

EVALUATION OF INTERDISCIPLINARY PATIENT  
CARE CONFERENCES FOR THE COMPLEX  
PATIENT POPULATION IN A RURAL STATE

by

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## DEDICATION

I dedicate my dissertation work to my committee, family and friends. First, to my committee chair Dr. Wade Hill, thank you for guiding me through my doctoral journey. You have been a sounding board for me throughout this process. You have spent numerous hours of your valuable time discussing, reviewing, and giving advice to me that I can never repay you for. To my committee members Dr. Stacy Stellflug, Danielle Martin, and Janice Ostermiller, your patience, precious time, and personal contributions are forever appreciated. To my husband Cody, you have been by my side and have shown me grace in times when I haven't always warranted it. To my parents, Bob and Julie Lake, you have encouraged me throughout my life to pursue my passions, and my journey to this degree has been no different. To my in-laws, Brad and Lisa Griffin, you have both provided support and encouragement throughout this process and for that I am grateful. To my friends, I have missed weddings, births, and everyday celebrations. I am so thankful for your continued understanding and support. And lastly to my daughter Collins, may you be proud of me when you are old enough to realize that I had to sacrifice precious time with you to be the woman I am today, and to show you that, along with hard work and dedication, you can do anything you set your mind to.

## TABLE OF CONTENTS

1. INTRODUCTION .....	1
Problem Description .....	1
Available Knowledge.....	3
Patient-Centered Medical Home.....	3
Patient Aligned Care Team.....	5
Outcomes .....	6
Specific Aims.....	9
2. METHODS .....	10
Context.....	10
Interventions .....	11
Study of Interventions.....	13
Measures .....	14
3. RESULTS .....	15
Overview of Methods .....	15
4. DISCUSSION.....	22
Summary.....	22
Interpretation.....	22
Limitations .....	23
Conclusion .....	24
REFERENCES CITED.....	26
APPENDICES .....	31
APPENDIX A: ReSource Review Template.....	32
APPENDIX B: Development and Evaluation of an Interprofessional and Collaborative Case Conference Series in Primary Care: Article Abstract and Collaborative Case Conference Evaluation Form.....	36

LIST OF TABLES

Table	Page
1. Formative evaluation of care conferences .....	16
2. Summative evaluation of care conferences.....	17
3. Most valuable aspects of care conferences and suggestions for improvement..	20

LIST OF FIGURES

Figure	Page
1. Chronic Care Model.....	3

## ABSTRACT

Primary care practice in the 21<sup>st</sup> century requires innovative and visionary transformation. With the prevalence of chronic diseases continuing to increase, the management of diseases and patients has to change in order to make an impact on outcomes and healthcare costs. As needs for primary care expand, the population ages and patient complexity increases, collaborative care is vital in providing optimum patient care. In 2018, the United States healthcare costs were \$3.6 trillion, averaging \$11,000 per person and are projected to increase to \$6.2 trillion by year 2028. With care that is often fragmented between large hospital systems and community resources, rural states have shown that coordinated care teams have had a dramatic impact on healthcare costs. Monthly de-identified interdisciplinary patient care conferences were evaluated using the Collaborative Case Conference form. In the spring of 2021 an electronic survey was delivered to 18 historical participants of the interdisciplinary patient care conferences via email with goals of obtaining formative and summative evaluations. Formative evaluation found that 100% of participants responded Very Good-Excellent in usefulness of discussions as well as collaborative nature. The summative evaluation revealed that 93.34% of participants Agreed-Strongly Agreed that, as a result of the care conferences, they had a clearer sense of other health professionals roles. All participants reported that they Agreed-Strongly Agreed that there was greater value in interprofessional collaboration after participating in the conferences. Limitations of the evaluation included technology, recall bias, poor survey choices, and low scalability of project. In conclusion, the evaluation of the interdisciplinary patient care conferences for complex patients in a rural state was an overall success. Unfortunately, the program is no longer ongoing as it was halted after funding ended, making sustainability one challenge of convening statewide care conferences of this type. On a positive note, after the initiative was finished individual organizations did implement similar localized care conferences within their settings.

## CHAPTER ONE

### INTRODUCTION

#### Problem Description

Primary care practice in the 21<sup>st</sup> century requires innovative and visionary transformation. With the prevalence of chronic diseases continuing to increase, the management of diseases and patients has to change in order to make an impact on outcomes and healthcare costs. Akinci and Patel (2014) discussed the long-term and oftentimes crippling effects chronic illnesses have on patients, and that our health system is focused on being reactive instead of proactive. Bodenheimer (2008) noted that a typical Medicare beneficiary saw on average two primary care providers, five specialists, and up to 16 total providers every year, in addition to other health services. This statistic highlights the need for care among multiple providers to be coordinated.

