

HOW ACADEMIC MEDICINE IS ADDRESSING



THE OPIOID EPIDEMIC

FEBRUARY 2019

Learn more: aamc.org/opioidresponse



Through their missions of education, research, and clinical care, medical schools and teaching hospitals are actively responding to this public health crisis and preparing the next generation of health care professionals to address the opioid epidemic.”

Rewarding curriculum innovation

In October 2018, the AAMC announced the four winners of the first round of Curricular Innovation Awards, supported in part by funding from the Samueli Foundation. The awards recognize the leadership of medical education programs at the undergraduate, graduate, and continuing education levels that provide innovative training on substance use disorders (SUDs), addiction, and pain management, including nonpharmacological approaches to patient care. Awardees — the University of Massachusetts Medical School, Warren Alpert Medical School of Brown University, University of Michigan Medical School, and Uniformed Services University of the Health Sciences — have been invited to publish their curricular resources and will be celebrated guests at the AAMC National Workshop to Advance Medical Education to Combat Opioid Misuse: Working Together Across the Continuum in May 2019.

For more information on the awardees and their efforts: aamc.org/opioidresponse.

The AAMC National Workshop to Advance Medical Education to Combat Opioid Misuse: Working Together Across the Continuum

May 9-10, 2019

This workshop, hosted by the AAMC in collaboration with the Accreditation Council for Graduate Medical Education (ACGME), the Accreditation Council for Continuing Medical Education (ACCME), and the American Association of Colleges of Osteopathic Medicine (AACOM) and supported in part by funding from the Centers for Disease Control and Prevention (CDC), will bring together leaders in medical education and other stakeholders to share and build upon current educational content related to pain and addiction within undergraduate, graduate, and continuing medical education. Participants, working in teams representing medical schools and teaching hospitals from across the country, will develop and share knowledge, resources, and action that institutions can take to advance safe, evidence-based opioid practices, as well as effective strategies for assessing and managing pain and SUDs. The workshop will foster an inclusive and mutually supportive network across the medical education continuum to address this growing public health crisis.

After the National Workshop, the AAMC will offer challenge grants, supported in part by funding from the Samueli Foundation, to develop resources to support the collaborative efforts of educators across the medical education continuum.

Academic Medicine's Response to the Opioid Epidemic

Introduction

Opioid misuse has devastated communities across the country, and a concerted, collective effort across multiple sectors is needed to stem the tide of opioid and substance use disorders (SUDs). Through their missions of education, research, and clinical care, medical schools and teaching hospitals are actively responding to this public health crisis and preparing the next generation of health care professionals to address the opioid epidemic.

By working with their communities and enhancing content on SUDs and pain management in both classroom and hands-on experiences, these institutions are integrating learning opportunities throughout medical education. Additionally, as leaders in groundbreaking medical research and lifesaving clinical care, medical schools and teaching hospitals are advancing efforts to prevent, identify, and treat SUDs and to manage pain.

While a large portion of media and other attention has been focused on the impact of the epidemic among rural and white communities, data show that urban underserved and minority populations are also being affected by opioid use disorder — at an alarmingly increasing rate. According to data from the Centers for Disease Control and Prevention (CDC), the rate of death from poisoning involving opioid analgesics among black Americans in New York quadrupled between 2005 and 2012.¹ Data from the Chicago Urban League show African Americans are dying from opioid overdose at a rate higher than the general population in Illinois, Wisconsin, Missouri, Minnesota, West Virginia and Washington, D.C.² In addition, minority populations have historically been undertreated for pain. Further, non-opioid-related substance use disorders have been known to affect minority populations at rates equal to or higher than white populations. These trends underscore the importance of addressing the opioid epidemic as part of a larger strategy to address substance use disorders more broadly, with particular attention to the impact on different populations.

Accordingly, academic medicine is waging a comprehensive response, as shown, in part, by the examples included in this brochure. The examples included here are not an exhaustive list of medical school and teaching hospital efforts to combat the opioid epidemic, nor does any example provide a full description of efforts at a given institution.

Trends in Addressing the Opioid Epidemic

Medical schools and teaching hospitals are developing responses to the opioid epidemic that meet the needs of their local communities. While not fully representative of the breadth of efforts, here are some common themes among these responses.

Medical education

- Revamping the curriculum to enhance coverage of topics related to pain and SUDs.
 - Expanding education on naloxone and the treatment and prevention of overdoses.
 - Providing training on buprenorphine and medication-assisted treatment.
 - Expanding training on diverse, evidence-based approaches to pain, including nonpharmacological methods.
 - Training health professions students to manage pain and treat SUDs in teams.

Patient care

- Expanding access to long-term, medication-assisted treatment.
- Increasing the integration of SUD management during emergency department and inpatient encounters.
- Developing new pain-management protocols.
- Partnering on drug take-back events, naloxone distribution, and other harm-reduction strategies.

Research

- Improving SUD treatment and advancing overdose-reversal medications.
- Developing nonaddictive pain medications.
- Increasing the understanding of the basic biology of opioid action and metabolism.
- Training new investigators to research addiction and pain.

