4-2017

Rural Opioid Prevention and Treatment Strategies: The Experience in Four States [Working Paper]

John A. Gale MS
University of Southern Maine, Muskie School of Public Service, Maine Rural Health Research Center

Anush Hansen MS,MA
University of Southern Maine, Muskie School of Public Service, Maine Rural Health Research Center

Martha Elbaum Williamson MPA
University of Southern Maine, Muskie School of Public Service

Maine Rural Health Research Center
Working Paper #62

Rural Opioid Prevention and Treatment Strategies: The Experience in Four States

April 2017

John A. Gale, MS
Anush Y. Hansen, MS, MA
Martha Elbaum Williamson, MPA

Cutler Institute for Health and Social Policy
Muskie School of Public Service
University of Southern Maine

Maine
Rural Health
Research Center
Muskie School of Public Service, University of Southern Maine
34 Bedford Street, PO Box 9300, Portland, ME 04104

RHRC
Rural Health Research & Policy Centers
Funded by the Federal Office of Rural Health Policy
www.ruralhealthresearch.org

Rural Opioid Prevention and Treatment Strategies: The Experience in Four States

Working Paper #62

April 2017

John A. Gale, MS
Anush Y. Hansen, MS, MA
Martha Elbaum Williamson, MPA

Maine Rural Health Research Center

An associated Research & Policy Brief is available for viewing or download from the Maine Rural Health Research Center's publications page at http://usm.maine.edu/cutler/mrhrc-publications

This study was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number CA#U1CRH03716, Rural Health Research Center Cooperative Agreement to the Maine Rural Health Research Center. This study was 100 percent funded from governmental sources. This information or content and conclusions are those of the authors and should not be construed as the official position or policy of, nor should any endorsement be inferred by, HRSA, HHS or the U.S. Government.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

The authors thank the following members of our advisory panel who volunteered their time to guide our process of selecting states, identifying key stakeholders, and refining our interview protocols.

Andrea Boxill, Deputy Director of the Governor's Opiate Action Team, Ohio Mental Health and Addiction Services

Barbara Cimaglio, Deputy Commissioner, Alcohol & Drug Abuse Programs

Peter Kreiner, Principal Investigator, PDMP Center of Excellence, Brandeis University

Kathryn Power, Regional Administrator, Region One, Substance Abuse and Mental Health Services Administration

The authors also thank the following people who volunteered their time to talk with us about the opioid issues in their states and the development of strategies to address this national crisis.

Indiana
Kevin Moore, Director, Division of Mental Health and Addiction, Indiana Family and Social Services Administration

Stephanie Spoolstra, Deputy Director of Adult Mental Health and Addictions Services, Indiana Division of Mental Health and Addictions

Terry Cook, Assistant Director, Indiana Department of Health and Addictions

Michael Brady, Director, INSPECT, Indiana's Prescription Drug Monitoring Program

Kristen Kelley, Director, Prescription Drug Abuse Prevention Task Force, Office of the Attorney General

Don Kelso, Executive Director, Indiana Rural Health Association

Jeanni McCarty, Office Manager, Foundations Family Health Care, Austin, IN

Washington
Christopher Baumgartner, Drug Systems Director, Washington State Department of Health

Gary Franklin, MD, MPH, Medical Director, Washington State Department of Labor and Industries

David J. Tauben MD, Chief of Pain Medicine, University of Washington School of Medicine

John Roll, Senior Vice Chancellor, Washington State University, Health Sciences Spokane

Joseph Merrill, MD, Associate Professor of Medicine, University of Washington School of Medicine

Vermont
Barbara Cimaglio, Deputy Commissioner, Alcohol & Drug Abuse Programs

John Brooklyn, MD, Medical Director, Howard Center Chittendon Clinic

James Leene, Law Enforcement Coordinator, United States Attorney's Office, Burlington, VT

Mark Ames, Network Coordinator, Vermont Recovery Network

Jill Lord, Director of Community Health, Mt. Ascutney Hospital and Health Center

North Carolina
Jana Burson, MD, Addiction Medicine & Behavioral Health Services, Half Moon Medical Associates

Fred Wells Brason II, Executive Director, Project Lazarus

Spencer Clark, MSW, ACSW, Administrator, North Carolina State Opioid Treatment Authority

Sarah Potter, Chief, Community Wellness, Prevention, and Health Integration, North Carolina Department of Health and Human Services

Melinda Pankratz, SPF-PFS State Grant Coordinator, Division of MH/DD/SAS, Community Wellness Prevention and Health Integration Team, North Carolina Department of Health and Human Services

EXECUTIVE SUMMARY

Little is known about what states with large rural populations are doing to combat opioid use disorders (OUDs) in rural areas. Rural residents with OUDs tend to have multiple socio-economic vulnerabilities that may negatively impact their ability to access treatment and recovery services. Additionally, the rural health care system is characterized by numerous resource, workforce, access, and geographic challenges that complicate the delivery of specialized care for OUDs in rural communities. The nature and scope of the opioid crisis vary across rural communities and require multifaceted, community-based strategies to address the problem. Based on interviews with key stakeholders in Indiana, North Carolina, Vermont, and Washington State, this qualitative study explores promising state and community strategies to tackle the opioid crisis in rural communities and identifies rural challenges to the provision of OUD prevention, treatment, and recovery services.

FINDINGS

Rural Challenges to the Prevention and Treatment of Opioid Use Disorders

Key stakeholders identified the following challenges to the prevention and treatment of OUDs in rural communities:

- Significant variation in opioid prescribing patterns due to inconsistent use of evidence-based prescribing guidelines and limited access to specialty pain management support;
- Continued stigmatization of individuals with OUDs;
- Emphasis on criminalizing OUDs rather than treating them as chronic diseases;
- Limited access to specialty substance use and mental health services;
- Difficulties recruiting and retaining an adequate substance use treatment workforce;
- Impediments to inter-agency collaboration in poorly-resourced rural areas; and
- Barriers to the implementation of harm reduction strategies involving needle exchanges.

Promising Strategies for Addressing Opioid Use in Rural Areas

The results of our interviews identified the following promising strategies to OUD prevention and treatment that are relevant to rural areas:

- Engaging the local community to address opioid issues, including broad-based coalitions;
- Encouraging prescribers to adopt evidence-based opioid prescribing guidelines;
- Implementing hospital emergency department (ED) protocols to manage access to opioids;
- Expanding access to medication-assisted treatment (MAT) through primary care-based models;
- Supporting community buprenorphine prescribers through hub and spoke and telehealth models; and
- Developing models to support recovery and reduce relapse in rural communities.

IMPLICATIONS FOR POLICY AND PRACTICE

The complexity of opioid use in rural communities calls for community-based organizing and engagement strategies that tap into the expertise of local, rural stakeholders to reduce OUDs and related harms. Although the expanded use of buprenorphine in primary care settings is a frequently discussed rural strategy, traditional substance use treatment, mental health, and care coordination services are equally important components of an OUD system of care. Prevention strategies to reduce OUDs, harm reduction initiatives to reduce overdose deaths and exposure to bloodborne infectious diseases, and recovery resources to support individuals in maintaining gains made during treatment are also essential to reducing the consequences of OUDs. Additional research and funding are needed to target prevention, harm reduction treatment, and recovery strategies to the unique challenges of rural communities. Federal and state governments and foundations can make important contributions to addressing the opioid crisis in rural communities by funding evidence-based strategies and programs, providing or expanding access to evidence-based interventions, supporting research into best practices and dissemination activities, and strengthening the use of telehealth technology to improve access to direct care and consultative services to support rural clinicians.

INTRODUCTION

The current opioid epidemic is a complex problem reflecting the many challenges inherent in our healthcare system. Opioids* are a class of prescription medications providing significant benefits to patients with acute, severe pain due to intractable, chronic pain that is not adequately managed with more conservative methods, traumatic injuries, and bone and other cancers.[1,2] Opioid addiction is associated with several factors, including expanded use of opioids beyond the narrower scope of conditions for which they are most appropriately suited, early failure to acknowledge the risks of prescription opioids, slow adoption of evidence-based opioid prescribing guidelines by health care professionals, and growing patient demand for opioids.[3-9] Moreover, expanded prescription opioid use is directly linked to increased heroin use, as the cost of heroin has declined and the supply has increased relative to prescription opioids.[4]

Recent research conducted by the Maine Rural Health Research Center suggests that the prevalence of non-medical, prescription opioid and heroin use in the past year was slightly higher among urban than rural residents. Rural users, however, tend to have multiple socio-economic vulnerabilities that negatively impact their ability to access and successfully complete treatment; rural past-year use rates were significantly higher than urban past-year use rates among those who were under age 20, unmarried, with low educational attainment, no insurance coverage, and low-income, corroborating findings from other studies.[10] At the same time, rural travel barriers (e.g., costs, lack of public transportation, long travel distances, weather) exacerbate access challenges.[10]

In its January 2013 report to Congress on the nation's substance abuse and mental health workforce issues, SAMHSA officials identified a number of long standing substance use workforce problems including high turnover rates, recruitment and retention challenges, worker shortages, an aging workforce, stigma, and inadequate compensation levels. As of March 2012, HRSA reported almost 3,700 Mental Health, Health Professional Shortage Areas covering

* The term "opioid" previously referred only to synthetic opiates and is now commonly used to refer to all natural, synthetic, and semi-synthetic opiates (see National Alliance of Advocates for Buprenorphine Treatment, https://www.naabt.org/education/opiates_opioids.cfm). Consistent with current usage, we use the term "opioid" in this paper to refer to all opioids and opiates, and we jointly refer to non-medical use of pain relievers and heroin as opioid use.

almost 91 million people. Rural areas are more heavily impacted by these workforce issues than urban areas. Approximately 55 percent of United States (U.S.) counties, all of which are rural, have no specialty mental health professionals.[11] These workforce challenges are likely to be exacerbated by the growing demand for substance use treatment including treatment for opioid use disorders (OUDs).

