



Participatory Action Research: Exploring Distributed Leadership in a Workplace Network

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Abstract

This case describes a commissioned research project that was undertaken to explore the role of interorganizational networks in supporting large-scale change and improvement and achieving the collaborative goals of patient safety and quality of care. The hypothesis was that there is a strong correlation between effective distributed leadership in an interorganizational network and the ability to achieve these mutual goals. This case gives an account of the research process which involved multi-stakeholder groups in a large geographical area and highlights some of the challenges in conducting research in that context, and using social network analysis software. In addition to the findings specific to the study's topic, this research also provided some insights into conducting qualitative research in a distributed network and into using social network analysis software. I share some recommendations for researchers undertaking similar projects with the intent of contributing what was learned and documenting the strategies used to overcome the challenges.

Learning Outcomes

By the end of this case, students should be able to

- Be aware of the challenges in attaining ethical approval in a multi-stakeholder network
 - Be aware of the challenges related to using social network analysis software
 - Be aware of the impact and implications of staff turnover and relationship-building while conducting research in a dynamic and organic network
 - Be aware of the considerations important to data collection and the dissemination of research findings
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Introduction

The British Columbia Patient Safety & Quality Council (BCPSQC) has a mandate to bring a provincial perspective to, and build capacity for, quality improvement in the provincial health care system. This non-competitive commissioned research, funded by BCPSQC, focused on the BC Sepsis Network, exploring distributed leadership in a network that includes six health authorities (regions) and covers a large geographical area of 944,735 km². It was a collaborative research project among Royal Roads University, the BCPSQC, and the BC Sepsis Network. This case discusses the research and design of this project and shares some of the aspects that may arise during a collaborative project, such as communication, decision-making, and diffusing conflicts.

The stakeholders wanted to determine whether there was evidence to show that a network with committed, effective leaders would perform well in regard to its goals, in this case to demonstrate high levels of patient safety and quality of care.

We wanted to learn what leaders saw as enabling factors and what they felt were challenges. We wanted to hear their ideas for strengthening the network and how all this connected to quality improvement and patient safety. The approach of the research was to (a) hear network leaders' perspectives and learn from them, (b) understand how to accelerate improvement in sepsis care in BC, (c) determine what helps or impedes the network from achieving its goals, and (d) map the connections and relationships within the network.

The BCPSQC should be recognized for its willingness and foresight to study the sepsis project with a view to learn from it and apply the findings as the network was still developing.

Research Practicalities and Design

Methodology

This research examined distributed leadership in the context of the sepsis network in British Columbia and used a participatory action research (PAR) approach. Two data collection phases were conducted over an 11-month period between December 2013 and October 2014. The first phase was qualitative and entailed 12 semi-structured interviews. The interviews were between 45 and 60 min long and included people from all six health authorities and a variety of leadership roles. In the second phase of data collection, a social network analysis survey was conducted to map connections within the network in a visual form, creating a visual map to see the connection points between groups and potentially isolated individuals. The survey also provided some valuable demographic data about the network composition.

PAR recognizes the increasing convergence of principles, beliefs, and values common to participatory approaches. It is important to recognize that PAR is not actually a *methodology for* the research but an *approach to* the research. PAR comprises three basic elements (Greenwood & Levin, 1998; Wallerstein & Duran, 2003):

- Participation (broadens who participates in the research process (Bradbury & Reason, 2008); in this case, multiple stakeholders comprised applied researchers and decision-makers);
- Action (which is emphasized over just generating new knowledge (Bradbury & Reason, 2008));
- Research (focuses on perspectives locally defined by, for example, decision-makers; shares power between researchers and decision-makers; expands the purview of knowledge generation from academia to the community; and realigns the researchers' roles from directing to facilitating the process (Bradbury & Reason, 2008; Cornwall & Jewkes, 1995)).