As needs for primary care expand, the population ages and patient complexity increases, collaborative care is vital in providing optimum patient care. In 2018, the United States healthcare costs were \$3.6 trillion, averaging \$11,000 per person and are projected to increase to \$6.2 trillion by year 2028 (Centers for Medicare & Medicaid Services (CMS), 2020). The 2028 projected figure is not taking into account the current and future impact of COVID-19. Centers for Medicare and Medicaid Services (2020) also noted that in 2018 there was significant growth in multiple National Health Expenditures (NHE), including increases in Medicare of 6.4% to \$750.2 billion, Medicaid of 3% to \$597.4 billion, hospital NHE of 4.5% to \$1,191.8 billion, and



prescription drugs of 2.5% to \$335 billion. With NHE projected to grow 1.1% faster than the gross domestic product (GDP), healthcare expenses will utilize 20% of the economy by 2028 (CMS, 2020). In comparing health outcomes data from the Organisation for Economic Cooperation and Development, who gathers health outcomes data from eleven high-income countries, the U.S. had double the amount of healthcare spending, yet had the lowest life expectancy and highest suicide rate (Tikkanen & Abrams, 2020). If we continue to provide segmented care, it will cost U.S. citizens an astronomical amount of money and poor health outcomes. With care that is often fragmented between large hospital systems and community resources, rural states have shown that coordinated care teams have had a dramatic impact on healthcare costs (Bell et al., 2012; North Carolina Community Care Networks, 2015; & Parks, 2015).

Super-utilizers or “frequent-fliers” are the 1% of patients in the healthcare system that account for 22% of total healthcare expenditures (Cohen & Yu, 2012). These patients have multiple emergency room (ER) visits, hospital admissions, chronic conditions, and complex social challenges (Mulder et al., 2012; Woodhouse et al., 2010; Oostema et al., 2011). Implementation of chronic disease management programs has shown to be of benefit across the country. For example, the Disease Management 3700 program in Missouri, which worked with super-utilizers, had a total cost reduction of \$22.3 million (Parks, 2015); Community Care of North Carolina saved Medicaid \$336 million in 2014 (North Carolina Community Care Networks, 2015); and in Washington, their targeting of super-utilizers saved \$318 per member per month (PMPM) in the first 12 months (Bell et al., 2012).

In addition to care coordination teams, implementing ways of disseminating helpful tips and information for those who care for complex patients is also needed. In Montana rurality can be isolating, making collaboration with other team members challenging. The state of Montana is 147,040 square miles, making it the third largest geographical state in the country with the third smallest population (Montana.gov, 2020). Montanans pay various penalties for the wide-open spaces they enjoy as many communities have no dentists, physicians, or hospitals. There are two major healthcare hubs across the state, Billings and Missoula, with 342 miles separating them. With the state only having approximately 1,000 specialty physicians, primary care becomes even more important (Statista, n.d.).

### Available Knowledge

There are many types of collaborative care models that are utilized, with the current most notable systems being the Patient-Centered Medical Home (PCMH) and Patient-Aligned Care Team (PACT) (Akinici & Patel, 2014; Bodenheimer, 2008; & Gardner et al., 2018).

#### Patient-Centered Medical Home

The American Academy of Pediatrics developed the Patient-Centered Medical Home in 1967 to help coordinate care for children with chronic conditions (O'Dell, 2016). In 2007, the American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, and the American Osteopathic Association developed the Joint Principles of the Patient-Centered Medical Home to help mitigate the

rising costs of care while putting the patient at the center of their healthcare (O'Dell, 2016). In 2014 behavioral health was added to the Joint Principles (O'Dell, 2016).

In 1998, Dr. Ed Wagner, MPH, Director of the MacColl Institute for Healthcare Innovation, Group Health Cooperative of Puget Sound, and colleagues of the Improving Chronic Illness Care program with support from The Robert Wood Johnson Foundation developed the Chronic Care Model (CCM) (Institute for Healthcare Improvement (IHI), 2020). The CCM focuses on six fundamental areas that include: Self-management support, delivery system design, decision support, clinical information systems, organization of healthcare, and community (IHI, 2020). From this model the updated PCMH was developed with CCM as its framework, see Figure 1 (Coleman et al., 2009).

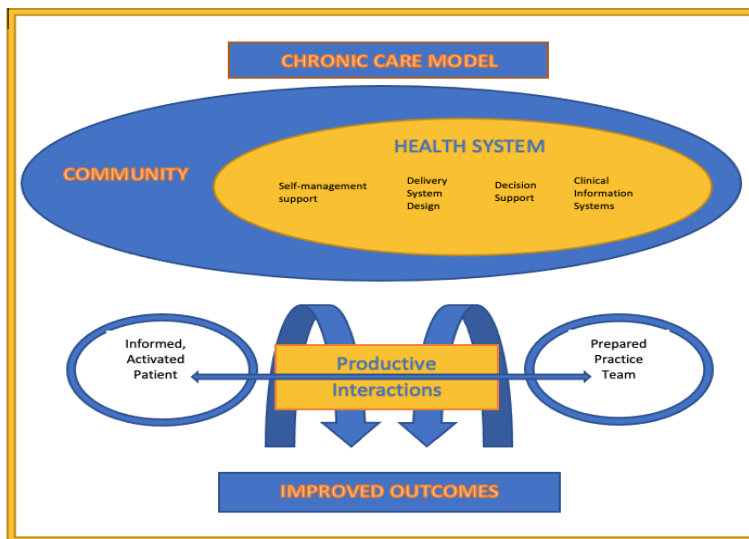


Figure 1. Chronic Care Model shows the community and the health system working together to have productive interactions between patients and their interdisciplinary team, resulting in improved outcomes.

The goal of PCMH is team-based care with each team member working at the top of their license (O'Dell, 2016). In utilizing team members appropriately, the needs of the

patient are able to be met without having to rely heavily on the provider, and in turn the provider can focus on diagnosis and treatment (Akinci & Patel, 2014; Bodenheimer, 2008; and O'Dell, 2016). In doing so, quality of care should improve for those patients with chronic conditions who create a disproportionate amount of healthcare costs and management challenges (Rosland et al., 2018).

