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Identifying Determinants of Implementation Success in a Program Adoption-Based Sustainability Strategy:

A Case Study of a

Small Alberta-Based International Development Organization

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This paper reports on a case study of the dissemination of a programmatic innovation to a network of non-profit partners as a component of a program adoption based sustainability and growth strategy implemented by a Canadian non-profit international development organization. The focus is on identification of facilitating factors and barriers related to adoption and implementation, and describing various stakeholders' constructions of program sustainability.

Introduction

Crutchfield and Grant (2008) studied twelve high impact non-profit organizations, which they describe as catalytic agents of social change. They found that six practices explained the level of the organizations' impact. Important among those practices was the nurturance of non-profit networks. This nurturance involved a fundamental re-orientation from "building an organization" to "building a movement", "building a field" or "building a network." Transformation from competing for scarce resources to "freely sharing wealth, expertise, talent and power with their peers" (p.22) was not perceived as altruistic, but as a way for the organization to accomplish its mission.

The practice of nurturing non-profit networks very much describes the transformation of Operation Eyesight Universal, a non-profit Canadian international aid organization, founded almost fifty years ago. Operation Eyesight Universal has shifted from a charitable model of sometimes delivering, but primarily funding and monitoring for quality assurance, programs in India and other developing countries to an international development model of building the sustainable capacity of indigenous organizations to provide eye health promotion, blindness prevention and treatment and rehabilitation services. As one senior official put it:

…and then you say to yourself, do you really want to own and deliver, be responsible for millions of dollars worth of programs in poor countries around the world? You would be better to teach people how to do it…you can eliminate avoidable blindness….Its really creating an infrastructure in developing countries of prevention and care.

The organization currently eschews identification as an aid organization and claims the territory of "sustainable development to create lasting changes …to improve peoples' lives." "Creative, respectful partnerships" are seen as the primary practice to accomplish this (Operation Eyesight Universal, 2011).

This sustainability criterion implicates another of the six practices identified by Crutchfield and Grant (2008), that of making markets work. In this case, it does not involve Operation Eyesight Universal's hospital partners in developing for-profit operations; but it does involve them in attracting paying clients through providing high quality treatment services. Revenue from these treatment services, along with some public support for the treatment of the poor, is used to fund community-based prevention programs and treatment for patients who cannot afford it.

The focus of this case study is the transfer, adoption, implementation and planning for sustainability of a community-based eye health promotion and blindness prevention program developed in Mumbai, India to non-profit hospitals in four other Indian sites: New Delhi, Hyderabad, Pune and Tamil Nadu. The original program was developed through funding and support of the Child Eye Care Charitable Trust, a local indigenous

charity. The desire to disseminate this intervention to other sites was based on knowledge gained through ongoing monitoring and shared experience, rather than through an evidence-based replication approach (Proctor and Rosen, 2006). This type of knowledge has been variously described as "knowing how", "knowledge grounded in action" (Ryle, 1949) and "tacit knowledge" (Polanyi, 1974; Greenwood and Levin, 2005).

The dissemination process is, in some ways, fundamentally different than is the case for scaling up evidence-based interventions, which tend to have their efficacy established in specialized settings which provide more ideal conditions than the eventual targets for implementation (Hoagwood et al., 2001). Therefore, the transfer and adoption process is complicated because a model of program fidelity based upon systematic replication is not available (Valentine et al., 2011), and there is more ambiguity in determining the acceptable boundaries of program adaptation.

Thus, Operation Eyesight Universal might be seen to be using a sustainability, impact and growth strategy which involves innovation, diffusion, adoption and implementation over time (Rogers, 2003). The focus in this paper is on the last two processes, with perspectives from both the adopting organizations (four hospitals) and those attempting to support the adoption (Operation Eyesight Universal and the Child Eye Care Charitable Trust).

Literature Review

The processes of adoption and implementation are best understood if placed within the context of a larger cycle of the diffusion of innovations. The classic formulation was

developed and refined by Rogers (2003). Diffusion is defined in linear communicative terms as "the process by which an innovation is communicated through certain channels over time among members of a social system" (Rogers, 2003, p. 3). This process is conceived as involving four main elements: an innovation, communication channels, time and a social system. Innovations are described in perceptual terms as ideas, practices or objects seen to be new by some unit of adoption. Their generation is understood as a conventional research and development process initiated through identification of an unmet need.

Adoption of innovations is facilitated when they confer some relative advantage on the adopter, are seen as compatible with adopter values, needs and experience, are of manageable complexity, can be implemented on a limited trial basis and produce observable outcomes. Communication channels are important because potential adopters evaluate innovations through a social process of modeling and imitation of the actions of similar innovators or adopters. The time factor is seen as necessary to accommodate an innovation decision process which involves five main steps: development of knowledge of the innovation, persuasion resulting in an evaluation of the innovation, coming to a decision to adopt the innovation, adaptation and implementation, and development of confirmatory reinforcement of the adoption decision. Diffusion is seen as occurring within a social system, and therefore, affected by the structure and processes of that system.

