



ORIGINAL RESEARCH

A rural community's perspective on the causes of and solutions to the opioid crisis in southern Virginia: a qualitative study

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ABSTRACT:

Introduction: Opioid use disorder is a leading public health issue in the USA, with complex drivers requiring a multi-level response. Rural communities are particularly affected by opioid misuse. Due

to variability in local conditions and resources, they require community-specific responses. The aim of this study was to gain insight into the perceptions, knowledge, and experiences of

members of a rural community impacted by the opioid crisis to inform the development of local strategies to address the crisis.

Methods: Stakeholder focus groups were conducted by a participatory research team as part of a larger project using the Stakeholder Engagement in Question Development and Prioritization (SEED) Method.

Results: Key findings from the focus groups included the importance of family dynamics and social networks as risk and resiliency factors, addressing hopelessness as a preventive strategy, the need for holistic approaches to treatment, childhood exposure resulting in intergenerational substance use, the needs of overburdened healthcare providers, the expansion of long-term rehabilitation programs, and the need for judicial reform towards

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FULL ARTICLE:

Introduction

Opioids are recognized for their analgesic effects and have an important medical application for mitigating acute and chronic pain. Repetitive use, however, can lead to dependence that has consequences for substance use disorder and drug overdose deaths¹. The potential for chronic misuse and dependency and the increasing supply in response to demand over the past decades have driven an increase in prevalence of substance use disorder and overdose mortality rates globally^{2,3}. In 2018, overdoses involving opioids accounted for 69.5% of drug overdose deaths in the USA, with two-thirds (67%) of these resulting from synthetic opioids⁴.

The US Department of Health and Human Services declared the opioid crisis a public health emergency on 26 October 2017, identifying prescription opioid misuse as a leading public health concern and classifying opioid use disorders as an epidemic⁵. The complexity of the issue poses challenges not only for the legal and healthcare systems, but also for communities seeking solutions to the opioid crisis. Rural communities are particularly impacted by opioid misuse. They have higher opioid prescription and overdose mortality rates and have struggled to tackle these issues due to limited resources⁶. Although opioid prescriptions are declining nationwide in response to new guidelines and prescription monitoring programs, there is considerable county variability in per-capita opioid prescriptions, with higher rates in rural and micropolitan counties and counties with greater non-Hispanic white populations, higher prevalence of diabetes and arthritis, and higher unemployment rates^{7,8}.

Rural communities face many barriers to addressing opioid misuse and its associated harms. Limited access to evidence-based treatments, behavioral health services and providers, and specialty hospital care presents significant challenges⁹⁻¹¹. Attitudes toward addiction treatment, stigma, long travel distances to treatment, and cost are additional barriers common to rural communities^{9,12}. Despite the common challenges that exist among rural

those with opioid use disorder. Specific and well-defined strategies are needed for more comprehensive methods to address the complexity of opioid use disorder. Understanding factors that contribute to opioid use disorder in rural communities through a stakeholder engagement process should be the first responsive strategy in developing actions.

Conclusion: This study shows that rural community stakeholders provide important perspectives that can be useful in solving the drug epidemic in their neighborhoods. Their understanding of the internal dynamics of the communities' needs offers a unique roadmap in which prioritized actions can be customized and adapted for improving health outcomes.

communities and a growing number of evidence-based strategies available to address them, individual communities confront unique sets of challenges related to the prevalence of opioid misuse, local conditions, resources, and priorities for intervention¹³. Therefore, solutions must be developed within the local context and with engagement of key community partners through processes that give voice to those most impacted¹⁴. The Stakeholder Engagement in Research Question Development (SEED) Method, a participatory engagement method, was used within a rural community impacted by the opioid epidemic in Southern Virginia as a model for local solutions to the crisis¹⁵.

In Virginia, rural communities face significant impacts from the opioid crisis. The rural community in Southern Virginia that is the focus of this article had one of the highest per-capita opioid prescription rates in the USA from 2006 to 2012^{16,17}. The community's opioid prescription rate in 2017 was 336.4 per 100 residents, compared to 58.7 nationally¹⁸. The opioid mortality rate was three times higher than the state average (38.8 and 12.4, respectively), and the area had the highest rate of unintentional opioid overdose emergency room visits statewide (55.5 per 10 000 compared to 23 per 10 000 statewide)¹⁹. Like many other rural communities, the county has lower levels of educational attainment, higher levels of disability, and lower median household income compared to national data²⁰. Once a prosperous farming and manufacturing center, the community had experienced economic turbulence as production was outsourced overseas and factories closed between 1980 and 2000²¹.