A critical component of a system of care to address OUDs is the availability of medication assisted treatment (MAT) involving prescription of methadone, buprenorphine, and naltrexone to ease cravings and facilitate withdrawal. MAT is an evidence-based intervention that is widely recognized as an essential element of effective treatment for OUDs. Although MAT is a critical tool, it is insufficient on its own to address an opioid user's full range of needs. MAT must be supplemented by substance use, mental health, and physical health services to address the issues underlying opioid use. Care coordination services are essential to assisting individuals with OUDs in obtaining the full range of treatment, social supports, and recovery services necessary to achieve and maintain an opioid free life. Finally, recovery services are a necessary component of care to reduce the potential for relapse and maintain gains made in treatment.

The complexity of OUDs calls for a multifaceted, community-based public health approach.[8,12-15] Little is known, however, about what states with large rural populations are doing to help combat the opioid crisis in rural areas. To address this question, we conducted key informant interviews in four states to learn about the strategies states and communities are taking to address this growing crisis. This paper discusses the opioid epidemic, especially as it pertains to rural communities. We provide a brief overview of the scope of the opioid problem, existing treatment infrastructure, prescription drug monitoring and other prevention programs, and barriers/facilitators to addressing the opioid epidemic in each state. We then summarize from our state interviews, common rural themes and describe seven promising strategies for addressing rural OUDs. The paper concludes with a discussion of implications for states and policy.

BACKGROUND

Scope of the Problem

OUDs are the fastest growing class of substance use disorders in the United States (U.S.)[12] and the primary cause of unintentional drug overdose deaths.[16] Since 2005, past year non-medical use of prescription pain medication was slightly higher among urban residents than rural

residents.[17,18] Multiple studies, however, document higher use among some rural sub-populations (compared to their urban counterparts) including youth,[19,20] pregnant women,[21] women experiencing domestic/partner violence,[22] and persons with co-occurring disorders.[23] Heroin use has also grown substantially in recent years, particularly among those reporting prior use of prescription opioids.[17,24,25] Heroin initiation is 19 times higher among this group compared to those who have not used prescription opioids non-medically. Rural opioid users tend to be younger, in worse health, less educated, lower-income, and more likely to be uninsured than urban users.[10]

Rural areas suffer from significant workforce shortages as well as gaps in the availability of substance use treatment services in general and for medication assisted therapy services in particular.[26,27] As mentioned earlier, 55 percent of counties, all rural, have no psychiatrists, psychologists, or social workers.[11] Rural residents wait longer to access treatment and travel further to obtain care. At the same time, the spread of human immunodeficiency virus (HIV) and Hepatitis-C (HCV) due to injection drug use creates an additional challenge for rural areas, many of which have limited access to infectious disease services.

Addressing OUDs is further complicated by the complex relationship between prescription opioid and heroin use. The Director of the Centers for Disease Control and Prevention (CDC) described this complexity noting that the growth in heroin use was attributable to the increased numbers of Americans who are "primed for heroin addiction because they are addicted to or exposed to prescription opioid painkillers" and the decreasing cost of heroin.[4] As efforts to reduce access to prescription opioids make it more difficult to obtain these medications either legally or illegally, users may turn to heroin, which is cheaper and can be easier to obtain in some communities, as a substitute.

Another contributing factor to the opioid crisis is the significant variation in opioid prescribing rates. CDC data reveal that U.S. providers write twice as many opioid prescriptions per person as Canadian providers with wide variations in prescribing practices across the 50 states. Providers in the highest prescribing states write three times as many opioid prescriptions as those in the lowest prescribing states.[28,29] The three states with the highest prescribing rates (i.e., Alabama, Tennessee, and West Virginia) also have significant rural populations. Ten southern states (North

Carolina, South Carolina, Arkansas, Louisiana, Mississippi, Oklahoma, Kentucky, West Virginia, Tennessee and Alabama) and three mid-western states (Michigan, Indiana, and Ohio) are in the top quartile of states in terms of the rates of prescriptions for pain medications. These 13 states all have significant rural populations.

State Strategies

The relationship between the use of prescription opioids and heroin requires states to work on several fronts to address this crisis.[8,12-15] The White House Office of National Drug Control Policy's[30] (ONDCP) 2015 National Drug Control Strategy reflects a broad-based, multifaceted public health approach emphasizing prevention, early identification and treatment, recovery support, and enhanced enforcement activity. In support the ONDCP's[30] approach, Kolodny and colleagues[8] argue for a focus on primary prevention (i.e., preventing new cases of OUDs); secondary prevention (i.e., identifying early cases of OUDs); and tertiary prevention (i.e., ensuring access to effective treatment and recovery services). Tertiary prevention includes MAT, psychosocial substance use and mental health treatment, harm reduction interventions (e.g., naloxone to prevent overdoses and needle exchanges to reduce HIV and HCV transmission), and recovery services to support those attempting to make long-term behavioral changes to avoid relapse. Reflecting the ONDCP's public health approach, state strategies include prescription drug monitoring programs, legislatively mandated prescribing guidelines to reduce excess prescribing patterns and the supply of prescription opioids, and expansion of harm reduction, prevention, treatment, and recovery services.

The Federal Government has undertaken a number of activities that can inform the development of state policies regarding opioid use and prescribing patterns. These include funding research by the National Institute on Drug Abuse, the Substance Abuse and Mental Health Services Administration (SAMHSA), and other agencies to address different aspects of opioid use, pain, next generation analgesics, and treatment of opioid use.[31] In March 2016, the Centers for Disease Control and Prevention released its prescribing guidelines for primary care clinicians prescribing opioids for chronic pain.[5] These guidelines provide an agreed upon evidence-based framework to inform decisions on when to initiate or continue opioids for chronic pain; specific prescribing issues (i.e., opioid selection, dosage, duration, follow-up, and discontinuation); and assessing risk and addressing harms of opioid use.

States have also been responded to the opioid crisis by implementing opioid prescribing guidelines. The State of Washington, as will be discussed in the paper, has taken multiple routes to the development of opioid prescribing guidelines including interagency initiatives driven by the medical directors of state health agencies as well as legislative action. California, Maine, Massachusetts, New York, Ohio, and Pennsylvania have passed legislation implementing or strengthening opioid prescribing guidelines.[32] As an alternative to legislative action, medical and/or hospital associations in Connecticut, Indiana, North Carolina, and New Hampshire have taken the lead on the development of recommended opioid prescribing guidelines, including guidelines for use by emergency departments (EDs). Oregon and West Virginia have implemented prescribing policies based on the CDC's opioid prescribing guidelines.

The nature and scope of the opioid crisis varies across rural communities, requiring multifaceted, community-based strategies to combat the problem. Key components of a comprehensive community-based strategy include:

- The education of law enforcement officials, healthcare and social service providers, and community members to promote the understanding of substance use disorders as a chronic disease rather than a law enforcement problem and to reduce related stigma;
- The promotion of evidence-based prescribing guidelines, screening tools, and treatment protocols by hospitals, primary care providers, and other clinicians; and
- The expansion of access to treatment, harm reduction, prevention, recovery, and other support services.[8,12-14,30,33-35]

We used this framework to identify relevant state and local agencies engaged in the above-mentioned practices, recruit key informants to participate in our study, and guide our selection of promising state and local strategies used to address the opioid crisis in rural communities.

METHODS

As noted, this study examined strategies in four states to address the opioid crisis in rural areas. The study objectives were to identify and assess the opportunities and challenges associated with rural implementation of the states' strategies to: (1) develop comprehensive community-based education programs targeting the risks and realities of opioid use and the role of law

enforcement, healthcare, and communities in addressing the ongoing crisis, (2) engage local healthcare systems and providers in the implementation of evidence-based prescribing practices and appropriate tools to screen for and treat OUDs and co-occurring mental health problems, and (3) implement integrated opioid strategies involving treatment, harm reduction, prevention, and recovery to reduce prescription drug diversion. To inform our selection of states and key informants, we convened a multi-disciplinary advisory panel of substance use experts from federal agencies, state government, and policy centers. The Panel also provided input on our key informant interview protocols. Members of the Advisory Panel included Andrea Boxill, Deputy Director of the Governor's Opiate Action Team, Ohio Mental Health and Addiction Services; Barbara Cimaglio, Deputy Commissioner, Alcohol & Drug Abuse Programs, Vermont Department of Health; Peter Kreiner, Principal Investigator, PDMP Center of Excellence, Brandeis University; and Kathryn Power, Regional Administrator, Region One, SAMHSA.

With the panel's input, the study team selected four states - Indiana, North Carolina, Vermont, and Washington - based on two main criteria: (1) evidence of significant rural opioid problems, and (2) a history of recent and ongoing significant initiatives that included rural community interventions. Using semi-structured interview protocols, we spoke with four to six key informants in each state (N=22) between September 2015 and January 2016. Key informants included state government and public health officials, clinicians, OUD professionals, prescription drug monitoring program representatives, and law enforcement officials. Interviews covered five main topics: (1) the nature and scope of the state's rural opioid problem; (2) the state's OUD infrastructure and rural gaps; (3) the state's prescription drug monitoring program (PDMP); (4) challenges in addressing rural opioid use; (5) specific state or community strategies; and (6) the perceived impact of the state's or community's efforts to address its opioid use problems.

Interview data were analyzed within and across states for key themes, and were organized and summarized according to the six areas of inquiry listed above. We also drew on information from publicly available documents, including reports, data summaries, evaluation studies, and plans produced by state and community agencies and substance treatment and prevention programs.

THE RURAL OPIOID PROBLEM AND STATE STRATEGIES: AN OVERVIEW

Indiana

Scope of the Rural Opioid Problem

The opioid problem in rural Indiana rose to national prominence due to substantial outbreaks of HIV and HCV linked to intravenous (IV) prescription medication misuse in rural Scott County located in the southeastern region of the state near the Kentucky border. During a six-month window in 2015, Scott County experienced 184 new cases of HIV[36] and 280 new cases of HCV (interview with Kevin Moore, Indiana Division of Mental Health and Addiction, November 2, 2015). These outbreaks were linked to misuse of the prescription opioid oxymorphone (known by the brand name Opana).[37] Although prescription opioid use is more common in Scott County, state officials noted that rural "hot spots" of heroin use and overdoses had surfaced across the state, driven by the low cost of heroin (roughly $8 per day) and restrictions in the availability of prescription opioids. Officials also reported significant prescription drug problems in several other parts of the state including northeastern Indiana where methamphetamine use is also a serious concern.