When applied to organizations, rather than individuals, the adoption process is conceived as involving a two-stage initiation sub-process and a three-stage implementation sub-process. Agenda setting, the first stage, is framed as a continual organizational activity of environmental opportunistic surveillance for new ideas that

might decrease a performance gap. Through this activity, the need for the innovation is perceived and placed on the organization's agenda. The second stage involves reality testing to match the organizational problem with an innovation which constitutes a feasible solution.

Implementation begins within the re-defining/re-structuring stage in which the imported innovation is re-invented to better fit with the characteristics of the adopting organization. It continues through clarifying and routinizing stages. Clarifying involves collective social construction of the meaning of the innovation as it is put into broad use. Routinizing involves incorporating the innovation as a regular non-novel activity within the organization's repertoire of activities.

Rogers' (2003) comprehensive model has been very influential, but has also been criticized as not applying well to some aspects of complex process-based innovations in human service organizations (Greenhalgh, Robert, Mcfarlane, Bate and Kyriakidou, 2004: Rauktis, McCarthy, Krackhardt and Cahalane, 2010). This is because of Rogers' focus on individual adoption of simple product-based innovations through imitation.

Greenhalgh et al. (2004) have adapted Rogers' model to the issue of organizational adoption of complex innovative program processes on the basis of a comprehensive, systematic, multi-disciplinary review of the literature. In addition to the attributes of the innovation related to adoption described by Rogers, they add the adaptiveness of the organizational structures and systems required for full implementation of the innovation, the level of uncertainty of outcome that the adopter views as personally risky, the likelihood of improvement of adopter task performance, the degree of

transferability and codification of the knowledge required to implement the innovation and the level of development of the innovation as an augmented product, incorporating customization, training and consultation.

Greenhalgh et al. (2004) also conceptualized individuals in service organizations as active participants in the process of adopting innovations, based upon general psychological antecedents, context-specific motivations, skills and needs, the meaning attributed to the innovation, and the influence of decisions made by other organizational actors. Different concerns effect adoption at different stages. In the pre-adoption stage information is required about how to use the innovation and how it will personally affect the adopter. Access to training, consultation and support are required in the early use stage. The adequacy of feedback about the consequences of the innovation is of concern to established users. Beyond adoption by individual practitioners, assimilation by service systems was characterized as "an organic and often rather messy model… in which the organization moved back and forth between initiation, development, and implementation, variously punctuated by shocks, setbacks, and surprises" (p.601).

Greenhalgh et al. (2004) have distinguished between spread of the innovation through purposeful, planned, and often centralized and hierarchical, dissemination as opposed to informal diffusion. However, throughout this continuum the spread of innovations is influenced by the structure and quality of adopters' social networks, their level of similarity with current users, advocacy by credible opinion leaders, the presence of active champions for the innovation and the presence of actors who link the adopting organization to its relevant environments. Where formal dissemination is undertaken, its success will be enhanced if those leading the dissemination take full account of the

balance of costs and benefits experienced by the adopters, incorporate adopters' perspectives, tailor the innovation and its implementation to the adopters' environments, communicate effective messages through appropriate channels and engage in rigorous monitoring and evaluation.

Successful assimilation of innovations was also found to be related to structural characteristics of adopting organizations including sufficient size, having attained maturity in the organizational life cycle, being functionally differentiated into semi-autonomous specialized units with foci of professional knowledge, and having decentralized decision-making structures. In addition, resource flexibility was important. Beyond these structural factors, the presence of the intellectual capital to absorb new knowledge and integrate it with existing knowledge is facilitative; as well as the adequacy of a receptive capacity for change, including clear organizational vision, effective leadership, a learning culture and adequate production of evidence of effective processes and outcomes (Greenhalgh et al. 2004).

Adopting organizations are likely to be most ready for change when adopters perceive their current situation as undesirable, when the innovation is a good fit with the culture and capacities of the organization, when implications of adoption are comprehensively and reliably assessed, when supporters exercise more collective influence than opponents, and when resources are available and dependable over time. Important contextual factors in the adoption process include the presence of informal networks favourable toward the adoption, the use of intentional diffusion strategies and the presence of a supportive policy environment linked to funding (Greenhalgh et al. 2004).

Implementation refers to the stage of the process which involves "the actual efforts that an organization has undertaken to offer the new service and to integrate this service within the organization" (Zazzali, Sherbourne, Hoagwood, Greene, Bigley and Sexton, 2008, p.39). Implementation failures have been found to be far more common than once thought (Rossi, Lipsey and Freeman, 2004). Greenhalgh et al. (2004) found that implementation is facilitated by a flexible, adaptable and decentralized organizational structure, senior management support, broad staff participation, effective training, dedicated and reliable funding, good inter-unit communication, strong inter-organizational networks and adaptation to the local environment. Fixsen, Naoom, Blase, Friedman and Wallace (2005) synthesized the literature on implementation and identified five core implementation components: staff selection, pre-service and in-service training, ongoing consultation and coaching, staff and program evaluation, facilitative administrative support, and systems interventions. The latter are strategies to work with external systems to secure adequate financial, organizational and human resources. Especially difficult are the sometimes contradictory goals of implementing the program with fidelity to its effective elements while innovating to enhance the fit with local contextual factors.

