COMMUNITY HEALTH CENTER INC – ***PainNET: Impact of developing an online professional learning community on chronic pain management in the primary care setting***

Pfizer ***Engaging Interdisciplinary and Interprofessional Teams in the Care and Management of Chronic Pain Patients*** **Full Proposal. Deadline for Submission: Monday, October 20, 2014**

A. **Cover Page**

1. **Title**: *PainNET: Impact of developing a chronic pain management online community of practice in the primary care setting*. (Pfizer RFP ID: 2014PA2) Collaborators include Integrative Pain Center of Arizona, Maine Quality Counts, Delaware Health and Social Services - Division of Public Health, Penobscott Community Health Care (Bangor, ME), El Rio Community Health Center (Tucson, AZ), and Henry J. Austin Health Center (Trenton, NJ).

2. Abstract: Goal and target population: The goal of this project is to establish an online professional learning community - PainNET - that will improve chronic pain expertise among primary care providers (PCPs) and stimulate collaboration and shared learning among a multidisciplinary team of healthcare providers. Participants will work individually and collaboratively to implement pain management best practices in FQHCs and other safety net practices caring for the medically underserved and members of ethnic and racial minorities.
Project: Building on our successful, Pfizer-funded Project ECHO Pain, we will work with 35 participating practices from five states to develop, test and evaluate PainNET, a web-based platform providing practice-level access to a customized content library that will include indexed recordings of didactics and case discussions from Project ECHO along with tools and structured modules to support practice redesign and quality improvement initiatives. PainNET will increase interprofessional collaboration through discussion boards, chat rooms, and direct messaging between providers and specialists. PainNET is a scalable, system-level intervention guided by the needs of PCPs, and will improve the quality and safety of chronic pain management and opioid prescribing.
Evaluation: The project will employ a cluster randomized design to evaluate the impact of PainNET at the knowledge level, practice level, and patient level. Project assessment will include an evaluation of the impact of PainNET on multidisciplinary chronic pain management strategies and best practices utilization. Project evaluation will specifically measure provider attitudes about interprofessional collaboration and adherence to evidence- based guidelines for management of chronic pain.

C. **Main Section of the proposal**

1. **Overall Goal and Objectives**:

The primary goal of this project is to establish an online professional learning community that will improve chronic pain expertise in primary care and stimulate collaboration among primary care providers (PCPs) nursing, physical/occupational therapy, pharmacy, and mental health professionals. Participants will be challenged to learn both individually and as collaborative members of a team, with common goals of improving adoption of evidence-based pain management practices, improving pain relief and function, increased patient satisfaction, and reduced healthcare costs and inefficiencies. The capacity for collaboration with colleagues across the U.S. will distinguish PainNET from other available online professional development and learning opportunities.

To accomplish the goal of this project, we will **develop, implement, and test** PainNET as a scalable, system-level intervention that will improve the quality and safety of pain management and opioid prescribing in Federally Qualified Health Centers (FQHCs) and other safety net primary care practices. PainNET is a web platform that will foster and facilitate shared multidisciplinary and interprofessional learning and communication specific to chronic pain. PainNET will establish and sustain a community of practice for professionals from diverse backgrounds to learn and share evidence-based knowledge, news, and resources about multidisciplinary approaches for chronic pain management. In addition, PainNET will engage providers and care teams in a system redesign intervention aimed at supporting the implementation of core best practices for pain management in primary care. The project will present a truly innovative approach to interprofessional collaborative practice among healthcare providers in pain management that can be replicated nationally.

Specific PainNET objectives include:

Objective 1 – Establish an interdisciplinary, interprofessional online pain management community to improve knowledge level, competence and adherence to practice guidelines among PainNET providers

Objective 2 – Support system-level redesign via increased adoption of pain management best practices in clinics utilizing PainNET

Objective 3 – Address existing gaps in patient care by increasing multidisciplinary care

The project will evaluate specific, quantifiable and measurable impact outcomes of the proposed online professional learning community and practice redesign platform on: (1) the frequency and quality of interprofessional collaboration; (2) provider knowledge and attitudes; (3) adoption of best practices; and (4) adherence to evidence-based pain management guidelines.

The goals of this project are closely aligned with the goals of this Request for Proposals (RFP). The RFP emphasizes the need for interprofessional interactions to promote collaborative,

multidisciplinary care for chronic pain. PainNET is an ideal platform to foster such communication. Opportunities for interactions between providers from different disciplines and professions are increasingly limited in today's primary care practice environment. Few PCPs still round in hospitals and increased pressure for productivity limits opportunities for telephone consultation and case discussions. PainNET will capitalize on well-established online tools to foster such communication in an asynchronous, highly efficient manner. PainNET will create a forum through which s can ask questions, post ideas, and interact with a range of specialists through online discussion forums, chats, and direct email communication.

The RFP also emphasizes the need for system-level interventions to support care teams and ensure adherence to best practices. The PainNET intervention will capitalize on the expertise and experience of CHCI's Weitzman Institute (WI) with quality improvement interventions to improve pain management outcomes. PainNET will feature a range of tools and modules to help practices implement a core set of evidence-based best practices for pain management. Intervention sites will commit to completing the modules and using the tools to adopt these best practices. The PainNET project team at WI will provide direct support and mentoring via the online interactive platform to ensure that participating practices achieve their goals.