Considering the significant challenges facing this resilient community, community organizations mobilized to form an opioid taskforce in 2016. The local taskforce, led by the police department, included key community partners such as behavioral health providers, the local health coalition, peer- and faith-based recovery programs, the local hospital, and representatives from the judicial system, among others. To establish an action plan, the taskforce connected with an existing community-academic research team, EM Team, that had previously worked in the

community to develop and prioritize research questions related to the community's disparity in lung cancer mortality²². In response to the need for methods that effectively involved community members in actions to address opioid and substance misuse in rural communities, and the importance of understanding local conditions prior to choosing strategies for action¹⁴, EM used the SEED Method to engage community members for action to address needs related to opioid misuse. The SEED Method is a multi-stakeholder method that uses a community-based participatory research approach to engage diverse community members to address identified health concerns. It engages community residents and partners at various levels of involvement to develop strategies and implement priority strategies through community action planning²³. With the help of the local taskforce, EM launched the project using the SEED Method to generate community action plans¹⁵.

As part of the SEED Method process, EM conducted in-depth focus groups with key stakeholders in the community affected by the opioid crisis. The focus group information was used to inform the project by providing insight into community members' views, perceptions, and experiences with the opioid issue. This information assisted the research team and participating stakeholders in the development of strategies and action plans to implement in the community. A complete description of this project¹⁵ and the SEED Method is available elsewhere^{23,24}. The focus group process and key findings are reported in this article. The results are particular to this community but may be relevant to other rural communities trying to address the opioid crisis.

Methods

The study was designed to engage community stakeholders from diverse backgrounds in a systematic process of evaluating the factors impacting the opioid crisis, prioritizing strategies to address the crisis, and developing action plans to implement the selected strategies. Participants engaged at three levels: EM Team led the project and identified diverse local stakeholder groups for engagement; three topic groups (TGs) of stakeholder participants explored factors impacting opioid misuse and developed and prioritized strategies to address the crisis; and consulting (SCAN) stakeholders provided local perspectives during focus groups. The EM Team included two university faculty members, a graduate research assistant, two community EM project members who had participated in a previous lung cancer project in the community (one of whom operated as the project coordinator and EM liaison), and four additional community members with personal experience or knowledge in the treatment or prevention of opioid use disorder. The EM Team had diverse demographics: there were three aged 24–44 years and three aged 45–64 years; two Black/African Americans and four White/ Anglo-Americans; and three individuals with a high school education or equivalent, one with a college degree, and two with a graduate degree. TG members consisted of stakeholders who participated in the major project activities, such as reviewing data, identifying potential stakeholder focus groups, developing conceptual models, and prioritizing potential strategies¹⁵. Focus groups were chosen as a

method of gathering information from consulting stakeholders in order to learn about diverse experiences and gain more information about the community. The TG members used results from the focus groups to create and prioritize actions. The article discusses the themes that emerged from the focus groups.

Focus group selection

Members from each of the three TGs identified community stakeholders with distinct perspectives on the opioid crisis in their community. A facilitated process guided the TGs to identify stakeholders based on lived experience, as well as stakeholders with experiences as a clinical service provider, policymaker, law enforcement official, or a person serving individuals with substance use disorder. Each TG selected one stakeholder group with whom to conduct a focus group. The EM Team went through a similar process to select stakeholders for a fourth focus group. Care was taken to avoid duplication of stakeholder groups, such that four distinct groups with differing perspectives on the opioid crisis were selected.

Focus group recruitment

The EM Team developed a recruitment plan for each of the focus groups. The EM Team identified locations within the community to recruit a convenience sample of participants for each group, such as organizations that have contact with members of the selected stakeholder groups. The EM Team also selected methods for recruitment appropriate to each group, including e-mail listserv announcements, social media posts, newspaper ads, and fliers. Recruitment materials and messages were drafted by the EM Team. Eligibility for all of the focus groups was limited to individuals aged 18 years and older who were current residents or employees of the rural community. Participants were excluded if they did not meet the minimum age requirement or would be unable to participate in oral discussions due to a health condition. The EM Team communicated with interested participants to confirm self-identification with one of the four stakeholder groups selected for the focus groups. Signed informed consent was acquired prior to participation. A single focus group was conducted with each of the four stakeholder groups, with a target recruitment of 8–10 participants in each group.

Focus group facilitation

Each 90-minute focus group was facilitated by an EM Team member. Each EM member was trained by an academic faculty member of the research team, and focus group questions were developed by the TGs and the EM Team. A distinct facilitator guide was developed for each of the four stakeholder groups (Appendix I). The questions were generated to explore pathways to opioid misuse, prevention, barriers to treatment, stigma, community awareness, policies, and programs from the perspective of each group.

Data analysis

There were two aims in conducting the focus groups. The first aim was to provide contextual background and a greater

understanding of the experiences of diverse stakeholders to help inform the strategy development and action planning work of the TGs. The second was to explore relevant causes of the opioid problem in the community and barriers to prevention, treatment, and recovery. The objective of the focus groups was not to reach saturation; rather, it was to elicit perspectives from four diverse stakeholder groups. For the first aim, the focus group data were initially summarized by research team members and the summarized findings were presented to the TGs for discussion to inform the strategy development and prioritization process. For the second aim, the data were inductively coded using a reliability thematic analysis of the focus group transcripts.