Zazzali et al. (2008) have developed a useful model for investigating the organizational innovation adoption, implementation, and continuation processes, based on three sources: the diffusion of innovation literature described above, the organizational behaviour literature and empirical research on adoption and innovation. The model involves three elements, which can be used to organize the literature: drivers of adoption, organizational facilitators of implementation and continuation and characteristics of the innovation which support implementation and continuation. They posit three classes of drivers of adoption, beginning with rational/technical motivations by adopting organizations to meet their service missions more effectively and with

more efficient resource utilization. Asymmetrical resource dependencies refer to the influence of those organizations which control financial and other resources required by the adopting organization, principally funders. Institutional effects refer to pressure to conform to prevailing social norms, which may originate in public policy, professional cultures and/or the actions of organizations which are influential in defining a particular field.

Four classes of implementation and continuation facilitators are identified, beginning with leadership. Formal leaders can facilitate implementation and continuation by developing and allocating resources of various kinds, coordinating organizational efforts and motivating and supporting the implementation efforts of staff. In addition, leaders can support a learning and experimental culture through the manner in which they confer rewards. Formal and informal organizational leaders can act as champions and opinion leaders. Second, implementation and continuation are facilitated when adequate and appropriate resources are available or attainable. This includes not only financial resources, but physical resources and space, human resources, knowledge resources, reputational support and shared resources from other organizations. Third, an organization's structure must be aligned with the requirements of implementation and continuation or be flexible enough to be changed to accommodate them. Decentralization of decision-making is especially important. Fourth, the organizational culture and climate can facilitate implementation and continuation if the innovation fits well with the culture and is defined by staff as enhancing the work environment. A culture supportive of innovation may also be important.

The flexibility and feasibility of the innovation are additional salient factors in facilitating implementation and continuation. These characteristics enhance the capacity to

customize to the organizational internal and external context, which has been shown to enhance successful implementation (Westfall, Gulati and Shortell, 1997). However, there is a trade-off; given the evidence that implementation that more closely resembles the original model, demonstrating high fidelity, seems to produce better outcomes (Jerrell and Ridgely, 1999; McHugo, Drake, Teague, and Xie, 1999).

Table 1 presents an integrated model of program adoption, implementation and continuation, in which the Zazzali et al. (2008) conceptual framework is used as a template to integrate factors described by Rogers (2003), Greenhalgh et al. (2004), and Fixsen et al. (2005). This integrated model is used as a framework to guide the analysis of the case study data. It broadens the range of rational/technical adoption drivers to include feasibility, urgency of the need for change, level of uncertainty and potential. An external environment category is added to facilitators, and the organizational culture and climate category is expanded to include capacity for knowledge absorption and incorporation of change. Structure is expanded to include communication and informal elements. The recruitment, characteristics and capacity development of human resources are emphasized.

Table 1: Integrated Framework of Program Adoption

Drivers of Adoption	

• Rational/Technical Motivation
   o Confers relative advantage (R)
 	
   o Feasible solution to organizational problem (R)
 	
   o Unacceptability of current situation (G)
	o Perceived potential to improve performance (G)
	   o Low level of outcome uncertainty related to personal risk (G)
	
	• Resource asymmetry (Z)
	• Institutional norms (Z)

Organizational Facilitators of Implementation and Continuation

- Resources (Z)
  - Resource Flexibility
  - Available and dependable over time (G)

  - Structural connection to similar innovators or adopters (G)

  - Human resources
    - Effective staff selection (F)
    - Staff with psychological antecedents (tolerance of ambiguity, intellectual ability) (G)
    - Staff with context-specific knowledge and skills (G)
    - Staff who attribute desirable meaning to the innovation (G)
    - Training (pre-service and in-service) (F)
    - Consultation and support (G)
    - Coaching (F)
    - Available program and staff evaluation feedback (G)

- Structure (Z)
  - Formal
    - Size (G)
    - Maturity and stability (G)
    - Functional differentiation and specialization (G)
    - Decentralized decision-making (G)
    - Broad staff participation (G)
    - Good inter-unit communication (G)
    - Adaptability (G)
    - Fit with intervention requirements (Z)
  - Informal
    - Supportive internal networks (G)
    - Influence of other organizational decision-makers (G)

- Leadership (Z)
  - Opinion leaders (G)
  - Active champions (G)
  - Senior management support (G)
  - Facilitative administrative support (F)

  - Developing and allocating resources (Z)
- Systems Interventions (F)
  - Coordination (Z)
  - Motivation and support (Z)
  - Promoting a Learning, Experimenting Culture (F)

- Organizational Culture and Climate
  - Capacity to absorb and integrate new knowledge (G)

  - Receptive capacity for change (vision, learning orientation, production and use of evidence) (G)

  - Theory of innovation is a good fit with organizational culture (Z)
  - Staff perceives innovation as Enhancing work place climate (Z)

- External Environment
  - Informal networks favourably disposed to the innovation (G)
  - Effective diffusion strategies (G)
  - Positive public policy environment linked to resources (G)
  - Strong inter-organizational collaborative networks (G)

  - Actors who link organization to external environment (G)
  - Adaptation of innovation to external environment (G)

Characteristics of Innovation	
- Compatible with adopter values, needs and experience (R) - Manageable complexity (R) - Can be implemented on a trial basis (R) - Produce evaluable results (R) Degree of transferability and codification of knowledge required to implement (G)	- Degree of development of innovation as an augmented product incorporating customization, training and consultation (G) - Degree of knowledge regarding the consequences of implementation (G) - Feasibility, given available Resources and demands (Z) - Flexibility (Z)

(G) refers to Greenhalgh et al., (F) refers to Fixsen et al., (R) refers to Rogers and (Z) refers to Zazzali et al.