As noted in the RFP, improving pain management requires a spectrum of activities. Enhancing knowledge of the individual members of the care team through the provision of "in-depth education" is among the most important. Project ECHO has been shown to be a highly effective tool to educate providers and improve patient outcomes.(1-3) The results of the two-year pilot study of CHCI's Project ECHO Pain Management teleconference intervention have demonstrated substantial improvements in providers' knowledge, attitudes, and practices around management of patients with chronic pain. Despite the success of Project ECHO, it has limited scalability - its impact is generally limited to one or two providers per practice due to the substantial time commitment and loss of visit revenue that this time commitment entails. Additionally, Project ECHO focuses exclusively on enhancing provider's clinical knowledge, but does not emphasize quality improvement or system redesign approaches which are often needed to achieve improvements at the organizational level.

PainNET will augment the impact of Community Health Center, Inc.'s (CHCI) successful Pfizer-funded Project ECHO Pain Management by creating new tools to promote interdisciplinary communication and adoption of pain management best practices and to expand access to expert clinical advice to a wider range of providers. The intervention will continue to provide access to Project ECHO live sessions in which primary care providers from around the country join together with experts in pain management via teleconference to discuss actual cases and brief didactic presentations. In addition, PainNET will enhance access to ECHO by adding flexible options for additional clinicians unable to attend live sessions to view didactic slides and search

for and view recorded case presentations on topics of interest. This directly addresses feedback from current ECHO participants noting the need for more options to access ECHO content and expand access to a wider range of clinicians and care team members. As called for in the IOM Report on Continuing Education (2009), Project ECHO is the ideal intervention to bring health professionals from various disciplines together in a unique and carefully tailored learning environment. PainNET will expand and enhance this environment.

The goal of PainNET is directly aligned with the mission of CHCI to provide the highest quality of care to medically underserved patients and in particular to those experiencing disparities in healthcare outcomes. Substantial disparities have been documented in the quality of and access to pain care for members of racial and ethnic minorities.(4-7) PainNET is intended to enhance access to evidence-based pain management for such patients by building the capacity of safety net practices to provide high quality pain care. In addition, PainNET reflects CHCI's strategic objective of commitment to health professional collaboration and aligns with the goals of CHCI's Weitzman Institute to promote innovation in primary care through research, application of formal quality improvement techniques, and use of technology.

2. **Technical Approach:**

Leveraging the newest thinking in healthcare marketing and education, PainNET is a web-based platform that features collaborative, multidisciplinary communication and shared learning. Providers can obtain answers to clinical questions from experts, interact with providers from other disciplines to develop care plans, gain access to learning modules, and find resources to help implement best practices in pain care. The project's innovation stems from its unique interprofessional communication platform combined with online learning technology for collaborative education and support for patient care. The project will develop a virtual community connected via the PainNET web platform and committed to improved care for patients with chronic pain. PainNET will establish and sustain a community of practice to improve the skills, knowledge, and collaborative efforts of all stakeholders working in chronic pain management.(8)

PainNET is designed to mitigate primary care practice isolation with easy access to education and professional discourse.(9) Many primary care providers and practices struggle with fragmentation, lack of collaboration and care coordination across settings, patients spread over a large geographic area, limited resources and reimbursement, and an expanding aging population with multiple chronic conditions. PainNET aims to address this fragmentation by building an interprofessional community of practice to improve healthcare delivery for patients with chronic pain. Through interdisciplinary and interprofessional chronic pain management collaboration, PainNET will raise the standard of care for patients with chronic pain and disseminate a set of practical, relevant and practice-based activities to drive care improvement.

This project has been designed based on a thorough review of specific social and learning theories that capture the differences in the content and processes of interprofessional learning, including online learning, professionalism, situated learning, communities of practice, reflective and experiential learning, and transformative learning.(10) The project framework will build upon these theories, which have demonstrated applicability in interprofessional team-based learning while also capitalizing on existing knowledge about Online Learning (OL). OL has been shown to facilitate communication and collaboration among professionals of various disciplines and supports care coordination efforts for patients.(11, 12) OL technology is easy to use and has been rated favorably by professionals who engage through blogs, chats, forums, and video seminars.(13, 14) OL eliminates geographic and temporal barriers which can exist with traditional learning methods, reduces content delivery costs, allows for scalability, and promotes quality improvement.(15-17) Existing OL programs have demonstrated ability to result in significant knowledge gains that are equal to, if not greater than, traditional learning, and healthcare professionals apply the evidence-based clinical choices they learn via OL to practice.(18-22) An OL program specific to chronic pain resulted in increased pain assessment and assessment tool knowledge, increased confidence in pain assessment, increased documentation of pain, and had an overall positive impact on clinical practice outcomes.(18)

OL forms the basis for building the proposed interprofessional community of practice in chronic pain management. To qualify as an Online Community of Practice (OCoP), the characteristics of a Community in Practice (CoP) as described by Lave and Wenger must be met. To this end, PainNET will include active members who are practitioners, or "experts," in the specific domain of interest. Participating providers will engage in a process of collective learning within their domain.(23) Additionally, social structures will be created within the community to assist in knowledge creation and sharing. Community members will learn through both instruction-based learning and group discourse. Finally, multiple dimensions will facilitate the long-term management of support as well as enable immediate synchronous interactions.(24)

3. **Current Assessment of need in target area:**

Assessment of a two-year pilot study of CHCI's Project ECHO Pain teleconference intervention has demonstrated improvements in knowledge, attitudes, and adherence to guidelines for the management of patients with chronic pain among providers attending Project ECHO Pain sessions. In addition, chart review data from the pilot study demonstrates a reduction in opioid prescribing and an increase in collaborative management with behavioral health. However, these improvements are limited by the lack of scalability of the current Project ECHO model. The addition of PainNET to the current Project ECHO Pain model will lower the barrier to entry for organizations that wish to take part in Project ECHO Pain, even for those unable to commit

to joining live sessions due to time commitment or time zone. PainNET will enable care teams to have on-demand access to content presented during Project ECHO Pain sessions and to join the burgeoning community of primary care providers who are interested in adopting best practices for the treatment of chronic pain. Widespread use of PainNET among providers at participating practices will decrease the institutional time commitment necessary for care teams to access knowledge and ideas presented during Pain ECHO sessions and will maximize the potential for system change by enabling more providers to engage with ECHO content and encouraging collaboration across disciplines, experience levels and geographic boundaries.

