Barriers and facilitators to implementing changes in opioid prescribing in rural primary care clinics

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Abstract

Background: Opioids are more commonly prescribed for chronic pain in rural settings in the USA, yet little is known about how the rural context influences efforts to improve opioid medication management. *Methods:* The Six Building Blocks is an evidence-based program that guides primary care practices in making system-based improvements in managing patients using long-term opioid therapy. It was implemented at 6 rural and rural-serving organizations with 20 clinic locations over a 15-month period. To gain further insight about their experience with implementing the program, interviews and focus groups were conducted with staff and clinicians at the six organizations at the end of the 15 months and transcribed. Team members used a template analysis approach, a form of qualitative thematic analysis, to code these data for barriers, facilitators, and corresponding subcodes. *Results:* Facilitators to making systems-based changes in opioid management within a rural practice context included a desire to help patients and their community, external pressures to make changes in opioid management, a desire to reduce workplace stress, external support for the clinic, supportive clinic leadership, and receptivity of patients. Barriers to making changes included competing demands on clinicians and staff, a culture of clinician autonomy, inadequate data systems, and a lack of patient resources in rural areas. *Discussion:* The barriers and facilitators identified here point to potentially unique determinants of practice that should be considered when addressing opioid prescribing for chronic pain in the rural setting.

Background

The opioid epidemic has disproportionally affected rural populations in the USA. This may be in part because rates of opioid prescribing are higher [1–3] and chronic pain is more prevalent within rural populations [4]. In 2017, 14 of the 15 US counties with the highest rates of opioid prescribing were rural [1]. Providing care to this rural population of patients experiencing chronic pain generally falls on the shoulders of isolated rural primary care providers, who generate many of the opioid prescriptions [5]. In response, attention and resources are being made available to rural primary care settings to initiate quality improvement efforts that address opioid prescribing and chronic pain and promote delivery of more guideline-concordant care [6].

Quality improvement efforts are sensitive to contextual factors that can both inhibit and support these initiatives [7]. However, little is known about how unique attributes of the rural context either pose challenges or facilitate efforts to improve opioid medication management for patients with chronic pain [8]. Also described as "determinants of care or practice," these are factors that enable or hinder the effectiveness of an implementation strategy to improve outcomes [9,10]. Understanding these determinants is important in efforts to develop more effective, feasible and responsive strategies to improve guideline-concordant use of opioids for chronic pain in primary care [11]. Very little is known about implementation in general in rural settings, even less about these determinants of practice that might improve opioid medication management [12].

The Six Building Blocks program guides primary care practices in making system-based improvements in the management of patients using long-term opioid therapy (LtOT). These "building blocks" were first identified in a study of innovative, high-functioning primary care teams [13]. They include (1) leadership support and consensus building, (2) revision and alignment of policies, patient agreements, and workflows, (3) tracking and monitoring patients, (4) planned, patient-centered visits, (5) identifying and connecting to resources for complex patients, and (6) measuring success.

The Six Building Blocks program was subsequently implemented across 20 rural and rural-serving clinics within six organizations. Study outcomes have been previously published [14]. Briefly, the rate of decline in the total number of patients on LtOT increased during the Six Building Blocks' 15 months of practice facilitation support. The rate of decrease in the proportion of patients on higher dose opioids was greater among patients seen in intervention clinics compared to the control group. In addition, clinicians and staff reported improvements in their work-life and decreased levels of stress [15]. Here, we identify and describe barriers and facilitators that influenced implementation of the Six Building Blocks program in these rural and rural-serving primary care organizations from the perspectives of clinicians and staff working in their clinics.

Methods

Intervention, Setting, and Subjects

Subjects and setting have been previously described [14]. Briefly, six rural-serving primary care organizations with 20 clinic locations in the Washington, Wyoming, Alaska, Montana, and Idaho (WWAMI) region Practice Research Network were enrolled in the study. Five of the organizations were designated rural critical access hospital organizations [16]. Each clinic location had from 2.6 to 7.4 full-time equivalent clinicians. Within each organization, an opioid improvement team, including a clinical champion, was identified. During an in-person study kick-off meeting at each organization, members of the study team discussed current opioid prescribing and chronic pain management practices with all staff and clinicians and identified opportunities for improvement. The study team then provided 15 months of ongoing support that included external practice facilitation, connection to resources, clinical education opportunities, and a monthly shared learning call with other participating organizations.

