

# **KNOWLEDGE TRANSFER AND HEALTH NETWORKS**

## **LITERATURE REVIEW**

**Prepared for**

**THE SOUTHERN ALBERTA CHILD & YOUTH  
HEALTH NETWORK**

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This report may be downloaded in full from [www.sacyhn.ca](http://www.sacyhn.ca), under "Publications". For further information contact [janice.popp@calgaryhealthregion.ca](mailto:janice.popp@calgaryhealthregion.ca).

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## SECTION 1 – INTRODUCTION

The Southern Alberta Child & Youth Health Network (SACYHN) is a voluntary joining of parents and youth, government ministries, provincial organizations, regional authorities, First Nations, and local agencies to focus on optimizing the health and well being of children and youth. The mission of the *Network* is to “use its collective strength to build and sustain linkages that optimize the health and well being of children, youth and families.” It looks for opportunities to facilitate linkages and connections across a number of geographic regions; professional disciplines; and child serving sectors such as health, education, and children’s services. The website [www.sacyhn.ca](http://www.sacyhn.ca) provides detailed information on the activities and membership of the *Network*.

In a literature review on networks, Hill (2002) describes education as a core function of networks enabling identification of staff from a variety of agencies with their larger community, rather than with only their own organization. Education of providers, and indeed families, holds the potential for improving health within the community.

In keeping with this, a core function of SACYHN is to build community capacity to address broad child health issues through education, or the transfer of knowledge. The present literature review was therefore commissioned by SACYHN in order to investigate the transfer of knowledge in the context of networks. The main purpose of the review was to find information that would assist the *Network* when disseminating knowledge among its members and through them to members of the community.

The key question guiding the review was as follows:

**What should be SACYHN’s role in education and/or knowledge transfer/ management with an end goal of increasing the capacity of professionals and children/families to enhance health care within their community?**

The review did not intend to provide recommendations to SACYHN in its role relating to knowledge transfer. Its purpose was to present a background of relevant research which the *Network* itself could use to examine this role and its execution.

A representative committee met with the writer to create guidelines and to provide feedback on the review during its preparation. Information was acquired through the use of Medline, with grey literature accessed by Google.com and ask.com.

In a literature review that deals with such a ‘hot topic’ as knowledge transfer, research can be outdated or superseded by the time it becomes available. This is especially true with any material related to information technology. Therefore, material used in the review was, for the most part, published since 2000. However, criteria for inclusion were based on relevance more than date, so older publications are referred to where appropriate.

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## SECTION 2 – SPREADING KNOWLEDGE

Voluntary health networks are in the knowledge transfer business – more or less. The lack of certainty exists due to an increasing number of terms which are associated with the same, or very similar, activity. The current literature review unearthed the following variations. Not all of them are assumed to refer to identical processes, but they are all related to the deliberate spread of information.

- Knowledge development and application
- Knowledge diffusion
- Knowledge dissemination
- Knowledge exchange
- Knowledge management
- Knowledge mobilization
- Knowledge translation
- Knowledge transfer
- Knowledge utilization

- Applied dissemination
- Diffusion of innovations
- Dissemination and utilization
- Effective dissemination
- Research implementation
- Research utilization
- Technology transfer

*Graham & Logan (2004); Backer (2000); Racher & Annis, (2005); Barwick, Boydell & Omrin (2002)*

For purposes of the present review, the terms knowledge transfer and knowledge exchange are used without preference or bias. The review begins with a discussion on general issues related to knowledge transfer and networks and continues with selected topics of interest.

### The Principles of Knowledge Transfer

Although information technology, or IT, has taken the term ‘network’ as its own, a voluntary health network, while using technology, depends on human interaction. Borrowing from Gilchrist’s (1995) description of community development, knowledge transfer can be said to involve “human horticulture rather than social engineering” (p. 269).

Barwick and others (2002) differentiated between knowledge transfer that is ‘exchange-driven’ as opposed to transfer that is ‘creation-driven’. In the first, emphasis is on spreading the word. The second focuses not only on the creation of new knowledge, but on following it through to its implementation by the intended users. There is the suggestion that while both types are used, the second is preferable. However, without knowledge transfer, minimal change can be expected across either a network or the community at large.

Effective knowledge transfer was considered by Barwick and associates to have four essential elements: source, content, medium, and user. These concepts, and their attributes which affect knowledge exchange, were elaborated upon as follows:

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## Elements of Knowledge Transfer

- **Source** – perceived competence; credibility of their experience; motive for producing information; relationship with other sources trusted by recipient/user of the information
- **Content** – credibility of research methods; credibility of research outcomes; cost effectiveness; link between outcomes and existing knowledge; a message that is oriented toward positive aspects and focused on practical applications also tends to be more readily accepted
- **Medium/delivery method** – reliable; consistent with what is known about the target audience; have sufficient capacity to teach intended users; research shows that effective dissemination of key messages depends on using multiple transfer methods; clarity and attractiveness of the information ‘package’ and timelines are also key considerations
- **User/audience** – knowledge transfer strategies must be tailored to the user or audience; specific strategies may be more effective with one group versus another.

*Barwick, Boydell, Stasiulis, Ferguson, Blase & Fixen (2005), p. 25*

The practical application of such elements will be determined by the immediate intent and focus of a network. However, they form a structure which will aid networks in planning for all knowledge transfer.

Backer (2000) provided what he termed ‘science-based principles’ for effective knowledge exchange. These were user-friendly communication, user-friendly evaluation, resource adequacy and the addressing of complex human dynamics of change. These latter included rewarding change of activities, involvement of people who have to live with effects of the change in the implementation stages, and helping users address their concerns and fears.

Graham and Logan (2004) examined the knowledge exchange process, using Rogers’ (2003) classic typography. They reported several aspects of innovation acceptance: conditions under which innovations were adopted, responses to innovation, and stages of adoption. In spite of the use of the term ‘innovation adoption’ as opposed to ‘knowledge transfer’, or synonym, the processes described are directly related to the purposes of a voluntary network.

## Conditions Under Which Innovations Are Readily Adopted

- **Compatibility** - considered compatible with current values, beliefs and practices
- **Relative advantage** - seen as more advantageous than current practice
- **Low complexity** - easy to use
- **Observability** - seen by others to be in use
- **Trialability** - can be tested prior to formal adoption

*Graham & Logan (2004), from Rogers (2003)*

If any condition is not present, networks will need to pay particular attention to making the knowledge readily accepted by their fellow members or by the community at large. Barwick and

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colleagues (2005) discussed the need for consumers to be aware of the advantages of making a change, of 'buying in'.

In examining the literature on community and systems change, Roussos and Fawcett (2000) identified seven factors which helped a collaborative partnership to create an environment conducive to positive health outcomes. These factors have been adapted as follows:

### **Factors Fostering Collaborative Environments**

- Have a clear vision and mission
- Prepare an action plan with details of what, how, who, plus sources of support and opposition
- Develop and support leadership
- Document progress and disseminate this information
- Provide technical and human resources
- Secure financial support
- Make outcomes important to people beyond the partnership

*Roussos & Fawcett (2000)*

These factors included both the actions of the members of the partnership, for example the creation of the mission or plan, and the needs of the community, as in dissemination of information or marketing the outcomes to people beyond the partnership. However, in this approach, there was little recognition of the community as part of the partnership, only as a recipient of its actions.

Seven rules of knowledge dissemination in health care were devised by Berwick (2003). Although 'admittedly speculative', the rules suggest procedures for effective knowledge transfer and the implementation of innovation. Berwick listed his 'rules' as follows:

### **Rules for Effective Knowledge Transfer**

- **Rule 1. Find sound innovations** – networks are one way of doing this.
- **Rule 2. Find and support innovators** – N.B. these may not be found in networks
- **Rule 3. Invest in early adopters** – facilitate the move from compliance to support
- **Rule 4. Make early adopter activity observable** – enable them to be watched by the early majority
- **Rule 5. Trust and enable reinvention** – do not assume that reinvention is resistance

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- **Rule 6. Create slack for change** – recognize that change takes time and energy
  - **Rule 7. Lead by example** – be prepared to change!

*Berwick (2003)*

Within the context of networks, these 'rules' appear to have a sound basis for knowledge transfer. However, perhaps one caveat is that within a voluntary health network, the diversity of membership may indeed facilitate innovation from within its own ranks.