Quantitative Needs Assessment: The current Project ECHO Pain model is focused almost exclusively on enhancing providers' clinical knowledge. It does not emphasize quality improvement or system redesign approaches, which are often needed to achieve improvements at the organizational level. **Data collected from CHCI's own practices as well as from other practices participating in Project ECHO and CHCI's *Breakthrough Series Pain and Opioid Management Collaborative*** (BTSPOMC) demonstrate the pronounced need for system level interventions to support the implementation of best practices in pain management. Currently five practices in the BTSPOMC work with quality improvement and pain management specialists from CHC to develop strategies to implement a series of evidence based best practices for pain care over approximately one year. Examples of these best practices include: use of a template or standard pain assessment form for all pain management visits, provision of pain management education material to all patients with chronic pain, referral of all patients with chronic pain and any substance abuse or mental health issues to behavioral health, requiring a signed opioid agreement/contract for all patients receiving Chronic Opioid Therapy (COT), requiring periodic urine toxicology screening test for all patients receiving COT and checking the state prescription drug monitoring program prior to each pain management visit for all patients receiving COT.

We collected **baseline data** from the five sites participating in the BTSPOMC project. These practices are similar to the 35 practices that will be participating in this intervention. The baseline data indicated that two sites did not have any of the six best practices named above in place at baseline, and none of the five participating sites used a template or standard pain assessment form for all pain management visits. Three sites had a policy in place to refer patients with chronic pain and co-occurring substance abuse or mental health issue to behavioral health, but only about 40% of patients who met these criteria had been referred to a behavioral health provider in the past year. The state prescription drug monitoring program was utilized at three of the sites, but approximately 40% of patients did not have documentation in their chart that the prescription drug monitoring program had been checked before their last pain-related visit. Three sites required a signed opioid agreement/contract

and periodic urine toxicology screening tests for all patients receiving chronic opioid therapy, but these sites reported that over 25% of patients did not actually have a signed opioid agreement or contract in their chart at baseline, and 20% did not have documented urine drug screening results from the past three months. None of the five sites used a risk assessment tool prior to initiating chronic opioid therapy or required a signed informed consent for all patients being prescribed chronic opioid therapy. None of the five sites monitored co-prescribing of benzodiazepines, stimulants and opioids or the use of supratherapuetic doses of opioids.

PainNET's web-based practice improvement curriculum addresses the need to spread knowledge of best practices for pain care to a wider audience and provide support to primary care organizations that need guidance on how to institute system change. PainNET's online practice improvement modules will be developed based on experience working with health centers in the collaborative and will serve as a resource for these organizations and the care teams that are interested in taking on the challenge of improving pain care.

Qualitative Needs Assessment Data: Providers taking part in CHCI's current Project ECHO Pain intervention further endorse the need for the type of support that would be provided by PainNET. Members of a cohort of primary care medical and behavioral health providers who participated in Project ECHO Pain in 2013 suggested that they would like access to Project ECHO Pain session content in a more flexible format, in order to help recall information presented by pain care specialists during live sessions, to share content with other providers at their sites who do not attend live ECHO sessions and to continue to utilize the expertise of the pain management specialist team on an ad hoc basis. Providers participating in ECHO noted that the sessions are so useful that "it would be great to expand [ECHO] to all providers at my site." Providers specifically mention that the didactics are so helpful that they should be "offered to a larger forum of providers – even in a view-only format, [to allow] more providers to benefit." Medical and behavioral health providers are using the knowledge that they gain from ECHO to improve their own knowledge of pain and that of their colleagues. One provider indicated that she "makes a list of things [she has learned about], to follow up on each week," while another reports that he takes "20 minutes at each staff meeting to discuss what I have learned at ECHO, so my colleagues can learn from it."

Providers state that ECHO has given them "a great knowledge base" and has "empowered [them] to know what is in a patient's best interest." ECHO has encouraged "structural improvement" in providers' practice and improvements in provider confidence levels to make treatment changes. One provider reports that "the idea of changing to long-acting medications instead of short acting has changed [his] practice," while another states that he is "more likely to turn responsibility back on the patient when increased doses are not working." A behavioral health provider reports that "ECHO has helped me structure my interventions more and has

encouraged collaboration between medical and behavioral health providers to treat pain." Overall, providers state that they have "been able to apply what [they] have learned about pain management to all of [their] patients." ECHO has made providers "more aware of the psychosocial aspects of pain and the need for a comprehensive approach" and has encouraged them to "refocus patients" to "engage them in a different way of thinking about pain."

Project ECHO represents a natural transition point to link to PainNET and further support providers, interdisciplinary teams, practices and health systems in discussing, utilizing, and adopting best practices in chronic pain management with the ultimate goal of improving care outcomes. The addition of PainNET to the Project ECHO Pain model addresses each of these identified gaps by allowing greater and more flexible access to content, additional forums for interdisciplinary collaboration, expanded venues for sharing care protocols and models, and improved support for system redesign and quality improvement at the practice level. PainNET will serve as a clearinghouse for best practices in chronic pain management and provide practical, actionable support for implementation of those best practices in safety-net primary care settings.