Data Collection

At the conclusion of the study, semistructured interviews and focus groups were conducted by phone by a single study team member, audio-recorded, and transcribed. Each roughly 60-minute session began with an oral informed consent process, approved by the University of Washington Human Subjects Division. Individual interviews were conducted with 1–2 representatives of each of the six opioid improvement teams, using purposive sampling in which the interviewees were chosen based on their role in the intervention. Within each organization, two separate focus groups were conducted, one with staff and one with clinicians, using convenience sampling. Five to ten participants self-selected based on interest and availability to participate in each focus group. Separating the two focus groups supported participants' comfort in sharing openly. At one organization, a group of clinicians could not be scheduled for a focus group due to disruptions, including loss of their data lead and a move into a new building, so five clinician focus groups and six staff focus groups took place. Interview guides included questions encouraging participants to reflect on factors that facilitated implementation of the changes they made and what made it more difficult. By the end of the data collection process, the interviewer (NV) felt we reached data saturation as no new ideas were emerging.

Data Analysis

Team members used template analysis' iterative process to code for barriers and facilitators [17]. Two study team members (MLP, BI) initially reviewed the interview transcripts using codes to capture two broad concepts: barriers to and facilitators of the work to improve opioid medication management using the Six Building Blocks as a structured guide. These two team members then developed an initial coding template with subcodes for different categories of barriers and facilitators that emerged from the data. Three study team members (BI, KO, SS) independently applied these facilitator and barrier subcodes to a subset of transcripts, met to discuss differences in code application, and refined the template according to these discussions. The three team members then applied this revised template to all remaining transcripts. After all transcripts were coded, they met to review the emerging themes that each identified during the coding process. They discussed any overlaps in themes, reviewed quotes reflective of each, and revised the template. They then presented these themes and supporting quotes to the larger study team for review and comment to reach a consensus on the final template and emergent themes. This study was reviewed and approved by the Institutional Review Board at the University of Washington.

Results

Ten themes were identified and classified into facilitators and barriers (see Table 1) to making systems-based changes in opioid management within the rural practice context.

Facilitators

A Desire to Help Patients and their Community

A desire to improve care for their patients and address the needs of their community was a primary motivation: "I think the most important to us was the patient care, just how to help our patients." A practice manager commented: "It is a hot topic in the community, so they could see – our board of commissioners, since we're a public hospital district we're very aware that we were actually actively taking charge of our patients and helping them . . . ."

External Pressure

Another motivating factor to do the work was the perceived increase in external pressure from parent organizations, insurance companies, and government regulators, as well as the public media coverage of the opioid epidemic. As one participant put it, a facilitator of the work was to make sure " . . . we are doing all the things we need to from the state's vantage point, so that we're not breaking rules and not . . . let[ting] people fall through the cracks."

Work-life Stress

Individuals across all six organizations were interested in doing the work because of a desire to reduce work-life stress. These stresses were partially attributed to inconsistent approaches to chronic pain care across providers. This sometimes resulted in patients with complex health needs who were on legacy opioid prescriptions: "Our providers have some experience picking up difficult cases from colleagues who've left and that has been . . . so difficult that they want to do their part in not getting in that pickle again." Inconsistent opioid prescribing practices across clinicians was noted as a particular concern in small, rural areas because " . . . word travels fast": "You have to stick with a policy and there can't be 'oh, we'll do it with some people this way and other people this way,' because when there's a disparity, then there seems to be a lot of tension between patients about what's going on and how it's being managed." They observed that consistency helped reduce

Table 1. *Facilitators and barriers to improving opioid medication management*

Primary code (themes)	Secondary code (or subthemes)
Facilitators	
Clinicians and staff wanted to help	• Clinicians and staff prioritized patient safety and quality of life • Clinicians and staff wanted to help the community
External pressure to make changes	• Parent company/health system asked organization to improve opioid management • Opioid crisis was a priority topic for the community and organization because the media regularly covered it • Implementing opioid management improvements made responding to increased insurance monitoring easier • Clinician and staff felt pressure to improve opioid management due to government monitoring
Desire to decrease work stress	• Inheriting patients on legacy prescriptions from colleagues illuminated inconsistency and increased stressful patient load • Clinicians and staff were eager for an evidence-based approach to caring for these patients, who can be emotionally and clinically complex and challenging • Clinicians and staff wanted a consistent approach to care for patients to make covering for each other, working in multiple roles, working across care teams, and inheriting patients easier • Consistency decreased tension in patients in a rural community where "word travels fast"

External support for clinic changes from study team	• Organizations felt supported in implementing opioid management improvements from study team support, such as
	  ○ External resources on opioid management
	  ○ Clinical education
	  ○ A source of accountability for planned changes
	  ○ Connection to a broader clinical community not in their rural location