Case Study Method

This study endeavoured to collect data through interviews with board presidents, board members, executive directors and staff, and through the review of documents related to the innovating organization, the disseminating organization and the adopting organizations. Interviewees were invited to nominate relevant documents, but none were forthcoming, perhaps because of how cumbersome it was to copy them and ship them from India to Canada. Semi-structured open-ended interviews were conducted with twelve staff and board members representing all of the dissemination sites, the disseminating organization and the innovating organization.

The study was guided by the following research questions, which formed the basis of the interview schedules:

1. What characteristics of the organizations, actors, processes and settings seem to be associated with successful program adoption experiences?

2. What characteristics of the organizations, actors, processes and settings seem to present barriers to successful program adoption?

3. What kinds of human, financial and intellectual capital are required for successful program adoption?

4. How do the organizations involved construct the concept of organizational sustainability?

5. What role does an adoption strategy play in the range of organizations' sustainability activities?

Interview schedules were collaboratively developed with Operation Eyesight Universal senior staff.

Analysis of the data related to the first three questions was deductively structured according to the literature-based framework presented in table 1. Thematic inductive analysis was used to analyze the data related to the last two questions (Patton, 2002). In addition, a telephone focus group was held with 14 representatives of non-profit organizations in North America to assess the transferability of the findings. This included five organizations with experience in program adoption and nine with experience in program dissemination or diffusion.

Findings

The findings are explicated by first describing the case under study, and then discussing what was learned about drivers of adoption, facilitators of and barriers to implementation and continuation, and the influence of characteristics of the innovation. Finally, constructions of sustainability are elucidated, and the role of the adoption strategy in the organizations' overall sustainability actions is described.

The "bounded system" (Stake, 2000) composing this case includes an innovating organization (Child Eye Care Charitable Trust), a disseminating organization (Operation Eyesight Universal) and six hospital adopting organizations in four sites in India. They are all non-profit organizations, and all except for Operation Eyesight Universal are exclusively Indian organizations. Operation Eyesight Universal's headquarters is in Canada, and it has organized an Indian affiliate, registered as a non-profit in India, and governed by an Indigenous board of directors with some overlap with the Canadian board. The boundaries among these sub-systems are somewhat fluid, as Operation Eyesight Universal has been involved in funding the development of the innovation and also, through this role, in shaping its development. The adopting organizations have all been partners of Operation Eyesight Universal, which has funded, monitored and shaped their in-patient programs.

The immediate environment of this case includes the communities which form the catchment areas for the adopting partners, potentially competing private sector providers within these communities and a range of local community-based non-profit health, education, training and social service organizations. The environment of the case also includes local, state and the national government in India; as well as the federal government in Canada, which is a significant funder of Operation Eyesight Universal through its international development agency. National and international professional organizations; as well as the World Health Organization and the International Association for the Prevention of Blindness, and Vision 2020 India (the national consortium of non-profit blindness organizations) play key roles in defining the field within which the case operates (Resnikoff, Kocur, Etya'ale, and Ukety, 2008,

Resnikoff and Pararajasegaram, 2001). Corporate and philanthropic supporters of Operation Eyesight Universal are also important stakeholders.

The patterned sequence of activities within the boundaries of the case includes dissemination, adoption, implementation and continuation of the innovation. Implementation in the four sites had occurred between two and six years before the interviews. The innovation involved a comprehensive community-based eye health and blindness prevention program developed in urban slums and poor rural villages. It includes four elements: community action to affect the social and economic determinants of eye health, community-based health education and screening, primary eye care in the context of community-based health care and coordination with secondary and tertiary ophthalmic care. This program adheres to best practices in blindness prevention (Hubley and Gilbert, 2006), and uses many of the methods associated with community development practice (Henderson and Thomas, 2001; Homan, 2010); but it is seen as an innovation by parties involved. An Operation Eyesight Universal staff member described the program as **"so genuinely unique."** Collaboration with public sector and other nonprofit sector organizations is central; as is ongoing sustainability.

The innovator described the development and nature of the innovation as follows. Development followed very much of a "knowledge grounded in action" approach (Ryle, 1948).

See, in Mumbai I had done it from 1981 to 2003. That was a replication of various slum pockets with a demand from the community and actual

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community participation which resulted into the, like a facility linkages between the community and the service provider, the inter-sectoral coordination, social mobilization. We could implement new and improved technology and it improved access to quality eye care and healthcare in a cost-effective way.