The **target audience and direct beneficiaries** for this initiative are primary care providers, behavioral health providers, and their care teams from 35 safety-net practice sites in five states. As a result of the enhanced competency and adoption of evidence-based pain management practices, this project will have a direct and positive impact on the tens of thousands of patients with chronic pain currently being cared for at these 35 practice sites. Through further attempts to spread and sustain PainNET, the impacted audience could grow substantially.

4. **Project Design and Methods:**

The project will be a matched pair cluster randomized controlled trial carried out in five states involving 35 safety net practices. Sites that have previously taken part in a pain management quality improvement initiative will be excluded from the study. Practices will complete a baseline needs assessment in which they will document current pain management policies and organizational capacity to engage in systems redesign work. Based on data from this assessment, practices will be paired. Practices in the pairs will be randomly assigned - one practice to intervention, one to control group. This will allow us to account for previous experience and other contextual factors.

Sites randomized to the **control group** will be offered access to Project ECHO Pain. These sites will select one PCP to join twice-monthly ECHO sessions. CHCI's Project ECHO Pain sessions are videoconferences that join PCPs with a multidisciplinary faculty team of pain specialists to improve the management of patients who have chronic pain. The faculty team includes

specialists with expertise in anesthesiology, physical medicine and rehabilitation, behavioral health and pharmacy. At each session, the specialist team delivers a brief didactic on a pain-related topic and provides advice and guidance for each case presented by a participating PCP. During the ECHO session, PCPs will present their cases to the faculty team. The faculty team asks clarifying questions, discusses the cases, and assists the provider in developing an appropriate plan of care. The PCP is then be responsible for working with the patient to implement the plan of care.

Practices randomized to the i**ntervention group** will, in addition to Project ECHO, be offered full access for all medical and behavioral health providers to PainNET, the online learning community described above. Each intervention practice will commit to use PainNET to improve knowledge for all providers, and to actively participate in PainNET's practice improvement modules. Intervention practices will also commit to completing a monthly report documenting current improvement activity, best practices that have been adopted, and data on a series of pain management process measures. Intervention practices will commit to participating in the intervention for one year.

The project will be implemented in 3 phases over 20 months. Development and implementation will be carried out over the first 6 months. The intervention phase will last for 10 months and the evaluation phase will last 4 months.

Development of the online platform - Development of PainNET will include content selection, creation and management and site interactions such as collaborative web tools, functionalities and administrative structures. A research assistant will serve as a site moderator and will monitor the user-generated content of PainNET for appropriateness and accuracy. An interdisciplinary team of pain management specialists will be active faculty members who participate in discussion forums and will be available to answer participants' questions. We will consult potential stakeholders (primary care providers and clinical leaders) using key informant interviews and surveys to determine content, learning modes, requirements, and to explore possible barriers to engagement in PainNET and how to overcome them. Some of the known challenges in online collaboration are mistrust of information and individuals and limited time. One strategy to overcome these challenges will be to identify a PainNET champion from the leadership at each participating site. To promote interaction and engagement with the group and a sense of community, we will engage participants in Project ECHO Pain in the development of PainNET, allowing them to help shape the more specific goals, structure and assessment of PainNET.

PainNET will include the following elements:

· Online discussion board and direct messaging: To enhance interdisciplinary communication, the discussion board will be open to all primary care staff and a network of participating specialty staff. Primary care providers with questions on specific topics ranging from addiction medicine and interventional pain management to acupuncture and behavioral interventions will be able to post questions and receive an answer within 48 hours. A designated webmaster will monitor the site and ensure that specific questions are correctly directed to the appropriate specialist and responded to in a timely fashion. In addition, other primary care providers will be able to view the questions and post their own thoughts. The discussion board will create an online professional community of practice working together to bring evidence based principles to front line care and expand the range of input to a variety of specialty areas currently unavailable to primary care providers. Established techniques to enhance participation in online activities will be implemented to ensure uptake and to maximize the impact of the intervention. Examples of such techniques include small non-monetary incentives, social media-based tools such as "likes", and public recognition of participation.

· Video library with access to recordings of individual ECHO case presentations catalogued by topic and condition: To expand access to in-depth education, PainNET will record and catalogue all ECHO case presentations and establish a virtual online library of case content that will be searchable and organized in such a way that a clinician, particularly one who may not be attending regular ECHO sessions, will be able to view case discussions similar to cases that they may be seeing in clinic and for which they may have questions. Asynchronous access to ECHO content will provide a critically important vehicle for ECHO learning to reach a much larger audience of providers. CME will be offered to providers who view this content, and the recordings will be organized in a logical order which would allow an interested clinician to view cases in a sequence that will provide core elements of the ECHO curriculum. In addition, all didactics and slides will be housed in the library, again allowing the viewer to receive the benefit of the ECHO content in a more convenient fashion. This too will help ensure that the benefits of ECHO are spread to a larger audience than is feasible during live sessions alone.

· Best practices resource manual with hands-on tools for practices: To promote the implementation of established best practices in pain management, PainNET will contain a best practices resource manual. The manual is a practical tool containing a range of material for practices seeking to implement evidence-based pain management practices. The manual will be housed on the PainNET platform and will include an extensive list of items including electronic health record templates, pain assessment tools, patient education material, sample policies and data collection and monitoring tools to help practices assess quality and report on outcomes.