### Patient Aligned Care Team

The patient aligned care team interprofessional care update (PACT ICU) that is utilized by Veterans Affairs is one example and testament to the use of interdisciplinary case conferences. The goal of the PACT ICU is to create a way for a variety of professionals to work as a team in ways that anticipate and address the needs of the high-cost, high-need patients (Gardner et al., 2018; Weppner et al., 2018). The PACT model utilizes a “teamlet” approach in order to provide multidisciplinary care to a 1,200-patient case load per full-time primary care provider (Bodenheimer 2007). The model emphasizes open-access scheduling, non-face-to-face modes of care, and nurse-led patient panel management (Rosland et al., 2018). The Center of Excellence in Primary Care Education is the core of the PACT ICU curriculum with its core domains being interprofessional collaboration, performance improvement, sustained relationships, and shared decision-making (Gardner et al., 2018). The PACT ICU is appropriate for a wide range of conditions such as behavioral health, diabetes, social issues, and healthcare delivery, for example, inappropriate emergency department use (Gardner et al., 2018). The focus of the PACT team is continuity of patient care while enriching

interprofessional function and decreasing the stress on the primary care provider and staff (Gardner et al., 2018).

The PACT ICU case conference model is structured around the EFECT model (Elicit the narrative of illness, Facilitate a group meeting, Evidence-based gap analysis, Care plan, and Track changes) (Gardner et al., 2018). Use of this model highlights the patient-centered approach PACT teams use to develop care plans. Gardner et al. (2018) discussed that in order for interdisciplinary patient care conferences to be able to happen, leadership needed to make sure that appropriate time was allocated for the team members to prepare and attend the conference, whether that be weekly, bi-weekly, or monthly. Organizations are more prone to implement evidence-based practice and research if there is staff development, nurse-to-nurse collaboration or in this case interdisciplinary, as well as staffing and support services present (Dudley-Brown, 2021). All of these factors are important to identify and implement in the organization that the work is being executed in.

### Outcomes

The outcomes associated with these two interdisciplinary team models are similar and echo the benefits of multidisciplinary care. With both PCMH and PACT models focused on chronic disease management, expanded access and continuity, comprehensive care through population-based screenings and disease registries, and patient-centeredness through staff training and care redesign, it is not hard to see the benefit to our healthcare system and patients (Rosland, 2018 & Schuttner et al., 2020).

Although all components of the PCMH model contributed to better performance on clinical quality indicators, those with the strongest association were care coordination, continuity, access, and communication (Nelson et al., 2017; Rosland, 2018; & Schuttner et al., 2020). PCMH patients compared to non-PCMH patients had decreased utilization of expensive diagnostic imaging, ED visits, and general resource costs (Akinici & Patel, 2014). “When each major quality improvement issue is broken down, the PCMH model serves some sort of impact whether directly or indirectly to enhance our delivery system and ultimately enhance patient quality of life” (Akinici & Patel, 2014, p. 103). Despite organizational similarity, PACT was not implemented uniformly at all sites. In observational studies, clinics with greater PACT implementation delivered better quality care, had lower preventable hospitalization rates for patients, and higher patient satisfaction. (Rosland, 2018 & Schuttner et al., 2020).

At the center of these primary care models resides the patient, surrounded by an interdisciplinary team and the primary care provider. Use of nurse practitioners (NPs) as care providers has become more common and accepted (American Association of Nurse Practitioners (AANP), 2020). It is also important to note that NPs are choosing primary care as their specialty more often than physicians and physician assistants. According to the American Association of Nurse Practitioners (AANP, 2020) more than 89% of NPs were trained and prepared in primary care programs, while only 8% of physicians entered into primary care residencies. Nurse Practitioners are educated in evidence-based practice, policy advocacy, quality improvement, informatics, leadership, and systems thinking, allowing them to be leaders in healthcare (American Association of Colleges of

Nursing, 2014). NPs bring a comprehensive perspective to patient care as they are able to assess, diagnose, treat, counsel, coordinate care and educate their patients on their diseases. Utilizing the NP as the facilitator of the collaborative care model is an effective change agent.

Use of NPs in collaborative care models is a scalable approach to reducing healthcare disparities, harm, and mortality while expanding alternative payment models and reducing costs of care. NP-led collaborative care brings together new and existing community resources and technologies that allow care to be extended to patients across a large geographical area. The ability to extend care is especially important for rural states, such as Montana. Lack of coordinated care for complex patients results in overutilization of the system and funding, poor patient outcomes, and poor care delivery (Akinci & Patel, 2014; Bodenheimer, 2008; Gardner et al., 2018; Rutledge et al., 2014; Woodhouse et al., 2010). The goal of the collaborative care team is to serve the patient as a whole, including medical, behavioral, as well as social determinants of health. In doing so, patient outcomes are improved while costs of care are reduced.

For patients with chronic disease, traditional, siloed, organ-based approaches have failed to deliver patient-centered holistic care (Alexander, 2008 & Mitchell et al., 2015). With today's primary care setting often being controlled by number of patient visits, time is limited for providers to address complex needs. As primary care practices continue to transition to team-based care models, challenges in providing teams with processes, structures, and training to facilitate effective interdisciplinary communication and relationships have arisen (Schottenfeld et al., 2016). There is a need for effective settings

that allow interdisciplinary teams to coordinate care for complex, high-risk, high-needs patients (Jobe et al., 2018; Medves et al., 2009; Mitchell et al., 2015; Weppner et al., 2018,). Gardner et al. (2018) noted that research has shown when care team members have an understanding of what each person's skillsets, values and procedures are, then patient care improves. Establishing patient care conferences with interdisciplinary teams is one way of mitigating the siloed approach to patient care that could have effects on patient outcomes, decreased utilization and cost of care while improving not only provider, but patient satisfaction.

