

Speaker Notes: Qualitative Methods in Dissemination and Implementation Research

PART 4: IMPLEMENTATION CASE STUDY

Slide 1: Implementation Case Study

Welcome to Qualitative Methods in Dissemination and Implementation Research. This narrated powerpoint is the fourth in a series of presentations and describes how we used qualitative methods to study the implementation of a federally funded national provider based research network. The presentation is offered to you by the Translational and Clinical Sciences Institute of the University of North Carolina at Chapel Hill.

Slide 2: What were the specific aims?

With funding from the National Cancer Institute, my research team examined the implementation, impact, sustainability, and business case of the NCI's Community Clinical Oncology Program, or CCOP. The CCOP is a federally funded national provider-based research network (or PBRN) with a 29 year history of conducting cancer clinical trials in community settings and translating clinical trial results into better cancer care.

The specific aims for the project are listed here. The most pertinent aim for this presentation is the first aim. In this aim, we sought to identify the organizational factors associated with the effective implementation of a federally funded national PBRN.

Slide 3: What is CCOP?

A few words about the CCOP will set the context for what we did.

Established in 1983, the CCOP is a three-way partnership involving the NCI's Division of Cancer Prevention, selected cancer centers and clinical cooperative groups (CCOP research bases), and community-based networks of hospitals and physician practices (CCOP). NCI provides overall direction and funding for community hospitals and physician practices to participate in clinical trials; CCOP research bases design clinical trials; and CCOP assist with patient accruals, data collection, and dissemination of study findings. As of July 2012, 46 CCOPs operated in 28 states and included over 450 hospitals and physician practices, with the average CCOP comprised of about 10 hospitals or practice sites. CCOPs also include over 2,000 physicians, with the average CCOP composed of 48 physicians.

Slide 4: What conceptual framework did we use?

Although many investigators use qualitative research methods for exploratory purposes, we had some definite ideas that we wanted to examine in this study.

We viewed CCOP participation as an innovation for local networks of hospitals and physicians and used both innovation and organization theory to inform our investigation. An *innovation* is a technology or practice that an organization uses for the first time, regardless of whether other organizations have

previously used the technology or practice. In the case of the CCOP, and PBRNs more generally, the innovation is community-based provider participation in research, or CBPPR.

Briefly, our conceptual framework posited that consistent, high-quality innovation use (or implementation effectiveness) is a function of the organization's readiness for change, the level of management support and resources available, the implementation policies and practices that the organization puts into place, the climate for implementation that results from these policies and practices, and the extent to which intended users of the innovation perceive that innovation use fosters the fulfillment of their values.

Slide 5: How did we design the study?

For Aim 1, we used a longitudinal, multiple case study design with the CCOP as the unit of analysis. We used case study methods because such methods are well-suited for studying implementation processes, which tend to be fluid, non-linear, and context-sensitive. In addition to permitting in-depth analysis of individual cases, case study methods offer analytic strategies for systematically comparing patterns observed across cases.

For Aim 1, we were particularly interested in the start-up and early implementation of community-based provider participation in research (or CBPPR). Therefore, we used a purposeful (or purposive) sampling strategy rather than a random sampling strategy to select the CCOPs for case studies. Specifically, we selected CCOPs that had received initial CCOP program funding between 2002 and 2005. As it turns out, only three CCOPs meet this selection criterion. Therefore, we recruited all three CCOPs to participate in our study. Had more CCOPs received initial program funding between 2002 and 2005, we could have used a somewhat different sampling strategy. For example, we could have selected our cases for heterogeneity in or more characteristics, such as CCOP size, geographic location, or organizational structure. It's important when selecting cases for heterogeneity that the selection criterion has some basis in theory. That is, you want to have some theory (or at least an educated guess) as to how and why that selection criterion makes a difference. For example, do you expect large CCOPs to differ from small CCOPs in their start-up and early implementations processes, barriers, or facilitators? If so, how or why might they differ? Selecting cases deliberately for heterogeneity allows you to systematically explore theoretically important differences.

Slide 6: How did we collect the data?

