

Crisis. Epidemic. Tragedy. Opioid stories have been heavy in the headlines and have caught the attention of parents, policymakers, clinicians, first-responders, and so-on. Unlike some other epidemics, rural areas have been particularly affected by the rising rates of opioid prescriptions, and more specifically, opioid misuse.<sup>1</sup> There is urgency to address this public health issue that is impacting all demographics--families and communities across the country, and especially agricultural communities. To drive that last point home: overdose rates in rural America surpassed urban areas, with as many as 74% of farmers impacted by the crisis.<sup>2</sup> Recently, this epidemic has been well-documented. We are regularly reminded that there is a problem, but next steps have been less clear.

Problematic opioid use is defined by the diagnostic term, *opioid use disorder*, or OUD.<sup>3</sup> The use of opioid prescriptions has become a unique public-health issue: opioid medications have been an important part of medicine and pain management despite their negative outcomes. In other words, they are a medication doing both good and bad, and it has been hard to find a balance. Opioid medications are typically prescribed to treat chronic, non-cancer related pain. They are commonly prescribed for post-operation pain or injuries, including outpatient procedures like wisdom teeth removal in teens and young adults.<sup>4</sup> Familiar medications seen in homes and hospitals include hydrocodone, oxycodone, morphine, codeine, and more recently, fentanyl.<sup>5</sup> The frequency in which these prescriptions are given has been increasing dramatically since the 1980s, most notably in the management of chronic pain, though the reasons for the increase are not well-understood.<sup>6,7</sup>

Research has shown that as the use of opioids for legitimate, medical purposes rise, the potential for misuse and the number of overdose deaths related to opioid medications may also rise.<sup>8,9</sup> This is especially true when prescriptions are not disposed of at the end of treatment. In the absence of proper disposal and care-planning, it is clear that increased medical availability increases the off-use availability.<sup>10</sup> Additionally, many physicians have not been adequately trained on the practice of tapering

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<sup>1</sup> "Opioid Misuse in Rural America | USDA." n.d. Accessed July 10, 2018. <https://www.usda.gov/topics/opioids>.

<sup>2</sup> "Opioid Misuse in Rural America | USDA." n.d. Accessed July 10, 2018. <https://www.usda.gov/topics/opioids>.

<sup>3</sup> Pinson, Richard. n.d. "Opioid Use Disorders." Accessed July 10, 2018.

<https://acphospitalist.org/archives/2018/03/coding-opioid-use-disorders-part-1.htm>.

<sup>4</sup> "Prescription Opioids | Drug Overdose | CDC Injury Center." 2017. December 26, 2017.

<https://www.cdc.gov/drugoverdose/opioids/prescribed.html>.

<sup>5</sup> Abuse, National Institute on Drug. 2018. "Prescription Opioids." June 7, 2018.

<https://www.drugabuse.gov/publications/drugfacts/prescription-opioids>.

<sup>6</sup> Trescott, Claire E., Randi M. Beck, Michelle D. Seelig, and Michael R. Von Korff. 2011. "Group Health's Initiative To Avert Opioid Misuse And Overdose Among Patients With Chronic Noncancer Pain." *Health Affairs; Chevy Chase* 30 (8): 1420–24.

<sup>7</sup> "Trends in Opioid Analgesic–Prescribing Rates by Specialty, U.S., 2007–2012 - ScienceDirect." n.d. Accessed July 10, 2018. <https://www-scienceirect-com.ezp1.lib.umn.edu/science/article/pii/S0749379715000896>.

<sup>8</sup> Cicero, Theodore J., Hilary Surratt, James A. Inciardi, and Alvaro Munoz. n.d. "Relationship between Therapeutic Use and Abuse of Opioid Analgesics in Rural, Suburban, and Urban Locations in the United States."

*Pharmacoepidemiology and Drug Safety* 16 (8): 827–40. <https://doi.org/10.1002/pds.1452>.

<sup>9</sup> Trescott, Claire E., Randi M. Beck, Michelle D. Seelig, and Michael R. Von Korff. 2011. "Group Health's Initiative To Avert Opioid Misuse And Overdose Among Patients With Chronic Noncancer Pain." *Health Affairs; Chevy Chase* 30 (8): 1420–24.

<sup>10</sup> Cicero, Theodore J., Hilary Surratt, James A. Inciardi, and Alvaro Munoz. n.d. "Relationship between Therapeutic Use and Abuse of Opioid Analgesics in Rural, Suburban, and Urban Locations in the United States."

