



Assessing local capacity to expand rural breast cancer screening and patient navigation: An iterative mixed-method tool



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ABSTRACT

Background: Despite federal funding for breast cancer screening, fragmented infrastructure and limited organizational capacity hinder access to the full continuum of breast cancer screening and clinical follow-up procedures among rural-residing women. We proposed a regional *hub-and-spoke* model, partnering with local providers to expand access across North Texas. We describe development and application of an iterative, mixed-method tool to assess county capacity to conduct community outreach and/or patient navigation in a partnership model.

Methods: Our tool combined publicly-available quantitative data with qualitative assessments during site visits and semi-structured interviews.

Results: Application of our tool resulted in shifts in capacity designation in 10 of 17 county partners: 8 implemented local outreach with hub navigation; 9 relied on the hub for both outreach and navigation. Key factors influencing capacity: (1) formal linkages between partner organizations; (2) inter-organizational relationships; (3) existing clinical service protocols; (4) underserved populations. Qualitative data elucidate how our tool captured these capacity changes.

Conclusions: Our capacity assessment tool enabled the hub to establish partnerships with county organizations by tailoring support to local capacity and needs. Absent a vertically integrated provider network for preventive services in these rural counties, our tool facilitated a virtually integrated regional network to extend access to breast cancer screening to underserved women.

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1. Background

Rural counties are highly heterogeneous with respect to population size, public health infrastructure, and access to clinical providers, as well as more intangible dimensions of social integration and community capital. Public health programs can maximize their program's adoption, maintenance, and

sustainability despite finite resources when providers gain the support and collaboration of local partners (Alexander et al., 2003; Cassidy, Leviton, & Hunter, 2006; Shapiro, Thompson, & Calhoun, 2006). Understanding the capacity of potential program partners in rural counties to collaborate can be critical for the success of community public health service programs (Meyer, Davis, & Mays, 2012).

Non-profit organizations often fill gaps in rural services through problem-specific programs. When they succeed, this can create demand for them to expand their services or catchment areas, but meeting these demands can strain the non-profit's personnel and financial resources (Allard & Roth, 2010; Mangham & Hanson, 2010; The Path to Scale: Ideas for Navigating Nonprofit Growth, 2013). Some organizations can scale up service provision within a program's original structure; for others, scaling up requires program redesign and partnering with other community groups to supplement resources and infrastructure (Mangham & Hanson, 2010; The Path to Scale: Ideas for Navigating Nonprofit Growth,"

Abbreviations: NBCCEDP, national breast and cervical cancer early detection program; BSPAN, breast screening and patient navigation program; ACA, patient protection and affordable care act.

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2013). Research shows that non-profits tend to underestimate local community groups' competencies and capacities during scale up (Chambers, 1994), so funding agencies and donors increasingly push non-profits to conduct "needs assessments" characterizing potential partners, resources, barriers and facilitators in their service area (Cohen et al., 2003; Davis et al., 2013; Leviton, Khan, Rog, Dawkins, & Cotton, 2010).

Most needs assessments, however, take a cross-section of a community's service delivery capacity, using only quantitative tools. This means, for example, reporting the number of mammography units available, hours of operation, types of providers practicing and types of insurance accepted (Peipins et al., 2012). Capacity, however, 'affects not only the potential of organizations for uptake in the sense of adopting health interventions and entering into partnerships, but also the ways in which these are implemented in practice and whether they can be sustained' (Stockdale, Mendel, Jones, Arroyo, & Gilmore, 2006, p. S1:137). Deploying quantitative tools at a single point in time, as has been common, may miss important contextual factors relevant to program implementation.

To assess capacity adequately, service organizations require longitudinal, iterative assessment tools better able to capture the dynamic context and inevitable changes that influence a local partner's capacity to facilitate program adoption, implementation, and maintenance (Weiner, Belden, Bergmire, & Johnston, 2011; Scheirer, Hartling, & Hagerman, 2008). The rapid assessment process literature offered a more robust approach, by encouraging use of both qualitative and quantitative data. These "mixed-method" designs enable evaluators to account for changes in local settings and organizational context (Dick, Clarke, van Zyl, & Daniels, 2007; Jilcott, Ickes, Ammerman, & Myhre, 2010; Lee et al., 2009). Rapid assessment processes themselves are commonly iterative, both in sequence of methods and waves of data collection. Drawing on that literature, this paper describes the development and application of an iterative, mixed-method assessment tool to assess county capacity, operationalized as the ability and potential to conduct community outreach and/or patient navigation in this partnership model. We demonstrate how capacity designations shifted over the course of our assessment process, as a result of integrating qualitative and quantitative data.