1. Sharp M, Melnik T. Poisoning deaths involving opioid analgesics — New York State, 2003-2012. *Morbidity and Mortality Weekly Report*. 2015;64(14):377-380. <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6414a2.htm>.

2. Bechteler SS, Kane-Williams K. *Whitewashed: The African American Opioid Epidemic*. Chicago, IL: Chicago Urban League. 2017. https://www.thechicagourbanleague.org/cms/lib/IL07000264/Centricity/Domain/1/Whitewashed%20AA%20Opioid%20Crisis%2011-15-17_EMBARGOED_%20FINAL.pdf.

Integrating and Reinforcing Content Throughout **Medical Education**

Each medical school tailors its curriculum within the framework required by the Liaison Committee on Medical Education (LCME®), the accrediting body for medical education programs. This dynamic structure ensures consistent baseline standards among all medical schools while allowing programs to adapt education to the individual needs of the communities and the populations the schools serve. Medical school faculty introduce addiction and pain-management subjects in preclinical coursework, then reinforce content through multiple instructional methods as students advance through medical school.

According to the LCME's 2016-2017 Annual Medical School Questionnaire:

143 of 145 medical schools

with students enrolled reported that content on "substance abuse" was included in required coursework, and 102 included the topic in elective coursework.

144 schools

reported including content on "pain management" in required courses, and 108 included it in elective coursework.

According to a structured telephone survey of curriculum deans (or their designee) at 147 LCME-accredited U.S. medical schools in September 2017, medical schools are actively engaged in covering the broad spectrum of topics related to pain and addiction. The survey assessed current or planned efforts to address the opioid epidemic in the curriculum, focusing on four domains of pain and SUDs: the nature of pain; pain assessment and measurement, including assessment of risk for SUDs; management of pain, including SUD treatment and opioid overdose; and the context of pain and substance use disorder. The analysis found:

87% of respondents

reported that all four domains are addressed in their institution's curriculum.

100% of respondents

reported that at least two of the four domains are addressed in their institution's curriculum.

In response to the crisis in their communities, institutions are enhancing existing coursework in innovative ways. Although students are exposed to this material through multiple modalities in medical school, to be maximally effective, such exposure must be reinforced throughout the continuum of medical education. As illustrated in the following examples, training programs are also emphasizing SUD treatment and pain management in clinical experiences and throughout graduate medical education (GME, also known as residency training) and continuing medical education (CME).



Integrating content throughout undergraduate medical education

- The **University of Central Florida College of Medicine** expanded its opioid and pain-management curriculum to be used during all four years of medical school and graduate medical education. The new curriculum includes education in risk-management strategies and overdose reversal, team-based learning exercises on chronic pain therapeutics, and didactics on postoperative pain in various clerkships. The curriculum also involves training in the newest clinical guidelines, including those from the CDC.
- In 2017, the **Council of Florida Medical School Deans**, consisting of the eight MD-granting and two DO-granting schools in Florida, created a multidisciplinary pain-management education workgroup. The group developed a document meant to help schools review and further strengthen their curricular offerings related to pain management and opioid stewardship. The document, *Pain Management and Opioid Stewardship Education for Florida's Medical Schools: Framework for Developing Core Competencies and Instructional Guide for Curriculum Development*, includes potential learning objectives and areas of study in four domains: the multidimensional nature of pain; assessment and measurement of pain; interprofessional and multidisciplinary approaches to treatment; and other considerations related to pain and pain management. The document also includes suggested ways to assess students, resources available in the State of Florida, and references to patient care information and public education.
- **Texas A&M Health Science Center** has committed to train every health professions student — totaling more than 5,000 students — to administer naloxone through the institution's intensive 90-minute Opioid Overdose Education and Naloxone Administration program. Every 12 months until they graduate, students' knowledge and change in attitude about opioid use disorder will be evaluated. Texas A&M has already done many trainings in the local community that have proven beneficial, and five lives have been saved.
- At the **NYU School of Medicine**, students take a full week of pain-management instruction that includes didactics on the origin and impact of the opioid epidemic, reforms taking place, and the role students will play in driving change. Students also receive a four-station, objective, structured clinical examination exploring various pain-management scenarios and training in dispensing the naloxone (Narcan) nasal spray kit. They also participate in workshops on treatment of opioid use disorder and other SUDs and on issues related to addiction, including physician labeling and bias. Throughout clinical training, students are expected to apply the principles and practices they learned in didactic

and simulation settings to providing safe, high-value pain management to all their patients, being responsible stewards, and improving the quality of existing systems.

- The four Massachusetts medical schools — **University of Massachusetts, Boston University, Harvard University, and Tufts University** — recognized the toll of SUDs in their communities and identified 10 core competencies to further educate their students in SUD prevention, identification, and treatment. These competencies have been worked into each school's curriculum, and the University of Massachusetts requires second-year medical students, graduating medical students, and graduating nursing students to participate in the Opioid Safe-prescribing Training Immersion (OSTI) program (umassmed.edu/opioid). The program involves interactions with simulated patients in a variety of care settings, engagement with actual patients in recovery and their families, and instruction in administering naloxone.



