

The Impact of SEARCH on  
Participating Organizations:  
**Building a Conceptual  
Framework for Evaluation**

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**A Conceptual Framework for Assessing the Impact on Organizations  
Participating in SEARCH**

**HIGHLIGHTS**

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- It is essential to examine the role and contributions of both **individuals and organizations** when assessing the impact of capacity building programs designed to increase the use of research evidence in health service organizations.
- The presence and **use of a framework** which describes the components that are important in understanding how organizations incorporate research knowledge into their operations **helps to plan effective programs** designed to enhance that activity.
- A **framework describing the organizational capacity for research (ORC)** has been developed using a process of expert input and case studies to explore and refine the concepts.
- The following **components are important** when thinking about the capacity of a health service organization to use research knowledge in its deliberations:
  - Events or influences which cause organization to pay attention
  - Actors (either individual actors or groups of actors)
  - Organizational structures and processes
  - Information
  - Links and relationships with external parties
  - Leadership
  - Politics
  - Nature of the issue
  - Norms and values in the workplace
- This ORC framework will be useful in **planning future activities** designed to enhance the use of research evidence in health services.

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## **EXECUTIVE SUMMARY**

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The impetus for this work arose from a program designed to build capacity for research in health organizations. The SEARCH<sup>1</sup> program began in Alberta in 1996 and its purpose is to build capacity in the health system for producing and using research evidence to manage health services. The program design involves working intensively with a cohort of 25 participants currently employed in the health system over a two year period. During this time, SEARCH participants undertake two projects. One project is important to their employing organization, and the other is a collaborative project involving several participants working together on a project of shared interest.

As SEARCH has evolved, it has become clear that evaluation of the program must focus on the experience and accomplishments of the organization that employs the individual participant as well as on the individual. The present work is designed to assist with the examination and understanding of the participating organization. Extensive work has been done to evaluate the impact of SEARCH on participating individuals and is available elsewhere.

As the SEARCH program has evolved, it has become apparent that more attention needs to be paid to the context within which the SEARCH participant is engaged; and modifications to the curriculum have been made over time to acknowledge this. Nevertheless, there has not been an explicit description of the 'theory of action' behind these changes. They have been incorporated based on evaluation feedback from key stakeholders and the experience and knowledge of program leaders.

This current project has been undertaken to make explicit a framework which explains the key components and processes that are important to understanding the organizations in which the SEARCH participants work. Having an explicit framework that addresses how organizations incorporate research knowledge into their operations will assist with designing and evaluating components of programs designed to enhance capacity in this area.

The framework (which has come to be called the Organizational Research Capacity or ORC framework) was developed using three steps: an expert workshop, six case studies, and a survey of managers and executives in organizations who have had employees participating in the SEARCH program.

### **THE WORKSHOP**

A workshop involving 14 participants (five organizational researchers, senior practitioners, four AHFMR representatives, three consultants) was held in October 2002. During this workshop, two models representing conceptual frameworks of potentially important variables were developed. Although there were some distinctions between the two models, they both at a high level included variables related to the external

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<sup>1</sup> SEARCH refers to Swift Efficient Application of Research in Community Health. This is a program sponsored by the Alberta Heritage Foundation since 1996.

environment of the organization, formal organizational factors (e.g. structures, attributes of staff, reward systems), informal factors (e.g. culture), and political dynamics.

### **THE CASE STUDIES**

Six case studies were done to refine and further explicate a model of organizational research capacity using the output of the workshop as a point of departure. The case studies explored 'action areas' involving conscious use of objective information in two large, two medium and two small health authorities. The cases were chosen because of the variety of contexts in which they took place. After analyzing the information received during interviews with key informants from each region, six main variables emerged as important in the case studies. These were: characteristics of the individuals involved (e.g. initiative, assigned role in organization), resources, organizational processes, decision influences, links and relationships, and norms, values, and beliefs. Resources were important both as drivers of change (often through incentives) and as enablers of change. There seem to be three components involved in the processes leading to action in an area: focusing on the issue, information gathering, and implementation. Decisions take place at many stages in the process. Decisions were influenced by the environment (both proximal and distal), the specific actors involved at any stage, and the information available. There was evidence of norms and beliefs emanating from both individuals and from the organizational level which influenced the organization's ability to effect change while using relevant information.

### **THE SURVEY OF MANAGERS IN PARTICIPATING ORGANIZATIONS**

The primary purpose for this survey was to evaluate the impact of the SEARCH program on participating organizations (the results of this are reported separately). Nevertheless, the conceptual framework was further informed to some degree by this process. For example, it highlighted the importance of closely linking projects undertaken by SEARCH participants with areas of high salience to the health authorities. In those cases where participation in the SEARCH program had produced an identifiable impact in the host organization, it was clear that the topics of the projects undertaken were of high importance to that organization. This illustrates the necessity of understanding the importance (and perceived importance) of any particular area of endeavour to the organization if one is attempting to facilitate change.

### **THE ORC (ORGANIZATIONAL RESEARCH CAPACITY) MODEL**

The cumulative work done to date supported the development of a conceptual framework, or model, which attempts to capture the key dimensions involved when an organization incorporates knowledge generated through research into its operations. However, the introduction of new knowledge is a very active and fluid process, and models can only reflect static components. Therefore, it is helpful to at least conceive of a specific 'action zone' within the model where the fluid nature of decision and implementation processes can be the target of focus. Following is a brief description of the components of the model.

- **Forces for Action** These refer to those events or influences which cause the organization to 'attend to' a particular area.

- **Links and Relationships with External Individuals and Organizations** External links are often the source of information. Personal relationships and mediated routes (i.e. internet) are key.

- **Three anchors: Actors, Organization Structures and Processes, and Information**

**Actors** Actors can be individuals (such as a person holding a particular position in the organization), but consideration of 'groups' of actors (e.g. physicians) is also part of the mix which influences action in an area. If senior managers are closely involved in the issue, action is more likely. If there are individuals with specific responsibilities for research or relevant areas (e.g. planning, information analysis, quality improvement), action is enabled. Individuals with excellent communication skills enable progress.

**Organizational Structures and Processes** In essence, this refers to those aspects of an organization that one can 'touch and feel'. Coordinating committees, research policies or expectations of senior executive are examples.

