

Paramedics Can Help Combat the Opioid Epidemic

— *Lessons from a new initiative to treat patients with buprenorphine at the point of overdose*

by Gerard Carroll, MD, Rachel Haroz, MD, and Kaitlan Baston, MD, MSc September 18, 2022



Between emergency medical service (EMS) calls in Camden, New Jersey, a Cooper University Health Care EMS crew gazes out of their ambulance toward a group of people using heroin under a bridge with new eyes. Frustration has been replaced with hope and a tinge of excitement. What previously felt like a drain on their resources to fight a worsening and seemingly hopeless crisis is now an opportunity for change.

The key: an innovative initiative to train and arm paramedics with buprenorphine, a medication that treats withdrawal and begins addiction treatment on the spot, interrupting the relentless cycle of repeat overdoses.

Medication for opioid use disorder (MOUD) has been shown to [decrease mortality](#) and [decrease the cost](#) of healthcare, but there are many barriers to delivery. In particular, the combination of behaviors intrinsic to the disease and the results of mistreatment in the healthcare system leave many patients with opioid use disorder (OUD) unwilling to engage, even in the setting of life threatening overdose.

At Cooper University Health Care, our EMS responded to 5-15 overdoses per day in 2019. Nationally, according to the CDC, overdose mortality increased [approximately 30%](#) from 2019 to 2020 amid the pandemic. This is our crisis.

Toward a New Intervention Model

The Division of Addiction Medicine at Cooper was started in 2015 with a single full-time fellowship trained physician and two part time toxicologists. We are now the Cooper Center for Healing, an

integrated pain, behavioral health, and substance use disorder center providing both hospital and ambulatory care. We developed education programs at the undergraduate, graduate, and attending level, and quickly disseminated the skills physicians needed to treat OUD across our system. We led with the front line, our emergency department, where our providers have all been buprenorphine X-waivered since 2017. We witnessed a philosophy shift among our healthcare providers with the integration of addiction services across service lines. Unfortunately, despite reaching this tipping point, overdose death rates in our county remained stable. We soon discovered that almost 40% of overdoses in Camden refuse hospital transport, never interacting with the system we created for them.

In response to the escalating crisis, we examined our existing healthcare system, and as with the emergency department, we realized that healthcare in the U.S. already has a 24/7 community-based medicine infrastructure: EMS. Available in both rural and urban environments, these well-trained providers are trusted members of the community.

Similar to the emergency department caregivers we had already trained, the traditional EMS mission is emergency care, not patient engagement or daily observed therapy. Yet, paramedics are trained for the challenging interactions they face in the field, are mobile, and carry life-saving medications and equipment. We postulated that addiction training could add patient engagement and the delivery of MOUD to EMS. We believe that these tools expand the profession and increase the relevance of EMS to the healthcare system.

In fall 2019, we launched the first paramedicine field buprenorphine initiative at the point of overdose.

The program utilizes all EMS resources to engage OUD patients on an ongoing basis, providing resources and opening a community dialogue. Paramedic ambulances carry buprenorphine and are supported by X-waivered EMS physicians either on scene or by phone. To date, we have field initiated 174 patients on buprenorphine therapy. 100% reported a reduction or elimination of their withdrawal symptoms and 35% made it to their first follow-up appointment. We have had no cases of precipitated withdrawal, and no adverse outcomes. Peer reviewed data on the intervention is in the final stages of publication.

In our model, paramedics actively engage patients after reversal with naloxone, initiating the first dose of 16-24 mg of sublingual buprenorphine on scene and arrange a next day clinic appointment.

The system is dynamic, able to provide engagement, OUD care, and linkage to 24/7 care. Like the emergency department, EMS serves as another gateway to our [MOUD system of care](#). Unlike other low-barrier solutions, it utilizes existing resources and is scalable to most EMS systems. It is designed to survive the ebbs and flows of grant cycles as EMS is a necessary service.

Other low-barrier solutions have been proposed: mobile units, integration of MAT into harm reduction centers, and walk-in clinics. While these initiatives can be critical, they still require patients to seek care, which their disease often prevents. Our model allows life-saving medication to be deployed to patients where they are, using infrastructure reliably available across the country.

However, an EMS program for OUD cannot exist in a vacuum. Key components and partnerships that have made our program a success include: a flexible, innovative addiction medicine division with easy access for EMS patients, a fully X-waivered emergency department, progressive state EMS regulatory partners, EMS medical direction with addiction training, and EMS operational personnel willing to advocate for and implement the program. Most critically, there needs to be ongoing engagement and training of the EMS service providing addiction care.

The program's effect on paramedic burnout has been a silver lining. In the past, our EMS professionals, like other healthcare providers, often expressed frustration with patients who overdosed. A perceived cycle of relapse, repeat overdose, and eventual death is disheartening for

acute care professionals who rarely observe patients improve longitudinally with medication and treatment. Even when buprenorphine isn't initially effective, our paramedics report feeling engaged and motivated to continue their new interactions. "I am no longer frustrated because I know we are trying to do something," one paramedic stated. There is pride in reaching the previously unreachable and stemming the tide of this devastating disease.

Honing and Expanding the Model

Despite our success initiating the first dose of buprenorphine at the point of overdose, our fully implemented model will add additional roles, beyond strict emergency response. In the future: EMS providers will seek this population out before they suffer a critical event, offer daily observed therapy, community resources, and link patients to the healthcare system. Paramedics have already been [utilized successfully](#) to treat chronic illnesses like heart failure at home, reducing hospital utilization, and increasing patient autonomy. We have created a pathway to save more lives, and serendipitously, we have seen other unanticipated positive effects.

Fred Rogers famously [called for](#) us to look at emergency responders as helpers: "Always look for the helpers...If you look for the helpers, you'll know that there is hope." Communities struggling with opiate use are calling for helpers, and EMS can fill this role.

On their next call, instead of merely resuscitating with naloxone, Cooper University Healthcare paramedics can now seize the opportunity to engage with the patient, initiate buprenorphine, and shepherd them through the process of getting their first clinic appointment. The paramedics know their patients may fail to follow up, that they might have to resuscitate them again, but this is their community and they will be here 24/7 with the right tools when their patients are ready. With this model, in any community, EMS can initiate a critical new pathway to recovery.

[Gerard Carroll, MD](#), is an emergency medicine and EMS physician at Cooper University Healthcare, and an associate professor in the Department of Emergency Medicine at Cooper. [Rachel Haroz, MD](#), is an emergency medicine, toxicology, and addiction medicine specialist at Cooper University Health Care, and an associate professor in the Department of Emergency Medicine at Cooper. [Kaitlan Baston, MD, MSc](#), is a family medicine and addiction medicine specialist at Cooper University Health Care and an assistant professor in the Department of Medicine at Cooper.