Together, these elements comprise the collaborative, collective nature of PAR. As Greenwood and Levin (2005) state, this is

cogenerative inquiry because it is built on professional researcher-stakeholder collaboration and aims to solve real-life problems in context. Co-generative inquiry processes involve trained

professional researchers and knowledgeable local stakeholders who work together to define the problems to be addressed, to gather and organize relevant knowledge and data, to analyze the resulting information, and to design social change interventions. Together these partners create a powerful research team. (p. 54)

The overarching research question was, “How is distributed leadership in an interorganizational network understood and currently practiced, and how could it be improved in regard to patient safety and quality of care?”

The research subquestions were developed jointly with the research partners and sought to determine how to take a Ministry of Health strategy and implement it to support clinical best practice. This includes understanding urban versus rural locations, cultures, and contexts and how they affect patient safety and quality of care, and what factors contribute to a positive experience for patient and health care workers. The subquestions asked in the interviews were as follows:

- How do you see yourself as a leader (or champion) in the BC Sepsis Network?
- What does being a sepsis leader (or champion) mean to you?
- How does (past and/or present tense) the BC Sepsis Network help you or not help you in your work at your site?
- What is the benefit of your connections with your peers in other communities within the network?
- How do we build the development of relationships so that the BC Sepsis Network is strengthened?
- What can be done to improve leadership throughout the BC Sepsis Network?

The data gathered provided health care organizations and leaders with information they can use to better understand the interplay of factors that affect them.

Ethical Review Process

Ethical approval was obtained from Royal Roads University and a panel of representatives from Fraser Health, Interior Health, Northern Health, Vancouver Island Health, Vancouver Coastal Health, and Providence Health Care.

A total of 11 separate approvals were needed before the research could begin, and that posed some logistical challenges for the research team.

The health authorities' approval forms are geared toward clinical research, and qualitative research did not fit neatly into the boxes on the forms. We were trying to fit square pegs into round holes. The health authority approval forms are primarily used to approve clinical research, not qualitative research, so many of the questions and conditions do not apply to this type of study, making it difficult to accurately communicate the process.

Each request for approval involved at least one telephone conversation with the research office of each health

authority, which was time-consuming. Some of the aspects of the process seemed designed for internal applicants and were paper-based rather than being easily transferable (and signable) electronically.

Although a coordinated, harmonized ethical approval system seems like it would be more efficient, this process has its drawbacks. There was one contact person on the review panel, and all communication flowed through this person. There was much back and forth with questions and clarifications, all through this person and not directly with the health authority representatives on the panel who had actually posed the questions. In my opinion, this slowed the process down and restricted my ability to build relationships with members of the review panel. It also meant that if one person on the panel is away or unable to review the documents in a timely manner, the whole process was delayed. The harmonized ethical review panel had its own system which had to be duly followed, so the research team had to be patient and let the process unfold. I was the contact person for the research team and I had one contact on the panel.

In addition to the ethical approvals, several health authorities also required institutional or operational approvals. There was duplication and redundancy. For example, the facility needs are really operational, but considerable time was spent in addressing these questions in the harmonized ethics documents. The operational approval requests were made to accommodate focus group space, which was not needed when the decision was made to eliminate focus groups from the data collection plan.

Some of the contacts in the health authorities are part-time in their ethical research role, so there were delays when they were not available. The ethical and institutional approvals were conducted over the summer months, so the process was delayed further due to vacation absences.

Once the ethical approvals were in place, participants were sent a letter of invitation outlining the purpose of the study and a description of what it would entail. They were also provided with a consent form informing them their participation was voluntary, details about the process, benefits of participation, their right to withdraw, confidentiality commitments, and the interview and survey questions. The invitations to participate were sent from the BC Sepsis Network executive office, and as consent forms were submitted to me as researcher, interviews were scheduled and a tracking sheet for each interviewee was prepared.

Data Collection

The research questions were piloted and tested with two participants (identified by the BCPSQC) prior to launching the formal research initiative. This served to test the research design and led to a small alteration in the interview questions, combining two of the questions into one. Piloting the questions is important to ensure that the question language, sequence, and relevance are appropriate before the formal research is begun. The pilot participant responses were included as data in the research.

In the first phase of data collection, 12 leaders were interviewed using questions that explored the following:

- How participants saw themselves as leaders/champions, and what that meant to them;

- How they led in a network situation;
- How the network could support the development of relationships, and how to improve/develop leadership skills in the network.

