



## Stretching the Scope — Becoming Frontline Addiction-Medicine Providers

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**O**n our infectious diseases (ID) consult service, we recently cared for Mr. C., a young man with *Staphylococcus aureus* tricuspid valve endocarditis, septic arthritis, and empyema that

were consequences of his opioid use disorder (OUD). Several years earlier, he had started taking oxycodone at parties, and eventually, when the cost of pills became prohibitive, he'd progressed to injecting heroin. His days were consumed by the logistics of obtaining heroin to stave off the exhausting cycle of opioid withdrawal. Despite his deep desire to stop using, he was initially ambivalent when we offered to start treatment with buprenorphine, which is commonly coformulated with naloxone as Suboxone (Reckitt Benckiser). "Doc," he said, "you gotta understand that as an addict, the scariest thing right now is the idea of putting another opioid in my body, even if it's going to help me."

Although Mr. C. had done well on buprenorphine in the past, accumulating several months of recovery, he felt overwhelmed by the prospect of starting the process again. In the days after his clinical status stabilized and the ID service defined his antibiotic course, we kept visiting Mr. C. on the ward. We confronted the dual imperatives to treat his infection and his OUD to reduce his near-term chance of dying from an overdose or relapsed infection. During our visits, we discussed his resolving empyema, but also his cravings, withdrawal symptoms, and readiness to start buprenorphine treatment. On the day before his discharge, as he faced impending relapse, Mr. C. decided he was ready. That afternoon, we

completed an observed buprenorphine induction and made an appointment to see him the following week in the ID clinic for ongoing buprenorphine and antibiotic treatment.

As the opioid use and overdose epidemic ravages the United States, bearing witness to the physical and psychosocial consequences of addiction has become part of many physicians' daily work. Despite our position on the epidemic's front lines, the remarkable reality is that we remain systematically undertrained and underengaged in addiction-treatment efforts.<sup>1</sup> Though we have taken steps toward recognizing our profession's complicity in the epidemic's roots, most physicians feel paralyzed when it comes to effecting change for individual patients.

The history of medicine is, in part, the history of physicians stretching the scope of their practice to answer the pressing needs

of their times. In the face of OUD, a treatable illness with a striking capacity to rapidly and definitively alter the lives of our patients, their families, and the communities we serve, we have been late and ineffective in our response. In recent years, the number of hospitalizations for the medical consequences of OUD has escalated, and in 2015 alone, more than 33,000 people died in the United States from opioid-related overdose.<sup>2</sup> Yet rates of active physician engagement in addiction treatment remain embarrassingly low.

At some point, it became culturally acceptable to treat all conditions in a patient except addiction. It's a diagnosis still frequently and falsely regarded as untreatable — a convenient assumption driven by the stigma against people with this disease. ID specialists have historically been ardent advocates for social justice and public health, championing patients on the margins of society who have stigmatizing illnesses. In the age of the opioid epidemic, treatment of life-threatening infections arising from injection drug use accounts for an increasing proportion of our practice. Far too often, however, infections that we treat resolve while underlying substance use disorders are left to fester.

Under the federal Drug Addiction Treatment Act of 2000, physicians who register with the Drug Enforcement Administration, regardless of their subspecialty, can receive a waiver to prescribe buprenorphine for OUD treatment after undergoing 8 hours of training. According to the Substance Abuse and Mental Health Services Administration, the federal body that oversees the buprenorphine waiver program, there

are currently 37,448 physicians with such waivers,<sup>3</sup> representing only approximately 4% of all professionally active U.S. physicians.<sup>4</sup> Nationally, the distribution of physicians with waivers is grossly uneven, and many suffering communities are left with little to no capacity for buprenorphine treatment. Obtaining a waiver is one concrete action that all physicians can take to help stem the tide of this epidemic. Physicians practicing in clinical contexts in which long-term prescribing is not possible can prescribe a short course of buprenorphine therapy as a bridge to long-term treatment managed by one of a growing number of primary care physicians and psychiatrists.