#### Specific Aims

The purpose of this project is to evaluate interdisciplinary patient care conferences for the complex patient population in a rural state.



## CHAPTER TWO

## METHODS

Context

Mountain-Pacific Quality Health Foundation (MPQH), the quality improvement organization in Montana, acted as the convener with funding through a CMS Special Innovations grant and the Robert Wood Johnson Foundation. Care conferences were part of a larger scale innovations program of improving care transitions, reducing 30-day readmissions, utilization, and costs of care for Medicare patients. The care conferences were structured in an analogous manner to Project ECHO® learning collaboratives. The format was through video conferencing where patient cases were shared, and attendees from different interdisciplinary teams from across the state of Montana. Locations included Missoula, Polson, Kalispell, Billings, and Helena, who all had patients travelling for care from rural communities and isolated locations. Participants attended via video or telephone. The purpose was to share best practices and support care coordination teams working in geographically isolated locations troubleshoot difficult cases. These patients can be extremely burdensome to providers and staff due to the time that they require. The end goal was to improve interdisciplinary communication that thus improved continuity of care and patient outcomes for medically and socially complex patients. In doing so, this project met the Doctor of Nursing Practice (DNP) program objective of assessing complex healthcare systems to facilitate organization-wide changes in practice delivery.

### Interventions

The need for care conferences, as well as the use of Project ECHO® learning collaboratives, were identified through previous work by MPQH. The participant profile included use of geographical location (Montana), snowballing and purposive methods as attendees were identified through healthcare organizations that worked with MPQH and that were implementing CCM into their organizations. MPQH identified these members by contacting healthcare organizations individually, asking if they would like to participate in the work. There was a total of four communities across Montana, with some communities having multiple organizations participating. Gaining additional members was completed through a snowball practice. Once the participant list was created, an online survey was conducted to identify a mutually agreeable time to meet. This was the first Wednesday of each month from 12pm to 1pm via WebEx platform. The MPQH representative utilized contacts already obtained from previous work to develop the expert panel. These included APRNs/PhDs from educational institutions (UPenn School of Nursing and MSU College of Nursing), clinical pharmacists, and behavioral health specialists (clinical psychologist and licensed clinical social worker). The sites' participating staff were nurses, community health workers, licensed clinical social workers, and pharmacists.

The call was structured with experts and the various sites participating, creating a roundtable effect. At the end of each meeting a site volunteered to present one patient case for the upcoming month. These cases were ones that care teams were having difficulty with in regards to finding resources, troubleshooting care, or making a

connection with the patient. One site presented the case to seek assistance and input via a common formatted/structured document on the screen (see Appendix A). The completed case template was distributed via email one week prior to the meeting to allow time for participants to review and develop suggestions. This also allowed pharmacy time to complete the medication review that was highly needed due to complex polypharmacy.

At the beginning of each conference the convener (MPQH representative) gave a brief explanation of the work, including funding. The convener also obtained attendee roll by going through the list of names or numbers shown on the WebEx attendance bar. The presenter for the month shared their screen with the completed case template. As the template had been previously shared, the goal was for the presenter to add verbal elements about the patient that were difficult to get across in writing, helping paint a picture of the situation for the other attendees. The case was presented before any other attendees were allowed to interject. This was important to allow adequate time for the whole case to be presented. Once this was complete the experts weighed in on clinical and medical elements that could aid the teamwork with the patient. The experts could present historical successes, tools or resources to help the presenting team. Knowledge was transferred from experts to sites. Sites could also share successes or new situations with the experts and the other sites. The additional participants could offer solutions or support to the presenting site. This transferred knowledge from site to site. Notes during each call were recorded by the MPQH representative, with follow-up and resource connection also completed by this person. Informal needs assessments were performed to identify educational topics of interest to the group that could translate to their work. If

there was not a patient to present one month, educational presentations were developed that included Medicaid Waiver, long-term care insurance, and shame associated with mental, social, and spiritual health. The spirit of this work was a collaborative knowledge transfer. Participation remained high throughout the project. Over time, the individuals attending the conferences created relationships and actively supported each other through this emotionally challenging and complex patient work. The care conferences aligned with the DNP program objective in assessing financial, sociopolitical, occupational, and organizational forces that have an impact on the development and implementation of clinical prevention and population health.

#### Study of Interventions

To evaluate the interdisciplinary patient care conferences for the complex patient population in a rural state the investigator chose to collect primary evaluation data with formative and summative aims. A survey was developed that collected data from care conference participants regarding satisfaction with care, as well as perceived value and patient outcomes. The survey was implemented electronically as this had advantages over mail-in or phone surveys due to having fewer steps for respondents, being cost effective, and was automated in terms of data collection and results review (Dillman, 2007). For this specific survey, recipient type was not a limitation as all are medical professionals who have access to computers and are highly educated.

