

Exemplary Integrated Pain Management Programs: West Virginia University Center for Integrative Pain Management (WVUCIPM)

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SUMMARY

Background

The West Virginia University Center for Integrative Pain Management (WVUCIPM) was established in May 2017 in response to the state's growing opioid crisis and in recognition of the need for improved care for residents experiencing chronic pain. The Center provides both interventional and integrative pain management services in one building to provide holistic pain care and maximize patients' function. The WVUCIPM was initiated in direct collaboration with the Department of Defense and Veterans Affairs Integrated Pain Management (DVCIPM) program at the Uniformed Services University for Health Sciences. Many of the WVUCIPM's approaches and tools were adapted from the DVCIPM.

Care Delivery Approach

The WVUCIPM aims to maximize patients' function and minimize the burden of acute and chronic pain. A variety of providers make up the care team, including physicians and advanced practice providers, chiropractors, social workers, clinical dietitians, movement specialists, and massage therapists.

Results to Date

Overall, WVUCIPM patients have reported high satisfaction with the program. The WVUCIPM has grown since its initial implementation with increased patient demand over time.

Challenges with Implementation

The WVUCIPM faced a variety of barriers during program implementation, including general resistance to organizational change, establishing sustainable methods of financing, institutional and regulatory limits on scope of practice, and delivering services to more rural and medically underserved areas of the state. The COVID-19 pandemic has also affected care delivery as in-person visits became limited, but it facilitated the rapid expansion of telemedicine. Program staff have overcome many of these initial barriers by creating a collaborative culture and being flexible with financing and hiring staff to work within certain limits.

Key Features of the Program

- **Initiated through strong support of state and organizational leadership.** State leaders looked to West Virginia University (WVU) to assist in developing solutions to the state's growing opioid crisis associated with acute and chronic pain. When the concept for the WVUCIPM was shared with health system leadership, it was immediately met with support. To implement and sustain the program, organizational leadership was able to help overcome departmental silos and has prioritized patient satisfaction and function over revenue.
- **Co-location of services.** Traditional and integrative services are all provided in a single location. This helped to facilitate collaboration and communication across providers, allowing them to refer to one another with confidence. Patients also benefit from being able to schedule multiple appointments in one day and in one location.
- **Case managers help navigate patients through the WVUCIPM.** Case managers work with patients to schedule appointments, communicate with providers, and ensure continuity of care.
- **Pain assessment measures.** The WVUCIPM partnered with the DVCIPM to adapt the Pain Assessment Screening Tool and Outcomes Registry (PASTOR) for use in their setting. The WVUCIPM uses PASTOR to measure patients' progress towards their individual goals over time.

WVUCIPM Details

Location: Morgantown, WV

Website: <https://wvumedicine.org/ruby-memorial-hospital/services/wvu-specialty-clinics/pain-management-center/>

CASE STUDY

TABLE 1. Overview of Pain Management Program

Organizational Description	The WVUCIPM is within the academic medical system affiliated with West Virginia University (WVU).
Pain Management Services Offered	Acupuncture, behavioral health services, chiropractic care, dietician services, interventional therapies, massage therapy, medical management, movement therapy
People Served by the Model	The WVUCIPM serves patients with acute, subacute, and chronic pain. About 30% of patients are covered by Medicaid or Medicare. The state is largely rural and also has high rates of opioid use, obesity, and diabetes, which significantly influence the overall impact of musculoskeletal pain.
Key Innovations	Co-location of interventional and integrative therapies; adaptation of PASTOR tool to collect data on patient progress.
Local Market and Context	The WVUCIPM operates in Morgantown, WV, a city in the northern part of the state with a population of about 30,000 people. Telehealth has helped the WVUCIPM provide care to reach across the state, including rural areas and some out of state areas. There are no major competitors in the local area.
Evolution and Buy-In	The WVUCIPM grew out of an interventional pain clinic. The severity of the opioid crisis in West Virginia drove the state to look toward the WVU Health System for solutions. WVU Health System leadership wanted to develop a program to address the crisis and supported the development of the WVUCIPM.
Financing and Infrastructure	The program operates in a fee-for-service model. Procedure-based interventions help support non-billable or under-reimbursed services. Hospital facility fees also help generate revenue for the WVUCIPM. The university also provided a building for the program, which drastically reduced implementation and start-up costs.
Implementation Challenges	Cultural challenges with integrating some providers into team-based care; hiring restrictions and provider shortages; challenges with billing and reimbursement for some integrative services; promoting work to insurers.
Results and Key Outcomes	To date, results are largely evaluated based on patient and provider experiences, as well as trends in use of services. The WVUCIPM has experienced high patient satisfaction with the program and increased demand over time.