**Information** Information is key to 'research transfer', as the results of research processes often materialize as information in one form or another. Information did not emerge as strongly as some other components of this model through the case studies, but given the particular focus of the model, it remains as an integral component.

- **Action Area** This is the focus of attention and is where decisions are being actively taken on a specific topic. It represents fluid and intangible dimensions, such as organizational culture. Resources often come into play as 'enablers' in the action area.

**Leadership** In every case study, leadership was central to the action process. Leadership included such things as clear executive leadership through business plans; putting the focal issue on the agendas of key committees, and guiding participative processes.

**Politics.** Social relations involving authority or power are inherently part of decision making processes in complex organizations. Politics are often closely intertwined with leadership dimensions and characteristics of various actors (either individual or groups).

**Nature of Issue:** If the issue under scrutiny is tightly coupled with organizational priorities, effective action is more likely.

This ORC model will be used during the process of developing recommendations regarding future program design decisions for the SEARCH program. The model also has the potential to inform other capacity building initiatives that AHFMR or other organizations may undertake in future.

## **BACKGROUND AND PURPOSE**

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This work was done to support the evaluation of a program that has been delivered by the Alberta Heritage Foundation for Medical Research (AHFMR) since 1996. This program is called SEARCH (Swift Efficient Application of Research in Community Health)<sup>2</sup>. The goals of the SEARCH program are:

- to develop a collaborative network of expertise across Alberta to initiate and carry out health research on a local, regional or provincial basis (create evidence).
- to have health professionals use current, relevant and appropriate information to assist in identifying priority health issues and making decisions based on research results (choosing and using evidence).
- to evaluate and further develop the SEARCH Program (adding to what we know).
- to create a culture in which policy-responsive research is both valued and supported (changing the context)<sup>3</sup>.

The primary purpose of the SEARCH program is to support and enable individuals to acquire, aggregate, interpret, and apply health information for individual, regional and provincial health decisions and programs, and to facilitate more effective management of the health system<sup>4</sup>.

This evaluation was done to assess SEARCH's impact on organizations who sponsored participants in the program, rather than on individual participants.

When the SEARCH program was started, the initial (although not exclusive) focus was on the individual participants. As the program has evolved, it has become increasingly apparent that concerted attention must be paid to the organizational contexts within which the SEARCH participants spend their days if the program is to achieve its goals. It is not enough to focus only on increasing the skills and knowledge of individuals if the ultimate goal is to influence health services delivery.

Our ultimate objective was to assess the impact of SEARCH on sponsoring organizations and to make recommendations about further development of the program. Before doing so, it was necessary to develop a conceptual framework through which that

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<sup>2</sup> A description of the SEARCH program can be found in the 'SEARCH Evaluation, Research and Development Blueprint' document. A brief overview of the program is included in Part I of this report.

<sup>3</sup> Hayward, R., Matthias, S. 2001. *E-Learning Panel - Opportunities from a Funder's Perspective*. E-Health: COACH Conference: Toronto, Ontario. (These goals were restated in 2001 as a slight modification of the original 1996 goals. They have not changed substantively, but rather were edited to more closely reflect the curriculum design of the program).

<sup>4</sup> Hayward, S (2003) SEARCH Goals slide 1 (Powerpoint presentation)

assessment would be made. By using a comprehensive framework to view the capacity of health system organizations to produce and use research evidence, we feel the results of this evaluation will ultimately be more useful in shaping the evolution of SEARCH (or other interventions).

## **METHODOLOGY**

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The conceptual model was developed in two phases. First, a workshop of knowledgeable researchers and practitioners was held to draft a model based on their expertise. Second, six case studies were done in Alberta to further refine the model.

### **THE WORKSHOP**

In the absence of known or validated indicators and measures for the assessment of organizational capacity for research in health service organizations, an assessment model needed to be developed based on the opinions and experiences of recognized experts in relevant areas. A workshop was held in Banff on October 4 and 5, 2002 to begin the development of this framework or model.

The workshop was structured to include researchers with a track record of work in organizational studies, and, in the case of most participants, work in the health sector. In addition, two practitioners were invited to bring their perspective to the discussions. There was a purposeful decision to include people with strong organizational disciplinary perspectives in the development of this model.

Two draft models of organizational research capacity were proposed.<sup>5</sup>

### **THE CASE STUDIES**

Six case studies were done to provide insight and refinement of the conceptual models created in Banff.

#### **Sampling Strategy**

In Stake's view (1994) these six case studies would be called instrumental case studies because they were chosen for their ability to maximize what we can learn. Cases were purposefully selected for a wide variety of key dimensions of interest, as well as on the strength of organizational research orientation and level of engagement with a research

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<sup>5</sup> A full report from the October workshop is available from Richard Thornley at AHFMR. Richard.thornley@ahfmr.ab.ca

capacity building program (SEARCH). The 'case', or unit of analysis, was a specific area in which an organization had taken action, and the action included the consideration of evidence.

The purpose of these exploratory case studies was to provide insight and refinement of a conceptual framework through which to examine an organization's capacity to produce and use health research. Our original task was to evaluate the impact that the SEARCH program has had on health organizations. Since 1996, Alberta's health organizations have had three opportunities to enrol participants in the two-year SEARCH program. The matrix identified below was used to select organizations who participated in SEARCH for exploration in our six case studies. Initially, one case in each cell was explored. Subsequently, a decision was made to ensure good representation of regions of varying size, so two additional case studies were done.

Table 1 on the next page provides the sampling matrix for the case studies. The health authorities were allocated into cells on the basis of expert input from five individuals familiar with health authorities and from five individuals familiar with the SEARCH program. In gauging an organization's level of involvement with SEARCH, a number of factors were considered, including:

- the number of participants sponsored by that organization
- the level of accomplishment by SEARCH participants
- attendance of senior managers at SEARCH sponsored events, etc.

**Table 1. Distribution of Alberta Health Authorities According to Research Orientation and Involvement with SEARCH program<sup>6</sup>**

	Stronger Research Orientation	Weaker Research Orientation	Not classifiable re: Research Orientation
Stronger SEARCH experience	Chinook David Thompson Palliser Calgary Keeweenok Lakes Alberta Mental Health Board	Lakeland Peace	
Weaker SEARCH experience	Capital Health Alberta Cancer Board	Health Authority 5 Westview Mistahia	
Not classifiable re SEARCH	Crossroads	Headwaters Aspen Northern Lights Northwestern	East Central

### Questioning Strategy

The questioning strategy employed was designed to:

1. learn about the organization's experience with respect to the four major processes of knowledge acquisition, assimilation, transformation and exploitation
2. learn how the study organization's research experience was shaped by the five major dimensions of the conceptual framework: people, structure, culture, political dynamics and the external environment.