As a small group of ID fellows and faculty practicing at Beth Israel Deaconess Medical Center, a large tertiary care hospital in Boston, we have pursued this strategy. We offer buprenorphine in conjunction with antibiotics to patients who are hospitalized with infectious complications of injection drug use. We ask patients about injection practices, counsel them about harm reduction, and prescribe intranasal naloxone for overdose reversal, recognizing that OUD is marked by both recovery and relapse. We partner with colleagues in social work to build viable treatment plans to facilitate recovery and eventually transfer addiction care to long-term programs. As we have waited for institutional capacity to increase, we have also started to offer inpatient buprenorphine induction for patients without concurrent infection.

We anticipated some resistance on both the institutional and the provider levels, but in practice, we have largely encountered appreciation, and our work has


served as one impetus for a larger hospital initiative to address the opioid crisis. This pilot program was born in our ID division, but we believe it is replicable by any physician group — for example, surgical teams discharging patients admitted with OUD-related complications or psychiatry teams discharging patients with both substance use disorder and mental illness. For all physicians, it is vital to recognize that medication treatment for OUD is a cornerstone of recovery for most patients, and when it's omitted, high rates of relapse are consistently observed.

We are wading into the turbulent waters of our patients' lives to see them through to a time when they are clear of their infection and on the continuum of recovery. Though our efforts are still relatively new, we have been changed by the experience. Some of our patients have had relapses or haven't returned for care. But we've also seen remarkable successes — patients who presented in the depths of addiction and illness who have subsequently reconnected with their families, have started to work again, and now use opioids less or not at all. By providing the bridge to long-term addiction treatment, we have observed patients remain in care at higher rates and start to mend their badly damaged sense of trust in a medical system that has long treated them with judgment and neglect.

We are providing this care outside the realm of traditional ID consultation because the crisis demands it. Today in the United States, another 91 people will die from an opioid overdose.<sup>5</sup> Under the watchful eyes of physicians, many people survive their acute illnesses only to die in public rest-

rooms, in private homes, or on the street. There are many inspiring examples of physicians and health care communities that have similarly stretched the scope of their practice, and lives have been saved as a result. We believe it's time for more of us to join the movement.

Two months after being discharged, Mr. C. continues to receive buprenorphine treatment. He gets his prescriptions through a program close to his home, where

 An audio interview with Dr. Rapoport is available at NEJM.org

he attends weekly group meetings and individual counseling sessions. He wholly understands the gravity of his infection; his heart valve has been left severely damaged, and

he still feels weak. But he has reconnected with friends and family and is making plans to return to work. He is in early recovery from his OUD and from the chaos, social isolation, and depression that come with it. As we see it, the medical community is also in early recovery — moving past implicit biases, stigma, and fear to connect with our patients and respond to a defining crisis of our time.

Disclosure forms provided by the authors are available at NEJM.org.

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## Threats to Information Security — Public Health Implications

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In health care, information security has classically been regarded as an administrative nuisance, a regulatory hurdle, or a simple privacy matter. But the recent “WannaCry” and “Petya” ransomware attacks have wreaked havoc by disabling organizations worldwide, including parts of England’s National Health Service (NHS) and the Heritage Valley Health System in Pennsylvania. These events are just two examples of a wave of cyberattacks forcing a new conversation about health care information security. With the delivery of health care increasingly dependent on information systems, disruptions to these systems result in disruptions in clinical care that can harm patients. Health care information security has emerged as a public health challenge.

Threats to information security plague many industries, but the threats against health care information systems in particular are growing. Data breaches, generally described as an impermissible use or disclosure of protected health information, are particularly prevalent. Nearly 90% of health care organizations surveyed by the Ponemon Institute (which does independent research on privacy, data protection, and information security policy) suffered a data breach in the past 2 years; meanwhile, 64% of organizations reported a successful attack targeting medical files in 2016 — a 9% increase in just 1 year.<sup>1</sup> Multiple causative factors are involved in the uptick in attacks against health care systems, but some reasons cited in that study include low organizational vigilance, in-

adequate staffing and funding for information technology security, insufficient technology investment, and the underlying value of health care data as compared with data from other industries.

Attackers use a variety of techniques against health care organizations. Denial of service (DoS) attacks, aimed at disrupting and disabling systems by overwhelming them with large volumes of network traffic, have targeted health care facilities.<sup>2</sup> Such attacks can render clinical systems unusable, with negative effects on core hospital operations, such as delays in surgical procedures, lab-result reporting, and bed management. More recently, attacks against health care organizations have taken the form of ransomware. In these attacks, an information system — for example, a