Drivers of Dissemination and Adoption

The data allowed us to examine the drivers of diffusion and of adoption from the perspectives of both the disseminating organization and the adopting organizations. However, it is important to note that these activities have occurred in a period of changing institutional norms, significantly re-orienting the field of blindness service within developing countries toward various levels of eye health promotion and blindness prevention, with a particular focus on the poor, given an emerging understanding of the connections between poverty and blindness (International Association for the Prevention of Blindness and Vision 2020, undated; Khanna, Raman and Rao, 2007). This is a component of a growing emphasis on promotion and prevention in global public health (Ayres, Paiva and Franca, 2011). A key event in defining these norms was the founding of Vision 2020, the global initiative to eliminate avoidable blindness in 1999 (World Health Organization, 2007). The chief executive officer of Operation Eyesight Universal is a member of the board of trustees of the International Association for the Prevention of Blindness, a co-sponsor of Vision 2020.

The main drivers which led Operation Eyesight to disseminate the innovation fit within the rational/technical classification. This began with the emergent perception

that a large proportion of blindness was avoidable (treatable or preventable); but that too little was being done to find treatable cases and prevent blindness in preventable cases. This perception emerged partially through serendipitous contact with the innovating organization, which was originally funded by the disseminating organization to provide service to the poor, and partially through attention to research findings. A senior official from Operation Eyesight Universal put it this way:

When we gained some experience with the Mumbai program, um, it was obvious that prevention …was an important, but almost completely ignored opportunity….there was very clear evidence coming out of research that ….80% of blindness was avoidable…

This led to efforts to involve the ophthalmic hospitals that the organization funded to also conduct community outreach activities. In some hospitals, this simply involved holding screening clinics in local areas when time was available, and this was seen as insufficient. An alternate model that was available, with a community component focused on the creation of local vision centres (Rao, 2005) was seen as costly, not engaging enough with community and not integrating community eye care with primary care. Therefore, the innovation was selected as a means to influence the funded hospitals to develop **"an integrated model."**

Another important factor for Operation Eyesight Universal and for the adopting organizations was the contribution that the innovation could make to hospitals' financial

sustainability. This is because the innovation would lead to increased patient load, both through direct case finding and through increasing awareness of the possibility of treatment, the hospital and its services. This is especially true if the innovation is applied to relatively larger community catchment areas. Beyond this, if the innovation develops sufficient local support, it could replace funding from the disseminating organization with local public and philanthropic funding. This is central to the Operation Eyesight Universal sustainability and growth strategy, as it allows it to use its resources to disseminate the program to new adopting organizations. However, although some adopters indicated that the innovation had produced expansion of their organization, others pointed out that the mix of self-paying, government-supported and non-paying patients is very important. Possessing the latest equipment is a key factor in attracting self-paying patients, and the disseminating organization often funds this. One senior manager of an adopting hospital was concerned that staff implementing the innovative program were establishing a norm of patients who could afford to pay not being expected to pay.

From the point of view of the adopting hospitals, beyond the rational driver described above, the innovation was seen as a means to expand, stabilize and improve community outreach efforts. In addition, there was clearly a situation of asymmetrical resource dependencies as the disseminating organization is a significant funder of the core hospital activities.

Beyond this, there was also evidence of the presence of a moral driver relating to the convergence of the core values of the organization with the underlying value framework of the innovation. A senior staff of one of the adopting organizations put it this way in referring to children living in poverty**:**

When we started out, we thought no child should go blind or suffer from other sight related problems.

Facilitators of and Barriers to Implementation and Continuation

Facilitative factors were found related to resources, organizational structure, leadership, organizational culture and the external environment of the organizations.

Resources

Financial and knowledge resources from the disseminating organization were especially important in supporting the implementation and continuation of the innovation. Financial resources included three to five years of guaranteed operating funding, and knowledge resources included a clearly articulated and communicated implementation sequence, the provision of two episodes of staff training and the ongoing provision of consultation. Thus, the innovation was developed as, at least, a partially augmented product.

…absolutely new idea and new experience for me…she gave me the manual….and she would come monthly and train us….she would guide us…..and by the end of eight months we knew what to do…

This also requires appropriate and sufficient resources at the disseminating organization, and in some cases sufficient staff time was not available. It was also

important that the adopting organization possess good knowledge about the relevant problems in its catchment area. Flexibility of the funder regarding internal reallocations within the budget was important, and changes in output expectations, especially in the absence of rapport between staff of the disseminating organization and the adopting organization, were difficult.

The training and consultation assisted in the selection of appropriate staff and in helping them to enhance skills required for program delivery. Sometimes appropriately skilled staff could be recruited, but sometimes additional training had to compensate for the lack of appropriate candidates. In one case a coordinator with appropriate training (social work) and **"attitude"** could not be recruited or retained, and having the wrong person in the job was seen as the principle cause of failure to meet output targets. Implementation of the program also assisted the adopting organization to leverage additional resources from self-financing patients, public and philanthropic sources to meet increased surgical demands related to enhanced awareness and recruitment through screening.

Another important resource provided by the disseminating organization was monitoring. Formal evaluation of outputs was only implemented when monitoring indicated problems related to volumes of service delivery, but intensive monitoring in the early stages of implementation was very useful in influencing successful implementation. This monitoring involved review of program statistics and observation. When it did not occur frequently enough in one site, this was identified as a key factor in limiting the optimal implementation of the program.