Prior to the Scott County crisis, Indiana's General Assembly passed a moratorium on new methadone treatment programs beyond the existing 13 programs located primarily in urban areas of the state at the time of our study. These 13 programs serve approximately 15,000 people per year. Ten of these programs are proprietary and three are located in community mental health centers (CMHCs). Indiana's Medicaid program does not reimburse for methadone treatment for substance use (only for pain management). As a result, most services are provided on a cash-only basis. Their location in urban areas and cash-only operating policies create access barriers for low-income rural residents.

Rural OUD Strategies

The outbreak of HIV and HCV in Scott County was exacerbated by existing Indiana statute classifying the use of needles for nonmedical purposes as a felony punishable by up to three years in prison.[38] In late March 2015, the governor declared a public health emergency in Scott County which allowed him to suspend the law thereby paving the way for the development of a needle exchange.

Following the Scott County crisis, the General Assembly passed legislation allowing the Division of Mental Health and Addiction to approve up to five new hospital or CMHC-based opioid treatment programs (OTPs). As of December 2016, approximately 312 physicians in the state had SAMHSA waivers to prescribe buprenorphine but not all were operating at full capacity.[39†] As with OTPs, these providers are clustered in more heavily populated areas and are difficult for rural residents to access. In addition, 190 traditional substance use treatment programs are certified by the state to provide treatment services and most are located in urbanized areas. In July 2015, the state received SAMSHA funding to develop a MAT health home model in rural settings. Although state officials are cautiously optimistic about its success, transportation issues, the limited availability of resources to develop a comprehensive, community-based buprenorphine treatment system using a hub (specialty substance use and OTP services) and spoke (primary care and community-based buprenorphine services, supported by the hub specialty services) model, and limitations on patients' ability to pay for services are ongoing barriers to the development of services in rural areas.

Indiana's prescription drug monitoring program (PDMP), known as INSPECT, was established by the state's General Assembly in 2004. As of January 1, 2016, licensed pharmacies must report schedule II - V controlled substances prescription data to INSPECT every 24 hours. INSPECT data can be accessed by many entities, including healthcare providers. As prescriber participation is not mandatory, program officials stressed the importance of ongoing, collaborative educational efforts with the Indiana State Medical Association to "bring providers along". The fear is that mandatory prescribing and reporting rules would discourage providers from prescribing pain medications, particularly in rural communities. Other prevention/opioid reduction strategies in Indiana include a prescription drug disposal program and a broad public service campaigns with multiple, high profile sponsors (e.g. the Indianapolis Colts professional football team).

† Under the terms of the Drug Addiction Treatment Act of 2000, qualified physicians may apply for waivers to treat opioid dependency with buprenorphine in settings in which they are qualified to practice, including office, community hospital, health department, or correctional facility settings (https://www.samhsa.gov/medication-assisted-treatment/buprenorphine-waiver-management/qualify-for-physician-waiver). Under the waiver process, SAMHSA verifies the qualification of the applicant and the Drug Enforcement Agency assigns the physician a special identification number. Upon receipt of the waiver, a physician may prescribe buprenorphine to a maximum of 30 OUD patients at a time for the first year. After the first year, the physician may apply to SAMHSA for approval to treat up to 100 patients at a time. Under new federal regulations, physicians who have prescribed buprenorphine to 100 patients for at least one year can apply to SAMHSA to increase their patient limits to 275.

North Carolina

Scope of the Rural Opioid Problem

Key informants emphasized prescription medication use as a key driver of the opioid problem in North Carolina, however, they also noted that heroin addiction had also risen in recent few years. A 2016 study found that three North Carolina communities (Wilmington, Fayetteville, and Hickory) were among the top 25 American cities for opioid misuse (based on the percentage of opioid prescriptions misused).[40] The state's Opioid Treatment Authority reported an increase in heroin overdose deaths, with prescription drug overdose deaths dropping slightly as heroin overdose deaths rose. Stakeholders described opioid users in some rural communities as younger, blue collar, middle class users, primarily addicted to oxymorphone (Opana). Stakeholders reported a recent uptick in younger users presenting at treatment clinics with acute exposure to prescription opioids, rather than with long-term addiction. Treating these users has been difficult since commercial insurance plans often require one year of addiction before covering MAT. According to key informants, EDs have experienced the effects of the opioid crisis with 12-15 percent of ED patients reportedly being admitted for substance use and withdrawal concerns.

Rural OUD Strategies

Key informants noted that rural North Carolina lacks treatment resources. Rural residents must drive significant distances to access services and the majority pay for treatment out of pocket. As of December 2016, 463 physicians had SAMHSA waivers to prescribe buprenorphine, however, limited data are available to describe their overall service volume in relation to their capacity.[39] Outside of federal block grant funds, North Carolina lacks a robust payment system for substance use treatment. Most of the state's 54 OTPs are private, for-profit entities, typically located in urbanized areas.[41] Few accept Medicaid and approximately two-thirds are cash-only facilities. Patients with private insurance also have trouble accessing treatment as many plans will not cover methadone and buprenorphine services and patients are forced to pay out-of-pocket for treatment.

Substance use and mental health services for Medicaid and indigent individuals are provided by seven regional Local Management Entities (LMEs)/Managed Care Organizations (MCOs) responsible for managing, coordinating, and monitoring the delivery of mental health, substance

use, and developmental disabilities services in their service areas. One rural OTP provider noted that the process to contract with LMEs/MCOs to treat indigent patients can be difficult.

North Carolina's PDMP came online in 2007. Officials reported that only 27 percent of practicing physicians use the PDMP but they are seeing steady growth. Recently, a notification system was added that raises an alert when a physician has a concerning prescribing pattern. The PDMP advisory group has been careful not to alienate physicians and promotes the PDMP as a positive way to serve patients and minimize OUDs. North Carolina allows a limited, discrete group of law enforcement officials to access PDMP data to minimize the impression that physicians are being "surveilled" by law enforcement in order to encourage wider use.

North Carolina has an important community-based prevention and harm reduction program, *Project Lazarus,* which started in rural Wilkes County, but has since been expanded statewide. As discussed later in this paper, *Project Lazarus* is deeply embedded in rural communities across North Carolina as well as in other states and is a proven model for helping communities tailor environmental strategies for addressing and preventing substance misuse.[42] The Wilkes County site also provides technical assistance to communities to build prevention capacity while also meeting the needs of patients being treated for chronic pain.

In 2013, North Carolina received a SAMHSA Partnerships for Success grant to reduce and prevent opioid prescription drug misuse among 12-25 year olds in high need communities, the majority of which are rural. In addition, North Carolina's LMEs/MCOs subcontract for prevention services with a network of non-profit organizations and community coalitions.

Vermont

Scope of the Rural Opioid Problem

In Vermont, key informants noted that prescription opioid misuse increased sharply in the 1990s, but has stabilized and declined since 2010. According to a 2015 Data Brief released by the Vermont Department of Health,[43] prescription OUDs have declined since 2010 with the greatest decrease among 18 to 25 year olds. Heroin use has been increasing since 2010, as evidenced by increased ED fatalities involving heroin. Stakeholders reported little variation in rates across the state or across urban and rural areas.

Rural OUD Strategies

In 2013, the number of people entering treatment for OUDs in Vermont exceeded the number entering treatment for alcohol.[44] Opioid use is the number one reason Vermont residents enter substance use treatment. The opioid crisis has been a focus of policy in Vermont since 2014, when Governor Peter Schumlin focused his State of the State Address on Vermont's opioid crisis. He noted that Vermont had the second highest rate of admission to state-funded substance use treatment programs in the U.S., the result, he believes, of the state's efforts to view substance use disorders as a chronic disease rather than a problem of criminal behavior.[45] The number of people receiving treatment for either heroin or prescription opioids in 2014 increased substantially over a five year period.[43] Despite improvements in access, heroin-related ED visits increased through 2014 while ED visits related to prescription opioids remained stable.[43]

The Vermont Department of Mental Health oversees a publicly-funded treatment system; most are Medicaid-funded providers. As discussed later, Vermont has aggressively developed a "hub and spoke" model of OUD treatment in which specialty OTPs (hubs) support community providers offering MAT services (spokes). The model serves both urban and rural communities, and has encouraged local primary care providers to take on more MAT patients and apply for the expanded waiver to increase their capacity. In a 2015 report to Vermont Legislature, representatives from the Vermont Department of Health noted that the hub and spoke system of care is "designed to provide a continuum of timely, interconnected and coordinated components with multiple entry points."[46]

Participants include Department of Health, Alcohol and Drug Abuse Programs-preferred providers, community-based organizations and non-profit agencies, schools, recovery centers, transitional housing agencies, the courts, other state agencies, and physical and behavioral health providers. Rural spoke providers include primary care practices and physicians in Critical Access Hospitals. As of December 2016, 58 Vermont physicians had waivers to prescribe buprenorphine in primary care, psychiatric, and substance use treatment settings.[39] Vermont is served by 10 OTPs, most of which are located in larger communities.[41]

In addition to treatment services, Vermont's system includes specialized substance use prevention consultants in the state's 12 district offices who work with communities on

community-based prevention. Vermont also has 12 recovery centers providing information and support and peer recovery coaches supported by state funds serving both urban and rural communities.

Launched in 2008, Vermont's PDMP requires schedule II, III, and IV prescribers to register with the system and pharmacies to enter prescription data into the system. Use of the registry is voluntary except under certain required circumstances (i.e., the first time a provider prescribes an opioid to treat chronic pain, annually for patients receiving ongoing opioid treatment, or when opioids are prescribed to treat acute pain with a duration of more than 21 days). The PDMP notifies providers when they have patients receiving multiple prescriptions through multiple pharmacies and suggests that they coordinate care. Vermont works to encourage more providers to use the system and engage prescribers in training opportunities. Law enforcement officials do not have access to PDMP data which is a source of frustration among the law enforcement community.

