the next 5 years.[4]

According to the American College of Academic Addiction Medicine, there are currently 84 AM fellowships across the United States, with 70 accredited by the Accreditation Council for Graduate Medical Education; the remainder are approved by the American College of Academic Addiction Medicine.[5] With almost 30% of all physicians being over age 60,[6] the current fellowship development workforce will not be able to replace the retiring workforce, putting further strain on the number of qualified AM physicians. Like much of the United States, the state of Michigan has too few AM specialists to meet population needs. In 2018, Michigan had 134 AM physicians (47 certified by the American Board of Preventive Medicine [ABPM] and 87 certified by the Addiction Medicine Foundation) for almost 10 million people.[7]

In April 2016, the American Board of Medical Specialties (ABMS) announced that AM would be a new subspecialty under preventive medicine. Following this announcement, there is a 9-year window of opportunity (2017–2025)

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in which to build the AM workforce via a practice pathway, which enables physicians to combine experiential hours (1,920 hours) and pass a board exam to become board-certified AM physicians. As preventive medicine is a multiboard specialty, providers from various specialties have the potential to become board certified in AM via this practice pathway. Using the practice pathway can help to mitigate our current lack of AM providers. Once the practice pathway closes, however, all AM specialists will need to complete the traditional fellowship pathway, which requires an additional 1- to 2-year fellowship.

The purpose of this report is to describe a novel program to support physicians applying to sit the board exam to become board certified in AM, who can help to address the current national shortage of AM physicians.

Approach

Program overview

To address the need for more AM specialists, we developed and piloted an educational program to support physicians ready to meet this need for AM board-certified physicians: the Michigan Collaborative Addiction Resources and Education System (MI CARES). MI CARES was originally designed to increase the AM workforce in Michigan, where there is a lack of board-certified specialists throughout the state, especially in the rural upper peninsula. However, as described below, it soon became clear this online platform needed to and could be rapidly expanded to physicians across the United States to increase the national AM workforce.

To meet the need for more AM specialists and assist physicians navigating the practice pathway, we developed MI CARES, a novel, asynchronous, self-directed online curriculum to equip physicians to assess their current practice and apply to obtain AM board certification, from February to June 2019. The curriculum provides modules aligned with AM core content following the knowledge blueprint for the board exam, including continuing medical education credits, quizzes to test comprehension, the ability to review content via desktop and mobile devices, and comprehensive lists of additional reading. The curriculum also provides 1:1 coaching support to educate physicians on how to document experiential hours when applying for the AM board exam. In addition to the core content didactics, the curriculum provides a comprehensive breakdown of the different components of the application process and supports subspecialty knowledge needs. We developed the curriculum to meet the needs of busy physicians working full-time, amassing experiential hours in the subspecialty while completing the application, and to support these physicians throughout the process from contemplation of applying through initial certification.

Physician recruitment

Before implementing our program, we discussed it with the ABPM and received their endorsement. We used snowball recruiting methods with rolling admissions, starting with the professional networks of our principal investigator (C.P.) and working with another grant targeting increased access to prescribers that our principal investigator (C.P.) is involved with. We then created a branded website (https://micares.msu.edu), flyers, and promotional materials that we distributed through professional associations in Michigan. After a small Twitter-based social media campaign, we received many inquiries about the program from physicians outside of Michigan. With approval from the Michigan Department of Health and Human Services, we began enrolling out-of-state physicians in our program. Initially, we focused on expanding nationally through collaborations with the ABPM, American Society of Addiction Medicine, and other similar organizations, including establishing a social media presence and campaign to expand the program's reach to support physicians throughout the United States.

Our rolling admissions allow physicians to enroll in the program as they plan to apply for board certification. As 1,920 hours in AM specialty practice are needed before applying to the ABPM to sit for the board exam, many physicians may enroll in MI CARES years before applying.

Curriculum development

We used the ADDIE (analysis, design, development, implementation, and evaluation) model of instructional design to develop the curriculum outline. The ADDIE model is a structured developmental model focusing on 5 steps: analysis, design, development, implementation, and evaluation.[8] We first conducted a multistep analysis of the knowledge needs of an AM expert, following the blueprint for the board exam, and cross-referenced these knowledge needs with the textbook *The ASAM Principles of Addiction Medicine*, 6th edition.[9] We collaborated with the ABPM to perform a gap analysis of shortcomings in rejected applications and to determine what the ABPM's standards are for accepting applications.[9]

We used the AGILE process, an iterative, adaptive, and incremental software development method, to streamline production and publication of the online learning modules, which encompasses 5 stages: align, get set, iterate and implement, leverage, and evaluate.[10] The AGILE process afforded time-saving opportunities to use collaboration tools, feedback, and iterations of earlier program materials to streamline the design and development of the modules, leading us to be able to rapidly produce high-quality, learner-centered modules.[10] This multistep and iterative approach to designing MI CARES helped create a unique asynchronous educational experience centered on the participants' needs as actively practicing physicians.