The differentiation of innovation acceptance was related to the audience or target market for a change or innovation (Rogers, 2003). There were four types of people described:

### **Adopter Types**

- **Innovators** - venturesome, cosmopolitan, socially connected
- **Early adopters** - respected locally, well-connected, self-conscious experimenters, social leaders
- **Early majority** - deliberate, local in perspective, watchful of early adopters
- **Laggards** - traditional, socially isolated, slow to change

*Graham & Logan (2004), from Rogers (2003)*

The communities with which health networks must interact can be expected to have people representing all four adopter types. However, implementation of new knowledge will be more straightforward if the majority type is strategically identified in advance and plans made accordingly.

In order for a person to accept an innovation or new knowledge, a series of five stages have been identified before a final decision is made:

### **Stages of Decision Making**

- **Knowledge** - becoming aware of the innovation
- **Persuasion** - developing positive attitudes towards the innovation
- **Decision** - making a cognitive decision to adopt the innovation
- **Implementation** - using the innovation
- **Confirmation** - continuing to use, adapting or abandoning the innovation

*Graham & Logan (2004), from Rogers (2003)*

Abernathy and others (2001) reported on a presentation by Alan Andreason, a specialist in social marketing. Andreason emphasized the need to know how prepared the audiences are to receive 'a message' and to appreciate what stage of decision-making they had reached. Knowing where customers are in their decision stages will assist networks in achieving successful adoption of new knowledge. Failure to identify decision stages or types of adopter most prevalent in their community may result in unnecessary effort and communication stress.

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## The Practice of Knowledge Transfer

The dissemination of knowledge is the goal of networks and much has been written on this issue (see Hill, 2002). In reviewing past research, Barwick and others (2005) stressed that the one single factor associated most often with successful knowledge transfer was face-to-face interaction. As Malhotra (2002) wrote, "Knowledge transfer is embedded in spontaneous conversations". Such knowledge transfer can only take place when people are in the same place at the same time. Thomasgard, Warfiel and Williams (2004) noted that valuable exchanges often took place just before or just after a formal meeting took place.

Face-to-face contact alone is not sufficient for achieving knowledge transfer. It was more effective to use multiple strategies and active approaches. It was also beneficial to examine the preference of intended users (Abernathy et al., 2001; Barwick et al, 2005; Gilchrist, 2000; Graham & Logan, 2004). The following list summarizes successful approaches to knowledge transfer:

### Recommended Strategies/Materials for Effective Knowledge Transfer

- Combined interventions
- Educational outreach visits
- Face-to-face interaction
- Interactive educational meetings
- Interactive seminars
- Involvement of highly respected leaders of opinion
- Listening
- Local consensus processes
- Pamphlets
- Reminders
- Social marketing
- Websites with interactive learning modules

*Abernathy et al. (2001); Barwick et al. (2005); Gilchrist (2000); Graham & Logan (2004); O'Donnell (2000)*

In order to construct a plan for delivery of a 'message', Mac Penney, vice-president of a public relations firm, gave practical, direct instructions to health professionals (Abernathy et al., 2002). He advised them to list the following concepts: core issues; key stakeholders; how the core issues affect the stakeholders; ways to reach the stakeholders; and most appropriate channel for reaching them. Working together to construct such a plan would provide opportunity for interaction and formation. Gilchrist (2000) pointed out that such opportunities for mutual learning foster relationships built on trust and respect. Selsky (1991) also emphasized the importance of relationships based on the personality of the 'change agent'. This was considered especially important when an organization was new or small.

Abernathy and others (2002) noted that the target market of a knowledge transfer activity would not be a homogeneous group. They advised configuring the users into smaller groups and identifying the most appropriate methods of reaching them. The methods would be determined by their different needs and might result in different information or methods of transfer.

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The use of informal networks to spread information was advocated by Gilchrist (1995) and Rosen (in Abernathy et al., 2001). Gilchrist listed the following attributes usually found in informal networks:

### **Attributes of Informal Networks**

- Connections are casual but beneficial
- People acquire a sense of belonging to a community
- Membership is not often defined with boundaries
- Changing membership connects with other networks
- Offer opportunities for communication
- Provide access to resources, information, influence and opportunities
- Members have similar interests and values

*Gilchrist (1995)*

Such informal groupings of people have, nevertheless, some disadvantages. As Gilchrist observed, they are sometimes restricted by distance and can be selective in who receives certain information. However, Rosen encouraged identifying the network 'hubs', the people at the centre of informal networks. They were seen to have contacts in a variety of places and were therefore in a strong position to disseminate information. Rosen also recommended 'seeding' information, planting it with key people so that it is talked about and becomes a topic of interest.

Ineffective strategies for knowledge transfer were noted by Graham and Logan (2004) and Barwick and others (2005). In referring to 'passive' strategies, they included most print materials, such as journal articles, and didactic conferences or workshops. Only small, if any, changes in practice could be expected from such approaches. Barwick and others recognized that, nevertheless, these were the 'currency' of both academia and health care organizations. They concluded that "all knowledge strategies work at least some of the time, but not all of them work all of the time, or in every context" (p.29).

In their efforts to foster knowledge transfer, health networks have a variety of styles of working together. These are determined by their purpose, focus and membership of the network and have been categorized by Watson, Townsley and Abbott (2002) into three types:

### **Types of Networks**

- **Multidisciplinary** – individuals within single agencies, families not included, focus is on the needs of the agency
- **Interdisciplinary** – professionals are from different agencies, set common goals, focus on the needs of children
- **Transdisciplinary** – different agencies share aims, information, tasks, responsibilities, focus is on the needs of children and family, primary caregivers are key members, families seen as equal partners.

*Watson et al. (2002)*

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The description of a transdisciplinary way of working together can be applied to voluntary health networks of the SACYHN type. Watson and others (2002) considered this the most effective, but least often found working style.

## **Comment**

Successful knowledge transfer in networks is a complex blend of interwoven concepts. These include the value attributed to the knowledge and its proponents, the involvement of all parties concerned, and the variety of approaches taken in its dissemination. It is therefore important for networks to be aware of factors such as the social and psychological environments present when new knowledge is being created and dispersed. Also, research in knowledge transfer highlights the lack of impact of some of the most frequently used methods of transfer. Tried does not necessarily mean true or effective.

A major strength of voluntary health networks lies in their composition. Inclusion of a wide range of health professionals, families and cultural groupings enhances the exchange of knowledge. However, both message and medium are embedded in the perceptions of these people. It is essential that people participating in networks are comfortable in their interactions and in their roles.

## SECTION 3 – BARRIERS TO KNOWLEDGE TRANSFER

In the transfer of knowledge between people, individually or in groups, a variety of barriers have been identified. Therefore, networks that are aware of such hindrances can be proactive in preventing their interference. The following barriers are recognized as interfering with successful interchange/ application of information:

<b>BARRIERS TO KNOWLEDGE TRANSFER</b>	
<b>SOURCE</b>	<b>CONTENT</b>
<ul style="list-style-type: none"> <li>Frequent staff turnover/burnout</li> <li>Intolerance for errors and mistakes</li> <li>Lack of trust</li> <li>Organizational stress</li> <li>Attitude of leadership</li> <li>Champion for project unavailable</li> <li>Cultural differences in agencies</li> </ul>	<ul style="list-style-type: none"> <li>Claim of no risk involved</li> <li>Negatives hidden</li> <li>Lack of shown benefits</li> <li>Lack of choices</li> <li>Lack of understanding of needs and fears of community</li> </ul>
<b>MEDIUM/DELIVERY METHOD</b>	<b>USER/AUDIENCE</b>
<ul style="list-style-type: none"> <li>Face-to-face exchange not provided</li> <li>Lack of equality, tolerance</li> <li>Low level of information sharing</li> <li>Lack of monitoring of process</li> <li>Poor choice of messenger</li> <li>Readiness analysis not completed</li> <li>Inadequate staff resources</li> <li>Weak triage in selection of programs</li> <li>Expectations not clear</li> <li>Procedures not clear</li> <li>Gaps in community knowledge not identified</li> <li>Gaps in community knowledge identified but no action taken</li> <li>Information overload</li> <li>Lack of place for meetings</li> </ul>	<ul style="list-style-type: none"> <li>Attitude to change generally negative</li> <li>Low tolerance for change</li> <li>Belief and ideology differences</li> <li>Frequent staff turnover/burnout</li> <li>Intolerance of errors and mistakes</li> <li>Organizational stress</li> <li>Role loss anxiety</li> <li>Inadequate staff resources</li> <li>Financial &amp;/or workload pressures</li> <li>Front line practitioners not involved</li> <li>Lack of authority to implement changes</li> <li>Regulatory restrictions</li> <li>Lack of time for meetings</li> <li>Medico-legal concerns</li> <li>'Not invented here' syndrome</li> <li>Peer influence</li> <li>Power relations unequal and unchanged</li> <li>Scepticism among practitioners</li> <li>Status and reward issues</li> </ul>