The Vermont Health Department has developed a statewide safe storage and prescription drug storage campaign called 'Vermont's Most Dangerous Leftovers' campaign. This initiative was launched in 2015 and supports regional prescription drug misuse prevention strategies.

Washington State

Scope of the Rural Opioid Problem

According to key informants, prescription opioid drug overdoses declined substantially between 2008 and 2014 (from 512 to 319) while heroin overdoses doubled to 293 deaths during the same time period.[47] Informants noted that total opioid overdose deaths outnumber deaths from all other drugs. They also noted that three-quarters of heroin users in Washington start with prescription opioids.[47] Heroin overdose victims tend to be younger (25 to 34 years old) compared to those who overdose on prescription opioids (45 to 54 years old), and overdose rates are higher in rural communities.[47] Key informants attributed this trend, in part, to rural occupational injuries and limited access to necessary specialty and pain management services in many rural areas.

Rural OUD Strategies

In January 2016, the Unintentional Poisoning Workgroup, with representatives from state agencies, professional associations, academic institutions, and local entities, released its updated

statewide working plan for responding to the opioid crisis. The plan addresses four priority goals: prevention of opioid misuse; treatment of opioid use and dependence; prevention of overdose deaths; and use of data to detect opioid use, monitor morbidity and mortality, and to evaluate interventions.[48]

According to respondents, access to substance use treatment services in rural communities remains an ongoing problem. Substance use services for Medicaid enrollees are accessed through one of nine behavioral health organizations under state contract to manage and coordinate access to and the delivery of behavioral health care. Covered services include: assessment, brief intervention and referral to treatment, detoxification, outpatient, residential treatment, MAT, and case management.[49] The state is served by 23 OTPs of which 13 are non-profit, six are for profit, two are Veterans Affairs facilities, and two are publicly/governmentally owned.[39] The majority are located in urban areas as are Washington's 429 physicians with a SAMHSA buprenorphine waiver.[41]

As discussed later in this report, the Washington legislature has passed legislation to address opioid issues including rules and prescription guidelines for chronic, non-cancer pain, dosing limits, and "Good Samaritan" laws to encourage use of naloxone to reverse opioid overdoses. Washington's PDMP collects over 11 million records annually and is accessible to health care providers, relevant government healthcare authorities, and state, local, and federal law enforcement agencies. Interviewees reported that approximately 30 percent of prescribers are participating in the PDMP. Provider registration is voluntary, but ED physicians are required by state worker's compensation rules to register when prescribing opioids to an injured worker. Federal program enhancement grants have allowed the state to connect the PDMP with the state health information exchange, connect to PDMPs in neighboring states, and support an evaluation of the program. Prescribers employed by OTPs are required to check the PDMP when treating patients for OUDs. Efforts have been made to simplify the PDMP registration process, including allowing providers to register with the PDMP through their "One Health Port," a centralized portal for prescription ordering procedures. The state is working to integrate and embed the PDMP into electronic health records to allow healthcare providers to seamlessly access PDMP information and reduce provider concerns that they do not have enough time to check PDMP reports for patients.

The state's prevention efforts include broad-based educational programs for providers and the public on the prescription of opioids for pain and potential risks associated with it; increased monitoring and tracking of substance use, including opioids; evaluation of regulations and guidelines for the treatment of chronic, non-cancer pain with opioids; and education of patients and providers using a "Take as Directed" website.

The state has hired an epidemiologist to work with county health departments, including those covering rural areas, to develop data on controlled substance use. This effort is being combined with a grant through the Bureau of Justice Assistance for controlled substance prescriptions, using data mapping tools to overlay substance use data with hospital admission, death, and treatment data to identify trouble spots with high, at-risk behavior rates, deaths, and lack of treatment. Also, the Department of Health, law enforcement, and environmental groups have developed and supported medication "take back" programs to prevent opioid diversion.

Rural Barriers & Challenges to OUD Prevention and Treatment

Our key informant interviews revealed several commonly identified barriers and challenges to addressing opioid use in rural communities, including:

- Difficulties in maintaining an adequate prevention, treatment, and recovery workforce limits the ability to develop effective services for opioid and substance use disorders in rural areas. Most rural communities and regions lack the critical mass of patients needed to recruit, support, and retain adequate staff and operate a sustainable service system.
- Many primary care and specialty providers are not fully informed about or do not use current evidence-based protocols for prescribing opioids. Key informants expressed concern that negative publicity regarding prescribing practices may discourage rural primary providers from prescribing pain medications. Others noted that provider efforts to reduce opioid prescriptions can have a negative impact on providers' patient satisfaction ratings.
- Stigma associated with the view that characterizes opioid use as a "moral failing" and/or criminal activity rather than a chronic disease is still common in many rural communities. While stigma is also an issue in urban communities, it has a disproportionate impact in rural areas given the social and environmental characteristics of rural communities and the relative lack of anonymity of the people who live in them.[50,51] Stigma is an ongoing

problem that can discourage individuals from seeking treatment. It also contributes to local residents' perception of treatment programs as magnets that will attract "addicts" to the community. Finally, it can discourage legislators from developing and funding programs and interventions necessary to address the opioid crisis.

- Inadequate access to substance use and mental health services in rural areas is a continuing problem that requires patients to leave their community for care, resulting in transportation and cost barriers. These can be significant impediments to using services, especially those that require daily encounters, such as methadone treatment programs.
- Despite a strong evidence base, MAT services are controversial among some policymakers who believe medication-based treatments only substitute one opioid for another (methadone and buprenorphine are opioid agonists with potential for abuse). As a result, states vary in the extent to which they support expansion of MAT services.
- Financial access to OTP and substance use services is a problem, with limited private and public insurance coverage and many OTP programs operating as cash only businesses.
- Inter-agency collaboration to address opioid problems can be difficult in poorly-resourced rural areas. Respondents noted that substance use, mental health, and physical health systems have not typically worked well together, making integration of care challenging.

PROMISING STRATEGIES FOR ADDRESSING RURAL OPIOID MISUSE

Key informants described a variety of strategies for addressing the opioid crisis in rural areas. Strategies span community-based prevention, harm reduction, treatment, and recovery. Prevention programs include North Carolina's *Project Lazarus* and Washington's programs to assist rural physicians with chronic pain management and introduce evidence-based opioid prescribing protocols in rural EDs. Harm-reduction programs include needle exchanges in Indiana and Project Lazarus's efforts to reduce overdose deaths. Initiatives targeting improved rural access to OUD treatment include Vermont's "hub and spoke" treatment service model. All four states are pursuing enhanced support programs for physicians adopting MAT. Vermont's Recovery Network is a statewide initiative providing peer support and recovery services to assist individuals with substance use disorders in maintaining sobriety. The following narrative briefly describes these promising approaches.

Engaging the Local Community to Address Opioid Issues: North Carolina's Project Lazarus

Focusing on the local community and its resources is a central tenet of a public health approach to addressing the current opioid crisis. This theme was echoed by a number of key informants interviewed. When discussing the HIV/HCV and opioid crisis in Scott County, officials highlighted the importance of working with communities to address underlying infrastructure, stigma, social, and economic issues related to opioid use. They reported working with key community leaders to encourage the development of prevention activities, harm reduction programs such as needle exchanges, and educational efforts to assist people who use opioids in understanding the dangers of both medical and illicit opioid use.

Project Lazarus offers a community engagement model that has been successfully adopted in rural communities throughout North Carolina and in other states.[42] Based in rural Wilkes County, North Carolina, *Project Lazarus* grew out of a local hospice director's concerns about his patients' opioid use and addiction and the unwillingness of some local providers to write prescriptions for hospice patients in need of pain relief. The county's prescription opioid overdose death rate was four to five times greater than state and national rates. In 2004, he recognized the need to develop the community's own tailored, rural solution to this epidemic. This required taking a balanced approach to OUD treatment and support services to prevent overdose deaths, while also providing responsible pain management to those in need.

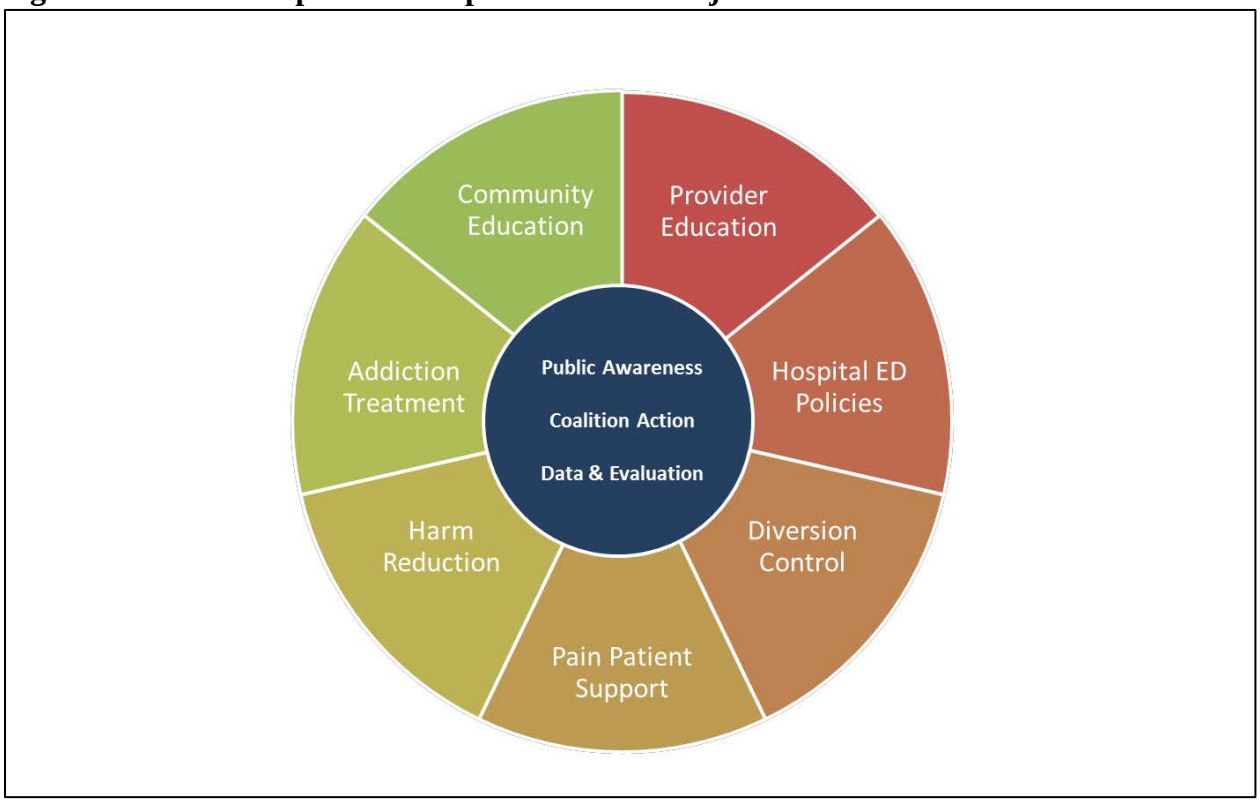
Project Lazarus began with two years of raising awareness across all community sectors (e.g., residents, schools, law enforcement, human services, hospitals, and medical providers) about the local opioid problem. As part of this process, organizers identified potential solutions to the local opioid problem and the role of each community sector in implementing those solutions. Identified strategies included building treatment resources for providers; enhancing linkages between medical providers, pain programs, and substance use treatment services; and working with state and local entities to better fund mental health services. It also included a public education campaign to combat stigma and work with a provider to establish MAT services in Wilkes County that now serve 400 to 500 patients per day.