Supportive leadership	• Clinic leadership prioritized the opioid management improvement work through word and action • Convening of an opioid improvement team contributed to delegation of work and diverse perspectives • Sharing of stories and data by clinic leaders and improvement team members led to buy-in
Patient receptivity	• Clinicians and staff were initially wary of how patients would respond • After implementation, clinicians and staff noted improvement in relationships with patients using long-term opioid therapy • Patients responded positively to opioid management changes
Barriers	
Competing demands	• Staff and clinicians "wear a thousand hats" • Administrative demands competed for time that could have been spent on opioid management improvements (e.g., electronic health record (EHR) transitions, staff turnover, infrastructure changes)
Clinical culture of autonomy	• Clinicians' culture of autonomy made consistency challenging • Some clinicians and staff were skeptical of external guidelines about opioid management
Inadequate data systems	• Getting usable reports from EHRs was challenging • PDMPs were challenging to access and use
Lack of resources	• There was a high patient load due to limited primary care and opioid prescribing resources in a large geographic area • There was a limited or lack of alternative therapies for chronic pain in the community • There was limited or lack of local treatment options for opioid use disorder • Patients often had to travel great distances to access alternative therapies or treatment for opioid use disorder

stress in the rural setting because of the many hats clinicians and staff wear in rural practices: "Because in a rural area, you're asked to do many things. So you might be working in the emergency room one day, and so you're not in the clinic so someone else has to take care of that patient. So creating a philosophy for the practice is really important."

External Support
The organizations were grateful for external support by the study team members who provided validation about the importance of their work, external resources, access to clinical education, help with brainstorming solutions to challenges and with maintaining momentum and progress, and connections to other clinics engaged in this work. A member of the improvement team in one clinic mentioned the particular importance of clinic connections to rural communities: "The other part of being in a rural clinic, I believe, is sometimes you feel like you're very isolated. So if there was any

way to have a support system and be able to talk to some other clinics that were at the same stage you were I think would be really key."

Supportive Leadership
Participants regularly emphasized the importance of supportive leadership that prioritized the work. This included the presence of a strong clinical champion, a representative opioid improvement team with protected time, and leadership that supported sharing data and stories to encourage buy-in. Several improvement team members mentioned the importance of support from leadership within their organization: "Leadership support really made a huge difference with our early adopters and our mid adopters here." In several of the clinic settings, improvement team members and other clinicians who were not on the team mentioned the role of the clinical champion. An improvement team member commented: "So I think having some clinical

champion is really important, who really believes in doing this and sort of feels like – in a sense you sort of light the fire under the platform so people feel some pressure and energy to move on it." When leadership supported sharing data and patient stories in a manner that either established the extent of the opioid prescribing problem or reported on early successes at improvement, it helped encourage buy-in to implement the opioid management improvements. One provider described the learning involved in seeing data: "I think for me I knew I had a lot of pain patients, but finally seeing their lists and the sheer numbers of them, that was surprising, a wakeup call." Another provider described the power of stories: "Telling good patient stories, because that's what sticks to physicians is that vignette, that experience that you're able to navigate a really successful transition for somebody or you're able to avoid a new start."

Patient Receptivity

Some providers and staff members were wary about the proposed changes due to concerns about patient reactions, but many reported generally positive patient receptivity, which motivated them to continue: "I thought a number of patients would be offended or put out or some other negative adjective, and they weren't. They were surprisingly cooperative, comfortable, welcomed the discussion." Another staff member commented: "For the patients, there's predictability there . . . . I expected a lot more pushback, so I think that has definitely been a big key." As the clinical teams rolled out these changes, the lack of significant pushback also turned into a facilitator of the work. "The thing that surprised me was the number of patients that once they started churning through the standard care pathway, that said, 'Wow, I get it,' and then a lot of them just ended up tapering themselves ahead of us. I just wasn't quite prepared to see the patients engage."

Barriers/Challenges

Competing Demands and Priorities

In these rural settings, clinicians and staff often worked in multiple roles and covered for unfilled positions. This generated a feeling of being "stretched thin" and was frequently cited as an issue to finding time to make the system-based improvements and implement the more comprehensive clinical opioid management. For instance, while discussing the implementation of the intervention, one practice manager – who was also handling a physical move to a new building, staff turnover, and an electronic health record (EHR) transition – said, "We just keep the balls juggling, doing the best we can. We wear a thousand hats." Initially, clinical care teams worried they would not have time to implement the new care procedures: "It's too much work. When will I have time to do all that?"

Clinician Autonomy

Engaging clinicians to change their practice behavior was reported to be challenging, sometimes due to skepticism about the suggested improvements. One improvement team member observed: "There still is some variation in really philosophical belief[s] around the use of opioids. I know I still have one partner who has complied with the general guidelines, but still when you get in a conversation with him, it doesn't seem that he completely has agreed with them." We also heard that some clinicians were skeptical of national guidelines. As one clinician reported: "We do have one partner who he'll tell you that he believes the CDC report didn't document this, it's politically motivated, not clinically."