Interviews were scheduled and conducted between December 2013 and April 2014 in-person at the Quality Forum 2014 conference or by telephone and were digitally recorded for transcription and analysis purposes.

Interviews were structured in a consistent format and allowed the interviewer to probe deeper into specific comments made by participants. Accuracy of the interpretation of the information was established by sharing the transcripts with the participants to verify the information. Participants had the option to clarify, alter, or rescind the information given to me, both verbally and in writing, along with a time frame to confirm. I was the sole interviewer, which meant that I heard all the participants' views and could form a comprehensive picture and connect the points the participants made. It also meant the interviews were consistent in structure and made the compilation of data easier. I established rapport by opening our conversation with a few minutes of small talk in a friendly yet professional manner. I thanked them for their time and their contribution, acknowledging that this topic was important to them. During the interviews, I listened closely and did not rush them through the questions. The only problem that was encountered was rescheduling interviews due to the participants' demanding and often unpredictable schedules.

The second phase of data collection, the quantitative component, used a social network analysis software tool called PARTNERTool to conduct a 20-question survey, analyze the responses, and map data that measured collaboration between network members. This tool also has the ability to map inter-relationships, including trust levels, to visually demonstrate the connections and corresponding changes over the course of the project (<http://www.partnertool.net>). "Social network analysis (SNA) is a diagnostic method for collecting and analysing data about the patterns of relationships among people in groups" (Anklam, 2003). The survey was opened on September 28, 2014, to coincide with announcements regarding World Sepsis Day. It closed on October 22, 2014, with a 44% response rate.

The survey data are useful because they allow the Sepsis Network to assess the composition of the network and the network demographics. It also reveals the connection points and people who are the boundary spanners between groups/professions so that they can be identified, recognized, and rewarded for that "unofficial" role. These "hubs" connect the network together and are key to the effectiveness of the network.

The social network analysis maps provide the network leaders with a snapshot of the connections at a given point in time. It can show leaders where there may be gaps in the network composition and allows leaders to think about the risks of turnover in those key hub roles. It provides information about the network and is a good starting place to ask "why" questions. The findings also showed what was working well and what should be continued to maintain the positive atmosphere in the network. This is helpful information to budget accordingly for activities that are key to building and maintaining relationships in the network and keeping members engaged and enthusiastic. It also shows the council where accolades and recognition are due, or conversely, where potential bottlenecks might occur.

The BC Sepsis Network was better able to understand how leaders in the network describe the value they bring to the network (collaborators, liaisons, advocate, etc.). The executive office now has documentation of the real-life challenges faced by leaders in the network and some suggestions on how to address those challenges. In effect, this was a form of an environmental scan for the BC Sepsis Network.

The BC Sepsis Network leaders can use this information to

- Determine where the opportunities are;
- Identify and support the “boundary spanners”;
- Proactively mobilize knowledge through the network hubs;
- Determine the next steps.

The BC Sepsis Network executive can acknowledge and recognize the important work of the hubs or boundary spanners and the role they play in strengthening the network. Leaders can see where the key communication points are in the network to be more effective in disseminating information. Network members can more ably action good ideas—information flows both ways.

Data Analysis

The interview data were analyzed using computer-assisted data analysis software (NVivo) and involved identifying themes and common experiences shared in the interviews. NVivo allows the researcher to sift and sort, code and arrange data, see relationships and patterns in the data, and establish themes. Using NVivo, researchers can code words, phrases, or sentences to group and classify for underlying themes in the interview transcripts. This form of analysis is known as thematic analysis. Data analysis yielded insight into the collective experiences and opinions of the participants, and the researcher’s role was to interpret those offerings in relation to the research question. The philosophy is that the participants possess the information that will answer the research questions, and the research findings emerge from the data through the themes identified by coding, without the limitations of preconceived conclusions (Gibbs, 2010). Data analysis involved identifying the themes and common experiences shared in the interviews and constructing meaning of them in terms of the research question. Glesne (1999) tells us that