Once health regions were selected for questioning, a request was made to the relevant person asking if they would agree to discuss an area where they had taken recent action; and where consideration of evidence had been a conscious part of the process. Subsequently group interviews were done with key individuals involved in the action. In

<sup>6</sup> Five knowledgeable raters classified each region on the dimension about which they were best informed (SEARCH or overall research orientation). Because some raters declined to rate in all instances, there was no clear allocation for some categories:

- Stronger Research = 3 or more responses in Stronger Research orientation category.
- Weaker Research = 3 or more responses in Weaker Research Orientation category
- Stronger SEARCH= 3 or more responses in Stronger SEARCH Experience category
- Weaker SEARCH= 3 or more responses in Weaker SEARCH Experience category

most regions, additional interviews were conducted with individuals who could not attend the group session.

The questioning strategy included the following questions:

- Why did the organization decide to look at this particular issue/area?
- How did you decide on the approach to examine this issue/area?
- What was your experience gathering the evidence?
- Did you use the information as gathered or did you modify it?
- How did you reach the decision to implement the program/policy?
- How did you go about implementing the program/policy?

In addition, probes were used to uncover aspects related to the key components of the draft frameworks developed during the October workshop:

- **Culture:** Did the values of the organization support or conflict with this approach/step? Was it taken for granted that you would do it that way or did you have to somehow justify the approach?
- **Politics:** What motivated you to do it that way? Was any special influence required to do it that way?
- **Structure:** How was the approach/step supported? Was this formal or informal?
- **People:** To what extent was the skill and expertise available to support that?
- **External Environment:** Why did you do it that way?

### **Data Analysis**

Notes were typed from all interviews and shared by both team members. At first, interviews were coded independently by each team member and a list of emerging categories was discussed and developed. Subsequently, all interviews were coded by the team member doing the interviews (P. O'Connell). Next, statements from all six case studies were grouped together according to theme.

Both team members independently read the notes to extract major themes and concepts, then jointly developed a summary statement which we felt captured our observations on each topic. During analysis, we kept notes about themes which seemed relevant across categories, as well as 'questions outstanding, or for future consideration'. We also built a list of points we felt may be relevant to the recommendations ultimately made to AHFMR.

## Advice to the Project

This project benefited from advice from several sources. Dr. Wilfred Zerbe was involved throughout and assisted in the development of methodology and interpretation of data. Dr. Zerbe also assisted in facilitation of the Banff workshop. The SEARCH Steering Committee provided valuable input at several points in the process, and ongoing consultation with Sarah Hayward and Richard Thornley from AHFMR was invaluable.

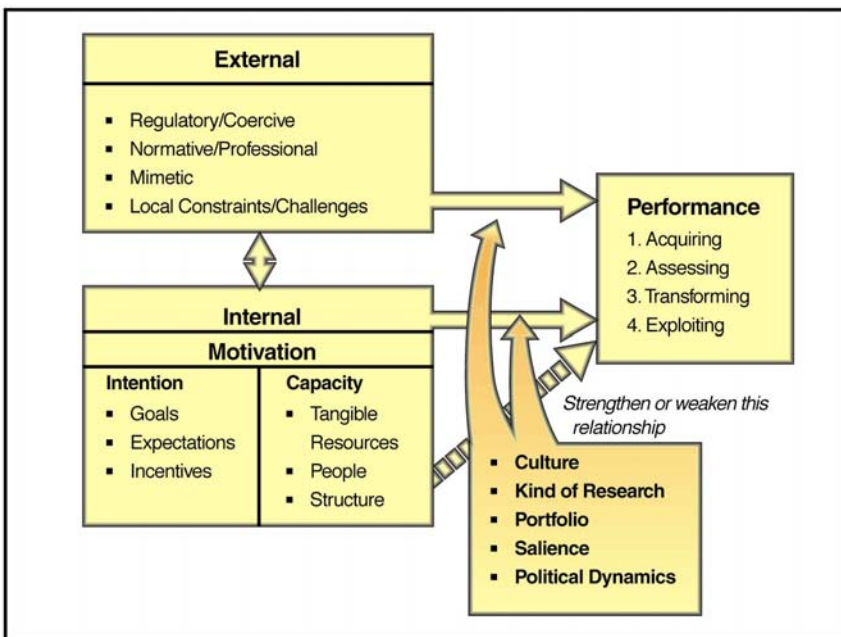
## FINDINGS

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### DRAFT MODELS FROM THE WORKSHOP

Two draft models were developed during the October workshop, and the decision was made to retain and work with both of them in the ongoing evolution of a framework. The two models and brief explanatory comments are included below:

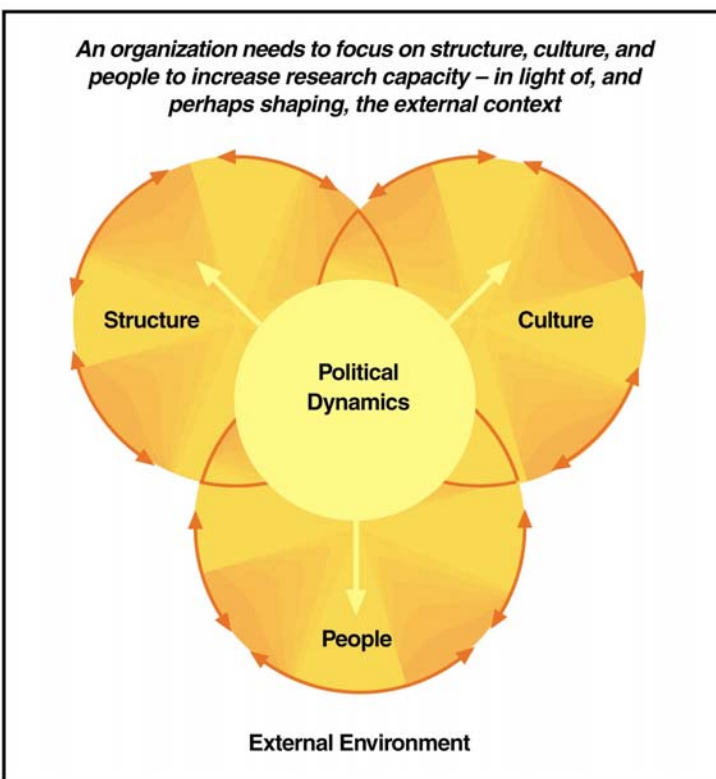
Figure 1: The 'Box' Model



- The 'Box' model attempts to identify factors which can be tested for their contribution to performance, which in this case is research use. Acquiring knowledge, assessing it, transforming it and exploiting it are deemed to be the four components of knowledge use.