Measures

Case conference evaluation was similar to the Collaborative Case Conference (CCC) Evaluation form that was developed by O'Brien, Pearson, and Shunk published in the Association of American Colleges in 2014 (see Appendix B). The CCC goal was to address interprofessional collaboration with trainees of various healthcare backgrounds and settings. CCC was set up in a similar format to the case conferences conducted in this project. At the end of each monthly case conference surveys were completed by attendees to evaluate interprofessional trainee satisfaction with the organization, facilitation, educational value, and collaborative nature of the conference; interprofessional trainee self-assessment of knowledge, skills, and attitudes related to interprofessional conferences; and participants' achievement of learning objectives based on observed behaviors during the CCC, documents generated for and after the conferences, and formative assessments by peers and faculty mentors (see Appendix B) (O'Brien et al., 2014). For the use of evaluation of this project, survey items were modified. Modifications included available participant roles; number of care conferences attended; change of terminology—use of “interdisciplinary care conferences” instead of CCC; addition of free-text answers to Question #6: What aspects of the care conferences did you find most valuable? and Question #7: How could the care conferences have been improved?

## CHAPTER THREE

## RESULTS

ResultsOverview of Methods

In the spring of 2021 an electronic survey was delivered to 18 historical participants of the interdisciplinary patient care conferences via email. Survey and methods were approved as exempt for review by Montana State University Institutional Review Board for human subject research. No sensitive information was asked and participation in the survey constituted as consent to participate. It was made known that the survey was confidential but was not anonymous, both in the heading of the survey itself and in the body of the initial email. As this was the case, each participant was assigned a participant ID by the investigator and was asked to input their given ID into the first question to track survey completeness. The initial survey email was sent to all 18 participants. Reminder emails were sent only to participants who had not completed the survey at 7 and 14 days after the initial email. 15 of the 18 (83.3%) participants responded from the following healthcare specialties: nursing (86.67%) and advanced practice professionals (13.33%). In addition to professional demographics the investigator wanted to know frequency of care conference attendance. The majority of attendees (86.67%) attended 6-9 care conferences, 29.67% attended 1-3 care conferences, and 26.67% attended 12 or more care conferences.

In the formative evaluation of the interdisciplinary patient care conferences (i.e. Table 1), participants reported the usefulness of the discussions as very good to excellent. Organization of the care conferences was also rated as being important and well executed by the facilitators. Participants found the collaborative nature of the discussions to be excellent. The one area that had encompassed ratings of poor to excellent were individuals' comfort level in participating in the interdisciplinary patient care conferences.

Table 1. Formative evaluation of care conferences

#	Question	Poor		Fair		Good		Very Good		Excellent		Total
1	Clarity of objectives	0.00%	0	0.00%	0	20.00%	3	26.67%	4	53.33%	8	15
2	Organization of the care conferences	0.00%	0	0.00%	0	20.00%	3	20.00%	3	60.00%	9	15
3	Participation by a variety of health professionals	0.00%	0	0.00%	0	20.00%	3	40.00%	6	40.00%	6	15
4	Usefulness of discussion during care conferences	0.00%	0	0.00%	0	0.00%	0	40.00%	6	60.00%	9	15
5	Collaborative nature of discussion during care conferences	0.00%	0	0.00%	0	0.00%	0	46.67%	7	53.33%	8	15
6	My comfort participating in the discussion	6.67%	1	0.00%	0	26.67%	4	33.33%	5	33.33%	5	15
7	Overall quality of the facilitator: Lara Shadwick and Britt Lake Posada	0.00%	0	0.00%	0	0.00%	0	33.33%	5	66.67%	10	15
8	Overall quality of the care conferences	0.00%	0	0.00%	0	0.00%	0	53.33%	8	46.67%	7	15

The summative evaluation of interdisciplinary patient care conferences (i.e. Table 2) had strong quantitative results as well. Majority of participants felt that their input and contributions to the care conferences were valued by the other attendees. Due to the professional nature of the care conferences, use of profession-specific jargon and terms were reported as easy to understand and did not compromise the integrity of presentations and discussion. The care conferences resulted in the attendees having a better

understanding of the roles of other healthcare professionals, as well as the importance of interdisciplinary collaboration to improve patient care. Increased knowledge of mental health and outpatient primary care were also reported by participants as a result of attending the care conferences.

Table 2. Summative evaluation of care conferences

#	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
1	I feel my contributions were valued by other participants in the care conferences. (Mark N/A if you did not contribute)	0.00% 0	0.00% 0	0.00% 0	71.43% 10	28.57% 4	14
2	The content of the care conferences were generally at a level that was accessible to me.	0.00% 0	0.00% 0	6.67% 1	20.00% 3	73.33% 11	15
3	The use of jargon or profession-specific language made it difficult for me to follow parts of the care conference discussions.	20.00% 3	66.67% 10	6.67% 1	6.67% 1	0.00% 0	15
4	As a result of the care conferences, I have a clearer sense of the roles of other health professionals.	0.00% 0	0.00% 0	6.67% 1	46.67% 7	46.67% 7	15
5	As a result of the care conferences, I have a clear sense of how someone in my profession can work with other health professionals to care for similar patients.	0.00% 0	0.00% 0	0.00% 0	53.33% 8	46.67% 7	15



Table 2 (continued)

6	I see greater value in discussing patient care plans with an interprofessional group as a result of participating in the care conferences.	0.00%	0	0.00%	0	0.00%	0	20.00%	3	80.00%	12	15
7	My knowledge of mental health increased as a result of the care conferences.	0.00%	0	0.00%	0	26.67%	4	40.00%	6	33.33%	5	15
8	My knowledge of outpatient primary care increased as a result of the care conferences.	0.00%	0	6.67%	1	26.67%	4	20.00%	3	46.67%	7	15

Qualitative data was gathered via two open-ended items for participants to share their thoughts on the most valuable aspects of the care conferences and suggestions for improvement of the care conferences (i.e. Table 3). The qualitative data had emerging themes on collaboration, as was noted by one participant.