In this analysis, audio-recordings of the focus groups were professionally transcribed. The transcriptions were reviewed for accuracy, and corrections were made when necessary. An initial coding schema was then developed using the focus group summaries created by the research team. Two investigators reviewed the transcripts independently using the schema and added emerging codes. An open coding process was used to break down, compare, and conceptualize the data. The codes for each transcript were reviewed for intercoder agreement, and final codes were agreed upon. Discrepancies were resolved by a third coder. The final codes were then categorized into major themes and subthemes. Themes were derived from the codes and representative supporting quotes were selected through a consensus process and an intercoder reliability matrix. This process was adopted and modified from Braun and Clarke, and Tolley et al.^{25,26}.

Ethics approval

The study design was approved by the Virginia Tech Institutional Review Board, protocol number 18-860.

Results

The stakeholder groups identified by the TGs and EM Team to participate in the focus groups included family and friends of opioid users, recovery service providers, treatment service providers, and decision- and policymakers. Distinct areas of inquiry were developed by the TGs and EM Team for each group (Table 1). All four focus groups were asked to discuss actions they felt would improve the opioid situation in their community, without regard to feasibility or cost.

The focus groups were conducted on two separate days in private administrative rooms in a local hospital. There was a total of 26 participants (16 females and 10 males). The participants brought multiple perspectives, with backgrounds ranging from community members, to peer counselors, to policymakers, and represented various organizations and institutions (Table 2).

The results of the four focus groups were organized into five categories: social and environmental factors impacting opioid use and recovery; impacts of opioid use disorder on the family; impacts of opioid use disorder on healthcare providers; barriers and facilitators to treatment and recovery; and communication strategies for targeting at-risk opioid use disorder populations.

Table 1: Composition of stakeholder focus groups and lines of questioning as part of the Stakeholder Engagement in Research Question Development (SEED) Method, in a rural community impacted by the opioid epidemic in Southern Virginia

Stakeholder group	Areas of inquiry			
Family and friends of opioid users	Pathway to opioid misuse	Impacts of opioid misuse	Barriers and facilitators to recovery	Experience with the legal system
Recovery service providers	Impact of opioid crisis	Available services	Marketing and community awareness	Prevention strategies
Treatment service providers	Availability, effectiveness and barriers to treatment	Populations accessing treatment services	Communication strategies about available treatment services	Prevention activities in community
Decision- and policymakers	Causes of the opioid crisis	Impact of the issue on health professionals	Effectiveness of policies and programs	Assessment of the impact of programs and policies

Table 2: Stakeholder focus group participants by affiliation

Recovery service providers (n=8)	Treatment service providers (n=6)	Family and friends of opioid users (n=6)	Decision- and policymakers (n=6)
Peer counselors	Community services	Abuse victim	Hospital representative
Peer recovery provider	Social services	Friends/family	Policymakers
Community recovery provider	Therapist	Caregivers	Pharmacist
Recovery housing provider	Mental and behavioral health specialists	Court system representative	Health Department representative
Clergy	Local drug coalition member	Foster care representative	School system representative

Social and environmental factors impacting opioid use and recovery

The importance of family ties and social networks as risk and

resiliency factors in this community was a major theme. Strong family and social ties form an important safety net for individuals, but also increase potential negative influences of family and peers

on attitudes and actions related to substance use. Focus group participants highlighted multi-generational substance use as one of the root causes of the opioid crisis. They reported that drug use, particularly prescription drug use, may be normalized in the home by family members modeling substance use behaviors. The presence of drugs in the home, and early childhood exposure to parents who use substances, may increase individuals' propensity for substance misuse.

... when you ask, 'where did you get it?' 'Mama had it at the house.' It's two or three generations that's all caught up in the addiction.

Focus group participants also discussed industrial jobs and the role of historic economic decline in this once-prosperous manufacturing community as a contributing factor in the opioid crisis. Abundant, well-paid manual labor jobs of the past had allowed residents with limited higher education to prosper, but also increased the need for pain management resulting from physical injury and work-related pain. As prescription opioids became more abundant and were promoted by pharmaceutical companies and prescribed by trusted physicians, their use increased and was normalized as a response to pain. The ongoing closure of manufacturing companies in the community resulted in a lack of jobs suited to the local labor force. Over time, unemployment led to a sense of hopelessness and low self-esteem, further driving the abuse of readily available substances. Lack of mental health services to help residents cope was identified as a compounding factor.

I quit school in the 8th grade and went and worked at [the factory], and now I have no job and I have no education ... I'm 52 years old, and I ... I don't even know what to do with myself.

Impacts of opioid use disorder on family

The emotional toll on families of individuals with opioid use disorder was a recurring theme in the focus groups. Participants described the extreme internal conflict they experienced trying to help their loved ones. They felt conflicted about the role of 'tough love' for the purpose of assisting someone's long-term wellbeing. They also struggled with the balance between helping their loved ones overcome their addiction and allowing their loved ones to avoid facing repercussions.

... that's all you want to do is help them. But at the same time, you're helping them ... it's too fine a line. You're, you're also enabling and hurting them.