Historical Context

Over the last 15 years, West Virginia has been in the midst of a growing opioid crisis, with the highest rates of [opioid overdose deaths](#) in the country. A number of individuals experiencing substance use disorder were first exposed to opioids as the result of treatment for acute and chronic pain. State leaders looked to WVU to develop solutions to help address this problem as they have the largest academic medical center in the state.

Prior to the WVUCIPM, WVU had established an interventional pain clinic. Created in 2005, the provider-based clinic offered medication and interventional

services for pain management. In February 2016, in partnership with the DVCIPM, two providers from WVU's interventional pain clinic presented the idea for an integrative pain center to health system leadership. The providers had the idea to translate the DVCIPM program from the military to a civilian site with the goal of reducing opioid use through the provision of integrative therapies, like acupuncture and chiropractic care. Leadership from the health system and medical school were strongly supportive of the idea and began developing and implementing the program.

“There was a frenetic energy to do something about this opioid problem... so there was no pushback at all.”

A steering committee comprised of health system leaders and physicians from a variety of specialties met weekly to plan the program and determine the initial services that would be offered. Several members of the steering committee had previously served in the military and knew leaders from the DVCIPM. Leaders from the DVCIPM were transparent about their work, providing a framework for how to implement an integrative pain management program. A mutually beneficial partnership grew out of these relationships, and the program was planned in collaboration with leaders from the DVCIPM. The WVUCIPM’s pain assessment tool, PASTOR, was adapted from the DVCIPM. The success of the WVUCIPM has also benefited the DVCIPM’s program as it has demonstrated the generalizability of their pain management model in a broader population.

In 2015, the second floor of WVU’s interventional pain clinic became vacant, and staff planned to use this space to offer the WVUCIPM’s integrative services, including behavioral medicine and chiropractic care. The WVUCIPM opened to its first patients in May 2017. The program leadership started small, hiring only a few providers, despite the ability to hire more. They added additional services and providers over time to match increased demand and patient volume. The WVUCIPM has also adapted to growing needs for space and resources. For example, the WVUCIPM had an X-ray machine that was used infrequently, so staff decided to remove it to create rooms for additional procedures and refer patients in need of X-rays to other parts of the health system.

“Don’t let the perfect be the enemy of the good, because ultimately, you don’t have to do things at massive scale. You can start small.”

The culture that the organizational leadership created was critical to the program’s initial and continued success. Leadership prioritized patient satisfaction and well-being over generating revenue, which helped create a sense of psychological safety for staff to achieve their vision. For instance, members of the steering committee had the ability to suggest hiring certain provider types or offering new therapies even if these would not generate significant revenue. Program staff noted that this flexibility, trust, and psychological safety allowed them to develop trust in leadership and create an innovative program that prioritized patients’ needs.