1.1. BSPAN: a program to expand rural access to breast cancer screening procedures for the underserved

In 1990, Congress authorized the Centers for Disease Control and Prevention to administer the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) through state cooperative agreements to provide under- and uninsured women access to breast and cervical cancer screening and diagnostic evaluation procedures (Centers for Disease Control and Prevention, 2009a; National Breast and Cervical Cancer Early Detection Program (NBCCEDP), 2013). The Texas Department of State Health Services administers the Texas version of the program, called the Breast and Cervical Cancer Services (Texas Department of State Health Services, 2016). While NBCCEDP has improved screening rates and mortality among underserved women overall (Benard, Royalty, Saraiya, Rockwell, & Helsel, 2015; Centers for Disease Control and Prevention, 2009b; Ehemann et al., 2006; Hoerger et al., 2011), significant rural distances and low BCCS participation rates among providers in North Texas represent persistent obstacles for under- and uninsured women seeking screening services (Rajan, Begley, & Kim, 2014). In light of these needs, a nonprofit organization, Moncrief Cancer Institute in Fort Worth, TX, created the *Breast Screening & Patient Navigation* (BSPAN) program to develop a virtually integrated network of local providers across 5 rural, underserved counties (Argenbright, Anderson, Senter, & Lee,

2013). Leveraging its existing BCCS contract, BSPAN would reimburse these providers for clinical breast exams, screening mammography, diagnostic imaging, and biopsy, as appropriate. This "virtual integration," in contrast to vertically integrated systems of unified ownership of service providers (Robinson & Casalino, 1996) enabled Moncrief to coordinate clinical procedures by creating reciprocal contract agreements and a common clinical information system (Inrig, Tiro, Melhado, Argenbright, & Lee, 2014). Additionally, the BSPAN program: 1) created a multi-county outreach strategy to increase women's awareness of availability of fully-funded screening procedures, and 2) developed an oncology-certified nurse-driven patient navigation telephone hotline to connect patients to local providers or mobile mammography vans and to ensure women were able to complete the breast screening process and achieve timely resolution of abnormal screening follow-up, as appropriate (Argenbright et al., 2013). In 2011, Moncrief sought to expand beyond the original 5 counties ("original") to twelve adjacent rural counties ("expansion"), and enlisted our evaluation team to reach a total service area of 17 counties covering ~14,000 square miles (Fig. 1) (Inrig et al., 2014).

We proposed evolving BSPAN into a regional, de-centralized, "hub-and-spoke" delivery model (Inrig et al., 2014) with Moncrief as the "hub," and trained stakeholders in the "spokes" (county organizational partners). While the hub assessed resources and maintained centralized management of all reimbursement activities in the expanding network, the spokes conducted outreach and patient navigation locally, as determined by their capacity, and contracted with local provider organizations for clinical procedures, (see Fig. 2). Expanding the program in this way would require rural county stakeholders to increase their engagement and participation. But which counties had the capacity to do this? How could Moncrief know which counties could sustain these increased levels of engagement? To establish this new partnership model, we worked with Moncrief to stagger the implementation strategy over time by county. We developed an iterative, mixed-method tool that Moncrief could deploy to assess each county's capacity to conduct community outreach and patient navigation in our partnership model.

2. Methods

2.1. County partners

Capacity has both structural and process elements (Goodman, Steckler, & Alciati, 1997). We operationalized capacity as an organizational partner's willingness to: (a) collaborate with other local organizations and the hub; (b) conduct specific program activities of community outreach, and/or patient navigation; and (c) adapt those activities to improve quality of care delivered, within the evolving BSPAN network (Hoerger et al., 2011; Stockdale et al., 2006). Potential partnerships, then, could entail one or both program roles: conducting clinical navigation, community outreach to promote awareness and access to screening procedures among local women. Clinical navigation of women across the screening continuum (see Fig. 3) included: assessing of financial eligibility, scheduling clinical procedures, following women through diagnostic resolution, and connecting to treatment for women with positive biopsy results (Tosteson et al., 2016). In practice, we used *High Capacity* to designate a county partner that could lead both navigation and outreach components of the BSPAN model; *Medium Capacity* to designate a counter partner only able to implement the outreach component; and *Low Capacity* to designate those county partners that needed the hub for both navigation and outreach (i.e., potential partners could not execute either component). Potential partners could be clinical entities (hospitals, clinics, individual physician practices, indigent medical

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