I found the collaboration of all members at the care conference valuable. At the time I was attending, I was very new in my care management role and learned so much at every conference. It gave me confidence to continue to learn and grow in my role. It was also a good learning opportunity to go through the process of presenting a case. I have been able to continue care conferences in my own organization as needed and have had great success in working as a team to help a patient have the best possible outcome.

This was reinforced by other individuals stating the most valuable aspects of the care conferences were, “The collaboration between multiple healthcare facility representatives” and “participation of other disciplines.” An additional theme that emerged was complexity of the patients being cared for by the different interdisciplinary participants for example, “Input and feedback from other care providers during care conference. Discussing care plans with other providers was helpful in gaining new

perspectives for challenging cases.” Patient complexity was reinforced by other participants.

The most valuable aspect of the care conferences was my opportunity to present a complex case and hear suggestions and feedback from a variety of healthcare professionals. It was an opportunity to think about the case in a different light and consider alternative solutions for the patient. I was able to put the suggestions into action and was able to improve care for the complex patient.

The final emerging theme was found to be related to resourcefulness and innovation, as one participant shared as a valuable aspect of the care conferences, “Knowledge sharing regarding additional resources and added direction” that was reinforced by another participants response.

Ideas from other IDT members on possible strategies for care coordination. Especially at the beginning, it was great to hear personal stories from others about the actual work that they were doing, how they were able to connect with individuals, and how persistence paid off and brainstorming sessions for ways to support patients. Wide range of experience at conferences provided a lot of solutions for patients.

Overall, participants reported many positive aspects, outcomes, and takeaways from the care conferences, as well as some great suggestions for improvement (i.e. Table 3) as one attendee noted.

I'm not sure if this qualifies for a potential area for improvement, but sometimes it was frustrating that resources available in one community were not available in another. This decreased the relevance for some of the interventions. For example, Kalispell had the great volunteer foundation that was able to provide a lot of patient assistance, especially in terms of transportation and light housekeeping/caregiving/companionship. We tried to do something similar, but our legal team was opposed to our work in this area. (Maybe not a criticism of care conferencing, but just a general frustration.).

The technology platform was also identified as a suggestion for improvement that was noted by participants. “At the time this wasn't a thing, but now I would ask everyone turn on their cameras as seeing each other really helps relatability” and reinforced by, “Zoom wasn't as popular then but having a platform where we were able to see each other would have been nice.” Participant responses emphasized the DNP program objective of enacting leadership and effective interdisciplinary communication and collaboration in order to improve outcomes for individuals, populations, and health care systems. As well as reinforcing professional standards, values, accountability and ongoing self-reflection of each person’s role.

Table 3. Most valuable aspects of care conferences and suggestions for improvement

Most valuable aspects of care conferences	Suggestions for improvement of care conferences
Sharing of cases and discussions regarding care.	Thought conferences were very good.
The collaboration between multiple healthcare facility representatives.	Additional representatives who were impacted by the information being brought forward.
Input and feedback from other care providers during care conference. Discussing care plans with other providers was helpful in gaining new perspectives for challenging cases. Gained new perspectives of mental health.	n/a
The most valuable aspect of the care conferences was my opportunity to present a complex case and hear suggestions and feedback from a variety of healthcare professionals. It was an opportunity to think about the case in a different light and consider alternative solutions for the patient. I was able to put the suggestions into action and was able to improve care for the complex patient.	Generally, the online platform is hard to gain engagement of all attendees but I acknowledge that in-person meetings are not feasible.
The collaboration.	More participants from other facilities sharing what they have learned that works and does not work.
Knowledge sharing regarding additional resources and added direction.	Added cross sector, multi-disciplinary attendees.
Ideas from other IDT members on possible strategies for care coordination. Especially at the beginning, it was great to hear personal stories from others about the actual work that they were doing, how they were able to connect with individuals, and how persistence paid off.	I'm not sure if this qualifies for a potential area for improvement, but sometimes it was frustrating that resources available in one community were not available in another. This decreased the relevance for some of the interventions. For example, Kalispell had the great volunteer foundation that was able to provide a lot of patient assistance, especially in terms of transportation and light housekeeping/caregiving/companionship. We tried to do something similar, but our legal team was opposed to our work in this area. (Maybe not a criticism of care conferencing, but just a general frustration.)