- All graduating medical students at **Rutgers New Jersey Medical School** are offered eight hours of training that makes them eligible to obtain a Drug Addiction Treatment Act of 2000 (DATA 2000) waiver. This enables them to prescribe or dispense buprenorphine at the completion of their training and licensure.
- The **Warren Alpert Medical School of Brown University in Rhode Island** has developed nearly 30 hours of education around substance use and, in particular, opioid use, that are now part of each year of the school's curriculum. The curriculum includes longitudinal elements across all four years, including didactic teaching in the first year, motivational interviewing in the first and second year, and workshops on naloxone use in the third year, as well as alternative treatments for pain. In the fourth year, students receive a final lecture on medication-assisted treatment (MAT), are assessed for their knowledge using an objective structured clinical examination, and become DATA waived in Rhode Island. In addition, twice a year, medical students and students from the University of Rhode Island Colleges



of Nursing, Pharmacy, and Health Sciences and Rhode Island College Schools of Nursing and Social Work participate in a half-day interprofessional workshop involving standardized-patient encounters, naloxone training, and panel discussions with patients in recovery. The workshops were initially funded by a three-year grant from the Substance Abuse and Mental Health Services Administration (SAMHSA) and will continue to be part of the program.

- The **University of Louisville School of Medicine in Kentucky** is part of an initiative in the Commonwealth of Kentucky that developed a medical curriculum to improve the health of the state by teaching students to prevent, recognize, and prescribe evidence-based treatment for opioid use disorder and other SUDs while maintaining a high quality of care for patients with chronic or end-of-life pain. The University of Louisville's program uses the 2016 CDC recommendations on prescribing opioids for chronic pain. The program also requires students to complete a clerkship in palliative care, and it provides electives in addiction treatment.
- During their second-year psychiatry clerkship, students at **Duke University School of Medicine in North Carolina** take a formal, interprofessional SUD course that incorporates learning about empathy and patient engagement, behavior-change counseling, and recognition, screening, and treatment of SUDs. Students are from medical, pharmacy, physician assistant, nursing, and social work programs, and they are taught by an interprofessional group of faculty representing medicine, pharmacy, and nursing. Class sessions use active-learning instructional approaches, including role-playing, case-based learning, and small- and large-group discussions. Students have an opportunity

to apply what they have learned about behavioral-change counseling when they interact with patients with SUDs in the clinical setting, with faculty observation and feedback. Students are required to attend a 12-step meeting and write a short reflection about their experience.

- At all four health professions schools at the **University of California, San Francisco (UCSF)**, expanded interprofessional educational efforts on pain care and opioid prescribing are ongoing through grand rounds and workshops — exemplified by the launch of a National Institutes of Health Center of Excellence in Pain Education at UCSF in 2012 and Pain Summits there in 2013 and 2015.
- The **Jacobs School of Medicine and Biomedical Sciences at the University at Buffalo in New York** has provided interprofessional exercises in recognizing and addressing opioid addiction in a variety of settings to more than 900 students from medicine, nursing, social work, pharmacy, dentistry, and public health programs. Students from other schools (law, urban planning, college of arts and sciences, and engineering) have also participated. Additionally, medical students learn about the history of addictions, pharmacology of opioids, and neurobiology of addiction in their first two years and are exposed to intensive education in addictions in the third-year family medicine clerkship. A fourth-year elective is offered in addiction medicine.
- At the **University of Pittsburgh School of Medicine in Pennsylvania**, students begin learning about addiction and opioid misuse early in the first year and continue to learn about it and skills for counseling patients in pain management and addiction in subsequent years. Instructional methods include standardized-patient encounters, simulations, and web-based instructional modules.
- Pain Care Medicine, a required course for all first-year students at the **Johns Hopkins University School of Medicine in Maryland**, introduces pain as an interdisciplinary area of research and clinical practice. The course is led by pain-care providers and includes discussions with physicians, patients, pharmacists, nurses, physical therapists, and psychologists. Topics include the neurobiology of pain, clinical pain assessment, nonpharmacological management of pain, and the appropriate use of both opioid and nonopioid analgesic medications. Lectures, many examples of clinical correlations, small-group and expert-panel discussions, and online tutorials are integrated with learning from the longitudinal clerkship experience. Students are encouraged to approach each patient as an individual and to appreciate their responsibility as physicians in executing a comprehensive approach to managing pain and suffering.



Medical schools and teaching hospitals are on the front lines in battling the nation's opioid epidemic, advancing comprehensive approaches for treating both chronic and acute pain and working to prevent, identify, and treat substance use disorders.”