The program is housed on Michigan State University's learning platform, Desire2Learn. We first developed the practice pathway module, which was released in January 2020. This module contains multimedia content (i.e., text, audio, graphics, animations, videos, and interactive activities) that outlines the ABPM application, how to complete it, and the process of applying to the ABPM to take the AM board exam. The module includes a list of examples of types of practice that are included under each activity option on the application and a tracking tool for calculating experiential hours (see the "Coaching" section below).

Next, we created multimedia core content modules covering individual classes of substances that result in SUDs. These modules, 7 of which were released monthly from February to August 2020, cover the epidemiology, neurobiology, pharmacology, assessment and diagnosis,

prevention, treatment, and medical complications of each substance class. This framework enables physicians to self-assess knowledge gaps they may want to address when studying for the board exam. Each module includes clinical resources and additional reading opportunities and concludes with a quiz for physicians to obtain category-1 continuing medical education credits, provided free of charge by the Michigan State University College of Human Medicine Office of the Dean.

Coaching

According to the ABPM (Diane S. Landahl, MSTD, CPCS, personal communication, August 2019), ~50% of applications requesting approval to sit for the board exam are returned to physicians for lacking necessary documentation of specialization. To coach physicians through the application process, we created the practice pathway module. MI CARES carefully developed several documents to supplement the practice pathway module, including a tracking tool that emulates the ABPM application. The tracking tool (Excel, Version 2012, Microsoft, Inc., Redmond, Washington) includes an equation to track the physician's number of weekly hours spent on practice activities (i.e., experiential hours). To support the tracking tool, we created an activity list that provides examples of practice activities that count toward direct patient care, research, teaching, and administration. Once a physician completes the tracking tool, MI CARES offers a 1:1 review and coaching session via video conferencing, email, or phone. This coaching enables physicians to express their expertise verbally and translate that information into proper activity documentation on their ABPM application.

Outcomes

As of October 31, 2020, 231 physicians from 13 ABMS specialties in 37 U.S. states were enrolled in MI CARES; this demonstrates program feasibility and a higher level of participation than expected from the funding agency. Table 1 presents participant demographics and specialties. Over half of participants (135/230, 58.7%) were male, and the majority were 25–44 years old (110/231, 47.6%) or 45–64 years old (100/231, 43.3%). Just over half were White (127/231, 55.0%), with Asian or Pacific Islander (44/231, 19.0%) and Black or African American (25/231, 10.8%) being the next most frequent racial/ethnic categories. As expected, a substantial proportion of participants resided in Michigan (76/230, 33.0%), while the West U.S. Census Region was the second-most frequent region (45/230, 19.6%). The most frequently reported specialties were family medicine (67/228, 29.4%), internal medicine (53/228, 23.2%), and psychiatry (51/228, 22.4%).

Table 2 presents information (as of October 31, 2020) on the 8 modules made available by August 2020: practice pathway, opioids, alcohol, stimulants, nicotine, cannabis, sedatives, and club drugs and hallucinogens. Data analysis from module evaluations (see

Table 1

Participant Demographics and Specialties, Michigan Collaborative Addiction Resources and Education System (MI CARES), October 31, 2020

Characteristic	Participants (N = 231), no. (%)
Gender[a]	
Male	135 (58.7)
Female	95 (41.3)
Age, years	
25–44	110 (47.6)
45–64	100 (43.3)
65 and older	17 (7.4)
Prefer not to answer	4 (1.7)
Race/ethnicity	
White	127 (55.0)
Asian or Pacific Islander	44 (19.0)
Black or African American	25 (10.8)
Other, including American Indian or Alaska Native	13 (5.6)
Hispanic or Latinx	10 (4.3)
Prefer not to answer	12 (5.2)
Geographic region[a,b]	
Michigan	76 (33.0)
West	45 (19.6)
South	39 (17.0)
Northeast	37 (16.1)
Midwest (not including Michigan)	33 (14.3)
Specialty[c]	
Family medicine	67 (29.4)
Internal medicine	53 (23.2)
Psychiatry	51 (22.4)
Emergency medicine	20 (8.8)
Pediatrics	8 (3.5)
Obstetrics and gynecology	7 (3.1)
Anesthesiology	6 (2.6)
Addiction medicine	5 (2.2)
Preventive medicine and public health	4 (1.8)
Other	7 (3.1)