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The listed barriers were found in work by the following - Abernathy and others (2001); Barwick and others (2002); Barwick and others (2005); Backer (2000); DeLong and Fehey (2000); Double (1999); Fuller, Edwards, Martinez and Edwards (2004); Gilchrist (2000); Graham and Logan (2004); Malholtra (2002); McKnight, Cummings and Chervany (1998); Sloper (2004); Tschannen-Moran and Hoy (2001); and Wenger, McDermott and Snyder (2002). They were, perhaps somewhat categorically, clustered under the elements of knowledge transfer identified by Barwick and others (2005) and discussed above.

It can be seen that the challenges of dissemination mainly tended to lie, not with the sender or the content, but with how the information was delivered and the attributes of the receiver. It was not just what was being said, but very much how it was said and to whom. Health networks need to be aware of such challenges and be prepared to deal with them in advance of knowledge transfer activity.

## **Anticipation of Barriers**

A network in which potential threats to knowledge transfer are identified at the start of an activity will be able to by-pass many of the identified challenges. Graham and Logan (2004) urged the execution of a barriers assessment prior to implementing change. The identified negative elements could then be dealt with beforehand. By anticipating the reactions of potential target audiences, including politicians, health professionals and community members, pro-active steps could be taken to deal with negative perceptions as well as to market positive attributes of the change. The anticipation not only of barriers themselves, but of the possible time, place, and people involved, can foster the smooth implementation of any activity.

In the knowledge transfer literature, there were a limited number of reports which indicated “We had a problem with x, but we fixed it by doing y”! There was also a shortage of practical examples of how the identified barriers evinced themselves in network activity. Useful illustrations, such as McCary, Schainker and Liu (1999) and Bernstein and Turner (1999), described community health activities which were successful in bringing together both professionals and families. They identified challenges faced in delivering their particular programs, such as compromises on dates or inappropriate signage. Yet, such practical information, “This is what we did and this is what happened”, is in a small minority of published material. The more theoretical approach to barriers and supports is common. More information is needed from front-line people who implement health knowledge transfer events and are prepared to be open regarding their challenges and even failures, as well as their successes. In the present report, some practical examples are provided in Section 7 on the uptake of knowledge.

The barriers identified above also tend to fall into two main groups – professional/personal and organizational/structural. In the first group, there is concern for a loss or threat to a personal or professional role or relationship. In the second, logistics, organizational structure or poor decision making may provide challenges. Networks face both types in the creation and exchange of knowledge.

## **Comment**

Knowledge uptake is a function of all the factors associated with knowledge transfer. Yet, examination of the research showed that it is the characteristics and responses of the potential

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users of knowledge that are most closely related to its lack of use. In the combination of product, process and people, it is in the people where resistance lies. However, by advance consideration of potential barriers and of an associated plan to overcome them, knowledge creators can effectively disseminate their message.

Networks need to keep aware not only of the quality of all information, but of the potential response of the people for whom it is designed. It should be noted that this includes both members of a network and members of the community.

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## SECTION 4 – HEALTH NETWORKS AND KNOWLEDGE UPTAKE

The application or use of new knowledge is currently termed ‘knowledge uptake’. It is an essential part of the change process. If it does not happen, preliminary efforts have little value.

### Preparation for Knowledge Uptake

Green and Johnson (1996, p. S14) summarized four ‘operating assumptions’, first identified by Dunn and Holzner (1988), which exist in knowledge transfer and uptake. The identified theses were as follows:

#### Operating Assumptions in Knowledge Transfer

- **Subjectivity thesis** – No matter how knowledge is objectively and scientifically grounded, both individuals and organizations consume it subjectively according to their own experience and circumstances.
- **Corrigibility thesis** – Knowledge, whether directed toward understanding or action, always leaves room for refinement, improvement and adaptation.
- **Sociality thesis** – The production, transfer and utilization of knowledge are social processes...The structure of social arrangements – societies, government, communities, organizations – affects the production, transfer and utilization of knowledge.
- **Complexity thesis** – The processes used in knowledge development, dissemination and utilization are interdependent in their causes and effects and thus complicated – both to study and to accelerate or decelerate.

*Dunn & Holzer (1988)*

These assumptions appear to divide into intrinsic and extrinsic pairings. Intrinsically, knowledge itself is not static, but is open to development and change. Its creation, transfer and uptake are closely intertwined. Extrinsically, knowledge uptake is affected by the characteristics of the users and the environment in which they exist. Proponents of the uptake of new knowledge, such as networks, are therefore faced with the double challenge of both their product and their market. The theses are paralleled by the categories of barriers to knowledge transfer provided above in Section 2 which were grouped into source, content, medium/delivery method and user/audience.

Before any action on the marketing side is taken, Backer (2000) advocated holding a gap analysis to determine the current spread of knowledge and thus identifying opportunities for further dissemination.

Barwick and colleagues (2005) addressed the challenges of knowledge uptake of in the context of children’s mental health. They examined how the use of evidence-based practices (EBPs) can be encouraged in a range of people including practitioners and consumers. Their conclusions on how to effect change which results in knowledge uptake included the following:

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## Enhancement of Knowledge Uptake

- Participatory approaches that examine the needs and preferences of all stakeholders are most effective
- Identification by stakeholders of their own needs and preferences results in more uptake – ask ‘What do you need to know?’, ‘What are your issues?’, rather than present stakeholders with information
- Leaders who communicate openly and honestly are needed
- One on one, face-to-face, knowledge transfer is the most effective
- Consumers must be informed and educated on EBPs to assist them in advocating for delivery of services
- Education on EBPs must be continued – this is at all levels, manager, practitioner, decision maker, consumer
- Knowledge is most likely to be used when decision makers are involved in its creation
- Dissemination and use of knowledge is enhanced by early and direct involvement of community partners in its preparation
- New community skills, particularly technological, need to be supported to a level of independence, enabling continued use following departure of initial resources
- Evaluation of EBPs should be carried out by the community during uptake processes

*Barwick et al. (2005)*

There is an emphasis on continued contact between those who are the core initiators of knowledge and those who will be the ultimate users. From the initial questions regarding issues, through development to dissemination and application, there is also a thread of ongoing community empowerment. Knowledge uptake was most likely when community members were integrally involved in its cultivation.

In their discussion of communities of practice, Fontaine and Millen (2005) noted that benefits accrued from “the exchange of insights, ideas, expertise, experience, lessons learned” (p.1). Wenger (2004) emphasized that successful communities “always combined bottom-up enthusiasm and initiative from members with top-down encouragement from the organization” (p.6). These participatory approaches reflect the values and activities of networks such as SACYHN. Cummings and van Zee (2005) found a core difference between communities of practice and networks in that the former were more interested in process than product and in practice than innovation. The variety of activities associated with health networks in Hill (2002) does appear to be weighted more heavily towards a culture of ‘newness’ in both product and innovation. The sharing of knowledge is, however, intrinsic to both communities of practice and networks. Nevertheless, it would appear that networks of the SACYHN type, being both voluntary and community oriented, are more inclined to share information beyond their boundaries, while communities of practice improve what they do for their own ends.

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Collaboration was encouraged by Swan and Morgan (1993) where the preparation of public awareness campaigns for child health, including brochures, videotapes and directory of services, was completed by community members in association with health professionals. The more contemporary inclusion of web-based information would now be associated with such activity.

## **Strategies for Knowledge Uptake**

O'Donnell (2000) urged that new health programs, a form of knowledge transfer, not only be successful, but be seen as successful. He suggested planning an early success as this would increase the trust, hope and self-esteem of community members. He also encouraged a wide view of what health needs involve. For example, in a program to improve children's health, planners have to take into account the children's need for transportation to take part in the program. In supporting the philosophy of community involvement, he commented that the successful approach is not 'build it and they will come', but "build it with them because they already live there" (p.15).