Comments like these show the difficulty that family members experienced trying to find appropriate ways to support their loved ones, and they reported that these struggles resulted in strained interpersonal relationships and distancing. This is particularly significant in view of the importance of family ties within the community.

In addition to the emotional toll of supporting a family member with opioid use disorder, the significant financial costs impacting the extended family were described. The financial costs included

support to addicted individuals as well as the costs associated with incarceration, an often-unrecognized financial burden that strains the social support network and may delay treatment due to depleted financial resources.

Impacts of opioid use disorder on healthcare providers

Focus group participants described how the increasing demand for services for people with opioid use disorder has overstretched the limited treatment and social service resources available in this underserved rural community. High caseloads have increased the burden on providers and reduced the quality of care. Providers experience guilt over their inability to provide the time and human resources needed to adequately address their patient needs, as well as burnout from the cycle of opioid users' needs and demands.

From the social services sense, I think it makes your caseloads high. Too high to manage. Um, you don't spend as much time with clients as you probably should. Um, you know, you become like a revolving door of trying to help somebody.

... [Community Service Boards] are just understaffed, overworked and everything else ...

Participants described how the dramatic reforms related to opioid prescriptions and pain management policies have had mixed impacts on the community's healthcare providers. While dramatic decreases in opioid prescriptions were seen as a good thing, participants worried that the result was inadequate pain management for some patients. New regulations and monitoring systems have also increased physician concerns about risks to medical licenses. Providers discussed feeling unprepared to treat opioid addiction in their patients while managing their pain and expressed the need for appropriate training. Providers also described expectations for pain medication held over from the decades of treating pain as the '5th vital sign'²⁷. Providers felt caught between meeting regulatory expectations for eliminating pain and prescribing under the new guidelines.

Some primary care providers are just wanting to cut it off and say, 'Okay, I'm stopping you.' When essentially you can't just stop [the opioid medications] because you're gonna create a bigger problem. So, it's, 'How do we stop? How do we win? How do we transition?'

Participants from the provider groups discussed how the changes impacted them. New opioid prescription regulations have resulted in difficulty accessing pain medications among patients with pain management needs. A public health specialist from the policy focus groups reported that monitoring practices have left patients feeling like criminals, and prescription opioid use has been stigmatized.

I've been on a fentanyl patch for years ... and it makes me able to get to work every day. And now, suddenly, I'm a criminal. I feel like I'm a criminal. I'm going in to get my fentanyl patch and everybody's looking at me.

Barriers and facilitators to treatment and recovery programs

Focus group participants indicated that availability of treatment and recovery services was increasing in the area; however, lack of certain essential services continued to be an issue. These included the lack of local services for inpatient detoxification and a comprehensive system providing a continuum of care from detoxification through long-term recovery. Participants stated that an integrative approach to substance abuse treatment that meets patients' needs, takes a holistic approach, addresses root causes, and provides transitional services could be more effective in changing and increasing the chances of continued recovery while lowering the chances of relapse. Of the services available in the community, medication-assisted treatment, peer recovery groups, rehabilitation centers, faith-based recovery programs, and long-term recovery programs were identified as particularly effective.

The significance of adopting an intrinsic, patient-centered approach to treatment and recovery that addresses the 'whole person' was a recurring theme in assisting individuals during recovery programs.

It's a process of changing the way somebody thinks – the way they deal with the stress, the way they deal with emotional problems. Because all of that has always been pushed away with chemicals.

Holistic and comprehension approaches must also address the social determinants of health that are associated with treating the whole person.

... Maslow's levels of need are not being addressed. So, we have to assess them for food, security, relationships, housing, everything ... things that can come on board and help them find a place to live, or transportation to get to treatment.

Participants also discussed judicial policies as barriers to recovery because they place a financial burden on those charged with substance-related offenses. An example was court fines that, if not paid, result in revocation of drivers' licenses. Lack of a driver's license limits the ability to work to pay the court fines, compounding the situation and putting treatment and recovery further out of reach. Lack of treatment while incarcerated; lack of effective linkage to social services, peer counselors, and treatment programs upon release; and cyclical incarceration were also important barriers to long-term recovery.

Finally, ensuring ongoing funding for opioid healthcare services and programs in the community was identified as critical. Medicaid expansion has provided funding for the most vulnerable. However, inconsistent and insufficient health insurance reimbursement policies and the variable allocation of government funds for programs remain significant funding barriers to expanding treatment services. Participants emphasized keeping legislators informed of ongoing funding needs and opioid statistics. To

accomplish this, it is important to address limitations in local opioid data, such as the accuracy and availability of opioid overdose information coming from emergency services, and to solve barriers to interagency data sharing and metrics relevant to city and state funding decisions.

... you had to use different silos, we'll just call them state police, department of health, social services, whatever. The don't talk to each other. And they, they still don't talk to each other within the rules of HIPAA [Health Insurance Portability and Accountability Act].

The stakeholders need to be at the table at all times and the legislative branch needs to hear from people all the time ...