Training providers to intervene early and provide treatment

Various academic medicine institutions are integrating training across undergraduate, graduate, and continuing medical education (UME, GME, and CME) in the Screening, Brief Intervention, and Referral to Treatment (SBIRT) approach:

- Family medicine and internal medicine residents at the **University of Wisconsin School of Medicine and Public Health** learn how to spot patients with substance use disorders and intervene using the SBIRT approach. The training is being expanded to include medical, nursing, pharmacy, psychology, and social work students.
- With funding from the Substance Abuse and Mental Health Services Administration (SAMHSA), faculty at the **Medical University of South Carolina** have expanded training for medical students, as well as undergraduate and graduate nursing students, in using the SBIRT approach, especially for opioid use disorder.
- **Marshall University in West Virginia** implemented SAMHSA's SBIRT Health Professional Training grant across training programs for 10 health care professions, including medical students at the Joan C. Edwards School of Medicine. The project has successfully trained close to 5,000 emerging health care students.
- The **Jacobs School of Medicine and Biomedical Sciences at the University at Buffalo in New York** provides SBIRT training for community physicians, nurse practitioners, and physician assistants. In 2016, the school offered local clinicians a series of well-attended pain-management seminars aimed at curtailing use of opioids and increasing use of other medications and nonpharmacologic modalities.

Reinforcing content in residency training

- Fellows in addiction psychiatry and pain medicine at the **Louisiana State University Health Sciences Center in New Orleans** lead team-based educational programs for medical students and assist with pain-management consultation services. Training for the fellows occurs in a variety of clinical areas, including outpatient clinics, intensive outpatient and residential treatment facilities, emergency departments, and hospital inpatient detoxification areas.
- Internal medicine and family medicine residents at the **University of Louisville in Kentucky** participate in interactive workshops where they have honest and difficult conversations with patients about opioid medications. In the internal medicine program, the principles outlined in the workshops are used in the residents' continuity-clinic experience, in which residents are trained using a template that promotes adherence to best practices in assessing the benefits and risks of opioids in individual patients. In the family medicine residency program, residents undergo additional training in the safe prescribing of opioids. Additionally, the university has a fellowship program in pain medicine that is anesthesiology-based and multidisciplinary and includes a required rotation in addiction medicine.
- The **University of Hawaii John A. Burns School of Medicine** GME programs in family medicine, OB-GYN, and psychiatry and psychiatry fellowships have a required curriculum that includes an overview of SUDs, opioids, safe prescribing, and local resources. The addiction psychiatry and addiction medicine faculty have created a two-part lecture for the other GME programs.
- The family medicine residency program at **Michigan State University College of Human Medicine** uses a systemized approach that involves informed consent for opioid treatment, mandatory periodic visits, an initial screening for risk, and a screening for depression at each visit. It also has a multidisciplinary team to assist with treatment and started a process — involving residents — of internal peer review for all patients above a predefined daily dose threshold of morphine equivalents.
- At the **Jacobs School of Medicine and Biomedical Sciences at the University at Buffalo in New York**, residents in all primary care fields as well as in OB-GYN, psychiatry, and emergency medicine are trained in screening techniques to detect SUDs and learn to use MAT for opioid use disorder. Residents and fellows in the gastrointestinal division provide treatment for hepatitis C to patients in methadone treatment centers in New York City and Buffalo; this work is funded by a grant from the Patient-Centered Outcomes Research Institute (PCORI).
- Residents at **Beaumont Health in Michigan** participate in a year-long education program, Pain Management: An Interdisciplinary Approach, that covers various perspectives on the assessment and treatment of acute and chronic pain through monthly presentations in formats such as lectures, experiential exercises, and faculty-resident discussions. The institution also created a website about pain and pain medicine for both health care professionals and patients that covers pharmacological and nonpharmacological pain remedies. The Beaumont Health Pain Management Service is sponsoring the development of nonpharmacological therapy, opioid-sparing pharmacological strategies, pain-rehabilitation regimens, and addiction medicine resources to be integrated into all treatment plans for chronic pain. Medical students, residents, fellows, and practicing physicians participate in the measurement, planning, and educational phases of this program.

Medical education programs across the country have opened fellowships in addiction medicine — a new subspecialty recognized by the American Board of Medical Specialties (ABMS) in October 2015 and accredited by the Accreditation Council for Graduate Medical Education (ACGME) — to train providers in caring for patients dealing with SUDs. ABMS is also integrating accredited safe-opioid-education initiatives into maintenance-of-certification programs.



Educating existing providers and enhancing continuing medical education

- The **University of Minnesota Medical School**, in partnership with the Minnesota Medical Association and the Steve Rummeler Hope Foundation, developed and recorded a series of lectures for medical students, residents, and practicing doctors on the topic of opioids (mnmed.org/painseries). The lectures qualify for continuing education credit and include topics such as pain psychology, pain management in the emergency department, opioid addiction in pregnancy, and prescribing guidelines for opioids, benzodiazepines, and other controlled substances. The University of Minnesota has been working with the state's Department of Human Services to develop a podcast to educate students, residents, and health professionals about the newly developed opioid-prescribing guidelines. The podcasts will be distributed widely and be available for continuing education credits. The school also developed and implemented a case-based curriculum for medical students about opioid prescribing and addiction, including alternative methods for managing chronic pain.
- The Safe and Competent Opioid Prescribing Education (SCOPE) of Pain at **Boston University School of Medicine in Massachusetts** is a continuing medical education and continuing nursing education program consisting of a three-module, case-based, online activity and live conferences across the U.S. that teach providers how to more safely and competently manage patients with chronic pain, using opioid analgesics when appropriate.
- The **University of Tennessee College of Medicine** Center for Addiction Science, recognized as a Center for Excellence in Addiction Medicine by the Addiction Medicine Foundation, trains physicians in alternate forms of pain therapy as a way to avoid overprescription of opioids and offers an addiction medicine fellowship. The center also provides clinical treatment services such as cognitive behavioral therapy, MAT, motivational enhancement therapy, and 12-step-program facilitation across all demographics.
- The **University of Arkansas for Medical Sciences (UAMS)** has launched a free video conferencing service for health care providers that includes a weekly 20-minute presentation by various health care professionals and a question-and-answer session. Physicians, physician assistants, nurse practitioners, pharmacists, and other health care providers are welcome to use the service and can present patient cases for feedback on approaches to treatment. In addition, addiction specialists with the UAMS Center for Addiction Research have partnered with the Arkansas Department of Human Services to offer a telephone hotline for physicians treating patients already