Racher and Annis (2005) identified knowledge transfer products that had been created with people in two communities closely involved in the Brandon University project, 'Determinants of the Health of Rural Populations and Communities'. The products were part of the overall aim of improving the health of the communities. Activities and materials that directly involved the community, as opposed to academic events, included the following:

### **Community Events Where Knowledge Uptake May Occur**

- Organizational meetings
- Newsletters
- Web sites
- News releases to local newspapers
- Creation of community assessment guide
- Focus groups
- Townhall meetings
- Poster sessions at meetings
- Celebrations

*Racher & Annis (2005)*

These activities illustrate the local involvement in the project. Such involvement not only facilitated knowledge uptake, but fostered the community-university partnership.

A variety of strategies to encourage local uptake was described by Rogers (2001). These emphasized the combination of social activities and health knowledge. For example, information on oral health was distributed at local baseball games and an insert on the dangers of spit tobacco was placed in a local newspaper. Harper (2003) wrote of a large-scale combined effort between the National Dental Association (USA) and the Department of Transport to increase seat belt use. While such a wide spread event may not be within the bailiwick of a voluntary health network, the opportunity for such creative joint ventures undoubtedly exists at a local level.

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Skelly and others (2002) noted the social context where health knowledge was exchanged. Places listed included work, recreational sites, churches, health clinics, schools, social clubs and stores. The concept of 'health knowledge nodes' was discussed. These are centres from where relevant health knowledge could be disseminated. Examples included both health clinics and hairdressers where information on breast cancer could be provided.

The need for more 'fertile ground' in encouraging innovation was noted by Hazel and Onaga (2003). If a community is not receptive to new health initiatives, implementation will be a challenge. Scullion (2002) also wrote of the need for 'good soil', not only as a prerequisite for change, but also as being in need of preparation to receive such a change. How 'local soil' can be prepared for the uptake of new health knowledge would appear to be a question of how best a network can prepare the community to receive it.

A practical method of spreading health knowledge was illustrated by Flax and Earp (1999) and Kim, Koniak-Griffin, Fiaskerud and Guarnero (2004) in their descriptions of the work of lay health advisors. The earlier project trained women to encourage others to participate in a breast-screening program in North Carolina. The trainees were the same race as the target group, with similar incomes and at a similar age. They visited women individually and talked about mammograms, but also organized church based activities and gave presentations to groups of women. Kim and others (2004) looked at lay health workers who provided information on the benefits of healthy nutrition, physical exercise and smoke-free environments to a Latino population in Los Angeles. They advocated the use of lay health advisors in immigrant communities. However, Lewin and others' (2005) review of the research on lay health advisors to disseminate health knowledge concluded that it was effective in some situations, although not enough was known to conclude overall effectiveness. They found positive results in increasing immunization rates for both children and adults and in the improvement of health in people with lung infections including those with malaria. While reporting that there was not enough evidence of impact in other conditions, they did not conclude that there was therefore no impact. The use of lay health advisors to disseminate information on good health practices would appear to have considerable promise. It also supports Dunn and Holzer's (1988) 'subjectivity thesis' discussed above.

## **Local Decision Making**

Jarillo (1993), in a corporate setting, noted the effectiveness of local decision-making in the marketing of international products. Using the Benetton company as an example, he described how the products are made in one country, but decisions on sales and marketing are left up to people working in countries where the products are sold. It is assumed that they know the answers as to how and where their message can best be delivered.

Community-based 'knowledge marketing' regarding health would undoubtedly benefit from the same local approach. Network members, knowing the who, how and where of their own areas, are in a strong position to encourage uptake of health knowledge. A list of sites to assist with community marketing is included in the present report, Section 7, Challenges for Rural Networks.

Berwick (2003) encouraged local adaptation of changes. Innovation, he wrote, generally has to come from outside a system, but implementation of that innovation needs to come from the inside.

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Wenger and others (2002) recommended independence at the local level, so that local decisions could be made regarding the organization of information exchange. This was supported by Bailey (2003) who urged that local problems have local solutions, presumably including uptake of knowledge.

In examining the impact of local decision making in developing countries, Child and Faulkner (1998) discussed the positive impact of 'less dominant control' by a foreign partner. In a smaller context, the same principle can be applied to the work of health networks. There is an underlying reality to the statement, "Sharing of control with local partners will lead to a greater contribution from them, which can assist in coping with circumstances that are unfamiliar to foreign partners." (p.209). When the main purpose of an activity is agreed upon, said Child and Faulkner, its implementation is better left to those with more expertise, knowledge or experience. In voluntary health networks, this would appear to be community members.

The importance of service providers in the knowledge uptake process was succinctly illustrated by Wenger (2004) when he wrote, "Again and again, it is primarily the voice of the practitioner that lends credibility to knowledge across the community" (p.6). Local practitioners from all disciplines, being familiar with community strengths and weaknesses, are in an advantageous position to encourage the uptake of knowledge.

While local adaptation processes may be effective, there is the risk of inappropriate changes to any program. This 'fidelity versus adaptation' debate was described by Hazel and Onaga (2003). Acknowledging the 'human propensity towards adaptation', they appear to favour the middle ground of some local adaptation where the essential core components of a model are kept in tact.

## **Comment**

It is clear that local participation in decision making facilitates knowledge uptake. Members of a community can be assumed to know best how their community will react to any new health information or activity. Successful implementation techniques can be shared within a network, but the final decisions were found to be more effective when cut to suit the local cloth. It is, nevertheless, useful to remember Malhota's (2002) caveat that knowledge transfer cannot assume identical transmission and reception. As the traditional game of whispering a message round a circle shows, knowledge may be changed as the transfer takes place. Therefore, on the one hand, it is necessary to make clear across a network whether there is any room for change in the substance of knowledge, or if it must be fixed. On the other hand, decisions on how to facilitate the uptake of knowledge can be the province of individual members and their community.

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## SECTION 5 – HEALTH NETWORKS AND LANGUAGE

In the literature, difficulties in communication between health professionals were acknowledged, but not often addressed. The problem tended to be caused by the use of terms familiar only to a limited group. Thomasgard and others (2004) referred to this as ‘discipline-specific code’. Although perhaps in itself an example of jargon, the term encapsulates a major challenge in communication.

Barker, Bosco and Oandasan (2005), in discussing interprofessional education, urged those working in this area to develop consensus statements on several areas, including language, before educational sessions began.

Gilbert (2005) provided a number of terms to describe interprofessional education and noted the various ways in which methods of care delivery, procedures and so on are referred to among the health disciplines. He discussed language in the context of ‘institutional dialogue’. This is a set of language patterns learned by students in training which can affect status and power relationships with other health professionals during and after training.

Cross-agency communication problems and ‘troublesome terms’ used by health professionals were challenges identified by Swan and Morgan (1993) when addressing ways to foster the health of children. They recommended that terms be defined, with the definitions either written or informally acknowledged. Hall (2005) claimed that the communication skills taught to medical professionals concentrated on interactions with patients rather than other professionals. Hall also commented that the collaborative interchange associated with clarification of terms did in itself foster the development of a common language.

The need to ensure that new members of a group are familiar with commonly used terms was emphasized by Briggs (1999). This was described as an integral part of the acculturation process. Personal commitments were to be made towards a limited use of any jargon and translation where necessary. Experienced members of a group, or network, should try as much as possible to interpret for families or others unfamiliar with a particular term.

Freeman and Sweeney (2001) noted that the words used by physicians can affect patient decisions. Although studied in a clinical setting, it was clear that communication was influenced by the experiences of both the physician and the patient. This finding would also be true in any health care initiative. For example, where a network may hope to initiate a knowledge transfer activity, the assumptions made about members of a community could have an impact on the communication style. To borrow from Freeman and Sweeney, it may be necessary to shape the square peg of the knowledge to fit the round hole of the community’s background and experience.

Gender differences in dialogue were addressed by Gilbert (2005). He suggested that the style of men to be one of power and status, while that of women was more related to ‘social connectedness’. This problem of ‘asymmetrical interactions’ may be intrinsic to volunteer health networks and may also spill over into dialogue with the community. Problems of communication exist, not only in what is said, as in acronyms or unfamiliar terms, but in how it is said.