Communication strategies needed for targeting populations at risk for opioid use

Another focus group theme was stigma associated with opioid misuse and the need to reduce stigma. Participants felt that stigmatizing opioid misuse kept people in denial and prevented them from seeking help. Stigma also hinders people with legitimate pain issues from receiving appropriate care. Depersonalization of individuals with opioid use disorder was felt to permit stigmatization. Campaigns to combat the stigma were recommended.

Promoting a 'culture of hope' in the community was a second communication theme. Hopelessness due to the lack of economic opportunity was identified as a driver of opioid and substance misuse in the community. Participants saw schools as a vital community institution that gives hope to children. Therefore, strategies to communicate a broader vision of hope for the future were targeted at children and youth.

In the school system teaching children, the ability to dream about what they know ... Realizing there's something out there besides what I know. There's more to life than what I've seen. Forming a program that focuses on hope, exposure, and greater opportunities can shift the minds of the youth.

Priority actions to combat the opioid crisis

As part of the focus group discussions, participants were asked to share ideas for actions that could reduce the opioid problem in their community, without regard to cost. The focus groups yielded several recurring ideas. The most commonly occurring concepts in the data were classified as actions. The top five proposed actions were establishing a drug court to divert people from the legal system and into treatment and recovery, allocating sufficient human and financial resources to meet the service needs of those with opioid use disorder and their families in the community, providing drug avoidance education in the schools and for those who are incarcerated, establishing a long-term rehabilitation program in the area that includes family in the process, and using the school system to promote hope among youth (Table 3)¹⁵.

Table 3: Supporting quotes for commonly proposed actions among focus groups

Proposed action	Supporting quote
Establish drug court	<i>We need to reform the judicial system. There's people going to jail that do not belong in jail. I think drug court. We don't have a drug court like in [central part of Virginia] ... I watched a video they had posted on their website, and it seemed like it helped when they just have one court ... versus throwing people in jail. Drug court is a big one and that's a policy issue.</i>
Allocate sufficient human and financial resources for treatment of individuals with substance use disorder and their families	<i>There's not enough people to help with those programs. We had two or three residents and we were impacting tremendously, but we only have so many beds ... And that's the issue. It's space. ... have recovery [policies or programs to address the opioid issue] in every primary care doctor's office. We see that very often an entire family needs to be treated. The problem may well be an individual there, but the caregivers need training, education, and they need their own support, perhaps, too ... There isn't anything here [for families]. Yeah, I think the focus needs to be put on the people surrounding that addict, not just the addict.</i>
Drug avoidance education in schools and jails	<i>I think the proactive part is going to be the education and prevention of the youth. The reactive is, you know, when you take care of the people that are already addicted. I think it [prevention education] should be mandatory to put in schools. Like have, you know, different people who come from recovery ... once a month or twice a month. Somebody, just different kids from all walks of life, to come in and have presentations and gather. You've got them incarcerated, you've got their attention, and they're different people when they're locked up. I think we need to focus more on reaching this population before they get discharged back into the community.</i>
Establish long-term rehabilitation program in the area that involves families	<i>I mean, these people need to be in rehab, not jails. And maybe we need a rehab center here that's government funded for people that can't afford to pay for their kids or loved ones to be in there, to keep them out of jail. That was a weekend trip basically to be able to go see him. If we had those facilities in this area, it would be easier on the family members to be able to see them while they're in there, you know, and hopefully see the progress.</i>
Promote hope in schools	<i>This may sound like an old school ... in the school system, teaching children the ability to dream beyond what they know. Realizing 'there's something out there besides what I know.</i>

Discussion

The rural community where this study was conducted falls within the area considered Appalachia, and shares many of the characteristics with those communities that made them vulnerable to the opioid crisis: high rates of chronic pain due to the large number of manual labor jobs, inadequate regulatory oversight, overmarketing of opioids, availability of willing prescribers, and lack of public education about the risks or prescription pain medications²⁸. Despite the commonalities of these rural communities, solutions to opioid and substance misuse must be based on local experience. The EM Team held four focus groups with diverse stakeholders impacted by the opioid crisis (individuals in recovery/family and friends of people with opioid use disorder, treatment providers, recovery providers, decision- and policy makers) who provided valuable perspectives on the opioid problem in their community. They highlighted the impact on service providers and patients, explored barriers to treatment and recovery, and proposed potential strategies and solutions.

The importance of family to the social support structure for individuals dealing with opioid misuse in this community was a salient point. An important cultural difference between rural and urban life is the breadth and influence of family networks²⁹. Strong family ties are an important support system for those dealing with opioid misuse and other stressors but can also pose a potential

risk for intergenerational opioid misuse and hinder long-term recovery^{29,30}. Addiction is a disease that impacts not just the user, but also the user's family and social network³¹. Taking a holistic approach to treatment and recovery that engages and provides support to the family is particularly important in this rural context. Programs to support healthy families and family dynamics in communities that rely on strong kinship networks are crucial when addressing opioid and substance misuse. Programs should focus on building individuals' ability to manage and plan for difficult social, financial, and relational situations, and should disrupt the intergenerational transmission of substance use by addressing the multiple factors that influence undesirable behavior³²⁻³⁴. Using a family and social network approach to address substance use can result in better treatment outcomes and reduce harm for both the person misusing substances and other family members^{35,36}. As a best practice, substance use disorder providers should assess the strengths and needs of a user's family and social networks, and implement evidence-based approaches that address those needs³⁷.