The AAMC is a member of the Conjoint Committee on Continuing Education (CCCE), a coalition of 26 national medicine, nursing, dentistry, and pharmacy and physician assistant organizations that have joined together to address the opioid epidemic in the U.S. through the continuing education of health professionals.

diagnosed with opioid addiction. The hotline puts providers in touch with addiction specialists who can provide advice on a range of topics — anything from determining dosages of addiction-treatment medications such as buprenorphine-naloxone to connecting patients with support services to handling billing. The providers can also have a telemedicine consult for advice or a second opinion from a UAMS addiction expert.

- The Project Echo Telementoring Program at the **Medical University of South Carolina (MUSC)**, known as South Carolina Medication-Assisted Treatment — Academic Community Capacity Expansion for Sustainable Success (SC MAT ACCESS), begun in 2017, supports primary care physicians in treating opioid use disorder through weekly teleconferences that educate providers on topics related to SUDs and pain management, with CME credits available, and provides a way to review case issues. MUSC also provides free DATA 2000 waiver training courses with eight hours of CME across the state, including to residents and medical students at MUSC and the University of South Carolina.
- The **University of Wisconsin School of Medicine and Public Health**, in conjunction with UW Health, operates the University of Wisconsin Addiction Consultation Hotline. This service provides daily (8 a.m. to 5 p.m.), on-call counseling by experts in addiction medicine, addiction psychology, and alcohol and other drug counseling to help providers care for patients with SUDs. The service is supported by an annual grant from the Wisconsin Department of Health Services.
- **Louisiana State University Health Sciences Center in New Orleans** has created a CME program for faculty focused on SUDs that uses faculty volunteers in a live program.

Providing **Clinical Care** to Patients Experiencing Pain and/or Substance Use Disorders

By bringing together teams of health care professionals and partnering with community organizations, medical schools and teaching hospitals, which treat a disproportionate percentage of people who overdose, are working to provide care for patients experiencing both chronic and acute pain and for patients who have SUDs. Physicians and residents, along with other health professionals at these institutions, are advancing comprehensive approaches that recognize pain management's risks and benefits. These institutions are also implementing new methods and protocols to treat SUDs and addiction. Their goal is to achieve a balance that ensures patient access to pain medications when clinically appropriate while minimizing the potential for misuse.

- The **University of Colorado Hospital (UCH)**, within the UHealth system, has undertaken a variety of efforts, some of which have been part of systemwide initiatives:
 - UCH is expanding MAT across 24 counties in eastern and southern Colorado through the Implementing Technology and Medication Assisted Treatment Team Training in Rural Colorado (IT MATTRs Colorado) program. As part of the effort, UCH is working with local communities to enhance awareness of opioid use disorder and MAT. To date, the program has trained more than 80 care teams to implement MAT services and has helped more than 400 providers obtain their DATA 2000 waiver training. The work is partially funded by grants from the Agency for Healthcare Research and Quality (AHRQ) and SAMHSA.
 - UCH also partnered with **University of Colorado School of Medicine** to improve how UCH primary care clinics manage chronic pain. The effort has led to standardized guidelines for screening, managing, and caring for patients. The University of Colorado Anschutz Medical Campus Department of Family Medicine also launched the Chronic Pain Resource Center website, which offers resources to patients, families, and providers (cufamilymedicine.org/chronicpain). For providers, the site has a risk calculator; pain-management guidelines; assessment tools for chronic pain, anxiety, depression, substance use, and other conditions; and policies and procedures for prescribing controlled substances.
 - UCH has instituted prescribing guidelines for opioids, emphasizing nonopioid alternatives to pain medication and connecting providers to the Colorado Prescription Drug Monitoring Program database. Since that started, additional UHealth hospitals have instituted similar guidelines, including three hospitals and two freestanding emergency departments that began implementing the guidelines and using alternatives to opioids with a Colorado Hospital Association pilot project. Now, all 10 hospitals and 19 freestanding emergency departments within UHealth have implemented protocols that reduce opioid prescribing.
- In March 2018, the **Medical University of South Carolina (MUSC)** launched the state's first Pain Rehabilitation Program, an evidence-based three-week, multidisciplinary intensive outpatient program that lessens patients' pain while transitioning to nonopioid pain treatments. MUSC's Opioid Task Force is charged with examining prescribing procedures across the system and working with department chairs to identify outliers and provide feedback to providers. In the past year, surgical faculty have led a statewide educational intervention to address responsible postoperative opioid prescribing. MUSC also operates a telemedicine program focused on improving access to treatment for opioid use disorder in rural areas of South Carolina.
- A collaboration of Penn State Health and UPMC Pinnacle, the **Pennsylvania Psychiatric Institute (PPI)** uses a hub-and-spoke model to treat patients in central Pennsylvania. PPI acts as the hub, with primary care practices serving as the spokes and referring more severe and complex patients to PPI. Through its inpatient services, PPI also provides primary care, including vaccinations, Pap smears, and hepatitis C screening and treatment. In the first eight months of using this hub-and-spoke approach, more than 500 patients had already been treated.
- To deliver care to people with SUDs, the **University of Cincinnati College of Medicine in Ohio** established the Cincinnati Exchange Program with grant funding from a local foundation and the Ohio Department of Health and a donated van. The program, now operated by the Hamilton County Public Health Department, has six sites that, in addition to offering safe disposal of and access to sterile injection equipment, screen for HIV, hepatitis C, and syphilis and refer clients to addiction-treatment providers.