- Factors both external to the organization as well as internal are deemed to contribute to research use.
- External factors include such things as accreditation processes which look for evidence-based decision-making.
- Internal factors include such things as expectations plus tangible features (highly educated staff; access to good library resources, etc.).
- Some variables are moderating. The prevailing attitudes of senior management about research (i.e. culture) can moderate research use, as can things such as the clarity of the research knowledge. For example, it is easier to act on the knowledge that administration of a particular drug after stroke reduces negative outcomes, and harder to respond to evidence that caring for stroke victims in a programmatic fashion improves outcomes.

**Figure 2: The 'Circle' Model**



- The dimensions of organizational research capacity were categorized into one of five groups: external environment, structure, culture, people and political dynamics.

- Structure is the hardware part. This includes such things as official documentation, job descriptions with research in their mandate, incentives and logistics for sharing information.
- Culture is the software part. This includes such things as valuing research and innovation, strong identity with a university, etc.
- The people circle refers to individuals in the organization and considers things such as leadership, number of people with advanced education, skills of staff, etc.
- Structure, culture and people are the variables organizations can do something about. It was tentatively proposed that, through these three variables, organizations do not just have to adapt to the external environment. They can actually shape it.
- Political dynamics overlay the three variables and is where the activity occurs. Here one acquires, assimilates, transforms and exploits. For example, acquisition is often moderated by structure and culture. The structure and culture are highly influenced by political dynamics. When one learns how to navigate and negotiate this space, success will result.
- The external environment is the backdrop within which the organization operates.
- All five groups, while separate in the model, are interdependent in practice.

## CASE STUDIES

Six case studies were undertaken to refine and further explicate a model of organizational research capacity. The studies were conducted through group interviews supplemented by individual interviews. The case studies focused on six exploratory areas of action:

- **Rural #1** explored the development and implementation of a Regional Clinical Resource Manual which addressed nursing policies and procedures across all sectors of the region. The discussion group included the project lead, an acute care Nursing Unit Manager, the regional Nursing Educator and the Director of Client Services, to whom the project lead reported. The group outlined how events and processes resulted in the successful completion of the manual under the guidance of the project leader. However, difficulties were encountered in the subsequent reproduction, dissemination and upkeep of the manual.
- **Rural #2** examined the development and implementation of a regional Young Family Wellness Program, a public health initiative supported by Alberta Health and Wellness. The discussion group involved the project leader, the Public Health Coordinator for the region and the senior administrator for public health. Discussion focussed on program content and rationale, and on strategies and challenges relating to dissemination and engagement. Individual in-person interviews were also conducted with former and current research officers regarding their involvement and recollections.

**Comment [GM1]:** Judy: would you like to number the case studies (ie 3.2.1, 3.2.2, or just a straight 1, 2, 3?)

- **Small Urban #1** looked at participation in one of four Alberta Heart Health demonstration projects: the Heart Health Community Action Plan, which was conducted between 1993 and 1997. This initiative was supported by external funds through the Alberta Heart Health Fund and was part of the Canadian Heart Health Project, a national research project. Group discussion involved two former project leaders and two senior management administrators representing health protection and Health Promotion and Education. The project was designed to develop knowledge on effective strategies to engage individuals and communities with respect to heart health and promotion. Unique among the case studies, this research project was co-led by a regional project team from public health and a research team with members drawn from Alberta Health and Wellness and the University of Alberta. The focus of the research changed midway through the project, from individual screening to the investigation of community development practices. Much of the discussion centred around the reasons for and implications of this change.
- **Small Urban #2** explored a five-bed expansion of a designated mental health unit in the regional hospital. The group discussion included three members representing administration from operations, nursing and psychiatric medicine, and a Regional Health Authority Board member. Discussion centred on the needs for expansion including internal and external pressures, types of information considered and strategies concerning the eventual expansion.
- **Urban #1** explored the development and implementation of a Regional Pneumonia Clinical Pathway. The group discussion involved the two project leaders, who were members of the senior executive in Medicine and Administration. Discussion covered all aspects of development and implementation including premise of need, strategies of engagement, identification, collection and review of evidence, pathway development, dissemination, and implementation strategies and implications.
- **Urban #2** looked at a regional multidisciplinary workforce review project. The discussion group included project members from nursing (including one of the demonstration unit managers), a nurse educator, and a nursing professional development consultant. The executive leader for nursing research and evaluation also participated in an in-person interview. The project, which is still in progress, was based on the need to determine more effective utilization of health care providers. It was prompted by a critical shortage within the health care workforce, and in particular in nursing. The group discussion focused on the experiences of one pilot nursing unit (Nephrology Transplant) and its strategies for and challenges with implementing a different model for nursing service delivery. The discussion with the director of research focused on components of the underlying change management model and evaluation framework. This case study was unique because results will be used as part of a formal research project involving other provinces and external research grants.

Thirteen themes were identified in the initial review of case studies:

- Roles and responsibilities
- Organizational culture
- External influences
- Values, beliefs and norms
- Organization structure
- Areas of action
- Individual characteristics
- Resources
- Links and relationships
- Political factors
- Decision influences
- Process factors
- Context and situation

On closer examination of the overlap and interplay between the themes, six emerged as being most important:

- individual characteristics
- resources
- process
- decision influences
- links and relationships
- norms, values and beliefs

Following is a summary of the highlights of each of these groups of factors.

### **Individual Characteristics**

Certain personal attributes and activities were relevant in supporting action. These characteristics can be divided into two types: those that seemed to be solely the attributes of the individual, and those that were individually oriented, but also defined by a specific link to the situation. Table 2 summarizes the attributes that were attributed to individual differences.