The field of gender differences is one which may be of particular interest to SACYHN and other voluntary networks. It may be valuable to investigate funding sources to examine this area in some depth.

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## **Comment**

Effective communication across a voluntary health network is essential. Yet its very cross-disciplinary nature can lead to communication challenges such as unknown acronyms, unfamiliar references or varying communication styles.

Knowledge transfer depends for its accuracy on clarity of the message. With anticipated challenges of dissemination and uptake, the message itself needs to be understood by all network members. The underlying courtesies of clear communication are intrinsic to all network activity.

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## SECTION 6 – KNOWLEDGE TRANSFER AND FAMILIES

Voluntary health networks often include representatives of families, providing an immediate opportunity to interact with a wide range of health professionals and other interested parties. However, the families outside that circle have their own informal networks which are also known to provide health information and support (McGrath, Patterson, Yates, Treloar, Oldenburg & Loos, 1999). At times, they may be the main source of such support.

### Sources of Family Knowledge

Information on health conditions is now widely available on the Internet. O’Connell and Baker (2000) discussed how this can affect patient expectations for health care. Families can obtain health information at home before deciding to participate in a new activity or program. This may have an impact on their response to health knowledge and its application. In a community setting, it can be expected to both challenge and facilitate knowledge uptake.

Through its Family and Community Resource Centre, SACYHN has developed consumer health Information Prescriptions (see [www.sacyhn.ca](http://www.sacyhn.ca)) to enhance family knowledge on particular child health issues. These Information Prescriptions are single page leaflets, distributed by health professionals, to provide families with a convenient list of sources for information on specific health topics. In addition to a list of websites, details are provided of books for both children and adults and of locations where additional information may be found. The ready access to relevant knowledge can offer timely assistance to families who can then acquire it from their own homes, in their own time, and at their own pace. A partnership of the Alberta Children’s Hospital, Calgary Public Library and relevant health agencies contributes to the preparation of the leaflets.

Families having access to decision aids such as pamphlets or videos can profit by the acquisition of new health knowledge. O’Connor and others (2005) found that such aids were shown to increase information on the benefits and harms of health practices and increased participation in the decision making process. Although these aids did not affect anxiety about decision making, the opportunity to use technical sources for health information would appeal to youthful members of a community.

Gilchrist’s (2000) suggestions for knowledge transfer included several that would involve family members – local festivals, neighbourhood projects, or cultural events that provide entertainment. It was also noted that such activities, being informal processes, would foster the creation of informal networks.

Many community health groups or networks have created situations that encourage families to share information and support. Bernstein and Turner (1999) reported that services of the Queen’s Health Network included a centre for children and families, an adolescent peer education program, and a program for HIV positive children and their siblings. The Ottawa-based CYHNEO, Child and Youth Health Network for Eastern Ontario ([www.child-youth-health.net](http://www.child-youth-health.net)), sponsored a family forum on mental illness and co-occurring alcohol and/or drug problems. The panel of speakers included a family member living in this situation and the forum was scheduled in such a way as to leave time for full discussion rather than questions and answers. Similarly, SACYHN co-sponsored a forum on autism that included participation by families in both planning the forum and presenting on their experiences.

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Kaas, Lee and Pietzman (2003) wrote very critically of the lack of awareness among mental health professionals regarding the impact on families, including children, of the presence of a mentally ill relative. They found a positive change after the provision of a course designed to help the health professionals understand the situation of the family and to encourage them to involve the families in decision making. The team providing the course consisted of two family members, two people with a mental illness and one health professional. This face-to-face learning opportunity was in the best tradition of knowledge transfer, this time *from* the families rather than *to* them. The SACYHN Family and Community Resource Centre recently launched a Community Education Service designed to provide educational sessions to families and community providers on child health and child mental health topics, with the goals of increasing their knowledge and self management skills as well as facilitating parent-to-parent connections and support.

Another recent addition to the Family and Community Resource Centre is the inclusion of a weekly scrapbooking evening. Parents come to create books which celebrate their children and, in doing so, provide support for each other in an informal networking activity (personal communication, 8 November 2005).

## Networking in Health Centres

Although established to meet a clinical need, British Columbia community health centres tend to be active in providing support for their communities which extends far beyond their obvious purpose ([www.chcnet.bc.ca](http://www.chcnet.bc.ca)). The range of networking opportunities, with associated knowledge transfer, is illustrated below:

### Examples of Networking and Knowledge Transfer in Health Centres

- Vancouver-based Mid-Main Centre provides interactive parental programs such as Parents as Teachers. Knowledge transfer in such a group can foster child and family health.
- Hornby and Denman Island Centre is a non-profit health delivery organization that collaborates with individuals and groups to foster independence of island residents and uses volunteers to make 'friendly visits'.
- Granisle, an isolated community over 100 kilometres from Burns Lake, holds monthly meetings of the Community Health Advisory Committee fostering community linkages.
- Akisqnuq Centre, near Windermere, works with residents of the Columbia Lake First Nations Reserve. Networking activities include the Good Food Co-op Nutrition Program, monthly elder lunches, women's lunches that include health education, and the Community Kitchen program which provides cooking classes for community members.

([www.chcnet.bc.ca](http://www.chcnet.bc.ca))

All of these events and programs are examples of how an active network can foster inter-family exchange, and creation, of knowledge.

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## Comment

Transferring health knowledge to families is, to a considerable extent, no longer at the sole discretion of health professionals. In addition to the tradition of do-it-yourself health books, there is now the ever-increasing ocean of information on the World Wide Web. Families can often be in possession of much information related to any new health concept before knowledge dissemination takes place. While incorporating the dangers of a little knowledge, this can nevertheless foster informed decision making.

Information can also be gained by contemporary decision aids, such as videos or websites, provided directly by a health professional or similar source. These aids can also be used to foster networks within a community related by similar health needs.

Family representation on health networks such as SACYHN provides a perspective that is unique. However, family informal networks also contribute to dissemination in a manner which is beyond the reach of many professionals. The health of children and youth benefits from knowledge transfer in both styles of networks in their community.

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## SECTION 7 – LINKAGES AMONG SERVICE PROVIDERS

In the promotion of knowledge transfer, the role of voluntary networks can be aligned with that of knowledge management professionals. These specialists, sometimes external to an organization, have a key role in establishing conditions for the creation and dissemination of knowledge (Ardichvili, Page & Wentling, 2002). It is therefore important for networks to establish an environment where knowledge passes smoothly between health professionals.

### Facilitating Linkages Among Service Providers

The required environment for achieving easy knowledge transfer was summarized as follows:

#### Conditions for the Dissemination of Knowledge

- Promote conditions whereby information and ideas are openly exchanged
- Provide time and space whereby expertise and stories can be exchanged
- Support innovative thinking

*Ardichvili et al. (2002)*

The value of face-to-face communication, which surfaces so often in the literature in knowledge transfer, was again promoted in this study. It is interesting also to find the exchange of 'stories' as builders of collaboration and rapport.

Swan and Morgan (1993) encouraged linkages through an ongoing exchange of professional information. This was considered a means of building rapport and knowledge transfer between practitioners from different disciplines. Examples of how this can be achieved included the following:

#### Activities to Build Rapport Among Disciplines

- Exchange information on agencies, programs, procedures
- Provide current details of contact people in each agency
- Explain terminology and definitions used in agency
- Exchange details of continuing professional education. Information on conferences or health initiatives is distributed to selected recipients, so other group members may be quite unaware of it.
- Provide frequent updates of agency activities, with members providing very brief updates on current successes or concerns
- Develop a directory of services with continuing updates
- Share newsletters and mailing lists
- Visit each other's agencies and programs

*Swan & Morgan (1993)*

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Voluntary health networks such as SACYHN are already active in promoting such activities.

Thomasgard and others (2004) were very practical in their fostering of linkages between mental health professionals participating in volunteer Collaborative Peer Support Groups. Their project worked with groups of eight to 15 members, with co-moderators from different disciplines. Food was always provided and continuing professional education credits were obtained. As a result of the collaboration, seminars were sponsored, curriculum modified, teaching materials developed, and further linkages between community and academic service providers were created. The network expanded. Thomasgard and others also observed an increasing crossover of professional support and less rigidity of role definition

Success in Thomasgard and others' (2004) groups was indicated by three measures: a high level of group stability, a high rate of attendance, and recommendation of the groups to other people. If such factors are missing, barriers to knowledge transfer are seen to exist.