TABLE 1.
Key Drivers for Program Development



Overcoming Resistance to Change

During the development of the program, the steering committee had to work to change some institutional norms. Many specialty care providers were accustomed to working within their departments, and the shift to integrated and interdisciplinary care was initially very challenging. Program leadership had to make providers feel comfortable with referring patients to other providers and services within the program. Some providers also expressed concerns about their own lower patient volumes and revenues associated with growth of the program. However, many providers have come to welcome the program as an effective option for patients with complex pain, which primary care providers often find challenging to manage. Program leadership worked with providers during this transition to make them more comfortable with team-based care and the internal referral process. Co-location of services and weekly case conferences also helped to build collaboration across providers.

Program Details

The WVUCIPM aims to minimize opioid use and avoid opioid prescribing and instead focuses on integrative services to manage pain. The program “strives to treat the whole person, not just the physical symptoms of pain.” At its core, the program aims to maximize patients’ function and minimize the burden of acute and chronic pain. To accomplish this, an interdisciplinary team of providers develop individualized care plans with interventional and integrative pain management services. Providers also work to address other factors that may impact a patient’s ability to tolerate or manage pain, including mental health, nutrition, and weight management.

“It’s really creating an alternative approach that’s much more directed at the root of the problem that then supports that person on their personal journey to move from pain and suffering to a place where they feel that they are controlling their own responses to the stimuli that are incoming.”

Leadership has taken an incremental approach to expanding the program, and have added services and providers based on demand. Currently, WVUCIPM providers include physicians and advanced practice providers, chiropractors, social workers, a clinical dietitian, a movement specialist, and a massage therapist. Behavioral medicine services include individual and group therapy as well as opioid risk evaluations. Table 2 below outlines the interventional and integrative pain management services offered at the WVUCIPM.

The WVUCIPM staff can be divided into four groups: an intake group makes initial contact with referrals; an interventional pain group provides interventional pain management services; a behavioral medicine group conducts individual and group visits; and a neuromuscular group focuses on using functional and rehabilitative strategies to manage pain. These providers work together and refer to one another to holistically address patients’ pain. Integration and provider coordination are discussed further under “Care Coordination and Provider Communication” below.

TABLE 2. Services Offered

Interventional Pain Management Services	Integrative Pain Management Services
<ul style="list-style-type: none"> • Epidural steroid injections • Cryoablation • Intrathecal (implantable) pumps • Joint injections • Medical management • Nerve blocks • Radiofrequency ablation • Spinal cord stimulation • Botox injections • Trigger point injections 	<ul style="list-style-type: none"> • Acupuncture • Chiropractic care (e.g., joint manipulation, soft tissue techniques) • Nutritional counseling and weight loss • Behavioral medicine (individual and group therapy) • Addiction management • Massage therapy • Movement/exercise therapy

Program Details

The WVUCIPM accepts referrals from providers within and outside of the WVU Health System, as well as self-referrals. WVUCIPM staff market the program to primary care practices and urgent care clinics within the WVU Health System, asking providers to refer patients with subacute pain to the WVUCIPM for conservative pain management.

“It really doesn’t do us any good to create and offer the services if people either financially don’t want to go or they’re embarrassed to just be given a referral over, or they’re embarrassed to say they have a problem... so some of these services, we allow folks to just self-refer in. It’s easy, it’s quick. We don’t want anybody to not use these services or come to us simply because they’re embarrassed to tell their story.”

To increase the public’s general awareness of the program, staff created a multilevel marketing plan involving internet advertising, television interviews with providers and program staff, and brochures and handouts for referring physicians. The messaging used in marketing materials tends to focus on the potential for services provided by the WVUCIPM program to help in reducing unnecessary suffering. The WVUCIPM is also promoted more broadly by the University and its medical school and health system.

Before patients participate in the program, providers set clear expectations about opioid use. Patients who are prescribed opioids following a hospital-based procedure must sign a short-term agreement that indicates that the WVUCIPM will not prescribe opioids indefinitely. Patients with chronic opioid use must sign a long-term narcotics agreement, stating that they will use only one practice and pharmacy and agree to participate in drug screening. Patients who have opioid prescriptions must also sign a consent form indicating that they understand the stated risks associated with opioid use. There is a zero-tolerance policy for violations of these agreements; patients who do not adhere to these expectations are discharged from the opioid program. To date, violations are rare.