· Practice improvement modules containing brief recorded lectures and discussions on QI practices and implementation solutions for adopting best practices: To achieve system-level redesign in pain management within the participating practices, PainNET will include a series of quality improvement modules focused on pain management best practices. CHCI and the Weitzman Institute have trained health centers nationally in quality improvement (QI) principles and the application of QI tools to primary care redesign. These QI tools have been successfully utilized by practices across the country to improve pain care. PainNET will incorporate materials developed for these trainings and present them as a series of online practice redesign modules that teach health centers how to implement the core elements of evidence-based pain management. The modules will contain brief recorded didactics about each selected best practice, sample tools, measurement information, and guidance on how to implement these practices using change management tools. Participating practices will commit to utilizing this content to implement a series of well-established, evidence-based best practices, divided into seven domains (see Appendix A).

To ensure that the project activities realize their intended impact and translate into practice improvement, the project staff will track and assess provider and care team engagement and behavior change to capture improvement work and adoption of best practices using an interactive reporting template included in PainNET. A quality improvement specialist from WI will review each intervention site's report and provide specific feedback via PainNET and offer additional support as needed to help ensure that each practice achieves its goals.

5. **Evaluation Design**

For the evaluation, we will use a **matched pair cluster randomized controlled design**, mixed methods and a composite of metrics. In order to assess and control for practice variability, a baseline needs survey will be conducted in each of the 35 practices in the study. This survey will provide data for matching the practices. Since the random allocation is by safety net practice and the inferences will be made at this level, the practice will be the unit of analysis. Practices will not be blinded to their allocation group, but will remain blinded to the results until the end of the study. We will also emphasize that no conclusions can be drawn regarding the possible benefit of PainNET until the study is completed.

We will use quantitative and qualitative methods in combination to provide greater validity and enhanced understanding of the results of the intervention. We will evaluate the impact of the proposed online professional learning community and practice redesign platform on the following **primary outcomes**: (1) frequency and quality of interprofessional collaboration; (2) provider knowledge and attitudes; (3) adoption of best practices; and (4) adherence to evidence-based pain management guidelines.

We will seek to validate the following **hypothesis**: PainNET practices will be more likely to implement evidence-based best practices in pain care, make evidence-based clinical decisions for chronic pain care, and provide more collaborative, multidisciplinary care for patients with pain in comparison to sites participating in Project ECHO alone. We will apply **Moore's framework** to evaluate educational impact at the knowledge level and higher (competence, performance, patient health status) in line with Moore's scale (25) and the Framework for the Development of Interprofessional Education Values and Core Competencies.(26) We will assess the constructs of the interprofessional collaborative learning model across the domains of exposure, immersion, and competencies for participants, as well as patient outcomes data. The overarching goal is for all health professionals to acquire interprofessional competencies conceptualized around building teamwork capability and transforming ways of knowing. As participating providers progress through the learning cycle, they will acquire, apply, and demonstrate their interprofessional teamwork competencies in more complex settings.(27)

We will utilize both formative evaluations and summative evaluation methods and will assess whether the project objectives have been achieved, including implementation, lessons learned, provider and patient experience, and best practice adoption and utilization. Measurable outcomes have been defined for each project objective. The outcomes will be assessed and will be based on data collection occurring throughout the project. Effective lines and means of communication will be established among partners and implementation staff to facilitate:

- Collaboration and mutual support in terms of the metrics used for the needs assessment
- Development and implementation of PainNET
- Generation of new ideas, further innovation and best practices
- Problem-solving
- Tracking and reporting

This information and data will be reviewed continuously and will provide project staff with the feedback necessary for monitoring and addressing the project goals and objectives.

Changes in quality of pain care will be evaluated by analyzing practice, provider and patient measures. We will use pre-developed and newly developed survey tools to measure outcomes: knowledge, attitudes, beliefs and/or behaviors that impact interprofessional learning and collaboration. We will determine the impact of PainNET on providers' knowledge and self-efficacy to manage patients with chronic pain, co-management with behavioral health providers and other specialty providers, prescribing of opioids, adherence to pain management guidelines for documentation and monitoring of opioid medications, as well as interprofessional communication and providers' attitudes about interprofessional treatment of chronic pain. We will evaluate use of PainNET online content repositories and tools, as well as the scope of collaboration – number of participants from each participating site, length of

collaboration, and size of the online community. The project will deploy embedded surveys in all online tools and regular surveys to all participants. The evaluation will address the relationship between the online professional learning community activities and changes occurring at an organizational/system level.

At the practice level, we will use surveys, qualitative reviews of monthly team reports and chart reviews to determine adherence to pain management guidelines for documentation and management of pain and monitoring of opioid medications. An important aspect of the evaluation design is the use of the same data collecting tools and procedures that provide data on the same metrics we specify in the needs assessment. This will allow us to collect, analyze and report on data with the same metrics pre-intervention and post-intervention, making it easier to compare data and results.

Specific PainNET **outcome measures** linked to project objectives include the following:
1. ***Establish an interdisciplinary, interprofessional online pain management community to improve knowledge level, competence and adherence to practice guidelines among PainNET providers.*** We anticipate a 20% increase in overall knowledge and competency scores and a 20% improvement in adherence to selected pain management guidelines, as demonstrated by values and changes on: the Know-Pain 50 survey, Pain Care Beliefs survey and PainNET monthly survey and reports.

2. ***Support system-level redesign via increased adoption of Pain Management Best Practices in clinics utilizing PainNET.*** We anticipate that 75% of participating practices will implement a minimum of 5 best practices for pain management by the end of the grant period, as demonstrated by number of best practices adopted per site via the Weitzman Institute Pain and Opioid Management Collaborative Selected Pain Management Best Practices for Primary Care survey.