According to the program's founder, communities wishing to replicate *Project Lazarus* should start "where the energy is" around OUD, creating change from within the community and building a coalition of local organizations, providers, and stakeholders. He also stressed that

finding the right balance of prevention, intervention, and treatment for each community is critical to success.

Project Lazarus is built around a set of core "prerequisite" components, which reflect a community-based, bottom-up public health approach (Figure 1).[52] This approach focuses on building awareness of opioid use through broad-based educational efforts and the use of local data to drive awareness; building coalitions to engage community providers, agencies, and organizations; and assembling data to build awareness, tailor programs to local needs, track progress, and sustain support and funding. Communities are also encouraged to select from optional evidence-based prevention initiatives to address unique local needs. These include community and provider education, hospital ED policies, diversion control, support for pain patients, harm reduction, and addiction treatment.

Figure 1: Core and Optional Components of the *Project Lazarus* Model



Source: Injury Prevention Research Center. *Lessons Learned from Implementing Project Lazarus in North Carolina.* Chapel Hill, NC: University of North Carolina at Chapel Hill, IPRC; August, 2016.

Program stakeholders report that overdose deaths in Wilkes County declined by 69 percent from 2009 to 2011 and the gap between Wilkes County and the nation narrowed.[42,52,53] Opioid overdose deaths in Wilkes County have declined from 46.6 per 100,000 in 2009 to 14.4 deaths in 2011. The program has also impacted local prescribing patterns. In 2008, 82 percent of opioid overdose deaths received their prescription from local prescribers. In 2011, this percentage was zero. ED visits for overdose and OUDs declined by more than 15 percent between 2009 and 2010 in Wilkes County compared to a 6.9 percent increase statewide.

With funding from the Kate B. Reynolds Trust, the North Carolina Office of Rural Health, Community Care of North Carolina, and the Mountain Area Health Education Center, *Project Lazarus* has expanded to all 100 counties in North Carolina.[52] Program staff have provided technical assistance to facilitate adoption of the model in communities in more than 13 states, tribal communities, and the U.S. military.[52] Examples include Operation OpioidSafe, Project Bald Eagle in Lycoming County, Pennsylvania (recognized as the 2015 Rural Health Program of the Year by the Pennsylvania Office of Rural Health), and the Washtenaw Health Initiative, Washtenaw County, Michigan.[52,54,55]

Supporting Primary Care Providers Treating Chronic Pain: Washington State's TelePain Program

Lacking specialty pain management training, many rural providers are not aware of, or do not adhere to the latest evidence-based opioid prescribing guidelines, contributing significantly to the opioid crisis. To address this problem, the University of Washington (UW) School of Medicine's Division of Pain Management developed a "TelePain" program to increase primary care providers' pain management and opioid prescribing skills.[56] The program is based on the Project ECHO[‡] model and available to clinicians in Washington, Wyoming, Alaska, Montana, and Idaho. The program conducts weekly videoconferences using UW's pain management specialists and includes didactic presentations from the UW Pain Medicine curriculum, case presentations from community clinicians, interactive consultations with pain specialists, and the use of measurement-based clinical instruments to assess treatment effectiveness and outcomes.

[‡] Project ECHO (Extension for Community Healthcare Outcomes) is a collaborative model of technology-based medical education and care management developed at the University of New Mexico, School of Medicine (http://echo.unm.edu/about-echo/). It connects front-line clinicians in rural and underserved areas with specialty clinicians through in a continuous learning system through regularly scheduled case and subject-based conferences.

Community providers present complex chronic pain cases and receive input from specialists with expertise in pain medicine, internal medicine, anesthesiology, rehabilitation medicine, psychiatry, addiction medicine, and nursing care coordination. The program offers a second weekly teleconference on veterans' health care for Veteran Affairs' providers and others working with veterans.

According to key informants, the TelePain Program increases community providers' access to educational and consultative support for pain management, improves patient outcomes, and enhances patient and provider satisfaction. The program also helps to meet the need for pain management specialist consultations required by the Washington State Department of Health's regulations for opioid prescribing.

The program is supported by grant funding and the service is typically not third party reimbursable. Although community providers find value in the program, it may not be sustainable unless an additional source of support is found when current funding expires. Program leaders noted a path to sustainability might include support from accountable care and managed care organizations that would find the TelePain program to be helpful in managing the chronic pain management needs and related costs of their patient populations.

Hospital Emergency Department (ED) Strategies for Managing Opioid Access: Washington State's ED Prescribing Guidelines and the "Oxy Free" ED

In 2008, the Washington State Department of Health established an interagency workgroup to develop guidelines for opioid prescribing in EDs. Members were recruited from state agencies, emergency, pain, and addiction providers, health plans, law enforcement, public health, and the University of Washington's School of Medicine. The resulting guidelines included limitations on the prescription of opioids in EDs and the concept of an "Oxy-free zone" (in which the ED would limit prescribing of the class of drugs that include OxyContin and discontinue the practice of replacing lost or stolen opioid prescriptions).[57]

The Washington Chapter of the College of Emergency Physicians sponsored the new guidelines, which were endorsed by the state medical, hospital, and emergency nurses associations. Washington's Medicaid program adopted the guidelines as one of seven best practices to reduce unnecessary ED use. The initiative has helped to reduce the rates of ED visits by "frequent

users" seeking opioid prescriptions by individuals with low-acuity diagnoses.[58] The Medicaid program has estimated ED savings in their non-managed care population at $33.6 million. Interviewees noted that hospitals were pleased with this strategy but some experienced initial reductions in patient satisfaction scores related to pain management. Nevertheless, rural hospitals in other states have expressed interest in this concept and some have already implemented the Oxy-free policy.

Models to Expand Medication-based Treatment: Vermont's Hub and Spoke Network

Stakeholders across the four states reported problems in accessing methadone treatment services in specialty OTPs or buprenorphine services in primary care and other settings. Buprenorphine treatment is widely promoted as a model for rural communities as it has a lower abuse potential than methadone and can be prescribed by primary care and other physicians who obtain the appropriate SAMHSA waiver. Despite this support, many physicians receiving waivers do not actually employ buprenorphine in their practices.[59] Lack of mental health and psychosocial supports and the lack of time needed to provide MAT within busy primary care practices are the most commonly reported barriers to buprenorphine prescribing.[60]