Structure

An important structural factor in the implementation of the program was the establishment of a dedicated unit so that hospital demands did not draw staff away from community preventive activities and concentrated experience could improve performance. Day to day decision-making was often highly decentralized with each field staff implementing the screening survey in a particular small area, based on her or his emergent understanding of the needs, culture and circumstances in that area. Another structural factor involved the capacity to establish functional and effective working relationships with other service agencies. This facilitated both contact with community members and the exchange or sharing of resources.

Culture

Facilitative elements within the organizational culture include support for outreach and prevention programs generated through delivery of similar programs in the past, an orientation toward serving the poor and other marginalized populations, and a commitment to quality assurance, establishing and reaching quality outcome targets in surgical care. The disseminating organization felt that it was important that a sense of ownership of the innovation develop early. One impeding cultural factor in the view of some adopting organizations was the expectation that a target number of individuals be referred to the hospital monthly by each worker in the innovative community program. When this was combined with lack of training in motivating people to pay what they could, it was seen as generating a perverse incentive, thus placing a financial burden on the adopting organization.

Though the numbers go up the finances go down.

In another case, a rigid institutional medical culture was seen as impeding the introduction of the innovation, given its basis in community collaboration and ownership (Bracht and Tsouros, 1990).

We want somebody…that can adapt to a hospital-based community approach…they see that just having a hospital alone is not serving the purpose of reaching out to the community.

Similarly, a culture of specialization in particular, medical or surgical interventions for particular diseases, can impede implementation of even the medical preventive aspects of the innovation, including immunization and vitamin supplementation.

External Environment

Environmental facilitative factors included existing positive relationships with public and philanthropic funders, the existence of a nation government policy on blindness control (Ravilla and Joseph, 2011; Sommer, 2011) and a positive reputation through past contact with some marginalized communities.

...we had a good rapport with the tribal communities….and our field staff, when they went to the villages and told them that they're coming from this hospital, there was more of an acceptance of the facilities offered to them.

On the other hand, competition from corporate hospitals was a significant impeding factor in some cases.

Rural communities presented geographic distance, attitudinal and skill barriers to implementation of the innovation. These included absence of a belief in entitlement to health care and lack of help seeking skills on the part of residents. Conversely, the largest urban sites presented barriers related to complexity and the potential for duplication.

You have too many players in Mumbai. Coordinating, networking, developing partnerships….Everything is a challenge.

Leadership

Committed senior leadership in the adopting organizations was very important in successful implementation of the innovation. **"Everything's about leadership."** Sometimes this leadership developed when senior personnel had the experience of involvement in outreach activities. One key factor was the necessity of a dual orientation toward the technical aspects of the innovation (insuring high quality eye screening and surgical follow-up) and the community development aspects (insuring effective rapport building and community problem solving). One implementation failure was attributed to the adopting organization's leadership being committed to the imposition of a good technical medical solution (establishing a high quality screening and eyeglass facility), as opposed to a comprehensive case finding survey and initiation of community issue identification and community action. In another case, a

strong, committed project director was able to partially compensate for senior adopting organization leadership not committed to community development, although the impact of the innovation was limited because the coordinator was not allowed to spend sufficient time. In addition, the disseminating organization identified the necessity of leaders in the adopting organization who can understand change and implement change management.

We really have to have people who understand what it takes to facilitate change.

Characteristics of the Innovation

The flexibility and practicality of the innovation in adapting it to the adopting organizations' internal and external environments has sometimes been problematic. Fidelity criteria have not been articulated, even at the level of principle (DePanfilis, Filene and Brodowski, 2009), so the desirable scope of consistency in implementation is unclear. This has sometimes resulted in lack of necessary adaptation, for example, of field workers' salaries to the local labour market. In another case, lack of flexibility in the methodology for the baseline community case finding survey was seen as contributing to the withdrawal of the adopting organization. A staff member in the disseminating organization described the needed scope of flexibility as follows:

….instead of having very specific as to how the project should be run, probably, if we have a larger framework or broad guidelines

Alternately, in referring to the four adoption instances a senior official in the disseminating organization argued for maximum flexibility on the basis that **"each one of them is unique…none of the projects is from the same packet."** This official thought that the model should be constantly evolving through **"cross learning"** among the organizations. This involves an ultimate "knowledge grounded in action" approach (Ryle, 1949); and may result in implementation which is very different than the innovation. In a sense, if this approach is taken, a broad concept is being diffused, as opposed to an innovative program. Increased risk of failure may result if ongoing learning does not yield knowledge of required elements and the acceptable range of variation in their implementation.

Constructions of Sustainability

The innovating, disseminating and adopting organizations expressed a complex construction of sustainability. Seven factors were implicated in the sustainability of the innovative program in the sense of continuation after the initial funding period. They involved both the development of direct revenue streams and the garnering of broader support.

 The first factor was sufficient commitment from the adopting organization, and the second was an effective referral route to the hospital inpatient and surgical services. This related both to the need for timely treatment of those with remediable eye disease identified in community screening so the program could maintain its reputation, and to

generating revenues from patients who are at least partially self-paying or government supported.