**Table 2: Individual Characteristics**

<b>Attribute</b>	<b>Individually Determined</b>	<b>Determined by Situation</b>
Persistence	+	
Initiative	+	
Professional commitment	+	
Knowledge of organization	+	
Trust / credibility	+	+
Collaborator / connected	+	+
Authority	+	+
Leadership skills	+	+
'Fit' (between individual and organization leadership)	+	+

Individual attributes are clearly an ingredient that enables action. Individuals were variously described as 'innovative', 'a visionary manager', or 'someone who took initiative'. However, many aspects were described (and attributed to the influence of an individual) which were influenced by the situation where the individual worked. For example, one individual (although acknowledging that perhaps it was excessive) referred to an 'underlying sense of implicit trust and faith in his/her own skills and abilities throughout the process'. Trust and credibility of key proponents of a change were often mentioned.

Trust and other characteristics ascribed to individuals, however, are only meaningful when considered in context. Trust, authority and connections become possible when considered in relation to other individuals or to the situation. Although ascribed to individuals, they are contextually determined. Leadership skills involve such things as:

- knowing where the levers are, which can include thing such as taking advantage of opportunities to talk to the Minister of Health
- knowing who the informal leaders are in specific milieus
- understanding decision pathways in the organization
- the ability to 'frame' an issue so it becomes important for senior management.

## **Resources**

Resources played a critical role in each of the action examples, but their role was not the same in all cases. Resources were either drivers or enablers of change.

**Resources as drivers** Financial incentives were a factor in choosing a particular area for attention. Cases where financial incentives were provided by an organization external to the health region could be described as a 'resource pull'. In other cases, lack of resources internally were the drivers ('resource push'). Either a shortage of a particular type of human resource, or beds, or excessive admissions were all drivers in one case or another.

**Resources as enablers** Enabling resources could also be internal or external. In several cases, organizations external to the health region provided supporting resources which enabled the use of evidence. Resources included such things as librarians at professional associations or larger health regions and travel funds. Interestingly, universities were not mentioned as enabling resources in any case study (and, in one study, were mentioned as a negative factor). Within organizations, enhanced research capacity was clearly a factor in larger health regions. Having staff with time, dedicated positions, specific research skills and content expertise enabled concerted efforts toward incorporating evidence into decisions. In smaller regions, access to computers and the internet were important resources.

## **Links and Relationships (The Power of Personal Connection)**

Links and relationships were a central feature of all six action areas studied. It is clear that links and relationships both within the organization and with outsiders are important.

Numerous examples were given of external links that were helpful or unhelpful. Interestingly, the same organizations were often perceived as providing both helpful and unhelpful links, depending on the situation. For example, connections between regional staff and university faculty were described as positive in some cases, unhelpful in others. Relationships with other health regions are another example. A trend did emerge with respect to characteristics of links that were seen to be helpful. Almost regardless of the location of an individual, when the regional staff member had a personal relationship with their contact, the link was described as being helpful. When the interaction between the two involved a 'cold call', the results were far less satisfactory. The other type of helpful external relationships seemed to be those involving formal or semi-formal groups or committees that met regularly to discuss issues of shared interest (e.g. data coordinators' meetings, regional mental health advisory committees).

Although a range of organizations were named with whom relationships existed, by far the most commonly mentioned organizations were other health authorities and individuals holding similar positions in other health authorities. Regions seemed most likely to seek information from regions with similar characteristics. Relationships with other community-based organizations were also frequently mentioned. Relationships with universities and AHFMR were mentioned less frequently, and the positive implications of these relationships were much less evident unless they involved long-

standing relationships between the individuals involved. Physicians hold a special place in this discussion of links and relationships due to the particular policy and professional environment of the health system. They are 'outside' the health region, for the most part, but their actions influence many health outcomes in a significant way.

Links and relationships can be described as two main types: interpersonal and mediated. Mediated relationships (often described as very helpful) are those involving networks to which relevant questions could be put, or professionals whose 'business' was information, such as librarians and book sellers.

The reasons for these linkages varied, but included both those designed to help implement a change in some concrete way (instrumental) and those which were more conceptual or symbolic in nature. That is, they may have helped in a more indirect way, but were not directly action oriented. Instrumental linkages produced such things as policy manuals from other regions, reduction in duplication of efforts (efficiency motive), and buy-in to a line of action from other parts of the organization. Other interpersonal linkages were for reasons that were less directly linked to action, but potentially important nevertheless. For example, the development of a clinical care pathway involved one professional group administering a test to patients. This was met with resistance, as the professional group had never heard of the test. Working with the professional school at the university to incorporate knowledge of relevant test and activities into the curriculum is expected to change this resistance in future.

In summary, linkages among individuals known to each other (either through past experiences, or through common membership in a committee or network/group) seem to be more helpful than more formal and impersonal relationships.

### **Process**

When examining the action areas in the six case studies, we identified three components of activity which contribute to action being taken: focusing on the issue, information gathering, and implementation. Although they may occur in a progressive manner, there is not always a clear demarcation between these three components.

### ***Focusing on the issue***

It is probably fair to say that a particular issue must be on the agenda of key decision makers for action to occur. The degree to which it is an issue for senior management may influence whether action is taken. In three of the case studies, the regions' executive management groups were involved in the issues and clear action was taken. In two of the cases, senior management was not clearly involved. In the sixth case study, the action (updating the policy manual) was important from an operations and quality perspective but the level of satisfaction with the action path was considerably lower.

Several factors contributed to issues getting 'on the agenda'. These included:

- data (often collected internally, but sometimes using knowledge gleaned from research done elsewhere)
- the action area addressed a strategic imperative (e.g. keeping the health region off the front page of newspaper, saving dollars)
- broad ownership of the issue
- appropriate framing so that the issue resonated with key decision makers
- good timing.

In one case study, informants referred to a 'fortuitous accident' with respect to their action area, which had been put 'on the agenda' by senior management and was being actively supported with resources. Accreditation processes were being introduced just as the team was ready to propose a plan of action, and each area needed to contribute actively to the accreditation process. The team was able to contribute a large scale initiative that would lead to improved quality and reduced cost, and this was perceived to have been helpful in getting support for the action.