Table 3 (continued)

At the time I was so new to care management, that all information was of value. I feel also as I have continued to work in case management I would gain more by attending such conferences again, because I understand the field more.	I don't specifically remember enough to comment.
Brainstorming sessions for ways to support patients. Wide range of experience at conferences provided a lot of solutions for patients.	They were great, I wasn't always available to attend the entire duration. I think they were well run, well designed.
Learning processes that other entities utilize to get the work completed. Hearing stories of struggles and how they were solved. I loved the case studies.	At the time this wasn't a thing, but now I would ask everyone turn on their cameras as seeing each other really helps relatability.
The case studies on complex patients, and talking through all options for a patient was the most valuable part of the care conferences. It was helpful to hear both what other care coordinators were doing in their practices, and to get perspectives from interdisciplinary teams.	Zoom wasn't as popular then, but having a platform where we were able to see each other would have been nice.
I found the collaboration of all members at the care conference valuable. At the time I was attending, I was very new in my care management role and learned so much at every conference. It gave me confidence to continue to learn and grow in my role. It was also a good learning opportunity to go through the process of presenting a case. I have been able to continue care conferences in my own organization as needed and have had great success in working as a team to help a patient have the best possible outcome.	I feel they were well thought out and organized. There were a variety of professionals on the calls. I appreciated the inclusion of behavioral health professionals and pharmacists. At that time, we did not have those team members on our team at work to collaborate with.
Networking with others, and hearing about their programs--what's working, what's not, and sharing "shared experiences" in care management.	Since MT is so large, maybe having conferences for smaller regions so folks didn't have to travel so far. But this would limit networking, plus there may not be enough participants so this may not be feasible.
It was very helpful to hear about the interventions going on around the state. It was also helpful to gain some understanding of the breadth of resources available to students.	n/a
Participation of other disciplines	More formal materials sent prior. May be confidentiality issues though.

## CHAPTER FOUR

## DISCUSSION

Summary

Care coordination conferences are increasingly being relied upon for sicker patients within complex environments. A pilot project convened through Mountain-Pacific Quality Health Foundation that was funded by a CMS Special Innovations grant and the Robert Wood Johnson Foundation facilitated these interdisciplinary care conferences. They were a part of a larger scale innovations program of improving care transitions, reducing 30-day readmissions, utilization, and costs of care for Medicare patients. In surveying the 18 historical participants, 15 (83.3%) completed the internet survey. The quantitative and qualitative data gathered supported the investigator's hypothesis that interdisciplinary care conferences improved collaboration among disciplines, supported the notion that patients and care have become increasingly complex, which leads to the final theme of the importance of sharing resources, being innovative, and sharing knowledge of individual learnings and strategies among care team members and across organizations in a rural state such as Montana.

Interpretation

The results of the evaluation completed by the 15 historical participants were comparable to the results of the O'Brien et al. (2014) survey results in that participants overwhelmingly reported value in the care conferences, with 100% of participants

reporting that they Agreed or Strongly Agreed that they found value in attending the care conferences. From O'Brien et al. (2014) and data obtained from this evaluation, participants reported interest in additional opportunities for collaboration. As one attendee noted, "At the time I was so new to care management, that all information was of value. I feel also as I have continued to work in case management I would gain more by attending such conferences again, because I understand the field more." Similar to O'Brien et al. (2014) who had used this care conference as a teaching tool, one attendee also added insight as a nursing professor by reporting, "It was very helpful to hear about the interventions going on around the state. It was also helpful to gain some understanding of the breadth of resources available to students."

Not only did the care conferences have an impact on interest in future collaborative initiatives, but the qualitative data showed it had an impact on people and the systems that they are a part of. For example, one participant noted the "Learning processes that other entities utilize to get the work completed, and hearing stories of struggles and how they were solved. I loved the case studies" as being the most valuable aspect of the care conferences. In the end, the investigator had expected people to have been satisfied with the care conferences. There were no real differences between observed and anticipated outcomes.

### Limitations

There were multiple limitations associated with this evaluation. The project was conducted in one rural state. This limits the ability to show that the intervention of care

conferences are beneficial in other environments, such as more urban locations. There were technical limitations as well. In terms of survey distribution, the investigator found that many emails ended up in junk or spam folders or were completely blocked by organizational firewalls. This emphasized the importance of sending reminder emails in order to reach as many participants as possible. A technical limitation within the survey itself was not making Question 2, that asked participants their professional role, as a multiple-answer question. This limited the collection of demographic data from being specific as many attendees qualified in more than one category, as options were: nurse, mental health provider, advanced practice professional, community health worker, academic, or other. For example, many chose their role as a nurse who were also considered as academic, such as a professor. An additional example was with mental health providers. All respondents that qualified for mental health chose advanced practice professional instead. The final limitation was that the data was collected in a single moment of time. The last care conference facilitated was over two years prior to data collection. Due to this, recall bias was a limitation. For improved data collection, surveys should have been administered after each care conference.

### Conclusion

In conclusion, the evaluation of the interdisciplinary patient care conferences for complex patients in a rural state was an overall success. Unfortunately, the program is no longer ongoing as it ended after funding was dropped 2 years ago. Sustainability is one challenge of convening statewide care conferences of this type. On a positive note, after

the initiative was finished, individual organizations did implement similar localized care conferences within their settings. As these care conferences were now part of job descriptions, specialized funding was not needed as it was compensated as part of each team member's FTE and was also highly encouraged through Comprehensive Primary Care Plus, that also supplied ambulatory care practices as a funding and reimbursement source. The care conferences themselves, as well as the survey evaluation, met several of the DNP program objectives. The results of the evaluation reinforced the investigator's passion for collaborative care initiatives, as collaborative care not only positively impacts patients but has lasting impacts on practice and professional wellbeing.



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APPENDICES

APPENDIX A

RESOURCE CASE REVIEW TEMPLATE



## De-identified Patient Case Review

The purpose of these case reviews is to collaboratively learn from on-going work. Both successes and challenges pose an opportunity for ReSource Teams to problem solve and share best practices. These standardized forms can be completed by the nurse prior to call. Information can be gathered through medical records, EHRs, patient and care giver interviews.