We gathered data through site visits, telephone interviews, and archival documents from January 2008 to May 2011. A two-person research team visited each CCOP in the first year of the study. During the site visits, the team conducted 47 individual and group interviews with CCOP leaders, CCOP physicians and staff, and hospital managers. Again, we did not use a random sampling strategy to select interview participants. Instead, we deliberately selected interview participants for heterogeneity in the organizational roles that they played. We did so in order to obtain a range of perspectives on the start-up and early implementation issues occurring in the CCOP. In subsequent years, the team interviewed the CCOP PI and CCOP administrator from each CCOP separately by telephone to gather data about implementation processes, facilitators, barriers, challenges, and opportunities.

As is common in qualitative research, our interview guides were semi-structured and tailored. This means that each guide contained a set of main questions and a set of follow-up questions. We selectively asked the follow-up questions depending on how the interview participants responded to the main questions. We expected different kinds of people would have different kinds of information. For example, we expected the CCOP Administrator would know a great deal more than CCOP physicians about IRB and regulatory issues. So, we tailored the interview guides by organizational role. We constructed a table to help us map interview questions to constructs in our conceptual model and interview questions to interview participants. We used this table to make sure that we had good coverage of each construct and we had some consistency across interview participants in terms of who got which interview questions.

In addition, the research team obtained data from CCOP annual progress reports and grant applications. The NCI requires that CCOPs file annual progress reports and periodic re-applications for funding. These documents included detailed data on the CCOP organization's structure, operations, and patient enrollment data for each NCI-sponsored clinical trial.

Slide 7: How did we analyze the data?

We analyzed the data in three phases: data coding, within-case analysis, and between-case analysis. In the first phase, we used qualitative data analysis software, ATLAS.ti 5.0 (and later 6.0), to code the study data. The conceptual framework provided a starting list of codes, which we supplemented with emergent codes as analysis proceeded. Using a common codebook, two investigators conducted a pilot test by independently coding four transcripts. They then fine-tuned the coding manual's definitions, decision rules, and examples. Two other research team members coded the remaining documents and a third investigator reviewed the coding for accuracy and consistency. The research team coded over 1,000 pages of interview transcripts compiled from the three CCOPs.

Due to wide variation in the formatting of progress reports and grant applications across the three CCOPs, we could not assign these documents to ATLAS.ti. Instead, we extracted numerical data from these documents (e.g., clinical trial enrollment figures for individual physicians) and used reported information to triangulate the results of this study. Over 500 pages of progress reports and grant applications were reviewed.

In the second phase, we conducted a within-case analysis of each CCOP. We generated summary reports of each code for each CCOP in Year 1 through Year 3 of the study. We assessed the degree to which the construct emerged in the data (i.e., its "salience") and the degree to which relationships among constructs were consistent with hypothesized relationships in depicted in our conceptual framework. Salience in this study refers to the frequency that constructs (or corresponding codes) appeared in the data. For example, the implementation effectiveness construct appeared as a code 39 times in CCOP A interview transcripts, 49 times in CCOP B interview transcripts, and 46 times in CCOP C interview transcripts.

In the third phase, we applied the same criteria across the cases to determine if cross-case variation in implementation was consistent with the hypothesized relationships depicted in our conceptual

framework. We generated 12 meta-reports that summarized each code across all three sites from Year 1 through Year 3 of the study. Over 120 summary reports were generated from coded text segments.

Slide 8: How did we publish the results?

We published our case study results in an article that recently appeared in the journal *Implementation Science*. I encourage you to take a look at the article to see how we wrote up our qualitative research results.

Although our study was primarily qualitative in nature, we used numerical data from CCOP annual progress reports and grant applications to help us tell story. For example, we examined the distribution of patient enrollment in clinical trials among CCOP physicians and used the resulting to explain why one CCOP was more effective in implementing CBPPR than the other two CCOPs.

We also used quotes selectively from our interview participants to bring alive the themes that we identified in our data analysis.

Slide 9: Case Study Resources

I've posted several materials that I've mentioned in this presentation that I thought might be useful for other investigators. These materials include:

- The table we developed to map constructs to interview questions to interview participants
- The codebook we developed and used to guide our data analysis
- A sample memo that we wrote during the within-case analysis
- A sample meta-memo that we wrote during the between case analysis

You can also find a copy of the original R01 grant application in another section of the D & I portal.

Slide 10: Thank you!

- This concludes our 4-part series, *Qualitative Methods in Dissemination and Implementation Research*.
- Staff from the TraCs Institute are available for consultations. In order to become a member and request a consultation, please call us at 919-966-6022, email us at nctracs@unc.edu, or visit our website at tracs.unc.edu.