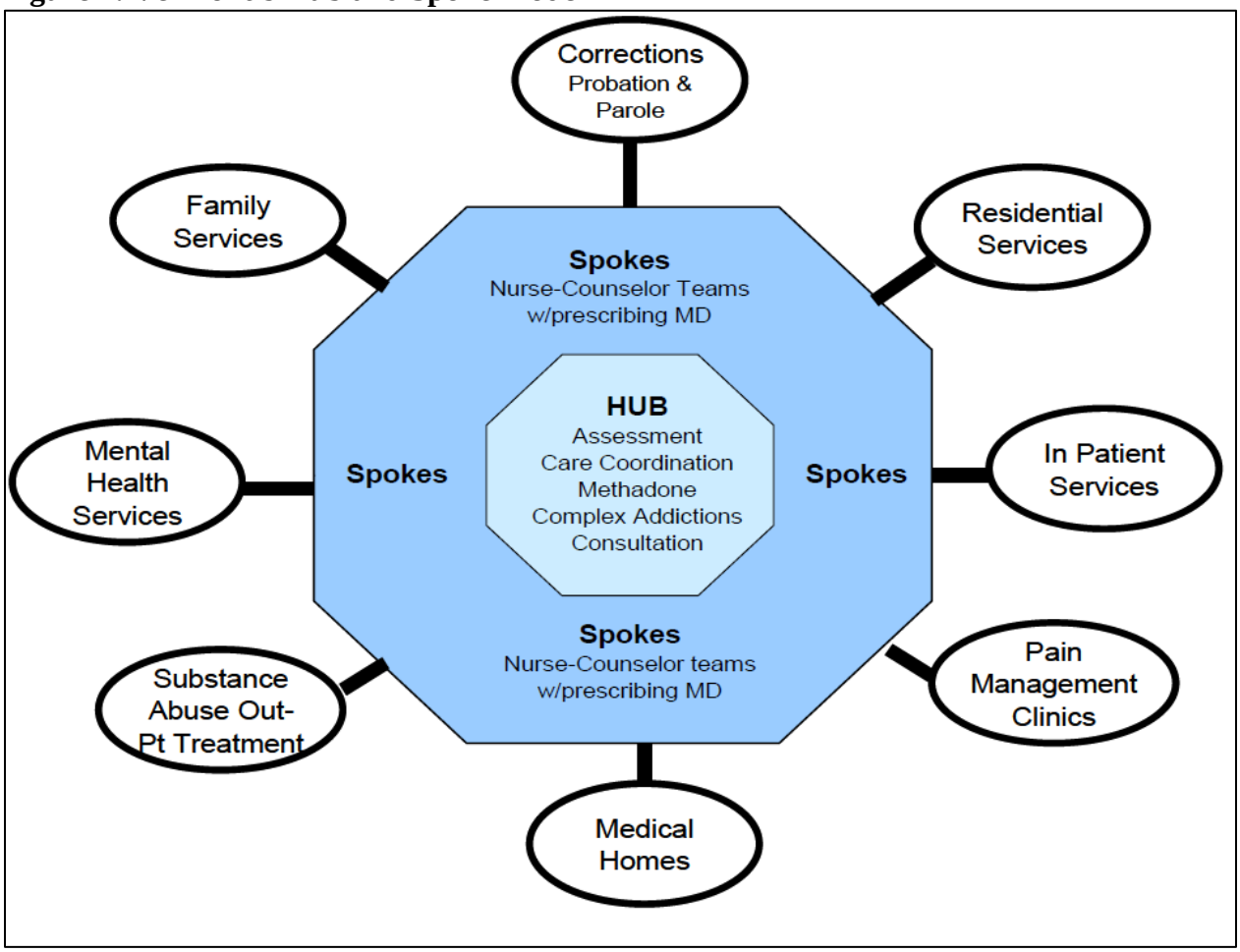
To address these barriers, Vermont developed a comprehensive system that includes medication-based treatment, behavioral support, and recovery services. Under Vermont's Blueprint for Health, the state, in collaboration with local health, addiction, and mental health providers, implemented the statewide *Care Alliance for Opioid Treatment* initiative. Using a "hub and spoke model" (Figure 2), this initiative has:

- Designated five regional specialty treatment centers as the "hubs" responsible for coordinating the care of individuals with complex OUDs and co-occurring substance use and mental health disorders. Hubs provide comprehensive assessments and treatment protocols; initiate methadone, buprenorphine, or antagonist treatment for clinically complex clients; provide care during the initial stabilization period; coordinate referrals to ongoing care; and provide specialty addictions consultation for care provided by primary care and others prescribing buprenorphine.
- Designated physicians prescribing buprenorphine and collaborating health and addictions professionals to serve as "spokes". Spoke providers dispense buprenorphine, monitor

adherence to treatment, coordinate access to recovery supports, and provide counseling, contingency management, and case management services. Spokes can be Blueprint Advanced Practice Medical Homes, outpatient substance use treatment providers, primary care providers, Federally Qualified Health Centers, and independent psychiatrists.

- Developed health home services providing care coordination, health promotion, transitions of care, and community support to Medicaid beneficiaries with OUDs.
  - Adopted Vermont's Community Health Team model to offer in-office supports to spoke physicians through embedded clinical staff (a nurse and a Master's prepared, licensed clinician) providing the health home services discussed above.
  - Expanded access to methadone treatment by opening a new program in southwest Vermont (Rutland) and supporting providers to serve all appropriate patients who are currently on waiting lists.

Figure 2: Vermont's Hub and Spoke Model



Source: Cimaglio B. *The Opioid Addiction Treatment System.* Burlington, VT: Vermont Agency of Human Services, Department of Health; January 15, 2013.

Specific services provided through the *Care Alliance for Opioid Treatment* include:

- Comprehensive care management: Screening programs, initial assessments, care planning, and care management across the continuum of physical health, behavioral health, and social services.
- Care coordination and referral to treatment and support services: Implementation and monitoring of plans of care (with patient engagement), referral to services, and coordination of service and supports across treatment and human services providers.
- Care transitions: Systems to facilitate movement of patients across treatment settings, levels of care, and physical health, mental health, substance use, and long term care providers.

- Individual and Family Supports: Advocacy, family assessments, education about available resources, and patient/family engagement in the care process.
- Health Promotion: Promotion of patient activation and empowerment, shared decision-making, and self-management of health, mental health and substance use conditions.

With the implementation of this initiative, Vermont has increased the number of physicians certified to prescribe buprenorphine and willing to treat opioid patients. Key informants report that some primary care practices have doubled the number of patients they will carry for treatment. According to key informants, preliminary Medicaid data show that the quality of care has increased, even in rural areas.[61] They attribute their success to additional staffing and support provided by the community health teams and improved access to specialty substance use support and treatment services.

Vermont's *Care Alliance for Opioid Treatment* initiative was created through Medicaid State Plan Amendments. Both the hubs and spokes receive a per-member, per-month reimbursement to care for individuals with OUD, as well as the additional staffing support for the care management services described above. Participating spoke sites are provided with support staff (a nurse and clinician case manager) whose salaries are paid by the Medicaid program. The level of enhanced staffing is modeled at one full time equivalent (FTE) nurse and one FTE licensed clinician case manager for every 100 MAT patients with the exact level of staffing prorated based on the number of patients carried by the provider. In a 2015 report presented to the Vermont State Legislature, the Commissioner of Health reported a variety of system improvements resulting from the operation of the *Care Alliance for Opioid Treatment* including:

- The opening of a new hub facility in Rutland;
- The addition of supportive health home services resulting in more comprehensive care;
- A 40 percent increase in the number of people receiving care with approximately 70 percent of Medicaid recipients with an opioid dependence diagnosis in 2013 receiving MAT services; and
- Improved care, with the majority of those receiving treatment remaining in treatment longer, and improved functioning at discharge for those who remained in treatment for more than 90 days.[43]

Supporting Community Buprenorphine Prescribers: Washington State's *Project ROAM*

In a project similar to the TelePain Program described earlier, *Project ROAM (Rural Opiate Addiction Management)* represents an alternative model to support buprenorphine services in rural communities. Developed through the collaboration of the University of Washington School of Medicine's Department of Family Medicine and Washington State University – Spokane, *Project ROAM* was implemented in 2010 to support rural physicians prescribing buprenorphine. Funded by tobacco settlement money, it offered continuing medical education courses, using a Project Echo style teleconferencing system, to enable physicians to qualify for the SAMHSA buprenorphine waiver.[62] To further support new buprenorphine prescribers, the program paired participants with course instructors in a mentoring relationship; provided practice management consultation on billing issues, clinical protocols, reporting forms, and staff training; and offered clinical grand rounds through which participants could present difficult cases and obtain feedback from the group. Although 10 to 15 rural physicians participated regularly, primary care physicians reported that it was difficult to commit the time to participate in the telehealth based conferences on a regular basis.

With the loss of tobacco funding, however, the program has been discontinued. According to one of the program organizers, *Project ROAM* was successful but difficult to sustain without grant funding as the service is not third party reimbursable.

Strategies to Support Recovery and Reduce Relapse in Rural Communities: Vermont's Recovery Support Network

Much of the discussion on the opioid crisis focuses on expanding treatment services, implementing harm reduction strategies, expanding the use of prescribing guidelines, and reducing the supply of opioids. Interviewees emphasized, however, the importance of recovery services to support individuals with opioid issues after treatment. They noted that many people with OUDs, particularly in rural communities, have a difficult time re-engaging in work and the community without falling back into the same situations and peer groups that supported their substance use habits. As such, it is important to provide access to recovery support services. The *Vermont Recovery Network* offers a model that can be adopted in rural communities.

The Network supports 11 Turning Point Recovery Centers (TPRCs) with funding from the state and federal (SAMHSA) grant funds. The TPRCs serve communities across the state; at least one

TPRC was described as serving a very small rural community. According to the Director, few Vermont communities have the ability to support a recovery center on their own. The exceptions are White River Junction (large rural) and Burlington (urban).

The Network provides facilitation, oversight, and basic infrastructure support. TPRCs are "local, consumer driven, non-residential programs which provide peer supports, sober recreation activities, volunteer opportunities, community education, and recovery support services".[63] The TPRCs offer peer supervision for staff and volunteers. Each TPRC must agree to the Network's expectations regarding management, oversight, and adherence to principles in the service plan; development of operating rules, by-laws, personnel policies, procedures; participation in Executive Council and quarterly Network meetings; and collection of data to demonstrate the effectiveness of recovery support services.

Key informants noted that the TPRCs provide non-clinical services to assist people with substance use disorders make the necessary connections to find employment, housing, and other needed social services. The mission of the Network is to "support people in their efforts to maintain recovery, in preventing relapse, and, should relapse occur, assisting in their return to recovery."[63] In addition to individual recovery services and coaching, various TPRCs offer services and groups that target specific populations (e.g., youth and adolescents, veterans, parents of youth with substance use disorders, individuals undergoing MAT or drug court, and individuals with co-occurring disorders) or certain aspects of recovery.[64] The TPRCs also offer social and recreational programming, parenting skills training, and writing groups.

The TPRCs use a peer-based recovery coaching model to assess where individuals are in their recovery, their readiness to change, and what can be done to assist them in that recovery. Staff and volunteers are recruited due to their own histories of substance use. Peer support specialists and counselors receive training and are required to obtain continuing education units. Program officials report significant changes in participants' use of emergency services and engagement with the criminal justice system.