Focus group participants described a lack of opportunity, and an associated pervasive hopelessness as important contributors to opioid misuse in the community. Hope is an important factor in addiction and recovery. It has been defined as the will and confidence to see things through, set goals and develop steps to achieve them^{38,39}. Higher measures of hopefulness are associated

with decreased likelihood of substance use in adolescents and may moderate the effect of other risk factors, such as depression⁴⁰⁻⁴². Promoting a culture of hope through schools, social activities, economic opportunity, and job creation were key recommendations from focus group participants.

Rural areas have fewer per-capita general health and mental health providers compared to urban areas^{39,43,44}. The disproportionate incidence of opioid misuse in this community has strained already-limited healthcare and social service resources, causing an overburdened workforce dealing with new prescription regulations, pain management needs, treating opioid use disorder patients, and providing long-term recovery services. The frustration of healthcare and social service providers unable to provide quality care due to time, training, and resources constraints was palpable and consistent with other rural community experiences⁴⁵. Expanding the existing workforce and providing adequate training to healthcare providers were seen as essential strategies to address opioid misuse in the community. The former is challenging, as recruiting qualified healthcare professionals to work in rural communities is difficult under the best of circumstances⁴⁶. Creative solutions will be needed to accomplish this, such as increasing access to healthcare professionals through telemedicine⁴⁷, task sharing⁴⁸, interdisciplinary partnerships⁴⁹, and targeting rural students for medical training and residency programs who are more likely to stay in the community^{46,50}.

In addition, focus group participants identified important strategies for stopping the cyclical demand for services for individuals with opioid use disorder, including increasing detoxification and long-term recovery services and establishing effective systems to transition patients across the continuum of care. In rural communities with limited resources, collective impact could be improved through better coordination between existing services, including non-traditional and faith-based recovery programs. As one participant expressed:

I don't think it's a standalone solution. I don't think a local community service can fix it alone.

To expand and sustain effective programs for those impacted by opioid dependence, this community recognized the importance of government action. Statistics drive legislation, and there was a need to improve the data currently available to inform local legislators, healthcare providers, and service providers. Information about repeat offenders, emergency medical services visits, treatment visits, and Narcan usage were seen as critical. Breaking down regulatory barriers to data sharing between the organizations in possession of the data was identified as a key first step. Consistent, ongoing communication with legislators that presents clear, concise ideas and statistics, as well as personal testimonies from constituents, would assist legislators in attaining the necessary support to move priority actions forward and maintain prevention and treatment funding in the community.

The findings presented here are useful in understanding the viewpoints of important stakeholders in a rural Virginia community

that has been severely affected by the opioid crisis. These findings could be very useful for other rural populations in similar situations but may not be substantially generalizable in other contexts. This study did not seek to reach saturation with any of the stakeholder groups because the information received from these four groups was used to inform a larger approach. As a result, it's possible that not all of the important information from these stakeholder groups was gathered. Having said that, this study purposefully set out to acquire varying community perspectives from as many community voices as possible. The data presented here provides valuable viewpoints from these stakeholder groups.

Conclusion

Rural communities face unique challenges that can hinder the process of mitigating the crisis of opioid use disorder. These communities have the essential tools to combat this public health crisis, especially if they can foster strong community engagement and prioritize actions suited to the community. The study demonstrates the use of community-engaged approaches that gather multi-stakeholder input to identify tailored strategies is a promising approach to addressing the opioid crisis in rural communities.

Community stakeholders identified and advocated for rational solutions to address substance use disorder and opioid use disorder. Those strategies include increasing access to local long-term treatment programs, targeting youth for prevention, addressing stigma and hopelessness, increasing and equipping healthcare personnel, incorporating holistic approaches, and developing a drug court. The information gathered from the focus groups was used to inform the community stakeholders engaged in the SEED Method, who ultimately developed strategies they felt were needed in their community, and that they felt empowered to implement.

The findings reported here are limited in that they come from only one community. Nonetheless, the perspectives shared by these diverse stakeholders will resonate with people in other rural communities or at least form a basis for discussion and reflection.

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Appendix I: Focus Group Interview Guides

Family and Friends Focus Group Guide

WARM-UP (5 minutes):

OK. Let's go around the room and quickly tell us your first name. You might want to mention something else about yourself, why you are participating in the focus group and discussing factors surrounding opioid use disorder?

A. Pathways to Opioid Misuse (10 minutes):

I would like to start by focusing on the pathways to opioid misuse.