Care Coordination and Provider Communication

Due to the WVUCIPM’s focus on individualized care, patients’ treatment pathways vary and depend primarily on the nature of their pain. A comprehensive evaluation is conducted at a patient’s first visit, which informs subsequent referrals to WVUCIPM providers. For the majority of patients, the intake appointment is with a physician or advanced practice provider before referrals are made to other providers within the program. For patients who are using opioids, a social worker conducts an opioid risk assessment at the first visit. Program staff noted that patients tend to feel more comfortable discussing this with a non-physician provider during intake. The opioid risk assessment provides a comprehensive overview of patients’ risk factors that may generate subsequent referrals. With self-referrals, patients often start the program with an evaluation by a chiropractor or massage therapist. After a patient’s initial evaluation, all providers in the WVUCIPM can refer a patient to any other provider as they see fit. See Figure 2 for additional details on common routes of patient flow through the WVUCIPM.

An important part of the WVUCIPM’s model is its case managers, who serve as “air traffic controllers” for all patients. Starting with patients’ first visits, case managers navigate patients through the WVUCIPM by helping them schedule their appointments and communicate with different providers. Many patients are able to see multiple providers on the same day and in the same building, which greatly improves continuity of care. However, an ongoing challenge to multiple same day visits is the inability to waive co-pays required per provider, even though services are co-located. Case managers also help connect patients to additional community services, such as home health services, as needed.

To date, at least half of WVUCIPM patients receive interventional pain management services. This has decreased over time with increased patient volume and interest in integrative services. Almost all WVUCIPM patients see a chiropractor and movement therapist, and over half of patients are seen by the behavioral medicine team.

To better coordinate care and facilitate communication among providers, weekly case conferences are held to discuss patient cases. Intake providers typically present patient cases to the group, and all providers can offer their opinions and recommend options for treatment. The co-location of services in one building also allows for frequent informal communication among providers.

“I think a lot of collaboration occurs in the hallway or behind closed doors because we don’t work very far from each other, and so it’s very easy and we have an open door policy. We all get along and we talk and we say, “Hey, I’m sending you this person. Here’s what they told me.”

Working Within a Rural Context

The WVU Health System provides care across a large geographic and rural region, which creates challenges related to access to care and hiring providers. Video and telephone visits have helped the WVUCIPM reach patients in rural areas, though not all integrative

services can be provided via telehealth. Unreliable internet access in some rural areas is also a practical barrier to care. To address some of these challenges, the WVUCIPM has identified providers in rural areas to whom they can refer patients if they require care closer to home.