Data analysis involves organizing what you have seen, heard, and read so that you can make sense of what you have learned. Working with the data, you describe, create explanations, pose hypotheses, develop theories, and link your story to other stories. To do so, you must categorize, synthesize, search for patterns, and interpret the data you have received. (p. 130)

The literature (Gibbs, 2010; McLellan, MacQueen, & Neidig, 2003; Ryan & Bernard, 2003; Saldana, 2009) suggests looking for repetition of words or expressions, looking for differing experiences, as well as what is missing from the stories. Data analysis primarily involves the identification of themes, and a variety of methods can be used to accomplish this. Ryan and Bernard (2003) share some techniques to identify and recognize patterns and key words in the narrative. They tell us

Analyzing text involves several tasks: (1) discovering themes and subthemes, (2) winnowing themes to a manageable few (i.e. deciding which themes are important in any project), (3) building hierarchies of themes or code books, and (4) linking themes into *theoretical mode*. (p. 85)

It was proposed that, at the end of the project, study participants attend a 1-day roundtable dialogue session at which time the project summary and findings would be presented, but that was not possible due to scheduling logistics and budget restraints.

It is important to note the size of the research sample. Twelve leaders were interviewed with in-depth conversations. Forty-four percent of those invited responded to the survey. The sample size was a limitation of this research, and we do not have a picture of the entire network.

I was the only one involved in theming the data. Regular meetings were scheduled throughout the research project, and I gave the rest of the team updates at each meeting. It was interesting to experience the reaction of the team. As health care professionals, they looked at the preliminary findings through their lens and pushed back on one of the key recommendations made by participants. I felt a responsibility to remind them that this came from the grass-roots and front-line personnel who were frustrated by the absence of one group of professionals from their working teams.

Knowledge Translation

Knowledge translation “is about turning knowledge into action and encompasses the processes of both knowledge creation and knowledge application” (Graham et al., 2006, p. 22). Other terms used to describe the process are knowledge transfer, knowledge exchange, and knowledge mobilization. The findings from this research were shared in several ways.

The preliminary findings at the conclusion of the interview data analysis were shared with BCPSQC during a regularly scheduled meeting. After the survey results were analyzed, a formal report was written and shared with the BC Sepsis Network executive and the next steps in dissemination were determined.

A large format storyboard poster was prepared and displayed at the Quality Forum 2015, which is a conference designed to bring together those working to make health care better in British Columbia, hosted by the BCPSQC.

An online webinar was also used to share the results with research participants and front-line staff. The webinar included a slide presentation and a narrative, with time allotted for questions and answers following the presentation. The webinar was recorded and is available for BC Sepsis Network members to view at any time.

The research team was offered an opportunity to publish an article in *Healthcare Management Forum* in May 2016 (Gorley et al., 2016). This article was co-authored by key members of the BCPSQC council and was a chance to collaboratively document the findings and implications of the research.

Lessons Learned

During this research project, many valuable lessons were learned that novice researchers may find helpful. In reflecting on the process, I offer the following as considerations for those undertaking qualitative research.

1. *There is value in on-site visits.* The proposal and request for ethical approval included on-site visits to observe leadership in action in the network. Unfortunately, this was not possible due to privacy concerns and budget restraints, so the research was limited by not having the opportunity to triangulate the comments from the interviews with “real-life” observations and examples. It affected my ability to build relationships in the network, raise awareness of the research, and perhaps affect the survey response rate. One of the findings of the social network analysis component of the research was the identification of the “hubs” or boundary spanners in the network. It would have enriched the research findings to include real-time observation of how the boundary spanners connect groups within the network and provide examples of how this benefits the overall network.
2. *The effect of staff turnover.* A network is dynamic and organic, with members taking on different roles, joining, or leaving the network over time. My contact liaison in the network changed three times in 1 year, so it was necessary to continually build new relationships. Turnover also affected the research timelines because as one contact was preparing to leave, other priorities were more important. There were lapses between the time one contact left and another was hired, and then further delays as the new contact learned the role and became familiar with the research.
3. *More complete information regarding social network analysis.* It would have been helpful to provide more information on what social network analysis is and why the research participants may find it beneficial to their roles. However, in the interest of time, we had to be aware of the length of our communications. In fact, our letter of invitation and consent form were criticized for their length. I was also hobbled by limitations regarding contact with the participant group and was not able to have informal conversations about the value of social network analysis, how they link to organizational values and goals, and how it might benefit individuals in the network. A better understanding of the purpose of the survey might have resulted in a higher response rate, making the data richer and more significant.
4. *Selection of a social network analysis tool.* When selecting a social network analysis tool, there are considerations that I did not realize were important. The tool set-up was more complicated than I thought, and I was unaware of the importance of the survey field labels and how they affect results. In selecting a social network analysis software tool, I recommend asking the following questions:
 - a. How much algorithm knowledge is required to use the software?
 - b. How user-friendly and intuitive is it?
 - c. Can data be imported easily, or is it necessary to use preformatted and