1. What puts a person at risk for opioid use disorder (OUD)?
 - a. What are some underlying causes of OUD?
2. What role do family members play in recognizing, preventing, or dealing with addiction?

B. The Impact of Opioid Misuse on Spouse, Partners, Children, Etc. (15 minutes):

Now I would like to shift our focus and explore any ways in which the impact of opioid substance abuse on family members, such as spouses, partners, children and friends.

3. What are the personal impacts of opioid misuse for family members and friends?
4. What are the difficulties that family members, life partners, and friends face in obtaining help for the person using opioids?
5. What are the difficulties they face obtaining help for themselves?

C. Experiences with Recovery (20 minutes):

The next questions will explore any experiences with recovery

6. What strategies or services have proven to be effective for opioid use disorder recovery in your experience?
7. What are the barriers to long term recovery?
8. What role do family and friends play in a person entering treatment and their long-term recovery?
9. What recovery methods are not available in community that would be helpful?
 - a. What resources do you wish the community had to effectively support individuals with opioid use disorder, their families, and community members?
10. What is the impact of stigma on a person's willingness to seek treatment, and their recovery?
 - a. What are some strategies to reduce stigma within the community?
11. What are the barriers and facilitator of opioid prevention?

D. Legal Barriers/Experience with Court System (10 minutes):

Now I would like to shift our focus and explore the role of the judicial system in prevention and treatment of opioid use disorder, and experiences with the Court System.

12. How does the legal system affect families dealing with substance abuse?
 - a. How are Drug Courts impacting people and families dealing with opioid use disorder?
 - b. How about Family Court?
13. How can the court system effectively protect families when a member has opioid use disorder?
 - a. When should the court intervene in a family opioid crisis?

E. Suggestions for improved recovery outcomes (individual, family, community, etc.) (30 minutes):

The next questions will let you think outside of the box about what needs to be done to address this issue here.

14. What policies or programs could be implemented to increase the effectiveness of addressing the opioid issue?
 - a. What about health insurance reimbursement policies?
15. How can we be proactive in our approach to the opioid issue, rather than reactive?
16. What is something that could actually be done now to make an impact on the opioid issue in this community?
17. Now, imagining that money and resources were not a limitation, what could be done to make a big impact on the opioid issue in this community?

Policy Focus Group Guide

WARM-UP (5 minutes):

(have a graph of the opioid misuse continuum – prevention – treatment – recovery (branches of support people and services))

OK. Let's go around the room and quickly tell us your first name. Where does your organization or your role potentially impact the opioid issue along the course of opioid misuse – for example prevention, health care access, etc.?

I would like to start by focusing on some causes and impacts of the opioid crisis.

A. Causes of the Opioid Issue (10 minutes):

1. What has contributed most to the local opioid problem?

B. The Impact of Opioid Issue (10 minutes):

2. How has the opioid crises affected your occupation?
 - a. Has it affected your work or the work you are doing?

C. Effectiveness of Current and Past Opioid Practices, Policies and Programs (15 minutes):

The next questions will be about current and past opioid policies and programs as they relate to opioid use and misuse.

3. Let's start with policies. Are there any policies that you are aware of, or within your scope of work that impact the local opioid issue?
 - a. Are there any that are working particularly well?
 - b. Are there any that are not working?
 - c. Are there any that are contributing to the problem?
4. Now, how about programs. Are there any programs that you are aware of, or within your scope of work that impact the local opioid issue?
 - a. Are there any that are working particularly well?
 - b. Are there any that are not working?
 - c. Are there any that are contributing to the problem?

C. Assessment of Impact of Policies/Best Practices (15 minutes):

Now I would like to shift our focus and explore the impacts of policies and best practices to address the opioid crises.

5. How is the impact of programs and policies being monitored?

- a. What data resource are being accessed to evaluate program/policy impact
 - b. What data resources are needed that don't exist?
6. What information do policy makers need to make better decisions?

D. Priority Changes for the Future (35 minutes):

The next questions will let you think outside of the box about what needs to be done to address this issue here.

- 7. What policies or programs could be implemented to increase the effectiveness of addressing the opioid issue?
 - a. What about health insurance reimbursement policies?
- 8. How can we be proactive in our approach to the opioid issue, rather than reactive?
- 9. What is something that could actually be done now to make an impact on the opioid issue in this community?
- 10. Now, imagining that money and resources were not a limitation, what could be done to make a big impact on the opioid issue in this community?

Recovery Focus Group Guide

WARM-UP (5 minutes):

OK. Let's go around the room and quickly tell us your first name. You might want to mention something else about yourself, how long you have worked with individuals recovering/suffering from opioid use disorder and include something about your experience.

A. Impact of Opioids in the Community (10 minutes):

- 1. How has the opioid problem impacted the community?
 - a. Who do you think is most impacted by opioid misuse?
- 2. How are service providers in the community effected by the opioid issue?
 - a. Social services like housing, EBT, food banks, unemployment, etc.

a. Treatment and Recovery Services in the Community (30 minutes):

The next questions will explore treatment and recovery services in the community.