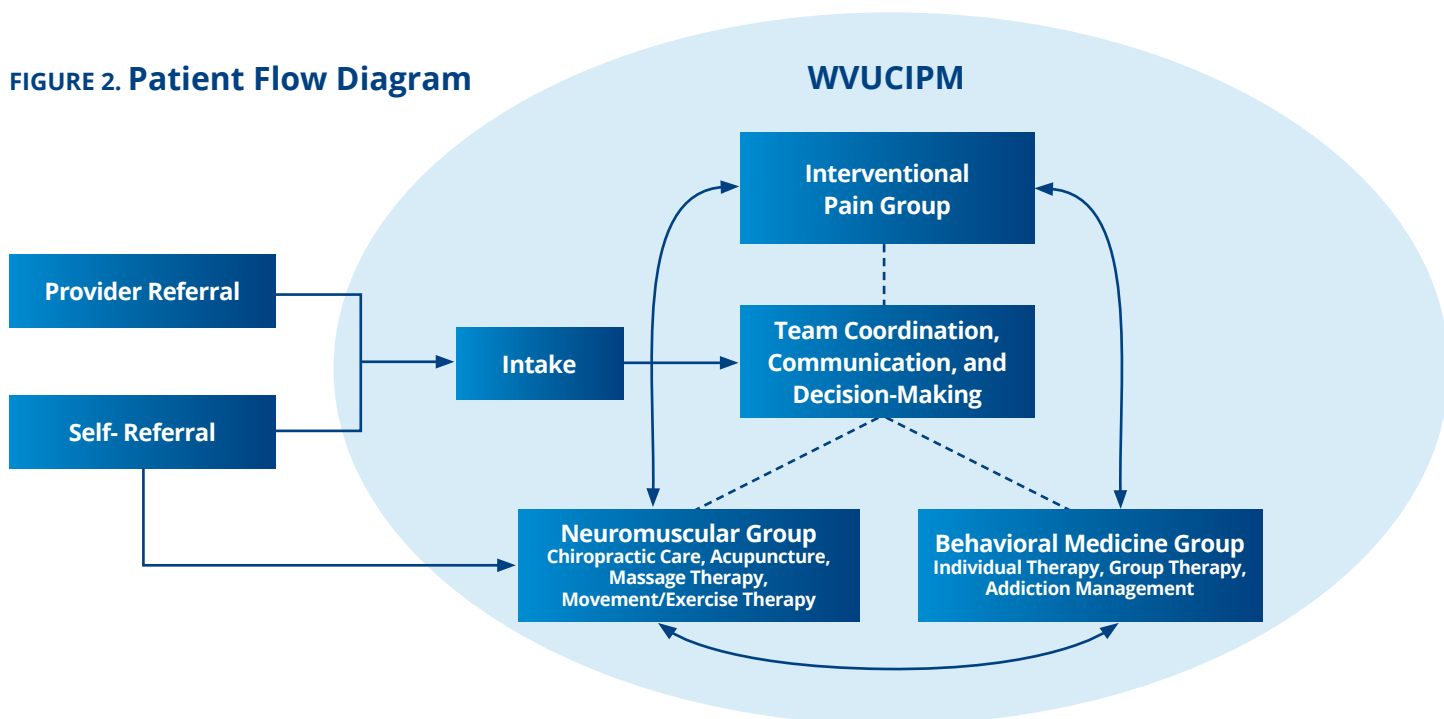
Outcomes Measurement and Program Evaluation

The WVUCIPM collects a variety of data to inform clinical care decisions and demonstrate program effectiveness. See Table 3 for a summary of measures used.

Measurement to Improve Clinical Care

The WVUCIPM collects data at each visit, documented in the electronic health record, to evaluate patient progress over time. The primary measure used is the WVU Pain Rating Scale, an adaptation of the Defense & Veterans Pain Rating Scale. Patients describe their pain levels on a scale of 1-10 and describe how pain has impacted their activity, sleep, mood, and stress in the past 24 hours. Providers can access this data to understand how treatments may be impacting pain levels and adjust treatment as necessary. Originally

FIGURE 2. Patient Flow Diagram



developed for specific use by the WVUCIPM, the WVU Pain Rating Scale is now used throughout the health system when evaluating patients who are experiencing pain.

The WVUCIPM collects additional data via PASTOR, also adapted from the DVCIPM, to track all patients' progress towards their goals. PASTOR includes multiple measures for pain, physical function and well-being, psychological well-being, and behavioral factors such as substance use. Patients also report the types of treatments they have received and their perceived effectiveness. Initially, the WVUCIPM had difficulty integrating PASTOR into the electronic health record and contracted a third party to build an interface for PASTOR. PASTOR data is collected every six weeks and is presented in a visual format that allows providers to view patients' treatment pathways

and associated outcomes. This allows providers to have a comprehensive perspective of how patients are progressing.