## **Challenges to Linkages Among Service Providers**

In order to prepare for successful linkages, the challenges to successful professional linkages need to be addressed. The findings of Thomasgard and others (2004) are presented below:

### **Challenges to Linkages**

- Established social and professional relationships
- Lack of respect for others' training and expertise
- Reasons for lack of respect
- Difficulty in changing current lack of respect
- Difficulty in identifying success of network
- Problem of establishing a common goal
- Different comfort levels with collaboration
- Structure, size and resources associated with various fields of practice
- Different preferred methods of communication
- Different approaches to confidentiality
- Varying ethnocultural backgrounds of members
- Lack of respect for values, traditions, customs, languages of other members

*Thomasgard et al. (2004)*

The challenges associated with linkage barriers add complexity to network activity. In order to help eliminate some such barriers, a Norwegian project focused on the facilitation of paediatricians, community health professionals and families in helping children with cancer (Eilertsen, Reinjell & Vik, 2004). Although a clinical situation, the fostering of collaboration between urban professionals, families and community health professionals established a growing network of people who provided support in the family's home community. It was recognized that there would be a need for support from different community professionals at different stages of the illness and the network provided this. By bringing both families and community health professionals to the paediatric clinic, they were able to exchange knowledge related to the child's life in the paediatric unit.

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## Knowledge Transfer and Interprofessional Education

Lyne, Allen and Slatherly (2001) recommended multidisciplinary professional training to foster linkages between health professionals. It was seen to reduce interprofessional stereotypes, although it was unclear if such training had an impact on either practice or relationships with families. Gilbert (2005) advocated 'exposure' to other disciplines for physicians throughout their training, but 'immersion' in their final year. It was believed that by this time, students would be cognizant of the shortcomings of their own profession and of how these could be met by the skills and knowledge of others. Gilbert stressed that interprofessional education (IPE) should be a long term activity, not stopping at graduation. Voluntary health networks such as SACYHN provide opportunity for such activity.

After an extensive review of related literature, Zwarenstein, Reeves, Barr, Hammick, Koppell and Atkins (2000) concluded that more rigorous studies were needed to examine the impact of IPE on both practice and health outcomes. Herbert (2005) believed that the current research support for its value was 'thin'. This was especially found in IPE provided during training. However, it was acknowledged that 'no evidence of benefit' was not the same as 'evidence of no benefit'. Herbert emphasized the positive impact of role models who showed respect for the skills and knowledge of the range of health professionals who care for members of the community.

The inclusion of college trained health care workers such as licensed practical nurses or nurses' aids in interprofessional activity was advocated by Cook (2005). Their role in front line participation in the provision of community care would presuppose inclusion in voluntary health networks. However, that may not be the case in all networks.

Purden (2005) urged that, where appropriate, IPE include members of the Aboriginal communities. It was stressed that education on cultural diversity was needed. However, such diversity extends far beyond First Nations people. Immigration brings a cultural mix to the realm of health care which can also benefit from health network action.

The focus on interprofessional education has led to the establishment of the Centre for Advancement of Interprofessional Education (CAIPE) in the United Kingdom ([www.caipe.org.uk](http://www.caipe.org.uk)). The professions currently included are health, education, social care and criminal justice. It is of note that one of the key aims of the organization is to 'stimulate networking and sharing of best educational practices' (Herbert, 2005).

Cross-disciplinary activities such as the health fair described by McCary and others (1999) resulted in collaboration to achieve a health related goal. Linkages occurred as a result of the planning and implementation processes. Child health networks that can design cross-discipline community events requiring cross-disciplinary collaboration, would probably find a similar increase in professional and personal linkages.

### Most Effective IPE

Thomson O'Brien and colleagues (2001) examined a large number of studies on professional education for health professionals. Activities that were examined included meetings, conferences, workshops, seminars, symposia and off-site courses.

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They concluded that the most effective activities in changing professional practice were **interactive workshops**. Such workshops provided to health professionals from different fields could therefore be assumed to benefit both professional practice and networking opportunities.

## **Comment**

Putting health professionals in one room and teaching them together has not been found to meet the challenges of interprofessional linkages. Such challenges are strongly associated with personal and professional differences. However, it is important that information on each other's role and contribution is exchanged, particularly in a network setting, as a basic level of shared knowledge.

Interprofessional education (IPE) is increasing in popularity, although there is as yet no definitive proof of its impact on change of practice. Nevertheless, there can be little expectation of change without contact, especially as face-to-face transfer of knowledge is known to be the most effective. Although it is not yet known when IPE can have the most impact, the finding that interactive workshops show most promise for change is a valuable one for network functioning. By talking and working together, linkages between professionals from different disciplines can be fostered. This can be expected to have resultant benefit for all network activities.

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## SECTION 8 – CHALLENGES FOR RURAL NETWORKS

Networks attempting to foster the health of children and youth in rural areas face challenges beyond those of their urban counterparts. In Canada, the infant mortality rates in rural areas in 1996 were 30 per cent higher than the national average, while rates in Aboriginal infants doubled this average (Ministerial Advisory Council on Rural Health, 2001). The context in which a rural network may function can therefore be fraught with established difficulties.

Nevertheless, the implementation of voluntary health networks in rural settings can be placed in a culture of both collaboration and independence (Fuller et al., 2004; Joyce, Veitch & Crossland, 2000; McGrath et al., 1999). This two-sided coin therefore needs to be addressed when considering the empowerment of a rural community. Although much of the information on health in rural areas does not address networking per se, it can be used to examine challenges that can impact the functioning of networks

When considering the challenges of organizational networks that were geographically far apart, Wenger and others (2002) identified distance, size, affiliation and cultural differences as the key stumbling blocks. These also appear relevant to rural health networks. McGrath and others (1999) wrote of the 'tyranny of distance' as it affected friends and family during a time of health needs. The same tyranny can be said to affect networking activities. Similar demands of time and money exist. Long distances need to be travelled for face-to-face meetings. Videoconferencing, while providing a valuable substitution, may also require travel for several members and is dependent on availability of resources.

A further challenge to rural knowledge transfer is the high rate of staff turnover. Fuller and others (2004) quotes a rural resident who lamented, "By the time you work out who you can work with, they're gone. It takes time to work on those relationships" (p.78). Such turnover has a negative impact on the functioning of networks where the establishment of trust is a key issue.

### Informal Networks in Rural Areas

McGrath (1999) looked at the community support services that were used by rural women in Australia to help them to deal with breast cancer. She found that the women often have support from informal networks, turning to neighbours and friends for health information. The most frequently used services were breast cancer volunteers, support group activities, social workers, hospital support services and community health services. Community members active in such services would appear to be important components of a knowledge transfer system. Yet an important result of the study was that many of the women were unaware of available services. Therefore, in spite of the existence of community supports, information was not reaching the most important users. This finding indicates an obvious gap in knowledge transfer, which may be avoided through the formation of SACYHN-type networks. As McGrath wrote, "Strong consideration needs to be given to stimulating and promoting...the already effective informal rural infrastructure base" (p. 51).

In investigating rural mental health, Fuller and others (2004) found that in lieu of mental health specialists, people turned to friends and neighbours who worked in the human service areas. These included teachers, nurses, ministers, members of police services, and school counsellors. Here would appear to be the nucleus of a voluntary regional health network. Ricketts (2000) pointed out that formal health networks, mostly physicians, were being created

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in response economic and environmental conditions. The existence of such networks may also form the basis of networks with a wider membership base.

A practical example of knowledge transfer through rural family health education was described by Alexander, Divin-Cosgrove, Faner, and O'Connell (2000). A network approach was used to involve professionals and families where one or more members had asthma. The family-focused activities were held in the community, a "well environment", rather than in the "ill environment" of a clinic or hospital. Health professionals came from the fields of nursing, speech and language pathology, social work, medicine, laboratory scientists and health science. They were, perhaps not surprisingly, all students in their various fields. Families volunteered to take part and could request home visits between the group meetings. Activities were culturally appropriate and provided through collaborative efforts of the students. In true networking fashion, not only the families but also the students benefited from the cross-disciplinary team building and educational activity. Delivery of information where the people lived, in an informal culturally appropriate way, led to serendipitous growth and learning for all.