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patients off of opioids, which can induce severe withdrawal symptoms and lead to continued use of opioids, and OUD. Misuse can occur when prescriptions are taken for too long, when prescriptions are taken for reasons beyond the intended purpose, or by taking medicine that has not been prescribed to an individual.<sup>11</sup>

Substance misuse and addiction have been associated with other life-events, like injuries and traumas.<sup>12</sup> For this reason, we see a large number of individuals in farming communities with opioid prescriptions. On the farm, injuries are all too common, with agriculture ranking as one of the most dangerous industries.<sup>13</sup> In addition, rural areas have inadequate access to healthcare. For example, an injury that could be treated with physical therapy, may instead be treated with pain medication. Farmers are often self-employed and may be less likely to pursue treatment in absence of healthcare. Farmers have identified access and ability to afford health insurance as one of the most critical threats to their business.<sup>14</sup>

There are numerous challenges associated with the development of innovative solutions to address OUD in communities, especially in rural regions. Identified roadblocks include HIPPA policies, where providers cannot communicate or release information to families and future facilities; social stigmas, which are amplified by a lack of anonymity in rural and agricultural communities; how OUD is classified medically, because it can prevent insurance coverage and long-term care; rural healthcare infrastructure and logistics, where facilitates may not exist or can be difficult to commute to within business hours; and more. In addition, socioeconomic factors in rural regions, like isolation, education, and poverty, have increased disparities and the impact opioid misuse has had in general.<sup>15</sup>

Strategies proposed to address this crisis are often created with urban communities in mind, where resources are distributed differently than rural communities.<sup>16</sup> Because of the nature of rural regions, promising interventions and activities should consider and target their specific barriers. As we move forward with research and advocacy, there are several components of action to address. Education, prevention, intervention, treatment, legislation, and enforcement all interact with OUD differently, but each are critical to addressing an issue of this nature and magnitude. Supply of opioid substances are addressed through enforcement and prevention efforts; where intervention and treatment focus on reducing the demand of opioid-based substances.<sup>17</sup>

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<sup>11</sup> Abuse, National Institute on Drug. 2018. "Prescription Opioids." June 7, 2018.

<https://www.drugabuse.gov/publications/drugfacts/prescription-opioids>.

<sup>12</sup> "Opioids in Rural America | | Hpij.Com." n.d. Accessed July 10, 2018. [http://www.hpj.com/opioids-in-rural-america/collection\\_cd40c4ac-7878-11e8-8129-1375f2f06d5c.html](http://www.hpj.com/opioids-in-rural-america/collection_cd40c4ac-7878-11e8-8129-1375f2f06d5c.html).

<sup>13</sup> "Safety and Health Topics | Agricultural Operations | Occupational Safety and Health Administration." n.d. Accessed July 10, 2018. <https://www.osha.gov/dsg/topics/agriculturaloperations/>.

<sup>14</sup> "Health Insurance Woes Add To The Risky Business Of Farming." n.d. NPR.Org. Accessed July 10, 2018.

<https://www.npr.org/sections/thesalt/2017/02/21/515196225/health-insurance-woes-add-to-the-risky-business-of-farming>.

<sup>15</sup> "The Rise of Opioid Use in Rural Communities- Prevalence and Strategies." n.d. Accessed July 10, 2018.

<https://attendee.gototraining.com/252gv/materials/6410005845670908418/8900704247636483585>.

<sup>16</sup> "Needle Exchanges, Once Radical, Need An Update To Survive In Rural America | HuffPost." n.d. Accessed July 10, 2018. [https://www.huffingtonpost.com/entry/opioids-needle-exchanges\\_us\\_5b3a8be8e4b07b827cb9b264](https://www.huffingtonpost.com/entry/opioids-needle-exchanges_us_5b3a8be8e4b07b827cb9b264).

<sup>17</sup> Dasgupta, Nabarun, Catherine Sanford, Susan Albert, and Fred Wells Brason. 2010. "Opioid Drug Overdoses: A Prescription for Harm and Potential for Prevention." *American Journal of Lifestyle Medicine* 4 (1): 32–37.

<https://doi.org/10.1177/1559827609348462>.

Political attention to this issue has been widespread, as this epidemic has affected communities of all kinds. The U.S. House of Representatives had a vote-a-rama on over 70 opioid bills, which is indicative of the impact and scope of this issue. Legislation has aimed to hold drug companies accountable and expand access to treatment.<sup>18</sup> A detailed bill in the Senate targets the response protocol to the crisis—from research and innovation to prevention, treatment, and enforcement strategies.<sup>19</sup>

Proposed solutions focus on prevention, treatment, and enforcement that intend to cater to rural residents—including farmers, farm workers, and community members. Prevention-focused solutions typically intend to reduce opioid prescription use, or to emphasize best practices when they are necessary. Identifying risk-factors in patients and integrating that information into care plans can reduce prescription misuse in all-communities, regardless of rural or urban demographics. Evidence-based prescribing guidelines for physicians and education for patients have also been supported as community strategies to prevent OUD.<sup>20</sup> Use of telemedicine to provide treatment that will prevent opioid prescribing or misuse can be successful, specifically in services that reduce opioid prescribing, like physical therapy.<sup>21</sup> Prevention efforts in communities through public health education typically is most successful in youth and young adults, which is an important consideration in regions with limited resources.