[a]Some participants elected not to respond, so the denominator for these sections is 230.
[b]The states in each U.S. Census Region with MI CARES participants are as follows: The West region includes Arizona, California, Colorado, New Mexico, Oregon, Utah, Washington, and Wyoming. The South region includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. The Northeast region includes Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. The Midwest region includes Indiana, Illinois, Michigan, Missouri, Ohio, and Wisconsin.
[c]Some participants elected not to respond, so the denominator for this section is 228.

Table 2
Curriculum Module Information, Michigan Collaborative Addiction Resources and Education System, October 31, 2020

Module	Month module became available	No. of unique visitors	No. of participants who completed the module's CME quiz	% of participants who passed the CME quiz[a]
Practice pathway	January 2020	112	86	89.5
Opioids	February 2020	65	47	95.7
Alcohol	March 2020	43	33	100
Stimulants	April 2020	34	28	92.9
Nicotine	May 2020	30	27	100
Cannabis	June 2020	31	26	100
Sedatives	July 2020	25	20	100
Club drugs and hallucinogens	August 2020	20	13	92.3

Abbreviation: CME, continuing medical education.
[a]Pass level for the quizzes was set at >75%.

Supplemental Digital Appendixes 1 and 2 at http://links.lww.com/ACADMED/B200) reflected that 136/231 (58.9%) physicians engaged with the online modules, 212/231 (91.8%) physicians found the modules to be highly valuable for their learning purposes, and 210/231 (90.9%) physicians completing the practice pathway module anticipated using the information learned to prepare for board certification. Substance-specific modules also received high ratings with 184/231 (79.7%) participants expressing confidence in their ability to prevent, assess, manage, and treat SUDs in their practice after reviewing the modules. The longer a module was available, the more participants visited the module. The first module, the practice pathway, received the most unique visitors (n = 112), while the remainder of the modules received about 20–60 visitors. This demonstrates the importance of content being asynchronously accessible, which allows busy physicians to fit the program into their schedules.

Twenty-four participants received a 1:1 coaching and tracking tool review session from May to September 2020. Three early program adopters, who only received 1:1 coaching (i.e., they did not complete any modules), were approved to sit for the 2019 board exam. For 2020, 51 participants passed the board exam. Among these participants, 5 (9.8%) had previously been denied approval to sit for the exam before participating in MI CARES. Participants who achieved board certification were surveyed, and 20/21 (95.2%) agreed that MI CARES simplified the application process. Furthermore, 16/22 (72.7%) did not think they would have applied successfully without participating in MI CARES. Lastly, 16/16 (100%) felt the MI CARES modules helped them prepare for the AM exam.

Next Steps

It will be important to replicate our preliminary evidence of feasibility for this novel model for expanding the workforce in a newly approved and underrepresented specialty to see if it holds promise for replication as other subspecialties are identified. When introducing a new specialty, both the ABMS and American Osteopathic Association use a similar practice pathway mechanism to provide an initial window for certification for physicians currently in subspecialty practice. For example, this had previously been done in clinical informatics and palliative care. In summer 2020, the American Osteopathic Association developed a similar AM practice pathway for DOs.

We will continue to provide 1:1 coaching through the 2025 application and review cycle, when the ABMS practice pathway for AM will close. By identifying the gap between the ABPM's expectations for the application and what physicians were providing, we were able to establish a program that filled a critical unmet need. As MI CARES has shown, coaching and asynchronous online modules provide informational support that can help physicians to successfully complete the practice pathway application process. This model should be explored for replication as other subspecialties are identified by the ABMS and the American Osteopathic Association.

Future work will assess current and past MI CARES cohorts through a formal program evaluation. This will allow us to improve our program for subsequent cohorts, focusing on which materials were most frequently used and the program's scalability and potential for replication as other subspecialties are identified.

To build on our previous work, we are expanding the curriculum to include modules on special populations (e.g., adolescents) and general addiction topics (e.g., ethics) to support physicians going through the practice pathway. Also, we are piloting making adapted content modules available for graduate medical education students (i.e., physician and nurse practitioners in residencies), including brief live didactics offering a preview and postview of the curriculum with an AM expert. Finally, the program recently received expansion funding to train undergraduate medical education students in Michigan; this will enable us to use course content earlier in medical training, with the goal of accelerating increases in the AM workforce.

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