A further effort in a rural setting to achieve both knowledge transfer and knowledge creation used a 'circle of care' with members of a First Nations community in Alaska (Simmons, Novins & Allen, 2004). The circle was asked to create a definition of 'serious emotional disturbance' which was relevant to their community. The discussion, which focused on the physical, emotional, spiritual and emotional health of children, resulted in a pronounced change in self-determination and empowerment. Simmons and others described the level of growth as 'remarkable'. There was empowerment through the process as well as the product of the discussions, a true networking result. Further networking activity with First Nations was found in some of the British Columbia community health centres as discussed in Section 6 of the present review, and Treaty 7 First Nations have been a part of SACYHN since its inception and are involved in many of its knowledge transfer activities.

Knowledge transfer has been seen to be affected by existing power relationships. A lack of authority to implement change can have a negative effect on health care (Barwick et al., 2005). From the perspective of voluntary networks, a lack of local authority could be detrimental to implementation. In the traditional, conservative, and often diverse social society of many rural areas, this barrier could be extremely difficult to overcome. The call for 'culturally sensitive' health service when dealing with Aboriginal peoples (Ministerial Advisory Council on Rural Health, 2001) would include the necessity of being aware of where local power, informal as it may be, actually lies. Program implementation without the support of the local cultural leaders is likely to be problematic.

Thomson O'Brien and others' (1999) examination of research on the impact of local opinion leaders, all physicians, on health care practices provided mixed results. The influence was found to be limited and did not work in all situations.

## **Knowledge Dissemination in Rural Areas**

In order to foster the transfer of knowledge related to health within rural communities, a list of suggested locations for display and/or distribution of information was developed in conjunction with rural community residents (Gowdy, 2000). It was found that both the creation of the list and the distribution of information fostered links between the people involved. Current and future health networks may find the list of use in reaching a wide range of residents within a single community. The initial list has been augmented below:

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## Reaching Rural Residents - Locations for Distribution of Information

Banks  
Barber shops  
Bars  
Churches  
Coffee shops  
Colleges  
Community centres  
Convenience stores  
Dentists' offices  
Doctors' offices  
Drop-in centres  
Drug stores  
Fabric stores  
Farm equipment distributors  
Fast food outlets  
Friendship centres  
Further education centres  
Gas stations  
Grocery stores [additional: place special flyers in grocery bags]  
Hairdressers  
Health centres  
Hospitals  
Hotels  
Libraries [additional: provide special book marks with each loan]  
Liquor stores  
Media outlets [newspapers, radio, television]  
Movie theatres  
Pool halls  
Post offices  
RCMP stations  
Schools  
Seniors centres  
Sports facilities  
Stores of all types  
Street display boards  
Truck and car sales centres  
Video stores  
Websites with local content  
Work and employment sites

The creation and management of health networks in a rural area has challenges and benefits unique to each location. The Alberta Rural Family Medicine Network ([www.arfmn.ab.ca](http://www.arfmn.ab.ca)) works in a geographical area similar to that of SACYHN. While established to foster the training of rural physicians, its supportive approach is congruent with that of the voluntary network. Joyce and others (2000) considered the presence of networks potentially valuable in the improved retention of rural physicians. As turnover of personnel was seen to be a barrier to knowledge transfer, a voluntary health network may fulfill the same function as a single-profession group. The network system by its reaching-out and bringing-in techniques would appear congruent with the special needs and resourceful culture found in rural communities.

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## Comment

Rural areas provide both challenges and opportunities for health networks not present elsewhere. The impact of distance, lifestyle, attitude and relationships can be positive and negative, for both health professionals and community members. The strength of informal networks can offer ease of dissemination and uptake, but the need for awareness of local cultural and social groupings is essential. Involvement of community members in dissemination plans is particularly important if time and effort are going to be saved.

It is possible that health networks in rural areas can have positive effects on members that reach beyond knowledge transfer. The social and psychological benefits of membership in such a network could result in an enhanced sense of belonging. It would thus encourage retention of health professionals who are so necessary to community well being.

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## SECTION 9 – HEALTH NETWORKS AND TECHNOLOGY

The recognized rate of technological change works against the currency of a literature review. Given the delays between completion of research, acceptance for review and final publication, an article addressing this topic may already be out of date before it can be accessed. However, suggestions for using technology to foster networking can still be relevant on a larger scale. 'Network' as a term used in this branch of research literature presumes reference to an information technology (IT) network. How health networks can use, or foster the use of, technological networks can often be gleaned from more general writings on the topic.

### Advantages of IT

The following are some generally accepted advantages of the use of IT. They can be applied to knowledge transfer in and across health networks.

#### Benefits of Information Technology in Knowledge Transfer

- Keep informed of general developments
- Post details of meetings, seminars, conferences on a variety of topics
- Supplement face-to-face meetings with videoconferencing
- Discuss specific topics
- Provide solutions to precise questions
- Provide ready access to vast amounts of knowledge
- Offer descriptions of best practices
- Increase collaboration between health services
- Host news groups
- Search for advice
- Provide efficient exchange of information

*Ardichvili et al. (2002); Cross, Bogatti & Parker (2001); Johannessen, Bergmo & Appelbom (2004)*

Bailey (2003) warned that knowledge management may be facilitated by IT, but it is not the only method of sharing information. He also noted that the need to transfer knowledge can push towards the need for IT. The moral obligation to share knowledge, bringing benefit to a community, was seen by Ardichvili and others (2002) to be fostered by IT. The online community could be an extension of an already existing face-to-face community as well as provide opportunity for distant units to communicate. Kim (1999) suggested that the anonymous nature of online support groups, as well as the strong expectation for privacy, enabled the discussion of private issues that might not be addressed in person.

### How Health Networks Use IT

To illustrate how health networks are using IT to enhance their knowledge transfer activities, the following examples are of interest to voluntary networks. It is noteworthy that there are now so many IT networks that there are networks devoted to networks (e.g., the Integrated Strategic Alliances and Networks).

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## Examples of Health Networks Using IT for Knowledge Transfer

- [www.bchealthguide.org](http://www.bchealthguide.org) (the **BC HealthGuide Program**) provides information on a very wide range of health issues. Under a list of health conditions, it not only provides clinical information, but also gives extensive contact details, including websites, for related parent and family support organizations both within British Columbia and beyond.
- [www.beststart.net](http://www.beststart.net) (**Best Start: Ontario's Maternal Newborn and Early Child Development Resource Centre**) offers information on the promotion of the health of newborns and children. It aims at increasing the capacity of service providers and parents. The content of the network can be very specific (e.g., The SMART Guide training manual for community service providers who support pregnant women who use alcohol). Also available through Best Start are detailed records of conference proceedings such as the 2002 conference *Heartache and Hope: Living Through Postpartum Depression*. This includes manuals on how to develop a community support program and a telephone support program. An email discussion listserv on issues associated with newborns, child health and maternal concerns is provided through the MNCHP (Maternal Newborn and Child Health Promotion Network) forum.
- [www.childhealthnetwork.com](http://www.childhealthnetwork.com) (the **Child Health Network for the Greater Toronto Area**) lists the child health networks across Canada. Although the information provided is not always current, for example names of agencies have sometimes changed, it provides contact details for nation-wide networks devoted to the health of children and youth.
- [www.child-youth-health.net](http://www.child-youth-health.net) (the **Child and Youth Health Network of Eastern Ontario or CHYNEO**) provides a number of sessions on parenting information, specifically the parenting of teenagers. It also has a video addressing the relationship between poverty and health entitled *Poverty Makes Me Sick*. Information on health related events is gathered from a wide geographical area. Such activities range from small local information sessions to national conferences.
- [www.holistickids.org](http://www.holistickids.org) (**Holistic Kids: Pediatric Integrative Medicine Education Project**) is an example of a special interest health network, offering information on the field of paediatrics combined with integrative medicine. It is designed to meet the needs of families and professionals who are interested in children and Complementary and Alternative Medicine (CAM).
- [www.mchfamilylibrary.ca](http://www.mchfamilylibrary.ca) (the **Montreal Children's Hospital Family Resource Library**) offered by McGill University is one of many websites where families can access medical information. However, in none of the libraries was there opportunity for families to comment on the materials. An interactive component, undoubtedly feasible, could enable parents and children to provide responses to the usefulness of materials.
- [www.sacyhn.ca](http://www.sacyhn.ca) (the **Southern Alberta Child & Youth Health Network**) facilitates a range of services and health information for families and professionals in southern Alberta. SACYHN has a well-developed calendar on its website that lists upcoming professional and family/community education sessions that may be accessed via videoconferencing. Clinical IT activities include family support groups, such as the opportunity for parents to discuss

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concerns related to children with kidney disorders and the facilitation of the discharge of patients from the Alberta Children's Hospital to rural health areas.