Inadequate Data Systems

Improvement team members often mentioned the challenges they faced due to the inability of their health information systems to identify patients on LtOT or track any clinical quality measures of improvement. An improvement team member noted: "Easy reports would be awesome, because right now they're not easy. We're always double checking if we're doing anything out of the EMR." In contrast, the one larger rural-serving practice we worked with made this observation when considering the comprehensive data system they were able to build: "I think rural independent groups are going to have a harder time having the IT support to get the data and have the analytics that we've been able to get, and being a bigger system, we were able to have the people in place that got that ready." Additionally, the state prescription drug monitoring program (PDMP) was reported to be challenging and time-consuming. "It's difficult to get signed up at times – sometimes people will put in their data and then ask these obscure questions like 'where does your cousin, did they ever live in this address' or things like that. So getting signed up for the P[D]MP is more difficult than it should be, I think. And that's beyond our ability to fix."

Lack of Local Resources

The absence of accessible resources to help manage chronic pain in the rural community such as physical therapy or behavioral health was regularly mentioned as a barrier among the participating practices. As one provider stated, " . . . sometimes I just feel especially patients that have to travel a long distance, it's sometimes a little hard to expect them to be able to use one of these other alternative therapies." Another provider commented: "So we're using our resources as best we can. Otherwise, we have to send them about a two-hour drive away." One provider reported that the distance to specialists in rural areas leads to rural providers being expected to take over opioid prescriptions that they did not initiate: "I feel that narcotics are pushed upon us because we're rural. We have so many specialists that say turn it over to us. They start people on narcotics and then they turn it over to us, and they say you're still having pain, I'm not going to provide you anymore. Go see your PCP for your pain management . . . . and again, because we're rural, especially our older patients don't want to travel to see their specialist."

Discussion

Barriers to and facilitators of implementing an opioid prescribing improvement initiative in rural primary care exist both within the inner setting of the clinic and the outer setting of the rural context. Although some are ubiquitous to many primary care settings, e.g., leadership support [18], competing demands [19,20], and fear of conflict with patients, some may be more prevalent in the context of the rural clinic environment and make efforts to improve opioid medication management more difficult. For example, the lack of specialists, mental/behavioral health treatment, and alternative therapies for chronic pain in rural settings were also reported by Click and colleagues in their evaluation of rural clinician attitudes toward opioid prescribing for chronic pain [21]. These barriers were also reported in a national survey of over 800 primary care clinicians across four states [22]. This combination of limited local treatment options

for chronic pain and assuming care of patients on LtOT from other physicians may also make efforts to improve opioid medication management challenging in rural areas.

Our results are also echoed in findings from a study of an opioid improvement initiative in another rural setting. Investigators described anecdotal reports of two factors they believe were associated with the observed improvements in opioid medication management: increased communication between patients and providers about risk, and a healthy provider–patient relationship that supported efforts to taper [8]. These are similar to some of the comments made by providers and staff about "patient receptivity" when they discussed changes in how opioids are managed with their patients.

Rural clinic staff and providers emphasized the importance of consistency in opioid prescribing policies across their patient population because of the tight social network within their rural community. They identified this as a strong motivator that facilitated doing this work and described how this consistency improved their work-life and decreased stress [15]. A desire for consistency in care for patients on LtOT was also a motivator identified by McCann and colleagues (2018) in one rural practice when choosing to implement a structured opioid management program [23]. Prior research suggests that individuals in rural areas know the members of their social network longer and are more closely connected to them than are individuals in urban areas [24], further supporting the recognized need by clinicians and staff to be consistent in their approach to opioid prescribing.

Several limitations of this study deserve mention. Those who participated in the interviews and focus groups self-selected to participate. We made no efforts to actively recruit others who might have had different views and opinions. These findings also depend on the ability of participants to remember and reflect on experiences and events that may have happened more than 1 year prior, introducing potential recall bias. We also did not conduct member checking of our findings with participants. Finally, our study is limited by not including the patient perspective.

Conclusion

The barriers and facilitators identified here point to potentially unique determinants of practice that should be considered when addressing opioid prescribing for chronic pain in the rural setting. For example, identified facilitators could be used as intrinsic motivators: the benefit of decreasing stress by improving consistency of opioid medication management across providers and appealing to their mission to improve care on behalf of their community. Identified barriers should also be taken into consideration in the design of opioid improvement initiatives in rural settings, in particular providing data system solutions and efforts that address resource deficits. Finally, while recent studies support the efficacy of medications for opioid use disorder in rural areas [25–27], there is a pressing need for more research on effective strategies for screening, diagnosis, and management of this condition among patients in rural areas who are on LtOT.

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