A third factor involved community ownership (Savaya, Elsworth and Rogers, 2009; Bracht, Finnegan, Rissel, Weisbrod, Gleason, Corbett, and Veblen-Mortenson, 1994), sometimes expressed through incorporation of a community-based non-profit organization. As a senior official in the disseminating organization put it:

If your community doesn't know that you are important to them, or that you exist, you're not very sustainable

A fourth factor involved integration with the range of non-profit service providers so that a critical mass of stakeholders is supportive, and so that they provide allied services related to the innovation. A fifth factor relates to garnering support from local governments, which can influence the delivery of national and state government resources. As an official of the disseminating organization said:

If local government acts a watch-dog, acts as an interface between government departments, programs and the community…the project will be sustainable.

A sixth factor involves policy advocacy with the national and state governments, and a seventh factor involves "creating evidence."

Figure A summarizes the findings of the case study.

FIGURE A: CASE STUDY FINDINGS

Drivers of Dissemination Sustainability and Adoption	Facilitating and Impeding Factors	Innovation Characteristics	Sustainability

Drivers of Dissemination Sustainability and Adoption

Institutional Norm
- Blindness Prevention

Rational/Technical
- Prevention best investment where possible
Improve hospital outreach

- Increase patient load and sustainability

Asymmetrical Resource Dependency
- Disseminator is funder

Moral
- Service to the poor

Facilitating and Impeding Factors

FACILITATING
Resources

- Funding
- Flexibility in Budget
- Reallocation
- Implementation plan
- Training
- Consultation –staff selection
- Monitoring and evaluation

Structural

- Dedicated decentralized unit
- Functional external organizational relationships

Cultural
- Support for prevention
- Ethic of service to poor
- Quality assurance
- Ownership of innovation

Environmental
- Positive funder relationships
- National government policy
- Positive relationship with marginalized communities

Leadership
- Commitment to innovation
- Dual orientation to technical and community development
- Change management

IMPEDING
- Changes in output expectations
- Perverse incentives of referral targets
- Institutional medical culture
- Culture of medical or surgical specialization
- Distance, lack of help-seeking skill and beliefs (rural)
- Complexity (urban)

Innovation Characteristics

- Lack of fidelity criteria leads to inflexibility in reproducing original version of innovation

- Lack of fidelity criteria may lead to adoptions which lack core aspects of the innovation

Sustainability

- Commitment

- Effective hospital/surgical referral

- Community ownership

- Integration with service providers

- Local government support

- Policy advocacy with senior governments

- Creating evidence of impact

Focus group participants agreed that the findings accurately reflected a general description of their experiences. However, one new element was identified from the participants' experience and one situation was identified where findings may not be transferable. As one participant said:

I think in general, when I read the findings, I felt that they did, um, mirror a paper that I had recently written about our experiences in adopting two gender-specific (name of program).

Service system factors were, however, found to be more important in the participants' innovation dissemination and adoption experiences than the case described in this paper. Especially important were clear and comprehensive communication throughout the entire service system, encouraging appropriate referrals, and managing prevailing service system preferences and reimbursement policies. This may relate to greater development of service systems in North America than in India. It was also stated that the findings may not apply as well to multi-organizational adoptions at the community level, which require a more community development approach.

Discussion

This case demonstrates that the success of a program dissemination-based sustainability and growth strategy, involving the nurturance of non-profit networks, is largely dependent on the nature of the dissemination, adoption, implementation and continuation processes being implemented in the diffusion of the innovation. In Crutchfield's and Grant's (2008) terms, high impact non-profit organizations must be highly skilled in managing these processes. Therefore, the literature on dissemination of innovations can provide practice guidance to those organizations attempting to elevate their impact through "the nurturance of non-profit networks".

This case study has yielded some findings which confirm and illuminate previous research in the context of international development, community-bases health promotion and disability prevention. Other findings suggest some additional elements, which are important to be considered by non-profit organizations involved in a program dissemination-based sustainability and growth strategy.

With regard to drivers of dissemination and adoption (Zazzalli et al, 2008), the importance of rational/technical motivation, resource asymmetry and institutional norms was confirmed. The stage was set by the global re-orientation toward eye health promotion and blindness prevention. Then, the two stage initiation process described by Rogers (2003) in relation to adopting organizations seemed to apply to commitment to the innovation by the disseminating organization. The agenda was set when the disseminating organization began to perceive that the innovation developed by one of its beneficiaries could be diffused to other beneficiaries to align with the emergent

preventive institutional norm. Testing of the dissemination of the innovation yielded information that it could be a prime tactic in the disseminating organization's strategy of transforming from a charitable funder to a developmental capacity builder. Motivation for both the disseminating and adopting organizations also related to the innovation's revenue generating potential. Ideally, this was thought to lead not only to self-financing of the innovation, but also to additional revenues to enhance the hospital adopters' sustainability. Self-financing of the innovation would result in flexibility for the disseminating organization to use its resources to diffuse the innovation to new organizations.

Analysis of this case yielded some novel findings. One relates to the importance of moral drivers, which may be especially salient for human service organizations. The other relates to the balance between the asymmetrical resource dependency of adopters upon the resources of the disseminating organization and the functional partnership required between the two parties. In some sense asymmetricality is inconsistent with the collaboration required for local adaptation of the innovation, development of a sense of ownership by the adopting organizations and local capacity building.