3. Address existing gaps in patient care by increasing multidisciplinary care. We anticipate that 75% of participating providers will express an increased acceptance and understanding of the need for collaborative, interdisciplinary care for chronic pain, and show an increase in patient referrals to appropriate pain-related specialists (including behavioral health, CAM, physical therapy, etc.) by a minimum of 10%, as demonstrated by values and changes on the modified extended RIPLS, Attitudes Towards Health Care Teams Scale, the TTURC Researcher Survey, Attitudes and interprofessional collaboration of multidisciplinary care survey and the PainNET monthly survey and report.

Practices: All participating practices will commit to completing a monthly progress report containing qualitative and quantitative data outlining their progress towards implementing new processes and

improving pain outcomes. The monthly reporting template will also be embedded in PainNET and include clear identification of a population of focus, outcomes for that population, and an accounting of progress towards implementing the required best practices.

Providers: We will gather information on provider knowledge, self-efficacy and attitudes using provider surveys. This data will be collected in a cross-sectional manner at baseline and at the end of the intervention. The time interval between the pre- and post- survey data collection will be 10 months. The goal will be to determine baseline and post-intervention experience and perceptions regarding the intervention on multiple domains, including communication with specialists and impact on clinical care of patients.

Specific project outcome measure instruments include the following:
· The KnowPain-50 (KP50) Survey is a 50-item, validated tool for assessing physician pain management knowledge.
· Pain Care Beliefs Survey is an 11-item measure assessing PCPs' self-efficacy and attitudes and beliefs regarding pain care survey.
· Weitzman Institute Pain and Opioid Management Collaborative Selected Pain Management Best Practices for Primary Care outlines seven mandatory areas of compliance for participating practices.
· PainNET monthly survey and report
· Modified versions of the extended Readiness for Interprofessional Learning Scale (RIPLS) (29), the Attitudes Towards Health Care Teams Scale (30-32), and the Transdisciplinary Tobacco Use Research Centers (TTURC) Researcher Survey(33) to measure changes in attitudes regarding multidisciplinary care and interprofessional collaboration and communication for chronic pain

We will also track and assess provider adherence to evidence-based guidelines for pain management, specifically opioid monitoring and prescribing, decreased reliance on prescribing for pain, increased use of tools for safe prescribing and monitoring, and the actual application of multimodal care (indicated by increased referrals of pain patients to other specialties such as physical therapy, CAM, and behavioral health).

Identification of Patients with Chronic Pain: All patients with chronic pain from both the intervention and control primary care providers' panels will be part of the evaluation. There is no standard definition for "chronic" pain, and no standard mechanism to identify such patients from administrative data exists. For purposes of the study, chronic pain will be defined through an algorithm developed by CHCI (28) that combines pain scores, ICD9 codes, and opioid prescribing data.

Data from Electronic Health Records: Data elements will include the patient's primary care provider name and degree, their demographics, patient self-reported pain scores, medication prescribing records, laboratory results, opioid agreement use, and behavioral health and medical referrals. Weitzman Institute will collaborate with the participating practices to collect data from their respective systems through queries and chart reviews.

Operations Data: Additional data sources for the project will include a variety of ECHO and PainNET operations data.

Qualitative Data on PainNET: We will obtain feedback from intervention participants on a wide range of PainNET materials and activities through survey questionnaires and focus groups that will occur during and after the intervention period. This feedback will be critical for assessing the utility of the PainNET approach to support the adoption and implementation of core best practices for pain management and for making improvements to this approach in the future. We will also gather their feedback and their perceptions about the utility of PainNET to improve interprofessional communication and collaboration.

Statistical Data Analysis: Appropriate statistical analyses will be undertaken to test for statistically significant differences pre- and post- intervention as well as between intervention and control groups. We will use the difference-in-difference approach, which will measure the difference in project outcomes over time (before and after the intervention in 3- month periods) for the intervention group compared with the difference over the same period for the control group. Using pre- and post-methodology, we will aim to determine whether there is a difference in relative average (1) frequency and quality of interprofessional collaboration; (2) provider knowledge and attitudes; (3) adoption of best practices; and (4) adherence to evidence-based pain management guidelines. Specifically, we will seek to determine a difference-in-difference of means. We will fit logistic regression models with a random effects term to account for clustering at the practice level. Explanatory variables will include group (control or intervention), time period (pre- and post-) and an interaction term between them. The interaction term will provide the difference in difference that estimates the impact of the intervention. Lastly, qualitative data from the focus groups will be analyzed in accord with established procedures. We will use standard qualitative content analysis with clustering techniques to identify the repetitive themes regarding providers' experiences with PainNET.

Dissemination: As part of a Federally Qualified Health Center, a close collaborator with the Project ECHO Institute, a member of the MetaECHO collaborative, and a nationally recognized research institute, project staff from the Weitzman Institute are well positioned to disseminate findings from this project widely to a diverse audience. CHCI will work with Dr. Sanjeev Arora and the ECHO Institute, a national institute based at the University of New Mexico, to ensure

wide dissemination of project findings and newly developed materials to all current and potential replication sites in the U.S. and internationally. In addition, results of the study as well as the intervention methodology will be disseminated through publications and conference presentations. In July 2013, CHC presented to program staff at the U.S. Department of Health and Human Services *Health Resources and Services Administration (HRSA)* Bureau of Primary Healthcare Clinical Quality Forum. Project staff will continue to capitalize on opportunities through the Bureau of Primary Healthcare and the National Association of Community Health Centers to disseminate and promote this project to other health centers nationwide. Such opportunities will provide an important forum to reach national policy makers. CHC has also presented on its projects that use the ECHO model at the 2013 *American Telemedicine Association Conference and the 2013 International Conference on Opioids.* At the culmination of the proposed study, we intend to present the results at these conferences and similar ones. We will work with Health Resource and Services Administration and the National Association of Community Health Centers to ensure that PainNET reaches the national network of community health centers serving over 22 million people at more than 9,000 sites.