### Patient Demographics:

Site Location: \_\_\_\_\_ Age: \_\_\_\_\_ Gender: M or F Race: \_\_\_\_\_

Weight/BMI: \_\_\_\_\_ Insurance Type/Situation: \_\_\_\_\_

#### Problem List:

- |          |           |
|----------|-----------|
| 1. _____ | 6. _____  |
| 2. _____ | 7. _____  |
| 3. _____ | 8. _____  |
| 4. _____ | 9. _____  |
| 5. _____ | 10. _____ |

#### Patient's Identified Goals:

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### Social Barriers:

Housing Situation: \_\_\_\_\_

Transportation Situation: \_\_\_\_\_

Family/Caregiver Situation: \_\_\_\_\_

Occupation: \_\_\_\_\_ Education: \_\_\_\_\_

Food Insecurity \_\_\_\_\_

#### Patient Supports/strengths:

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Other social barriers (language, disability, pets, etc.): \_\_\_\_\_

---





## De-identified Patient Case Review

### Medical History:

PCP: \_\_\_\_\_ Specialty Care: \_\_\_\_\_

#### Specialty Consults (circle):

Cardiology	Pulmonology	Other: _____
Mental Health/substance use	Endocrinology	
Chronic Pain	Nephrology	

Medications: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#### Treatment/Care Plan:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#### History of treatment adherence:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#### What programs community programs or agencies are involved?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#### What assistance challenges does this case present or successes to share?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## De-identified Patient Case Review

Please list out any significant ED visit, IP admissions, or office visits to show frequency of resource utilization and interventions.

Sunday	Monday	Tuesday	Wednesda	Thursday	Friday	Saturday

Sunday	Monday	Tuesday	Wednesda	Thursday	Friday	Saturday

APPENDIX B

DEVELOPMENT AND EVALUATION OF AN INTERPROFESSION AND  
COLLABORATIVE CASE CONFERENCE SERIES IN PRIMARY CARE:  
ARTICLE ABSTRACT  
AND  
COLLABORATIVE CASE CONFERENCE EVALUATION FORM

## Abstract

**Introduction:** Many health professions training programs provide inadequate opportunities for trainees to develop the knowledge, skills, and attitudes needed for interprofessional collaboration (IPC). To address this gap, we created an interprofessional collaborative case conference (CCC) series that provides opportunities for participants from multiple professions to learn with, from, and about each other through discussion of real patient cases and actionable strategies for care plans. **Methods:** This publication describes a monthly hour-long CCC in which trainees from a variety of health professions facilitate and discuss medically and psychosocially complex patients from one trainee's primary care panel with the goal of developing an improved care plan for the patient. The CCC includes upwards of 20 participants from wide-ranging backgrounds and allows face-to-face, interactive brainstorming of strategies and solutions that can ultimately be incorporated into a care plan in real time. The trainee facilitator works closely with a faculty mentor to prepare and execute the CCC, including selecting an appropriate patient, identifying clear learning objectives, inviting discussants involved in the patient's care or with relevant expertise, writing up the case and discussion questions, summarizing two pertinent articles from the literature, and creating a facilitation plan to encourage participation and collaboration among all participants. The trainee also writes a postconference care plan detailing innovative ideas for the patient's care that arose during the CCC and completes a 3-month update on the status of the proposed interventions. Included herein are a comprehensive Instructor's Guide with documents and sample templates for conference preparation and follow-up. **Results:** We used conference evaluation forms and trainee check-ins with faculty mentors to evaluate the following components of the CCC: interprofessional trainee satisfaction with the organization, facilitation, educational value, and collaborative nature of the conference; interprofessional trainee self-assessment of knowledge, skills, and attitudes related to IPC; and participants' achievement of learning objectives based on observed behaviors during the CCC, documents generated for and after the conferences, and formative assessments by peers and faculty mentors. Conference ratings were very high across the board, with scores above 4 (on a 0-5 scale) for nearly all questions. In formal curricular feedback sessions held twice a year, trainees frequently requested more such interprofessional case-based learning sessions. The CCC also led to innovative developments in patients' treatment plans. **Discussion:** The CCC series has proven to be an effective tool in developing primary care trainees' competence in IPC and has helped to foster a culture of IPC within our program. The IPC skills that trainees develop through the CCC are expected to translate into enhanced interprofessional skills in future clinical settings beyond our training program. The CCC has also had a positive impact on the individual patients discussed, through the generation of new

multidisciplinary strategies in their care plans and the creation of lasting collaborations between their providers.

**Collaborative Case Conference Evaluation Form**

Session Leader(s): **NAMES**  
 Date:                      Location:                      Time:

**Trainee:** NP Student  NP Fellow  Resident  Associated Health  Mental Health Fellow  Other

Please rate each of the follow items based on your experience in this session.

	Poor	Fair	Good	Very Good	Excellent	N/A
1. Clarity of objectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Organization of the session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Participation by a variety of health professionals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Usefulness of discussion during the session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Collaborative nature of discussion during the session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. My comfort participating in the discussion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Usefulness of articles selected for the session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Overall quality of facilitator: <b>NAME</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Overall quality of presenter: <b>NAME</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Overall quality of the session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Please estimate the likelihood that you will make changes in your clinical activities as a result of this session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. What aspects of the session did you find most **valuable**?

13. How could the session be **improved**?

14. Please provide 1-2 specific feedback points to the trainee presenter.

**PLEASE TURN OVER**

**PLEASE TURN OVER**