In practice terms, for both the disseminating and adopting organizations, it is important to examine the fit of the innovation according to the range of drivers. Will the parties experience the support of institutional norms or will they be swimming against the current? Will the innovation enhance the effectiveness and/or efficiency of organizational performance or will it be a drain? Will the innovation further the moral mission of the organization or will it cause drift from that mission? Disseminating organizations should focus not only on the leverage on adopting organizations

associated with providing resources; but also on the need for the adopting organization to develop its capacities and a sense of ownership of the innovation. The power of the funder can enhance compliance, which is sometimes important; but cannot develop capacities or a psychological sense of ownership. For these purposes, collaboration is necessary.

The case findings suggest the importance of articulating a fidelity model, even when a formal research program designed to establish an evidence-based intervention is not undertaken. Community-based organizations are more likely to adopt some variant of a "knowledge grounded in action" approach (Ryle, 1949; Greenwood and Levin, 2005) to improve interventions over time, often because of a lack of resources and the pressure to respond quickly to large scale social problems. However, this does not eschew the need to identify the core elements of the intervention, the principles behind them, those characteristics of these elements which must be maintained with little variation, and those characteristics which can be more fundamentally adapted to local conditions. The case demonstrates, as Zazzali et al. (2008) have noted, that flexibility and practicality are important in implementation so that the innovation can be tailored to local conditions. The case under discussion includes several instances in which implementation problems occurred due to inflexibility. However, it was unclear that this inflexibility was justified on fidelity grounds. What was the rationale for not adapting staff salaries to the local labour market? There were also instances in which the core nature of program elements (such as community engagement, inter-organizational coordination, identifying the ability to pay) were not identified, and also led to implementation problems.

In practice terms, it is important for innovating and disseminating organizations using a "knowledge in action" approach to develop systematic processes to collectively reflect on what is learned through successive implementations of the intervention. This should begin with a logic model (Rossi et al., 2004) of the innovation which can be adjusted as learning occurs over time. Initially, the core elements and their necessary characteristics should be identified; along with elements and characteristics which can be flexibly tailored. This initial identification can be based on the literature and logic of the innovation. Reflections on experience should then be used to refine the articulation of what is required to implement the program with fidelity. Empirically derived and verified core fidelity criteria seem very likely to be related to successful implementation.

The experience of the case under study confirms the importance of many organizational facilitating factors related to resources. Financial as well as knowledge resources from the disseminating organization are very important. Flexibility in budgetary allocation is useful; as well as transmission of knowledge through accessible routes, such as intensive training, consultation about key implementation processes, instructional manuals, and feedback through monitoring. The necessity of a clear fidelity model is obvious. When knowledge resources were not available in sufficient supply, implementation difficulties arose. In addition, knowledge of the catchment community by the adopting organization facilitated implementation, as did the presence of adequate human resources, especially at the leadership level.

Two structural factors in the adopting organizations were especially facilitative. One was a feature of their internal environments and the other related to effective connections to external service organizations. The establishment of a designated unit was useful in protecting staff time for implementation of the innovation and in allowing

for the development and use of local communal knowledge in implementation decisions. Functional inter-organizational working relationships enhanced efficiency through resource sharing and facilitated contact with potential clients.

Several features of the organizational culture were important, but early development of a sense of ownership of the innovation was paramount. Foci on quality assurance, prevention and service to marginalized populations were also important. Supportive policy and funding environments were salient, as was a positive relationship with often difficult to enter marginalized communities.

Senior organizational leadership was important in demonstrating commitment, providing adequate resource allocation, supporting the components of the innovation that are novel to the organization, and managing organizational change necessitated by this novelty.

These findings suggest that the dissemination of innovations should be carefully planned. Attention should be paid to the adequacy of a range of financial, knowledge, human and technical resources available to adopting organizations; as well as to establishing a functional delivery structure and developing senior management commitment. Both the internal cultural environment and external policy, funding, and communal environments of adopting organizations should be comprehensively assessed. Strategies can then be developed to enhance assets and manage potential barriers.

The impeding factors identified may be especially instructive to organizations planning diffusion or adoption of an innovation. They suggest the need for good relationships between the disseminating and adopting organizations, consistent output expectations related to funding and the avoidance of perverse incentives for the staff implementing the innovation. In addition, these findings demonstrate that features of the organizational culture antagonistic to the innovation must be managed, and that challenges peculiar to the local environment must be identified and strategies be developed to deal with them.

Sustainability was constructed by participants in a complex manner, and future research might focus on the implementation and effectiveness of sustainability strategies. In the view of stakeholders in this case study, sustainability involves a broad range of resources beyond financial resources; as well as functional relationships with community, public and non-profit organizations. Creating a market for inpatient services extended sustainability considerations beyond the program to the whole adopting organization.

Further research might also test the integrated model described in Table 1, adjusted to include the additional factors in Figure A describing the findings of this case study, in a range of non-profit settings and service fields. Accumulation of such findings will aid in developing a more realistic, nuanced and pragmatic understanding as to how dissemination, adoption, implementation, and continuation processes actually function in a range of settings.

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