- standard data? For example, can you modify the survey questions and can you import, rather than enter, participant data?
- d. What is the quality of the visuals produced? Can the visual maps be customized easily to include or exclude specifics?
 - e. What is the quality of the stats and analysis of the data? For example, charts, graphs, and narrative descriptions.
 - f. How difficult is it to change the data groups? For instance, if you want to group the participants differently, how difficult is that?
 - g. What level of tech support and training is available from the vendor if you have problems using the software?
 - h. Where are the data stored? Are they on a server in another country or stored locally on the researcher's computer?
 - i. What are the client's expectations for this software? The expectations should be realistic, and if not, the researcher must manage those expectations.

If I were to undertake another social network analysis project, I would separate the SNA tool from the graphic tool. In this case study, the data from the survey could be imported into a better graphic tool, but we were prevented from doing that because we had not stipulated it in our ethics proposal. In future, I would include that clause, and if I was not able to identify the graphic tool at the time of submitting the proposal, I would list the criteria that would be used to select it.

Be aware of any implications related to using a software tool that stores data on a server in another country. It may be necessary to include this information in the ethical approval and information provided to participants.

In addition, the strict privacy and confidentiality clauses in the ethical approval prevented the findings from being as useful as they could be. The hubs in the network could not be identified, meaning there was no way for managers to recognize and reward this important work. Conversely, if a hub was a bottleneck in the system, this could not be addressed. Network members like to see where they are on the map, and the privacy restrictions did not allow for this, making the maps far less meaningful to the participants:

5. *Use the time slippage and delays to do what can be done.* Time slippage and unforeseen delays are a common challenge when doing qualitative research. The best laid plans can go awry due to time slippage and events that are out of the control of the research team (e.g., turnover and participant availability). This is common when undertaking research in an active network where members are tasked with many demands on their time. It can be difficult to schedule interviews and meetings around participants' calendars, high demand times, work cycles, and other scheduling challenges. Scheduling of interviews and time to complete the survey were factors in some delays in the data collection phase. Further delays occurred when

the timing of the social network analysis survey was set to coincide with the World Sepsis Day communications. The survey itself was extended in the hopes of a higher completion rate. The software selected for this project did not perform as expected, so delays were necessary as the issues were resolved and the software was repaired. Be proactive and patient.

However, there are usually other things that can be done during those lag times. Use that gift of time wisely! Begin the draft report. Gather a list of potential journals to publish the research findings in. Gather more resources for a literature review. Craft a plan to disseminate the findings in non-academic circles.

6. *Link communications to what's important to the client and participants.* I learned that as a researcher, I need to constantly emphasize the benefits to the particular audience I am speaking to. Link the research to values, goals, and what is important to the individual.
7. *Knowledge translation accountability.* I learned that it is important to include a follow-up piece to the research activities. Develop a variety of presentations and materials for a wide range of audiences. This project was planned using the PAR model, but due to the timing and funding limitations it was not possible to follow up to see what action had taken place and what changes had occurred as a result of the research. In future research, I would include an accountability clause to ensure that the research had lasting effects.
8. *Address issues associated with the collaborative process proactively.* A research team may have members with different communication styles and different priorities. I had to be aware of these realities, self-manage my reactions, and address any differences in an effective way that did not damage relationships. I realized that the language spoken in research circles is different than what is used in the field. This meant that I had to take the time to ensure that we had clarity and understood the terms in the same way. There was some translation needed between the organizational languages that had to happen before the team could move forward. There were some organizational cultural differences that also needed to be accommodated. The health care providers were used to making decisions quickly and moving to action faster than the ethical review and research processes could allow. After the data had been analyzed and interpreted, there was a desire from many team members to downplay some aspects of the findings and highlight others. As a researcher, I had to be firm and respectfully insist that all the findings be included in the report. A qualitative researcher needs to be mindful of these potential issues and prepared to demonstrate leadership in anticipating and resolving them.