- Students at the **University of Puerto Rico School of Medicine** provide information on safe injection techniques and access to sterile injection equipment to people with SUDs through a community clinic and outreach program. The incidence of HIV within the target population has dropped since the program started.
- Comprehensive Opioid Addiction Treatment (COAT), an outpatient program managed by **WVU Medicine in West Virginia**, directly links MAT with group therapy and peer support services to provide a comprehensive treatment approach to opioid addiction. Addiction experts at West Virginia University School of Medicine have successfully expanded the COAT model to rural areas by mentoring local clinicians through ongoing face-to-face mentoring and telementoring.
- Patients and their family members at all **NYU Langone Health** emergency departments can receive naloxone kits and training on how to recognize an overdose and administer naloxone.
- Work to improve the clinical management of pain at the **University of California, San Francisco (UCSF)**, includes integrating nonopioid, multimodal analgesic therapies, implementing strategies to reduce opioid doses without losing analgesic efficiency, expanding clinical services through the Division of Pain Medicine, and developing provider-based tools embedded in the electronic health record system for opioid prescribing and patient education. A fully integrated approach, Pediatrics, Pain and Palliative Care (IP3), was established in 2010 and is ongoing at the UCSF Benioff Children's Hospital. Current tools include an opioid-equivalency table for determining appropriate dosages and assessing the amount of medication a patient is currently taking, an opioid patient-provider agreement, and an opioid-directed after-visit summary for patients. Together, these tools are intended to help establish and maintain realistic opioid analgesic expectations and ongoing patient and provider responsibilities. Institutional priorities for an overall analgesic strategy were recently refined at an Opioid Stewardship Summit that the leadership of the UCSF Pain Management Committee will implement.
- In July 2018, the Department of Pediatrics at the **Jacobs School of Medicine and Biomedical Sciences at the University at Buffalo in New York** opened a new clinic for adolescents at risk of or suffering from SUDs that integrates behavioral health, social work, and pediatric medicine with addiction medicine expertise and offers MAT for opioid use disorder. Additionally, the Department of Orthopedics convened a regionwide effort to decrease opioid prescribing postoperatively, which is conservatively anticipated to result in a million fewer prescribed doses of opioids this year.



- The Michigan Opioid Prescribing Engagement Network, launched with support from the **University of Michigan**, the Michigan Department of Health and Human Services, and Blue Cross Blue Shield of Michigan Value Partnerships, aims to end the opioid epidemic by preventing opioid-naïve patients from developing opioid dependence and to reduce the risk of opioid diversion in the community. The program focuses on acute, postoperative, and dental pain-management settings to educate patients, providers, and communities about the risks of prescription opioids, develop guidelines for best practices for opioid prescriptions, design and implement statewide interventions, and facilitate safe opioid disposal with community-driven take-back events.
- **Johns Hopkins Medicine in Maryland** launched the Perioperative Pain Clinic in June 2017, which helps patients understand and manage pain throughout the surgical experience. The clinic provides an array of pain-management options and comprehensive treatment plans for each patient. In addition, Johns Hopkins Hospital operates the Pain Treatment Program, which helps patients with chronic, disabling pain by offering comprehensive evaluation, treatment planning, and care.
- Physicians at **UK HealthCare in Lexington, Kentucky**, perform opioid-free surgeries in four surgical disciplines: endocrine and oncologic, sports orthopedic, gynecology, and some general surgery. When they first meet with their patients, physicians inform them about the kind of pain management they will be using and what to expect. UK HealthCare is evaluating the impact of this program and has so far found a hospitalwide decrease in prescription of opioids.