Broad ownership of an issue leads to a higher salience for the issue. In one case study, the issue of bed shortage for mentally ill patients was reinforced not only by staff working for or affiliated with the region, but also by individuals in the community and by a broadly representative community group. Broad ownership within the organization was also instrumental in several of the case studies, and lack of same contributed to less effective uptake in at least one other case. Broad ownership is not necessarily a 'reactive or passive' process. In one case study, where a group of about thirty were invited to participate in the implementation planning, we were told that 'We joke about this, but we went through approximately 67 drafts of this algorithm.'

### ***Information gathering***

The collection of data and information to inform the action area is also an explicit part of the process in taking action<sup>7</sup>. The sources of information which were most highly valued (at least according to those in smaller regions) were from peer organizations ('they understand our context'), individuals with whom the requester had a personal relationship, and on-line sources. Actors had created their own methods of identifying legitimate sources of on-line information, such as membership in on-line 'groups' and using websites with .org or .edu extensions. In two of the case studies, explicit use of organizational change knowledge had been employed in their apparently successful undertakings. As one informant indicated, 'We got the informal leader on board. You have to do that for it to work.' In another case study, one of the key project leaders was working from a change management model he/she had developed during doctoral work.

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<sup>7</sup>Recall that these case studies were selected on the basis of action having been taken where consideration of information was an explicit part of the process. So, there may well be other decisions or action areas where consideration of 'objective' information is not explicitly part of the process. The focus in this work is selective.

## ***Implementation***

This last major component of the process involved three subcomponents: Organizational structure, organizational routines and context.

### ***Organizational structures***

In formal organizational structures, three dimensions seemed to contribute to action. First, clear roles and responsibilities enabled a change process to unfold in complex situations. When clear roles and responsibilities were not articulated, the action implementation seemed to be at a disadvantage. For example, in one action area studied it was not clear who would take responsibility for the regular updating that would be required by the next iteration of organizational change. Appropriate Board or executive level committees were mentioned as important vehicles through which to enact change. They provided a legitimate venue for raising issues and seeking support for action. These committees had names such as the Regional Coordinating Committee and the Health Services Committee of the Board. In three of the larger regions, departments or individuals who focused on research and evaluation and who clearly saw research as part of their mandate were instrumental in facilitating action.

### ***Organizational routines***

Organizational routines mentioned in the case studies included interpersonal relationships, understanding the usual way of doing things in a specific setting, and framing the action area so that it made sense to relevant decision-makers. While these were important contributors, perhaps the most predominant routine discussed was that of participation. Two region-wide initiatives were identified that involved large regions and large numbers of people. In one initiative, more than 30 people participated directly in planning and implementation. This was a theme which resonated across all the case studies. In one case, where the action involved relatively few individuals, there were clear difficulties in widely implementing the hoped-for action.

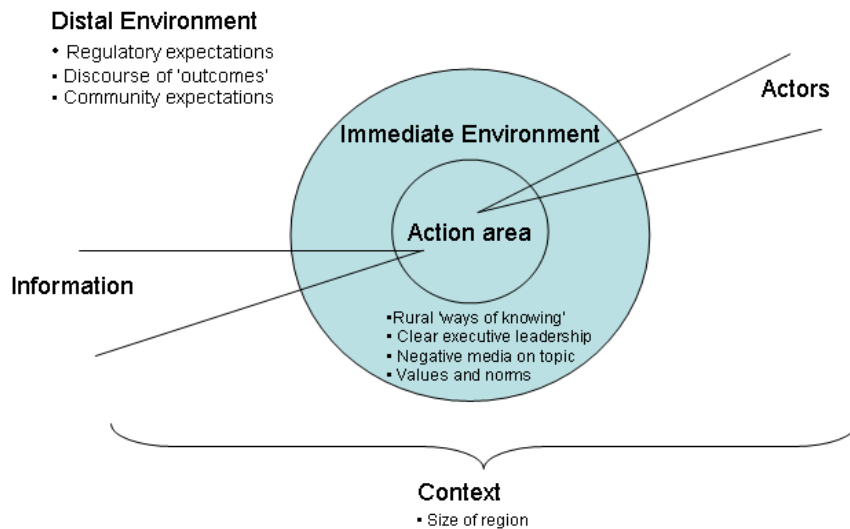
### ***Context***

Dimensions in the immediate context for action either supported or created barriers to the action. Senior management support was instrumental in change efforts, and governance or leadership actions also enabled change. In one case study, the Board set aside contingency funds to address emergent priorities.

## **Decision Influences**

Examining the cases to determine factors which influenced decisions was helpful because we were explicitly trying to learn from situations where action had been taken. Several predominant themes are captured in the illustration on the next page.

**Figure 3: Decision influences**



Factors in the environment are important influences on decisions. Some factors are more distant to the decision environment, and often are of a nature that would impact all health regions, or perhaps all organizations in that particular community. For example, regulations regarding Alberta's mental health facilities influence care provided for patients. Also, dominant streams of thought in society at large have influence. For example, the increasing attention paid to 'outcomes' and accountability leads health organizations to think about these issues.

There are often factors in the immediate environment of the decision zone which influence what gets done. In rural areas, a 'rural way of knowing' was described, and while this may reflect a specific cultural attribute of a particular situation, no doubt there are similar 'accepted ways of doing business' in all settings. Clear executive leadership is another example of a factor in the immediate environment. Organizational aspirations, such as the desire to be positioned as a leader in workforce innovation or to develop a clear business plan with broad ownership, also influence action.

Two elements seem to transcend 'distance' from the action / decision zone, and they are actors and information. Characteristics relating to the actors' individual attributes are more fully discussed in that section but clearly personal attributes or those relating to a particular actor's group are important. For example, physicians sometimes carry disproportionate weight to their numbers, perhaps because their low numbers

(particularly in rural areas) make their role in particular action areas more critical. Rural physicians are a scarce resource, so their involvement in any planned change is perhaps more salient than it may be in a large centre. Conversely, nurses represent a large proportion of employees in any health region, so an action involving large numbers of nurses (such as in the Workforce Innovation Project in Calgary Health Region) has the potential to influence the culture of an organization.

In this particular analysis, where we are focusing at a high level on the potential impact of research evidence on decision-making and service delivery, it is important to examine the nature of information and how it is used to make decisions. Certain types and sources of information were valued highly, such as randomized control trials and specific websites. In particular, information from 'peer' organizations seemed to have high salience.