Additional Advice to Researchers

Every research project offers new learning opportunities, which are then incorporated into practice in subsequent projects. What follows is couched as advice to novice researchers and are the tried and true results from earlier research, applied here:

1. *Lead by example.* Be mindful that as a researcher, you will be relating to different organizational and professional cultures, which is important when crafting communications and building relationships that will foster engagement. Practice self-management and be self-aware and self-managing. Be proactive and self-motivated.
2. *Do a pilot.* Test the questions and the process. Research questions should be worded in the language of the participants, not the language of academic research.
3. *Keep a research journal and a checklist.* Reflective journaling is an important part of being a researcher. I designed a process for journaling after each qualitative interview, noting things like what was learned, what question arose, what surprised me, and so on. I also learned that the speech recognition feature on my computer is an ideal tool for capturing the post-interview and post-meeting notes!

I developed a checklist to make it easy to track the meeting dates, when the audio was sent to the transcriptionist, when it was returned to me and sent to the participant for verification, and so on. I also sent handwritten thank you cards to each participant after each interview, noting any significant points the participant made. Be organized in your approach and in your communications to participants and stakeholders.

4. *Work from your strengths.* I learned that the best work occurs when I can work from my strengths and approach the work in a way that generates energy for me. For example, I use PowerPoint to organize ideas and materials. I use colored pens and highlighters to inject some energy into the research journal notes. I create research journals with colored tabs for different sections and use a binder style so that sections could be moved around or expanded. I learned that it is an asset to the work to “own the process” and design the work in ways that are aligned with personal learning and working styles.
5. *Knowledge translation.* I learned the importance of allotting time for knowledge translation throughout and at the conclusion of a research project. The PAR model allowed for knowledge translation during the project, but opportunities for sharing the conclusions and findings often do not become apparent until after the project is finished and the funds are no longer available, which is a regrettable lost opportunity to highlight and expand the reach of the potential benefits of the research.
6. *Use technology creatively.* I saved transcripts as pdf documents and loaded them onto an iPad so that I could read them wherever I was. I saved them as audio files and loaded them onto an iPod and on a CD so that I could listen to them while walking or driving, hearing things like pauses and laughter that gave some insight into the participants’ meaning.
7. *Manage your bibliography from the start.* Find a citation manager software tool to manage and store reference items in a manner that means you can easily retrieve what you are looking for.

Be open to learning new tools and new software.

Conclusion

This research project provided many opportunities to learn about conducting research in a dynamic and organic organizational network. I hope this case study will enable novice researchers to avoid some of the challenges I encountered and will provide some ideas for efficient and organized approaches to data collection and analysis.

Exercises and Discussion Questions

1. What are some things that affect participant response rates?
 2. Often the research results are the point at which more questions arise. What questions could be explored in a subsequent research project?
 3. PAR emphasizes participation and action. How could we assess whether this research resulted in action and change?
 4. What knowledge translation activities and events could be undertaken?
 5. What lessons learned in this document can you apply to your own research?
 6. Research journals can be effective tools for researchers. A journal can contain your notes, decisions, and reasons for decisions or recommendations. A journal can be a place to clarify your thoughts for inclusion in your final report. How would you set up a research journal for your research project?
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Further Reading

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Web Resources

<http://collabor8now.com/wp-content/uploads/2013/07/Social-Network-Analysis-Proposition-V1.pdf>

http://www.monitorinstitute.com/downloads/what-we-think/catalyzing-networks/Catalyzing_Networks_for_Social_Change.pdf

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