6. **Detailed Work Plan and Deliverables Schedule:**

The project will be implemented in 3 phases over 20 months. Phase 1 includes project development and implementation, which will be carried out over the first 6 months. During this phase, a project manager and website design consultant will collaborate closely with the Project ECHO staff the faculty of the Integrative Pain Center of Arizona, and with CHCI's quality improvement staff to build the PainNET online learning platform. This phase will rely heavily on CHCI's experience conducting pain management quality improvement collaboratives and running Project ECHO Pain. Also during this phase, all participating practices will be recruited and will complete baseline surveys and a baseline needs assessment allowing site pairing and randomization for the intervention phase. Phase 2 encompasses the intervention and will last for 10 months. During this phase all sites will appoint a site champion to participate in twice-monthly Project ECHO sessions. Intervention sites will also engage their entire practice in utilizing PainNET for shared learning and practice improvement. Monthly progress reports will allow for ongoing assessment of each intervention site and for direct feedback and support to be provided by the quality improvement staff. Phase 3 will focus on project evaluation and will last 4 months. All sites will complete post intervention surveys. In addition, the evaluation team will work with sites to collect electronic data and to conduct chart reviews as necessary to capture all patient level data needed to assess the impact of the evaluation.

Workplan Deliverables

	Project phase	Phased deliverables	Staff responsible for activities	Time-frame for implementation of activities
1	Phase 1 – Project development and implementation	Recruitment of Project ECHO PCP focus groups, conducting focus groups to identify needs, intervention ideas, and development of relevant training content	Project Manager, ECHO Director, PI	Months 1-6
2		Development of the online platform will include content selection, creation and management and site interactions such as collaborative web tools, functionalities and administrative structures	Website Design Consultant, Project Manager, PI, Quality Improvement Specialist	Months 1-6
3		Complete IRB protocol and obtain approval	PI, Research Director, Research Assistant	Months 1-3
4		Development of project monitoring and assessment tools	Research Director, Research Assistant	Months 1-6
5		Recruitment of all participating sites	PI, Research Director	
6		Administer baseline assessment surveys and needs assessment tool	Research Director and Research Assistant	Months 4-6
7		Randomization of paired sites	Research Director	Months 4-6

8		Collect baseline practice data from electronic data sets and chart reviews	Research Director and Research Assistant	Months 5-6
9	Phase 2 - Intervention	Introduction and training of all intervention sites to PainNET	Project Manager, Research Assistant	Month 7
10		Commence twice-monthly Project ECHO sessions for intervention and control groups	ECHO Director	Month 7-16
11		Intervention sites engage with QI pain management modules, host weekly improvement meetings, and complete monthly progress reports	QI Specialist, Project Manager	Months 7-16
12		QI specialist provides online feedback and customized support for each practice to support adoption of pain management best practices	QI Specialist, Project Manager	Months 7-16
13	Phase 3 – Evaluation	Collect post intervention surveys from all participants; conduct focus groups with PainNET participants	PI, Research Director, Research Assistant	Months 17-18
14		Assess electronic practice performance data – including EHR, patient, referral measures	PI, Research Director, Research Assistant	Months 17-18
15		Complete evaluation	PI, Research Director, Research Assistant	Months 19-20

D. **Organizational Detail**

1. **Leadership and Organizational Capability:**

CHCI is Connecticut's largest Federally Qualified Health Center (FQHC) and a Level 3 NCQA Certified Patient Centered Medical Home and Joint Commission Certified Primary Care Medical Home offering comprehensive medical, behavioral health and dental services. It is an independent, private, non-profit 501-3(c) organization. With 130,000 active patients, CHCI is the health care home that works to keep its patients—and communities—healthy. The Weitzman Institute (WI) was created by CHCI in 2013 as a dedicated research and quality improvement center embedded within a large FQHC. The research agenda at WI focuses on answering questions that arise in daily practice of primary care, adopting patient-centered strategies and promoting the implementation of evidence-based care. The Weitzman Institute (WI) now has accumulated 4 years of experience directly working with health centers nationwide on improving the quality of pain management. In addition to Project ECHO, WI staff have developed and conducted a statewide improvement collaborative modeled after the Institute for Healthcare Improvement's (IHI) Breakthrough Series Collaborative. This collaborative has resulted in five safety net practices in New Jersey successfully implementing pain management best practices and achieving measurable improvements in pain care over the course of the intervention. WI will provide clinical, quality improvement and research methodological expertise and support, and assist in development and evaluation of the intervention. In addition, WI staff have substantial experience conducting research in pain management and quality improvement and are currently conducting several funded projects in this area. The combined expertise of the WI research and quality improvement staff will be critical to the success of this project.

2. **Staff Capacity:**

Principal Investigator: Daren Anderson, MD: Dr. Anderson is a general internist and serves as CHCI's VP/Chief Quality Officer and Director of CHCI's Weitzman Institute. In this role, he has principal responsibility for supporting all clinical research activity at the health center. Dr. Anderson is also Associate Professor of Medicine at Quinnipiac University's Frank H. Netter MD School of Medicine, and previously served as Director of Primary Care for the VA Connecticut Healthcare System and Assistant Professor of Medicine at Yale School of Medicine. Dr. Anderson is an expert in applying quality improvement principles to the primary care setting and a recognized national speaker and researcher in the field of pain management and primary care. He has led CHCI's efforts to implement an evidence based approach to pain management and to use technology to improve quality of care. Dr. Anderson has been the driving force behind the development and rapid expansion of CHCI's Project ECHO model. Dr. Anderson's research experience includes serving as PI for a range of funded projects and publishing peer

reviewed articles on health system redesign, pain management, self-management, and health disparities.