- 3. What types of supports and services are available for people using opioids?
 - a. Which of these are most important to these people?
 - b. How do they/you promote long term recovery?
 - c. What has the best success rate?
 - d. What are the barriers to long term recovery for people using opioids?
- 4. What activities in the community are most critical to addressing the opioid issue?
- 5. What services are important but not currently available in the community?
 - a. Why are they not currently available?
 - b. Is an inpatient recover center needed in the community?
 - c. What is the role of faith organizations? Are they willing to be involved? Why or why not?

a. Marketing/Community Awareness of Services (5 minutes):

Now I will be shifting our focus on community awareness and marketing strategies related to services in the community.

- 6. What methods are you using to get the word out to the community about your services?
 - a. How successful have they been?
- 7. How can people who are misusing opioids be identified and referred to services?
 - a. How can they be made aware of all of the services that are available?

a. Prevention (5 minutes)

The next question will focus on targeted prevention activities.

- 8. Who should be targeted for prevention of opioid misuse?
- 9. What prevention activities are you aware of?
- 10. What do you think the major challenges are to preventing opioid misuse?

a. Priority Changes for the Future (35 minutes):

The next questions will let you think outside of the box about what needs to be done to address this issue here.

- 11. What policies or programs could be implemented to increase the effectiveness of addressing the opioid issue?
- 12. How can we be proactive in our approach to the opioid issue, rather than reactive?
- 13. What is something that could actually be done now to make an impact on the opioid issue in this community?
- 14. Now, imagining that money and resources were not a limitation, what could be done to make a big impact on the opioid issue in this community?

Treatment Focus Group Guide

WARM-UP (5 minutes):

OK. Let's go around the room and quickly tell us your first name. You might want to mention something else about yourself, how long you have been servicing the community and something about your experience here.

A. The Availability and the Types of Services in the Community (30 minutes):

I would like to start by focusing on questions that relate to the availability and the types of services in the community.

- 1. What types of treatment for opioid use disorder are available in the community?
 - a. What about follow-up services for people who complete treatment?
 - b. Are there services for family members of those afflicted by OUD?
 - c. What services are not available or in short supply?
- 2. Who has access to treatment?
 - a. Do they need a referral (court, physician), or can they self-refer?
 - b. Do they need insurance or can they self-pay?
 - c. What barriers do people face to accessing treatment?

B. Effectiveness of treatment strategies and barriers to recovery

Now that we have talked about what services are available in the community, I would like to discuss the relative effectiveness of the treatments and services.

- 3. What treatment methods or strategies have you seen that are most effective?
 - a. What are the success rates of the various treatments?
- 4. What are the barriers to recovery for people with opioid misuse disorder?
 - a. Do any of the treatment options address these barriers?
 - b. What advice do you give patients regarding barriers that may impact the continuation of treatment? (Side effects, Monetary, Loss of Hope)
- 5. What are the barriers to organizations providing treatment and services to meeting the needs of the community?
 - a. Are they fully staffed?
 - b. Do they have financial limitations?
 - c. Are they able to reach the people in need?

C. Information on individuals accessing services (5 minutes):

The next questions will focus on information about accessing services.

- 6. In this area, who is most in need of services?
- 7. Who is accessing the available treatment services?

- a. Is there a unique population group that uses treatment services?
What is the average age? Race? Sex?
- b. Are clients coming from a certain area of the city/county?
- 8. Is there a shared program/software in place that can identify people as a user of opioids/narcotics who have accessed services?
 - a. Would such a system be helpful?
- D. Prevention (15 minutes):**
The next question will focus on targeted prevention activities.
- 9. What puts a person at risk for opioid misuse disorder?
 - a. Is there a "gateway drug", or common pathway to OUD?
- 10. What prevention activities are offered in the community?
 - a. Who is your targeted audience?
- 11. What additional preventive services could be offered in the community?
 - a. Who should be targeted?
- 12. How has Narcan helped as a prevention for overdose deaths in this community?
 - a. So, you see any downsides to Narcan?
 - b. Is there a need for increased Narcan distribution?
- E. Cross communication and getting the word out about available services (5 minutes)**
Now I would like to shift our focus on the cross communication about and between service in the community.
- 13. How does the public get information about opioid misuse treatment services?
 - a. How effective do you think those methods are?
 - b. Are there ways to advertise the availability of resources for people in need that are not currently being utilized?
- 14. How easy is it for people to learn about all of the available services they might need?
- F. Priority Changes for the Future (35 minutes):**
The next questions will let you think outside of the box about what needs to be done to address this issue here.
- 15. What policies or programs could be implemented to increase the effectiveness of addressing the opioid issue?
 - a. What about health insurance reimbursement policies?
- 16. How can we be proactive in our approach to the opioid issue, rather than reactive?
- 17. What is something that could actually be done now to make an impact on the opioid issue in this community?
- 18. Now, imagining that money and resources were not a limitation, what could be done to make a big impact on the opioid issue in this community?

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