Measurement to Demonstrate Effectiveness

Increases in patient volume, patient satisfaction, and growth have helped demonstrate the efficacy of the WVUCIPM to health system leadership. The WVUCIPM is currently expanding its capabilities to collect and track program success. For instance, the WVUCIPM partnered with the WVU Rockefeller Neuroscience Institute to build infrastructure to track patient-reported outcomes, health care use, and aggregated data from PASTOR to observe general trends in patient outcomes.

TABLE 3. Overview of Measures Used

Measure	Description	Components	Collection	Use
WVU Pain Rating Scale	Adaptation of Defense & Veterans Pain Rating Scale Measures pain levels and impact on function and quality of life	Level of pain (1-10) Degree to which pain has interfered with activity, sleep, mood, and stress in the past 24 hours (1-10)	At each visit in EHR	Patient screening and clinical decision-making
PASTOR	Adaptation of Defense & Veterans Center for Integrative Pain Management PASTOR Based on patient functionality and patient goals	Pain: Pain Catastrophizing Scale; TBI QOL Headache; PROMIS Pain Interference; PROMIS Neuropathic Pain Scale; Pain Diagram Physical: PROMIS Physical Function; PROMIS Fatigue; PROMIS Sleep-Related Impairment, Pain Impact Scale Psychosocial: PROMIS Depression; PROMIS Anxiety; PROMIS Anger; PROMIS Social Role Satisfaction; Primary Care PTSD Screen Behavioral: PROMIS Alcohol Use; PROMIS Prescription Pain Medication Misuse; Pain Treatment History & Effectiveness; History of Present Illness	About every six weeks	Patient screening and clinical decision-making
Patient Satisfaction	Press Ganey survey <i>(not yet fully implemented)</i>		Quarterly	Program success to leadership
Patient Volume	Number of patients seen and change over time		Ongoing	Program success to leadership

Financing and Infrastructure

Infrastructure startup costs associated with the WVUCIPM were relatively low, stemming from their opportunity to expand into the second floor of the existing clinic's building. The health system made a small initial investment to purchase equipment and IT systems and renovate the space.

The WVUCIPM operates within a fee-for-service model in which services are reimbursed at different rates. Interventional pain management services, such as injections, help to offset the costs of integrative services, which are usually reimbursed at lower rates. Because the first floor of the WVUCIPM is designated as a provider-based facility, the WVUCIPM receives hospital facility fees which generates additional revenue. Increased patient volume has also increased revenue, further supporting integrative therapies. Chiropractors are the highest revenue generators, since their services are covered by most insurance plans and they have significant capacity to see patients (more than 8,000 visits per year). Non-billable services include massage therapy, movement therapy, and dietician services (without certain comorbidities), which are written off by the WVUCIPM because leadership and staff believe in the value in offering these services.

“We’ll write it off... we’re not going to bill the patient. We want them to have that service... it’s the right thing to do to make the program work.”

Due to regulatory challenges, the WVUCIPM developed unique reimbursement arrangements with some providers. The WVUCIPM was contractually limited in who could provide physical therapy services, and existing resources were not available for physical therapists to provide the level of integrative care required by the program. As a result, the WVUCIPM decided to hire chiropractors and movement therapists to provide these services instead. The movement therapists, who provide functional rehabilitative services, exercise, and patient education, are billed under and supervised by the chiropractors, who provide chiropractic care

and acupuncture services. The WVUCIPM created a biomechanical evaluation service that can be billed under insurance, which includes visits with the chiropractors and movement therapists. This arrangement has allowed the WVUCIPM to deliver effective and integrative care at lower costs.

The WVUCIPM continues to face challenges in promoting their work to payers. To generate buy-in across payers, WVUCIPM staff have focused on demonstrating how integrative services can reduce future costs and healthcare use. To date, it has been difficult for the WVUCIPM to collect the required data to definitively demonstrate this benefit. The WVUCIPM also recently partnered with the Public Employees Insurance Agency (PEIA), which covers most of West Virginia's state employees, to pilot a program that eliminates copays for six chiropractic visits at the WVUCIPM for PEIA members with back and neck pain. All WVU employees were notified about the pilot program, which generated significant interest; the WVUCIPM received 50 referrals in the first two days following the announcement. Data from the pilot demonstrated that participants would not have sought chiropractic care without the waived copays. Program staff are hopeful that the success of this pilot program will facilitate partnerships with additional payers to improve access.