- Many institutions are providing MAT in the emergency department and provide handoffs to long-term care, which, research has shown, results in better long-term-care results. The research, conducted at **Yale New Haven Hospital in Connecticut**, showed that 80% of patients who begin MAT in the emergency department were in treatment 30 days later compared with less than 50% of patients who were either given a referral to treatment or received an intervention of brief counseling followed by a referral to treatment.
 - **Massachusetts General Hospital** offers buprenorphine to patients who present with opioid use disorder in the emergency department. At least one physician licensed to provide MAT is in the emergency department at all times, and after initial treatment, patients are referred to the Bridge Clinic, a transitional outpatient addiction clinic that provides long-term MAT.
 - In 2015, **Boston Medical Center in Massachusetts** established the Addiction Consult Service to transition patients from the hospital to posthospitalization substance use treatment. Services include the initiation of MAT during hospitalization and help in connecting with community-based treatment programs. Emergency room visits for SUD-related events have gone down by 30%, and readmission rates for those patients, by 40% since 2015. The service referred 376 patients to long-term treatment in its first six months.
 - The Department of Emergency Medicine at the **Jacobs School in New York** created an innovative network model for initiating buprenorphine treatment in patients presenting with opioid overdoses, with secure handoffs to treatment agencies within 24 hours, and then transitioning from maintenance care to primary care physicians. The program is in place at most of the regional hospitals and with nearly all service agencies. The University at Buffalo is currently training providers in MAT in rural and tribal areas of New York.
- In the past year, **MUSC in South Carolina** launched a program to start treatment for opioid use disorder in the ER. Since its inception, the program has been expanded to two other hospitals, and there are plans for statewide implementation.
- **NYU Langone Hospital-Brooklyn**, a Level 1 trauma center, and the Family Health Centers at NYU Langone, one of the largest Federally Qualified Health Center networks in the nation, have developed care pathways to connect patients between the hospital and outpatient settings. These pathways ensure that patients can be transitioned effectively from buprenorphine induction in a hospital or emergency department setting to monitoring and ongoing treatment in an outpatient setting. NYU Langone Health is also working to increase the number of providers who can prescribe buprenorphine.
- In June 2018, with grant funding from the Office of Behavioral Health within the Colorado Department of Human Services, the **UHealth University of Colorado Hospital** started a two-year pilot program for MAT initiation in the emergency department followed by a warm handoff to community care providers.

Research Into New Methods of Treating Pain and Substance Use Disorders

Scientists at medical schools and teaching hospitals conduct approximately half the research supported by the National Institutes of Health (NIH) on pain, substance use, narcotics, and opioids to improve understanding of pain and addiction and develop new and more effective treatments. Investigators in academic medicine also conduct health services research to better understand and address gaps in care delivery for pain and addiction, including through work supported by the Agency for Healthcare Research and Quality (AHRQ) and the Patient-Centered Outcomes Research Institute (PCORI). The results of this research benefit the education and training of future physicians and the care of current patients.

- **NYU Langone Health's** interdisciplinary investigators are partnering with local departments of health to study drivers of the opioid epidemic and to provide evidence for the most effective prevention and treatments for substance use disorder, among various populations and in a range of clinical settings. Researchers are assessing addiction treatment, from pharmaceutical to clinical consultation, through partnerships in a variety of clinical and nonmedical environments. Researchers at NYU Langone Health are also investigating alternatives to opioids for pain management, particularly in postoperative care.
- Researchers at **Stanford University School of Medicine in California** are working to develop a pain-relieving compound, unrelated to opioids, that does not cause dopamine-driven addiction and does not interfere with breathing, which can lead to respiratory depression, the main cause of prescription-opioid overdose fatalities. The research is funded by the NIH.
- Scientists at the **University of North Carolina School of Medicine**, partially funded by the NIH, have made a major step forward in developing opioids that relieve pain without causing harmful side effects by creating a new drug-like compound that activates only the kappa opioid receptor.
- The Drug and Alcohol Abuse Research Track, funded by the NIH's National Institute on Drug Abuse, allows psychiatry residents at the **Medical University of South Carolina** who are committed to pursuing research careers to conduct patient-oriented research into SUDs and related topics. The program provides training, mentoring, and support for the residents as they work with active researchers. Residents also receive formal didactic training in the skills necessary to have a successful research career. The program is being expanded to include a new lecture series and two research retreats focusing on opioid use disorder that will be available to residents in all specialties. A related summer program is available for undergraduate, medical, and graduate students.

AMC-member medical schools and teaching hospitals are active members of the NIH HEAL (Helping to End Addiction Long-term) Initiative, which includes the Food and Drug Administration and experts from private and academic sectors. HEAL identifies areas of opportunity to advance pharmacological treatments for pain and addiction — including medications to treat SUDs, prevent and reverse overdoses, and support long-term recovery — as well as to develop new alternatives for pain relief.

- A team of researchers from the **University of Minnesota Medical School** and Minneapolis Medical Research Foundation at Hennepin Healthcare is developing vaccines against heroin and prescription opioids that use the immune system to produce antibodies that target, bind to, and prevent the opioids from reaching the brain.
- Researchers at the **Washington University School of Medicine in St. Louis in Missouri**, along with researchers from Epharmix, a St. Louis-based digital health company founded by Washington University students, examined the potential use of automated text messages to follow up with patients being treated for SUDs. They found that the system, in conjunction with cognitive behavioral therapy, may reduce the likelihood of relapse, allow providers to treat more patients, and trim medical costs.
- Researchers from the **University of Massachusetts Medical School** in Worcester studied the use of wearable technology that measures temperature, heartbeat, motion, and skin electrical conductance to track patients in recovery. The technology identifies when patients relapse and can be used to contact a sponsor or physician to intervene. (In a previous study, the technology was able to detect with complete accuracy when a patient used cocaine.)