Harm Reduction Strategies: Indiana's Needle Exchange Programs

The rapid spread of HIV and HCV in rural Scott County, Indiana due to injection drug use highlights the importance of needle exchanges as a harm reduction strategy for injection drug

users. Initially prohibited by Indiana state law, the governor declared a public health emergency in Scott County in March 2015, and later other Indiana counties, thereby allowing him to suspend the law. Public health stakeholders in Indiana reinforced the important role of expanding access to clean needles through needle exchanges in reducing the spread of HIV and HCV among injection drug users in Scott County.[38,65] Since 2015, needle exchange programs have also been implemented in Madison and Monroe Counties and another 20 counties are exploring the development of needle exchanges based on local injection drug use.[65] Although public health stakeholders have applauded the development of needle exchanges and noted their success in reducing the spread of HIV and HCV, some have described a number of implementation issues that have hindered the effectiveness of the Scott County needle exchange program.[38] These issues have included inadequate funding to support the purchase of sterile needles by the exchange, rules requiring injection-drug users to register with their initials and date of birth to obtain needles, limited operating hours, and the ongoing prosecution of unregistered injection-drug users for carrying syringes.

IMPLICATIONS FOR POLICY AND PRACTICE

In summarizing and distilling the key lessons from these four states for rural policymakers and community stakeholders, we found that many of the strategies and interventions identified do not have a uniquely rural focus. For example, efforts to develop and disseminate treatment guidelines are equally applicable to urban and rural settings. The same is true for harm reduction strategies involving needle exchanges and naloxone use or programs that offer treatment and support to non-violent opioid users as an alternative to incarceration. We therefore focused our attention on strategies and interventions that demonstrate how resource-constrained rural communities can begin to address gaps in OUD prevention, treatment, and/or peer support and recovery.

The experiences of these four states demonstrate the critical importance of community engagement and education as the foundation for developing a comprehensive set of education, prevention, treatment, care coordination, peer support, and recovery services. Given the complexity of opioid use in rural communities, strategies and tools such as those offered by *Project Lazarus* are critical to educating and organizing community members and resources to address the opioid crisis. Federal and state governments can provide funding, support, and training, but the real work is on the ground, in communities. Those we spoke with noted the

strength of rural communities and coalitions in addressing the needs of their communities during this opioid crisis. As money, providers, and services in rural communities are in short supply, broad-based coalitions are important as the problems and solutions cannot be owned by any one entity. Participants may include representatives from health care, public health, social services, law enforcement, local government, schools, faith-based organizations, business, and the community. These efforts take time and resources but are an essential part of the process.

While *Project Lazarus* provides one model of community engagement, others can be equally valuable. The keys are to supplement national and state data with data and input from local stakeholders and community members, engage broad-based coalitions involving all sectors of the community, and develop a transparent planning process to identify and address priority issues.

Helping community stakeholders to view opioid use as a public health issue and understand that it is a chronic, relapsing disease that can be addressed successfully with evidence-based strategies must be a major focus of efforts to address the opioid crisis. OUDs are not limited solely to those that misuse heroin and prescription medications. Individuals prescribed opioids for pain are equally at risk for opioid harms as those that obtain them illegally. This public health approach to opioid use recognizes the complex interrelationship between prescription opioids and heroin. Prescription opioids can be a gateway to heroin use, particularly as efforts to reduce access to prescription opioids take effect and as the cost of heroin declines relative to prescription opioids.

A greater focus on prevention and harm reduction is important to minimizing OUDs and reducing opioid harms by directly educating the community (primary prevention), individuals at greater risk for OUDs (secondary prevention), and individuals already engaged in dangerous opioid use (tertiary prevention). In addition, states and communities can pursue a variety of strategies to reduce the supply of opioids, including the use of prescribing guidelines, expanded use of prescription drug monitoring programs by providers to monitor prescribing practices and "doctor shopping," law enforcement efforts to reduce drug trafficking, and take back/disposal efforts to reduce access to prescription medications that are no longer needed.

The concept of harm reduction is closely aligned with a focus on prevention. In acknowledging that OUDs are a chronic illness (rather than a moral failing or enforcement/legal issue), states are

implementing interventions that reduce the risk of harm to opioid users through needle exchanges to reduce transmission of HIV and HCV, increased access to naloxone to reduce overdose deaths, and expanded prevention, treatment, and recovery programs to reduce the health consequences of OUDs.

The experiences of these states also make clear the importance of a comprehensive system of care providing prevention, treatment, and recovery services. A comprehensive system of substance use care is hard to develop in rural communities and typically requires regional collaboration among providers to provide easily accessible medication-based treatment and traditional substance use services, mental health services, and care coordination. Any one of these component services on its own is insufficient to meet an opioid user's full needs. MAT services, for example, address a user's craving for opioids but do not address other co-occurring mental and physical health issues underlying opioid use. Traditional substance use and mental health services are less effective without the craving control provided by MAT. Care coordination services are essential to assisting individuals with OUDs in obtaining the full range of behavioral health, physical health, social supports, and recovery services necessary to achieve and maintain an opioid free life.

Federal and state governments and foundations can make important contributions to addressing the opioid crisis in rural communities by funding evidence-based strategies and programs, providing or expanding access to evidence-based interventions, supporting research into best practices and dissemination activities, and strengthening the use of telehealth technology to improve access to direct care services and consultative services to support rural clinicians. As demonstrated by Washington State's successful effort to develop ED prescribing guidelines, inter-agency and inter-disciplinary collaborations at the federal and state levels are critical to the development and implementation of programming and interventions to address the opioid crisis.

The strategies profiled in this report provide examples of pathways that other states and rural communities can follow. Adopting these strategies will not immediately resolve the opioid crisis. Inappropriate opioid use is a complex problem requiring comprehensive and sustained attention. Currently, too little attention and funding has been given to the challenges rural communities face in developing comprehensive interventions to address this crisis. To support such efforts, expanded, long term funding and support will be needed. This includes expansion of third party

reimbursement for OUD treatment services, expanded Medicaid coverage, comprehensive education efforts targeting providers as well as community members, wide dissemination of evidence-based best practices targeting the needs of rural communities, and focused research on which strategies work in rural communities and provider organizations.

For more information about this study, contact John Gale at john.gale@maine.edu.

REFERENCES

1. American Academy of Pain Medicine. *Use of Opioids in the Treatment of Chronic Pain.* Chicago, IL: AAPM; February, 2013.

2. Washington State Agency Medical Directors' Group. *Interagency Guideline on Prescribing Opioids for Pain.* Seattle, WA: AMDG; June, 2015.

3. The Problem of Pain. *Economist.* 2016:52-54.

4. Centers for Disease Control and Prevention. *Transcript for CDC Telebriefing: New Vital Signs Report - Today's Heroin Epidemic*. July 7, 2015. Available at: http://www.cdc.gov/media/releases/2015/t0707-heroin-epidemic.html.

5. Dowell D, Haegerich TM, Chou R. *CDC Guideline for Prescribing Opioids for Chronic Pain - United States, 2016.* Atlanta, GA: Centers for Disease Control and Prevention;March 18, 2016.

6. Hooten WM, Timming R, Belgrade M, et al. *Assessment and Management of Chronic Pain.* Bloomington, MN: Institute for Clinical Systems Improvement; Updated November 2013.

7. Huber E, Robinson RC, Noe CE, Van Ness O. Who Benefits from Chronic Opioid Therapy? Rethinking the Question of Opioid Misuse Risk. *Healthcare.* 2016;4(29).

8. Kolodny A, Courtwright D, Hwang CS, et al. The Prescription Opioid and Heroin Crisis: A Public Health Approach to an Epidemic of Addiction. *Annu Rev Public Health.* 2015;36:559-574.

9. Volkow ND. *What Science Tells Us About Opioid Abuse and Addiction*. 2016. Available at: https://www.drugabuse.gov/about-nida/legislative-activities/testimony-to-congress/2016/what-science-tells-us-about-opioid-abuse-addiction. Accessed 9/27/16.

10. Lenardson JD, Gale JA, Ziller EC. *Rural Opioid Abuse: Prevalence and User Characteristics.* Portland, ME: University of Southern Maine, Muskie School of Public Service, Maine Rural Health Research Center; February, 2016. PB 63-1.

11. Hoge MA, Morris JA, Daniels AS, Stuart GW, Huey LY, Adams N. *An Action Plan for Behavioral Health Workforce Development.* Rockville, MD: Substance Abuse and Mental Health Services Administration;2007.

12. U.S. Executive Office of the President, Office of National Drug Control Policy. *Epidemic: Responding to America's Prescription Drug Abuse Crisis.* Washington, DC: ONDCP;2011.

13. American Association of Family Physicians. *Success in Fighting Opioid Abuse Demands Multifaceted Approach: Policy Changes, Education, Community Involvement Play Key*

Roles. [web page]. 2014, July 9. Available at: http://www.aafp.org/news/health-of-the-public/20140709opioidsrpts.html. Accessed December 23, 2015.

14. American Association of Family Physicians. *AAFP Joins Multifaceted National Effort to Combat Opioid Abuse* [web page]. 2015. Available at: http://www.aafp.org/news/health-of-the-public/20151022opioidinitiative.html. Accessed March 3, 2016.

15. Vermont Department of Public Health. *Opioid Addiction and Treatment*. [web page]. 2014. Available at: http://www.healthvermont.gov/adap/treatment/opioids/#strategy. Accessed January 12, 2016.

16. Centers for Disease Control and Prevention. *National Vital Statistics System Mortality Data*. [web page]. 2015, February 16. Available at: http://www.cdc.gov/nchs/deaths.htm. Accessed February 16, 2016.

17. Kuehn BM. SAMHSA: Pain Medication Abuse a Common Path to Heroin: Experts Say This Pattern Likely Driving Heroin Resurgence. *JAMA.* October 9, 2013;310(14):1433-1434.

18. Rigg KK, Monnat SM. Urban Vs. Rural Differences in Prescription Opioid Misuse among Adults in the United States: Informing Region Specific Drug Policies and Interventions. *Int J Drug Policy.* May 2015;26(5):484-491.

19. Havens JR, Young AM, Havens CE. Nonmedical Prescription Drug Use in a Nationally Representative Sample of Adolescents: Evidence of Greater Use among Rural Adolescents. *Arch Pediatr Adolesc Med.* Mar 2011;165(3):250-255.