“Insurers generally see pain as a black hole of money.”

“If an insurance company sees them coming back on a consistent basis, a lot of times they consider that maintenance therapy and... that’s a non-covered service. So I think sometimes these people get abandoned... and then we let it deteriorate and start the process over.”

Impacts of COVID-19

The COVID-19 pandemic has significantly impacted the WVUCIPM's delivery of care, limiting in-person visits. Reduced utilization during the early phase of the pandemic resulted in a \$1 million deficit. The pandemic also caused logistical barriers for IT support staff, which delayed the implementation of PASTOR. However, telehealth expansion has helped mitigate financial losses, allowing the WVUCIPM

to continue to provide care to existing patients while also expanding their reach to more rural areas of the state. Telehealth expansion has also benefitted some patients, limiting transportation and other logistical barriers to care. Most services have been amenable to delivery via telehealth during the pandemic, with the exception of some manual therapies.

TABLE 4. Barriers and Facilitators to Implementation

Contextual Factors	Barriers	Strategies
Institutional	Siloed departments and bias against referrals	Leadership's creation of a collaborative culture; co-location of services; weekly case conferences
Local Market	Rural state with barriers to transportation	Use of telehealth to reach all areas of the state
Regulatory	Challenges with prior authorization, reimbursement, and hiring certain provider types	Use of facility fees and interventional services to fund overall operation; services that are not covered by insurance are written off by the program

Recommendations and Future Directions

Throughout interviews, program staff provided key recommendations based on their experiences and success for those interested in developing and implementing IPM programs, which included:

- **Partnering with leaders who are passionate about and supportive of this work.** Program staff repeatedly emphasized the importance of organizational support for building and expanding the WVUCIPM. The support of health system leadership helped to overcome barriers to implementation and motivated staff to create the program they envisioned. Program staff were passionate about the concept of the program and felt a sense of psychological safety to test and refine their ideas.

“We’ve been successful because we had great partners who were selfless in their commitment to helping people, and they helped us help others.”

- **Flexibility.** Program staff noted that it is important to adapt to different circumstances, such as hiring restrictions or the COVID-19 pandemic, in order to be successful.

“Not everything we said on day one was something we were doing on day 60. I think that ability to be able to change and understand something didn’t work, you’re willing to go do something else... we’ve been willing to make the change in what we were doing to do what was right.”

- **Prioritizing building the necessary infrastructure for data collection and monitoring.** Building a robust infrastructure to collect and report program data is important for showing program effectiveness. Ideally, this data should be collected in a user-friendly interface that can be used by providers and program staff to improve clinical care as well.

“I realized one of the things that we’re maybe missing is the research piece. We’ve been doing so much of trying to build it, what we’re doing... we’ve got tons of data out there you can go get if you know how to go get it. It’s not the easiest thing in the world to go get it.”

- **Building a collaborative team and culture.**

Program staff highlighted that collaboration across providers is a core aspect of the program and has a positive impact on patients’ care.

“I think the best thing is the amount of collaboration and teamwork between all of the modalities, all the providers here. They have great faith in each other. That only spills over to your patients. They see that. It really does make things happen.”

Moving forward, program staff noted that they plan to further develop their ability to track and report patient outcomes to inform clinical care and generate interest from additional payers. Program staff are also considering the need to relocate the WVUCIPM to a larger space to accommodate increased patient demand.

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For information about this project, including other publications and case study reports, please visit <https://healthpolicy.duke.edu/projects/integrated-pain-management-lessons-north-carolina-health-systems-and-beyond>