Realistically, prevention efforts will not stop misuse and ultimately OUD. Treating these individuals and providing harm-reduction measures is the next component of dealing with the opioid epidemic. One of the main issues for the treatment of individuals with OUD in rural areas, is access to treatment and utilization of treatment programs. A hub-and-spoke model for medication-assisted-treatment (MAT) in Vermont had targeted this challenge, where addiction specialists are integrated into health treatment models. The hub-and-spoke stabilizes patients at the hub, then continues care and outreach like MAT at the spoke, where patients are often in rural communities.<sup>22</sup> Additional innovation in treatment of OUD includes harm-reduction and emergency care. Access to overdose medications in rural areas tends to be more limited, despite the life-saving effects of having them available to first responders. Recently, a State Patrol officer in rural Nebraska administered a life-saving dose of nasal Narcan, a success story for the expanded access of emergency medications. Harm-reduction strategies include needle-exchange programs, though these tend to be politically controversial and less prevalent in rural communities.<sup>23</sup>

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<sup>18</sup> “U.S. Rep. Keith Rothfus’ Opioid Crisis Bills Pass House - News - The Times - Beaver, PA.” n.d. Accessed July 10, 2018. <http://www.timesonline.com/news/20180620/us-rep-keith-rothfus-opioid-crisis-bills-pass-house>.

<sup>19</sup> “Text of S. 2680: Opioid Crisis Response Act of 2018 (Reported by Senate Committee Version) - GovTrack.U.S.” n.d. Accessed July 10, 2018. <https://www.govtrack.us/congress/bills/115/s2680/text>.

<sup>20</sup> “The Rise of Opioid Use in Rural Communities- Prevalence and Strategies.” n.d. Accessed July 10, 2018. <https://attendee.gototraining.com/252gv/materials/6410005845670908418/8900704247636483585>.

<sup>21</sup> Thackeray, Anne, Rachel Hess, Josette Dorius, Darrel Brodke, and Julie Fritz. 2017. “Relationship of Opioid Prescriptions to Physical Therapy Referral and Participation for Medicaid Patients with New-Onset Low Back Pain.” *The Journal of the American Board of Family Medicine* 30 (6): 784–94. <https://doi.org/10.3122/jabfm.2017.06.170064>.

<sup>22</sup> “Rural Project Summary: Vermont Hub-and-Spoke Model of Care for Opioid Use Disorder - Rural Health Information Hub.” n.d. Accessed July 10, 2018. <https://www.ruralhealthinfo.org/project-examples/1015>.

<sup>23</sup> “The Rise of Opioid Use in Rural Communities- Prevalence and Strategies.” n.d. Accessed July 10, 2018. <https://attendee.gototraining.com/252gv/materials/6410005845670908418/8900704247636483585>.

Additionally, having general-practice or primary care facilities trained and educated in OUD helps to address challenges and social stigmas associated with receiving specialty care in a rural community.<sup>24</sup>

Enforcement strategies to address OUD have often focused on re-framing criminalization associated with addiction and intervening in misuse activities. For example, Project Angels has sought to address the self-reinforcing cycle of addiction by providing a guide through recovery, connected through law enforcement.<sup>25</sup> Also, policy to expand law-enforcement access to overdose-reversing medication has gained momentum nationwide, but barriers still restrict overdose-reversing medication distribution.<sup>26</sup>

Long-term, it is important to address the roots of socioeconomic factors contributing to OUD and change the stigma surrounding OUD. As technology has advanced, agricultural commodity dynamics demanded fewer employees, resulting in changing rural communities. Overall, this means the United States has become less rural, despite the increased agricultural productivity. Additionally, a lower percentage of the rural population is directly engaged in agriculture, meaning that rural populations do not necessarily mean agricultural. Rural development initiatives focusing on resiliency, economic development, and market adaptation will be important to the communities beyond the city limits, and we all depend on healthy rural communities.

**Additional resources:**

<https://www.ruralhealthinfo.org/topics/opioids>

<https://www.usda.gov/topics/opioids>

<https://www.air.org/center/center-multi-system-solutions-opioid-epidemic>

<https://www.cdc.gov/ruralhealth/drug-overdose/policybrief.html>

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<sup>24</sup> “The Rise of Opioid Use in Rural Communities- Prevalence and Strategies.” n.d. Accessed July 10, 2018. <https://attendee.gototraining.com/252gv/materials/6410005845670908418/8900704247636483585>.

<sup>25</sup> <https://attendee.gototraining.com/252gv/materials/6410005845670908418/8900704247636483585>

<sup>26</sup> <https://www.cdc.gov/ruralhealth/drug-overdose/policybrief.html>