20. Hartley D. *Substance Abuse among Rural Youth: A Little Meth and a Lot of Booze.* Portland, ME: University of Southern Maine, Maine Rural Health Research Center;2007. Research & Policy Brief No. 35A.

21. Shannon LM, Havens JR, Hays L. Examining Differences in Substance Use among Rural and Urban Pregnant Women. *Am J Addict.* Nov-Dec 2010;19(6):467-473.

22. Cole J, Logan TK. Nonmedical Use of Sedative-Hypnotics and Opiates among Rural and Urban Women with Protective Orders. *J Addict Dis.* Jul 2010;29(3):395-409.

23. Kapoor S, Thorn BE. Healthcare Use and Prescription of Opioids in Rural Residents with Pain. *Rural and Remote Health.* September 9, 2014;14(2879):online.

24. Jones CM. Heroin Use and Heroin Use Risk Behaviors among Nonmedical Users of Prescription Opioid Pain Relievers - United States, 2002-2004 and 2008-2010. *Drug Alcohol Depend.* September 2013;132(1-2):95-100.

25. Muhuri PK, Gfroerer JC, Davies MC. Associations of Nonmedical Pain Reliever Use and Initiation of Heroin Use in the United States. *CBHSQ Data Review.* 2013.

26. Lenardson JD, Hartley D, Gale J, Pearson KB. Substance Use and Abuse in Rural America. In: Warren JC, Smiley KB, eds. *Rural Public Health: Best Practices and Preventive Models*. New York: Springer Publishing Company; 2014:95-114.

27. Quest TL, Merrill JO, Roll J, Saxon AJ, Rosenblatt RA. Buprenorphine Therapy for Opioid Addiction in Rural Washington: The Experience of the Early Adopters. *Journal of Opioid Management.* 2012;8(1):29-38.

28. Paulozzi L, Mack KA, Hockenberry JM. *Vital Signs: Variation among States in Prescribing of Opioid Pain Relievers and Benzodiazepines - United States, 2012.* MMWR; July 4, 2014.

29. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. *Opioid Painkiller Prescribing: Where You Live Makes a Difference*. [web page]. 2014, July 1. Available at: http://www.cdc.gov/vitalsigns/opioid-prescribing/index.html. Accessed July 11, 2016.

30. U.S. Executive Office of the President, Office of National Drug Control Policy. *National Drug Control Strategy.* Washington, DC: ONDCP;2015.

31. Volkow ND. *What Is the Federal Government Doing to Combat the Opioid Abuse Epidemic?* : National Institute on Drug Abuse;May 1, 2015.

32. American Academy of Pain Medicine. *State Legislative Updates*. N.D. Available at: http://www.painmed.org/advocacy/state-updates. Accessed January 10, 2017.

33. Alexander GC, Frattaroli S, Gielen AC. *The Prescription Opioid Epidemic: An Evidence-Based Approach.* Baltimore, Maryland: Johns Hopkins Bloomberg School of Public Health;2015.

34. Crawford C. *Success in Fighting Opioid Abuse Demands Multifaceted Approach*. 2014. Available at: http://www.aafp.org/news/health-of-the-public/20140709opioidsrpts.html. Accessed 9/27/2016.

35. State of Wisconsin, State Council on Alcohol and Other Drug Abuse, Heroin Ad-hoc Committee. *Wisconsin's Heroin Epidemic: Strategies and Solutions. Analysis and Recommendations for Reducing Heroin Abuse in Wisconsin.* Madison, WI: State Council on Alcohol and Other Drug Abuse; July, 2014.

36. Indiana State Department of Health. *Three Additional People Test Positive Following HIV Retesting Blitz in Southeastern Indiana*. [Press Release]. 2015, December 4. Available at: http://www.in.gov/isdh/. Accessed July 18, 2016.

37. Conrad C, Bradley HM, Broz D, Buddha S, Chapman EL, Galang RR. *Community Outbreak of HIV Infection Lined to Injection Drug Use of Oxymorphone - Indiana, 2015.* MMWR; May 1, 2015. 64(16):443-444.

38. Strathdee SA, Beyrer C. Threading the Needle: How to Stop the HIV Outbreak in Rural Indiana. *The New England Journal of Medicine.* June 24, 2015.

39. Substance Abuse and Mental Health Services Administration. *Buprenorphine Treatment Physician Locator*. [web page]. n.d. Available at: http://www.samhsa.gov/medication-assisted-treatment/physician-program-data/treatment-physician-locator. Accessed December 16, 2016.

40. Castlight Health. *The Opioid Crisis in America's Workforce.* San Francisco, CA: Castlight Health;2016.

41. Substance Abuse and Mental Health Services Administration. *Opioid Treatment Program Directory*. [web page]. n.d. Available at: http://dpt2.samhsa.gov/treatment/directory.aspx. Accessed December 16, 2016.

42. Brason F. Project Lazarus: An Innovative Community Response to Prescription Drug Overdose. *NC Medical Journal.* 2013;74(3):259-261.

43. Vermont Department of Health. *Opioid Misuse, Abuse & Dependence in Vermont.* Burlington, VT: Vermont DOH; July, 2015. Data Brief.

44. Cimaglio B. *Opioids in Vermont*. Presented at the Community Solutions to Opioid Addiction Conference; April 5, 2016; Montpelier, VT.

45. Shumlin, Peter, Governor. *2014 Vermont State of the State Address*. [web page]. 2014, January 8. Available at: http://governor.vermont.gov/press-release/gov-shumlins-2014-state-state-address. Accessed July 19, 2016.

46. Cimaglio B. *The Opioid Addiction Treatment System.* Burlington, VT: Vermont Agency of Human Services, Department of Health;January 15, 2013.

47. Washington Department of Health. *Opioid Epidemic Continues in Washington*. November 17, 2015. Available at: http://www.doh.wa.gov/Newsroom/2015NewsReleases/15188OpioidOverdoseDeathsNewsRelease.

48. Stopoverdose.org. *Washington State Interagency Opioid Working Plan*. 2016, January. Available at: http://www.stopoverdose.org/stateresponseplan.pdf. Accessed July 15, 2016.

49. Washington State Department of Social and Health Sciences, Division of Behavioral Health and Recovery. *Washington State's Behavioral Health Benefits Book.* Seattle: Washington State DSHS; March, 2016. DSHS 22-661.

50. Aisbett D, Boyd C, Francis K, Newnham K, Newnham K. Understanding Barriers to Mental Health Service Utilization for Adolescents in Rural Australia. *Rural and Remote Health.* February 13 2007(7):624.

51. Robertson EB, Donnermeyer JF. Illegal Drug Use among Rural Adults: Mental Health Consequences and Treatment Utilization. *Am J Drug Alcohol Abuse.* 1997;23(3):467-484.

52. Brason F. *Examining the Growing Problems of Prescription Drug and Heroin Abuse: State and Local Perspectives. U.S. House of Representatives Committee on Energy and Commerce*. 2015. Available at: http://docs.house.gov/meetings/IF/IF02/20150326/103254/hhrg-114-if02-wstate-brasonf-20150326.pdf.

53. Project Lazarus. *Results for Wilkes County*. [web page]. n.d. Available at: http://projectlazarus.org/project-lazarus-results-wilkes-county. Accessed July 18, 2016.

54. Penn State News. *Pennsylvania Office of Rural Health Honors Rural Health Champions*. [web page]. 2015, November 20. Available at: http://news.psu.edu/story/381981/2015/11/20/impact/pennsylvania-office-rural-health-honors-rural-health-champions. Accessed July 11, 2016.

55. Washtenaw Health Initative Newsletter. *Project Lazarus Community Forum Addresses Opioid Epidemic in Washtenaw County*. [web page]. 2015, November/December Available at: http://washtenawhealthinitiative.org/2015/12/happy-new-year-from-the-washtenaw-health-initiative-novemberdecember-2015-newsletter/. Accessed July 14, 2016.

56. University of Washington, Division of Pain Medicine. *UW TelePain*. [web page]. Available at: http://depts.washington.edu/anesth/care/pain/telepain/. Accessed July 19, 2016.

57. Neven DE, Sabel JC, Howell DN, Carlisle RJ. The Development of the Washington State Emergency Department Opioid Prescribing Guidelines. *J Med Toxicol.* 2012;8:353-359.

58. Washington State Hospital Association. *ER Is for Emergencies: Seven Best Practices*. [web page]. 2015, January Available at: http://www.wsha.org/wp-content/uploads/er-emergencies_ERisforEmergenciesSevenPractices.pdf. Accessed July 19, 2016.

59. Hutchinson E, Catlin M, Andrilla CH, Baldwin L-M, Rosenblatt RA. Barriers to Primary Care Physicians Prescribing Buprenorphine. *Ann Fam Med.* March/April 2014;12(2):128-133.

60. Arfken CL, Johanson C-E, di Menza S, Roberts Shuster C. Expanding Treatment Capacity for Opioid Dependence with Office-Based Treatment with Buprenorphine: National Surveys of Physicians. *J Subst Abuse Treat.* 2010;39:96-104.

61. Mohlman MK, Tanzman B, Finison K, Pinette M, Jones C. Impact of Medication-Assisted Treatment for Opioid Addiction on Medicaid Expenditures and Health Services Utilization Rates in Vermont. *J Subst Abuse Treat.* 2016;67:9-14.

62. Rosenblatt RA. Are Addicted Patients Taking the Pleasure out of Your Rural Practice? Join Project Roam: The Rural Opioid Addiction Management Cooperative. *Washington Rural Health Association Newsletter*. September 2010:1,16.

63. Vermont Recovery Network. *Vermont Recovery Center Network*. [web page]. n.d. Available at: https://vtrecoverynetwork.org/network.html. Accessed July 19, 2016.

64. Vermont Recovery Center Network. *Recovery Solutions*. [web page]. n.d. Available at: https://vtrecoverynetwork.org/solutions.html. Accessed July 19, 2016.

65. Rural Center for AIDS/STD Prevention, Indiana University School of Public Health. *Syringe Exchange: Indicators of Need & Success*. Bloomington, IN: Indiana University School of Public Health Updated April 20, 2015.