### **Norms, Beliefs and Values**

What individuals and organizations 'believe' about a situation is a powerful influencer of action, although these beliefs are often difficult to clearly identify and articulate. The six case studies suggest that beliefs and values operate on two levels: individual and organizational. While they are inextricably intertwined, both levels are important. Individual efforts and beliefs can be powerful adjuncts to change, but without the supportive environment of an organization which values and expects certain things, change may be difficult. It seems that when individual and organizational norms, values and interests are aligned, maximum progress can be achieved.

In the cases examined, several beliefs and values were inherent in the case descriptions:

- cost savings are important to regions (efficiency and cost benefit studies are important)
- operations (service delivery), education and research need to be part of an integrated whole
- evaluation research is more important than knowledge development research
- always keep in mind: Is what we're doing good for the patient?
- understanding and recognition of the fact that effective service includes valuing the contributions and cooperation of others, including colleagues in the region and community agencies with overlapping or related mandates
- research and development must be an inherent part of any successful organization.

A fundamental and underlying theme among most of the case studies is related to the 'valuing' and understanding of research as part of the mandate and operations of a region. It is interesting that, of the six cases examined, half chose to discuss an

example<sup>8</sup> that focused on processes typically associated with academically based research, including external funding, the involvement of individuals with specific research training, and systematic collection and reporting of data from the region. In the other three regions, the emphasis was on using knowledge generated from outside (often from peer organizations or those with a similar mandate), or on the perceptions of key individuals involved. Not surprisingly, those regions reflecting research activities more closely aligned with an academic approach were the two largest regions and one of the mid-sized ones.

These case studies point to an underlying theme which speaks to the fundamental 'valuing' of research by the region. While that may be operationalized in different ways, there is an inherent tension when examining the presence and impact of research knowledge in the operations of a region. Several examples of this tension were given:

*"You always have to marry what's going on in operations with research. The danger with research is that when you are talking to administration they say "Oh, that's research!" And they push it off to the side because they're so busy with the clinical and operational day-to-day details of running their system that they don't think about where research could help."*

*"There is no explicit support for research in this area unless it has immediate application."*

*"Some people think that (region) subsidized (person's name)'s research, which is not really true because this is a situation where you cannot distinguish practice from research."*

Even regions with a fairly highly developed profile of applied health-related research reported experiencing tension when trying to integrate research into a busy operational setting. In one case study, the potential for research (use of research knowledge) was framed in such a way to translate into potential significant cost savings for the region, and the level of support from the region was substantial (in resources allocated and also from attention at senior executive levels). Nevertheless, there were claims by some that operational funds were paying for research.

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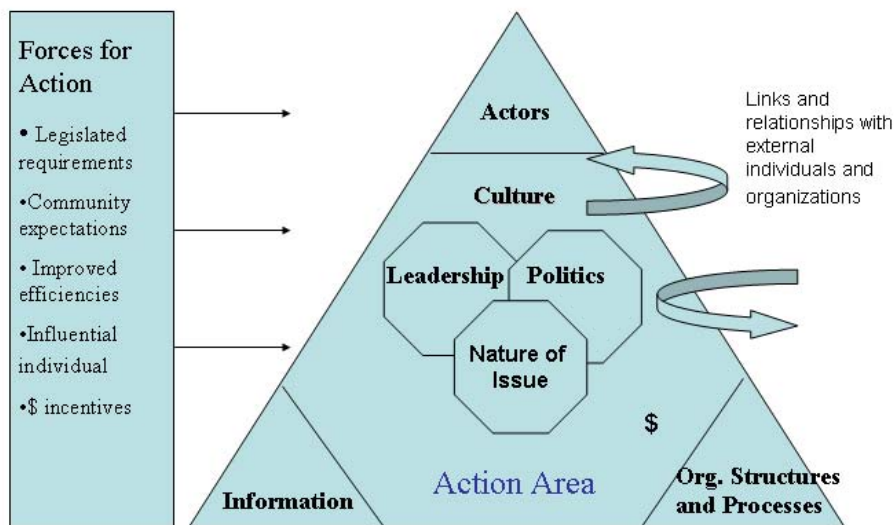
<sup>8</sup> Each region was asked to identify and discuss a specific action area that had been recently undertaken where using evidence or objective information had been explicitly part of the purpose.

## SUMMARY / CONCLUSIONS

### A FRAMEWORK OF ORGANIZATIONAL RESEARCH CAPACITY

It was the original intent of this work to develop a conceptual framework through which to consider organizational dimensions that may be important in the use of research evidence by those organizations. Figure 4 presents this conceptual framework.

**Figure 4 : Organizational Research Capacity Framework**



### BRIEF DESCRIPTION OF MODEL COMPONENTS

**Forces for Action** These refer to those events or influences which cause the organization to 'attend to' a particular area.

**Links and Relationships with External Individuals and Organizations** External links were often the source of information. Personal relationships and mediated routes (i.e. internet) are key.

### **Three anchors: Actors, Organization Structures and Processes, and Information**

**Actors** Actors can be individuals (such as one holding a particular position in the organization, but consideration of 'groups' of actors (e.g. physicians) is also part of the mix which influences action in an area. If senior managers are closely involved in the issue, action is more likely. If there are individuals with specific responsibilities for research or relevant areas (e.g. planning, information analysis, quality improvement), action is enabled. Individuals with excellent communication skills enable progress.

**Organizational Structures and Processes** In essence, this refers to those aspects of an organization that one can 'touch and feel'. Coordinating committees, research policies or expectations of senior executive are examples.

**Information** Information is key to 'research transfer', as the results of research processes often materialize as information in one form or another. Information did not emerge as strongly as some other components of this model through the case studies, but given the particular focus of the model, it remains as an integral component.

**Action Area** This is the focus of attention and where decisions are being actively taken on a specific topic. It represents fluid and intangible dimensions e.g. organizational culture. Resources often come into play as 'enablers' in the action area.

**Leadership** In every case study, leadership was central to the action process. Leadership included such things as clear executive leadership through business plans; putting the focal issue on the agendas of key committees, and guiding participative processes.

**Politics.** Social relations involving authority or power are inherently part of decision making processes in complex organizations. Politics are often closely intertwined with leadership dimensions and characteristics of various actors (either individual or groups).

**Nature of Issue:** If the issue under scrutiny is tightly coupled with organizational priorities, effective action is more likely.