Partnerships With the Public and Private Sectors

Medical schools and teaching hospitals cannot combat the opioid epidemic alone. A multifaceted response across multiple sectors is essential to effectively deal with this public health crisis. This is why AAMC-member institutions have partnered with local public health and community organizations.

- Partnerships help increase the number of certified naloxone administrators.
 - **New York Medical College** has partnered with the Westchester County Department of Health to teach medical students the factors that should be considered before prescribing an opioid for pain control. Along with using caution from the get-go, the students are trained to recognize the signs and symptoms of an opioid or heroin overdose, administer naloxone to reverse an overdose, and understand the science behind naloxone's effectiveness. Involving the health department contributes invaluable practical lessons learned from actual experiences in the field.
 - **Boston Medical Center** partnered with **Rhode Island Hospital** and CVS Health to study and analyze data from pharmacies throughout **Massachusetts and Rhode Island** to develop best practices for a national pharmacy-based naloxone-rescue-kit program.
 - Emergency medicine faculty at the **Jacobs School of Medicine and Biomedical Sciences at the University at Buffalo** have trained hundreds of police, first responders, and members of the public in naloxone rescue.
- Faculty from the **Jacobs School in New York** have been core members of an Erie County Opioid Task Force, composed of representatives from hospitals, addiction service agencies, law enforcement, the judiciary, education, the public, government, and clinicians. The task force created guidelines for managing acute pain, approved by the county medical society and representatives from specialty societies, which, in combination with CDC guidelines, resulted in a marked reduction in opioid prescriptions in the region. Between 2016 and 2017, opioid-related deaths decreased by 17% in Erie County (from 301 to 251). In addition, local insurers have partnered with the Jacobs School and the county health department to present educational seminars on safe pain management and screening and managing people who are addicted to opioids.
- The UM Injury Prevention Center at the **University of Michigan** is partnering with the Michigan Department of Health and Human Services and law enforcement to improve real-time reporting of opioid overdose deaths in Michigan. To allocate public health and addiction resources, and to disrupt drug trafficking most efficiently, communities need to know how many fatal and near-fatal overdoses occurred in the past days, weeks, and months. Currently, counties in Michigan, like those in most of the country, obtain this information after a nearly 16-month delay. The System of Opioid Surveillance (SOS), run by the Injury Prevention Center, is working to change this by merging data from medical examiners, emergency departments, and emergency medical services systems. The SOS aggregates data and maps the data to better inform public health efforts. The maps do not identify any one individual but instead show patterns and changes in a community, which can guide resources and let public health officials better evaluate the interventions that have been put in place.



Educating the Public

As anchors of their communities, medical schools and teaching hospitals make it a priority to inform the public about critical public health issues, including the opioid epidemic.

- The Heroin and Opioid Prevention and Education (HOPE) Initiative, a joint effort of the **University of New Mexico Health Sciences Center** and the District of New Mexico U.S. Attorney's Office in Albuquerque, is running a public awareness campaign — including a website (hopeinitiativenm.org), billboards, social media outreach, and student education programs — built around the messages of prevention, treatment, and public safety.
- The **University of Pittsburgh Medical Center in Pennsylvania**, in coordination with the University of Pittsburgh Schools of the Health Sciences, have been bringing together their expertise to explore the opioid epidemic, care for the community, and prevent further deaths. The Opioid Epidemic Media Kit highlights the doctors, researchers, and nurses making significant efforts to reduce diversion and misuse of prescription opioids (upmc.com/media/media-kit/opioid-epidemic/Pages/default.aspx).
- In 2016, the **University of Nebraska Medical Center**, the Nebraska Attorney General's Office, the District of Nebraska U.S. Attorney's Office, and the Nebraska Department of Health and Human Services sponsored a daylong conference to find a collaborative, multidisciplinary approach for preventing and treating opioid use disorders in the state. The summit, Charting the Road to Recovery: Nebraska's Response to Opioid Abuse, focused on prevention, treatment, and law enforcement through direct collaboration with Nebraska's public health, medical, and law enforcement communities.
- In 2016, the **University of California, San Francisco (UCSF)**, produced an Osher Mini Medical School for the Public program, Pain: New Insights and Old Treatments. The six-part series addresses the multifaceted aspects of pain management by embracing a historical perspective of analgesic discovery and presenting the scientific basis of pain therapies, including psychological, pharmacologic, neck and back, integrative medicine, and new technological approaches (uctv.tv/pain).
- The AAMC, through conferences, meetings, online resources, and other methods, shares practices and data with, and between, its member institutions.



Promoting sharing of practices, approaches, and responses

The AAMC maintains a hub of resources about how academic medicine is addressing the opioid epidemic, including examples from AAMC members, webinars, peer-reviewed curricular resources, congressional briefings, and news articles and features on topics related to the opioid epidemic. The information is available at aamc.org/opioidresponse.



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