Co-Investigator/Research Director: Ianita Zlateva, MPH Ianita Zlateva serves as the Director of Research and Evaluation for the Weitzman Institute. In this role, she is responsible for managing a wide range of research activities and supporting the overall growth in primary care research that is relevant to the CHC's mission to provide quality healthcare services to all. She also has a faculty appointment as Assistant Professor of Medicine at Quinnipiac University's Frank H. Netter MD School of Medicine. Ms. Zlateva has a diverse educational background and an extensive range of research and analysis experiences that include developing of research methodologies and evaluation tools, developing and managing surveys, collecting and analyzing electronic health record data, preparing and presenting study results. She has collaborated with research investigators and multidisciplinary staff to design and execute large-and small-scale research projects on a variety of public health and healthcare delivery topics. She has directed and performed a variety of statistical procedures and analyses. Her proven skills and specialized knowledge in research design and methodology, advanced statistical analysis, and research project management and considerable experience with various research projects make her particularly well-suited for her role in the proposed project

Project Manager: Jose Villagra: Jose Villagra is a certified project manager with extensive experience in communications technology, software implementation, and health information technology. Most recently Mr. Villagra has served as the project manager for the development and implementation of an eConsult network bringing together primary care providers and specialists from across New England via a secure messaging platform to improve the efficiency and effectiveness of specialty consultation.

Patti Feeney - QI Specialist: Patti Feeny is a quality improvement specialists and trainer with a six-sigma/lean "Black Belt" and five years of experience as a quality improvement coach at CHCI. Ms. Feeney has played a key role in designing and implementing the Weitzman Institute's pain management quality improvement collaborative. Ms. Feeney will be a critical content expert supporting the development of PainNET and overseeing the team interventions focused on practice redesign.

Agi Erickson, Project ECHO Director: Ms. Erickson directs all of CHCI's Project ECHO interventions. She has worked in this capacity for three years and has significant experience using telehealth and the Project ECHO model to improve quality and reduce barriers to effective care for patients with chronic pain. In addition, she has played a lead role in developing and customizing CHCI's unique technology platform for delivering Project ECHO. Her

expertise in technology and Project ECHO processes will be critical for the success of this project.

Contractual: Integrative Pain Center of Arizona (IPCA): The Integrative Pain Center of Arizona is recognized as a Center of Excellence in pain management by the American Pain Society and will be an important partner on this project. Collectively, the IPCA team has fifteen years of experience delivering fully integrated, high quality pain management care. They have served as the lead faculty team for CHCI's Project ECHO and have demonstrated their skill and ability to engage with primary care providers to promote multidisciplinary care for patients with pain. The IPCA team will provide input on all PainNET content and will serve as the principal faculty team to engage with primary care staff through online discussions and direct email consultation.

Appendix A

Pain Management Best Practices for Primary Care

1. Adopt policies and procedures to standardize the assessment and follow up of patients with chronic pain:
   a. Use a template or standard pain assessment form for initial and follow-up pain management visits
   b. Use an opioid risk assessment tool (ie: the ORT, SOAPP, or DIRE) prior to initiating chronic opioid therapy (COT)
   c. Require a signed informed consent for all patients before prescribing COT
   d. Require a signed opioid agreements/contract for all patients receiving COT
   e. Require periodic urine toxicology screening test for all patients receiving COT
   f. Check the state prescription monitoring system prior to each pain management visit for all patients receiving COT
   g. Ensure that all patients receiving COT have a standard pain management follow-up visit at least once every 90 days that includes screening for side effects, assessment of functional status, screening for risk of abuse and diversion

2. Develop a chronic opioid registry to track all patients receiving COT
   a. Track each primary care provider's percent panel on opioids (PPO) and use the information to evaluate variation in prescribing practices, and intervene when needed
   b. Monitor and minimize the co-prescribing of benzodiazepines, stimulants and opioids
   c. Monitor and minimize the use of supratherapeutic dose of opioids (>120 morphine eq.)

3. Provide multidisciplinary care to patients with chronic pain
   a. Refer all patients with chronic pain and any substance abuse or mental health issues to behavioral health
   b. Develop processes to routinely refer patients with chronic pain to complementary disciplines including: chiropractic, acupuncture, mindfulness/stress reduction, nutrition and physical therapy

4. Provide pain management education and self-management support to patients with chronic pain
   a. Provide pain management education materials to all patients with chronic pain
   b. Provide pain self-management education group sessions
   c. Track and monitor establishment of self-management goals for pain management

5. Use a team-based approach for managing pain care
    a. Morning huddles to review upcoming care needs
    b. Medical assistants review PMP, opioid agreement needs, utox screens
    c. Nurses coordinate care for patients with pain
    d. Collaborate with behavioral health and other complementary providers

6. Coordinate Care
    a. Establish linkages with local ER/hospital and communicate regarding shared patients
    b. Nurses help coordinate care for patients with chronic pain
    c. Establish linkages with local resources to help support patients with pain (support groups, mindfulness, yoga, etc.)

7. Provide pain-specific CME for all primary care providers through existing web-based or in-person opportunities

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