### **A FINAL NOTE**

The intent of this work was to develop a 'model framework' of an organization in its efforts to ensure that relevant research informs and aids its' operations and decisions in such a way that more positive outcomes are seen. The value of a generic model is that

it can be applied or used in varying settings to help assess, understand and plan interventions and actions to increase the outcome of interest (in this instance, organizational research capacity). It is hoped that this model will be helpful in both general and specific ways.

Specifically, the model will be used to analyze the SEARCH program and its accomplishments, and also to plan future programmatic activities designed to contribute to increasing organizational research capacity. For example, it may be used as a basis for helping SEARCH participants assess the organizational milieu in which they work, so that they are in a better position to think through the application of findings from their SEARCH projects. It may also assist in the identification of skills and knowledge that should be incorporated into the SEARCH curriculum.

In a general sense, this work contributes to efforts to increase our collective ability to support service delivery organizations in their quest to become more evidence-based in their decision processes. It will work in conjunction with other organizationally focused work done in Canada (such as the Canadian Health Services Research Foundation's development of self-assessment tools for organizations), and will contribute to increasing capacity for assessing key dimensions of organizational life that are involved in finding, assessing, translating and exploiting research knowledge for the benefit of the health system.

## APPENDIX A: SEARCH PROGRAM DESCRIPTION AND EVALUATION BLUEPRINT

The SEARCH Program is a partnership program to build capacity in the health system for producing and using research evidence to manage health services. This made-in-Alberta program provides a mechanism to help health regions support decisions about health care planning and priorities with sound, logically relevant evidence. The program involves a team of provincial organizations: Alberta Heritage Foundation for Medical Research (AHFMR), health authorities, universities and government. SEARCH provides an opportunity to develop local expertise for collaborative, applied health research and evidence-based decision-making. Since its establishment in 1996, the program has successfully engaged more than twenty health organizations or private practitioners in Alberta. SEARCH has involved approximately 75 health practitioners province-wide in the "how-tos" of conducting relevant research, accessing and assessing high quality information, and applying it in decision-making in ways that fit the unique needs and character of the local context.

SEARCH has a variety of strategies to meet its goals. These strategies are included below as they were described in the SEARCH Program Evaluation, Research and Development Blueprint developed in 2001.

Strategies were described as follows in the Program Overview document<sup>9</sup>:

**Interactive Learning Strategy**, which includes the residential experience and mentored research projects.

**Advocacy and Consultation Strategy** for working with health system and academic organizations, and with practitioners and university faculty members who create individual nodes of the collaborative research network. Activities in this strategy also support changes to the reward and recognition strategies of universities and health system organizations.

**On-going Support and Development Strategy**, for long-term capacity of participants and their organizations.

**Recognition and Reward Strategy**, to enhance value of this work.

**Research & Development Strategy**, which highlights SEARCH's commitment to contributing to the evidence base for activities aimed at changing the culture of the health system to an evidence-based approach. Activities in this strategy may include both the research projects completed by SEARCH participants as part of

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<sup>9</sup> SEARCH Program Framework: Planning Discussion Document 1: Program Overview, November 2000.

their learning strategy, and contract research to develop evidence on organizational culture change.

Additional strategies were described as follows in a letter of invitation to health organizations:

**Regional support:** health organizations select and support SEARCH participants and pre-select priority topics for projects.

**Interactive learning modules:** seven weeks of intensive residential instruction and team building.

**Technology supports:** state-of-the-art computer hardware and software, including a shared virtual workspace.

**On-line learning and communications:** a range of electronic knowledge and communication resources.

**Collaborative project work:** at least two applied research projects by each participant (relevant to their organization), learning, and knowledge sharing.

**Network of expertise:** on-going involvement in a province-wide group of like-minded individuals for collaboration, learning and knowledge sharing.

**Recognition:** SEARCH Program Recognition Awards acknowledge important contributions to the peer learning, mentoring, projects, teamwork, and organizational vision that make the program work.

Health organizations include the regional and provincial health authorities and private practice professional corporations who are supported by entities such as the Primary Care Research Network or the Rural Physician Action Plan. Participants from the health organizations are established health professionals from many areas in health care: nursing, family medicine, dietetics, social work, community health, health promotion, epidemiology, health inspection, mental health, and health records. They range from front-line clinicians to senior managers. Some are full time in positions focused on research, outcomes or evaluation; others integrate this way of thinking into their daily responsibilities for programs and patients. Roles have included: research / information officers, program managers, staff educators, clinical practitioners, and knowledge brokers.

SEARCH faculty mentors are health researchers and teachers from a number of different disciplines, with a wide range of expertise and interests. They come from Alberta's universities, representing departments of community and public health as well as nursing and business. They come from the private management and policy-consulting sector. SEARCH also accesses a range of provincial and national experts and contributors.

The SEARCH goals have been revised slightly since the first SEARCH program in 1996. However, the changes have not been substantive, but rather in presentation and organization. The goals, as stated in 1996, are listed below, and the last goal reflects AHFMR's commitment to the evaluation of the program:

1. To have health professionals in the RHAs and agencies use current, relevant and appropriate information to assist in identifying priority health issues and in making decisions on these issues based on research results.
2. To develop a collaborative network of expertise across Alberta to initiate and carry out health research on a local, regional, or provincial basis.
3. To create a culture in which policy-responsive research is both valued and supported.
4. To conduct a formal evaluation of the SEARCH II program.

### **SEARCH Evaluation Blueprint**

In the Evaluation, Research and Development Blueprint (2001), a matrix was developed showing potential areas for inquiry that would inform overall SEARCH program development and evolution (see Table 3).

### **The Current Evaluation Project in Relation to the Whole**

The current project is focused on the evaluation of the impact of the SEARCH program on sponsor organizations (most often health authorities).

Several other evaluation projects are underway concurrently focusing on most of the other cells of the matrix shown in Table 3.

**Table 3: Potential Areas of Inquiry**

Level of Change / Locus of Change	Service Delivery (e.g. RHAs, MDs)	Academic (e.g. Universities)	Funding (e.g. AHFMR)	Citizens, Consumers
Individual				
Individual in Organization/ Group				
Organization/ Group	XXXXXXXX			
System (e.g. Group of RHAs)				
Trans-sectoral System				

SEARCH Governance and Management				
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**APPENDIX B: POWERPOINT PRESENTATION**