While clinical information may be a core focus of large health technological networks, it is clear that human networking needs have not been forgotten. Through access to technology, families with health concerns are able to link with other people with similar needs.

Duhl (2000) promoted a concept of 'Health Information Community Networks' whereby single communities share information on health and social issues. Using an interactive web approach, he urged communities, both local and common interest, to address concerns such as teen pregnancies or suicide. He saw IT networks as facilitators of the actions of both organizations and individuals in fostering the health of the community, helping to form collaborative partnerships.

A practical example of IT health support was provided by Nguyen, Carrieri-Kohlman, Rankin, Slaughter and Shulbarg (2004). A virtual social network was created for patients who had received a variety of cardiac treatments. Both patients and their families were dealing with situations noted as commonly found at this time – anxiety, depression, decreased self esteem and reduced family functioning. The virtual social networks gave emotional support and information in a flexible way, with social contact made simple and information available around the clock. The patients were able to access health related material without formal meetings with the medical community. Nguyen and others (2004) commented that such online groups are believed to contribute to an increased sense of empowerment and to promote a therapeutic community. In agreement with Wenger and others (2002), he believed that 'lurkers', people who were silent members of the group, reading the interactions without contributing, would also benefit. One website included the invitation to "feel free to lurk and listen" (Kim, 1999).

## **Concerns Regarding Use of IT for Knowledge Transfer**

In spite of the acknowledged advantages of using information technology to create linkages and facilitate knowledge transfer on an ever-increasing basis, several caveats have been identified in its use. Examples of these are provided below:

### **Examples of Challenges to Use of Information Technology**

- Geography, economics, education, age, etc. can negatively affect access to IT equipment. This is termed the 'digital divide'
- Technical support to maintain an IT system may not be readily available
- People may not be comfortable with videoconferencing which involves little or no face-to-face interaction
- Contributions to support groups or listservs may be restricted by a fear of being criticized
- There may be a reluctance to provide information that might be considered important, accurate or totally relevant
- Some people may be reluctant to share knowledge which provides them with a particular role or advantage

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- People may rely too much on information obtained through IT and postpone a request for needed professional help
  - When a project passes the pilot stage, associated IT costs need to be covered by the community
  - There may be an attitude of reluctance towards any change
  - Expectations of the initial enthusiasts may be too high, leading to a lack of interest and confidence among community members
  - Early usage challenges may lead community members to avoid continued use

*Ardichvili et al. (2002); Johannessen et al. (2004); McClure & Faraj (2000); Nguyen et al. (2004)*

In addition to the above list, there is the contemporary concern for lack of privacy associated with IT. Particularly in a health context, networks need to be aware of the challenges specific to this area of use.

## **Telepresence, Etiquette and Knowledge Transfer**

As even the most widespread of technologies is affected by the human factor, Dimmick, Burgess, Robbins, Black, Jarnagin and Anders (2003) introduced the concept of 'telepresence'. In an interactive teleconferencing situation, this is the quality that provides a feeling of being in a face-to-face meeting. There is a need for dialogue where non-verbal cues can be observed and reacted to, but without effective telepresence this cannot be reached. Voluntary health networks may need to consider this factor when planning for effective knowledge transfer using videoconferencing.

There is an increased interest in how to prepare and conduct a videoconference so that the interaction will be most effective. Voluntary networks covering large distances frequently have little choice but to use this method of interaction. It is therefore important for network members to be as skilled as possible in the use of this form of IT.

The concept of etiquette for videoconferencing, or telehealth, has become readily accessible (see for example [www.northwestern.edu](http://www.northwestern.edu), [www.srl.cam.ac.uk](http://www.srl.cam.ac.uk), [www.hbg.psu.edu](http://www.hbg.psu.edu)). Advice is given on all aspects of the meeting, from preparation (e.g. forward the agenda in advance and arrive early to become familiar with the technical set up) to clothing (e.g. avoid red, black, and small checks or stripes, which affect the ability of the camera to focus, as well as bulky clothes, which make people look larger). All-light or all-dark clothes can affect the automatic brightness control of the camera, shiny jewellery reflects light, and large ruffles distract attention. Voices should be kept at normal volume, but interruptions need to be avoided and it helps to speak slightly slower than normal. Body movements should be restricted.

While seeming somewhat cosmetic, the suggestions made could contribute towards having telepresence. They could therefore assist in acquiring the credibility needed for successful knowledge transfer.

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## Comment

Health networks are using the advantages of information technology (IT) to provide information and support to members. Also, networks are recognizing the rapid increase in public use of websites to access health information. However, there is an inevitability and rapidity of change in website health information. It is therefore important that networks remain current as so much is available with so little effort.

Linkages between members of the public are being fostered. The support available through IT can be of considerable benefit to family members in contact with others in a similar health situation. The ongoing access to a virtual community of supportive people provides assistance that is immediate and personal, but not intrusive.

It is important to note that the use of IT can only be successful if there are sufficient financial and technical resources, not only to install, but also to maintain IT. Training is needed for people who become involved in its use. Initial expert enthusiasm may be misleading as to its long-term value. The presence of equipment alone is not sufficient to ensure that a program can benefit children and their families.

In-house use of IT using telehealth or videoconferencing for knowledge exchange is now a core activity of networks such as SACYHN. Much has been written on how to behave, dress and speak for maximum impact. In a setting where some members are together and others are at a distance, steps need to be taken to ensure that all participants can experience 'telepresence', or the impression of being in the same room. Finally, it is worthwhile observing that the availability of teleconferencing in a network does not ensure equivalency of participation, nor does it replace the strengths associated with face-to-face knowledge transfer.

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## SECTION 10 – CONCLUSION

Whether the intricacies of particular network structures challenge or facilitate knowledge transfer is subject for another discussion. What is clear is that knowledge transfer itself is highly complex. Indeed, Dunn and Holzer's (1988) fourth operating assumption of knowledge transfer was called the 'Complexity Thesis': *"The processes used in knowledge development, dissemination and utilization are interdependent in their causes and effects and thus complicated – both to study and to accelerate or decelerate."*

The thesis emphasized the interdependence of three stages of knowledge transfer - development, dissemination and utilization. In the preparation of the present review, the interdependence not only of these three main stages, but of the myriads of actions and decisions needed to complete them, became increasingly apparent. Each link in the knowledge transfer chain needs to be strong or the process will collapse.

Not only were the stages inter-reliant, but research findings were frequently interchangeable between them. The writing process involved moving information from one section of the review to another as it became, for example, more effective in Knowledge Transfer and Language than in Knowledge Transfer and Families. However, it was relevant in both. Information provided on transfer and uptake was often identical.

There is an interesting parallel between the purpose of a network and the process of knowledge transfer. Knowledge transfer can undoubtedly exist in a linear fashion, but when enacted in a network format it has intrinsic growth and development. Health networks are therefore in a congruent state for the development and exchange of knowledge. Their very shape, such as it is, is conducive to finding out, passing on and handing over - knowledge transfer in action.

If there are key factors regarding knowledge transfer in networks, they can be summarized as follows:

- Choose your information carefully;
- Anticipate problems and assets;
- Choose your messenger with discretion;
- Deliver your message in appropriate methods; and
- Back off - but not away.

Uptake of new knowledge needs local autonomy, but the availability of ongoing support as requested is needed to ensure continuity.

Knowledge transfer requires opportunity for people to meet and especially to meet face-to-face. It means dealing with people at every stage. Voluntary health networks are made up of such a variety of people that this can be a challenge. However, it is also a network's greatest benefit. Knowledge is transferred from person to person; such is the purpose of a network.

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# Bibliography

- Abernathy, T., Bertram, J., Coutts, J., Chapeskie, K.K., Gold, I., March, L. & Royce, D. [2001] **Knowledge Transfer: Looking Beyond Health: Report on Conference, 26-27 October, Toronto, ON.**
- Alexander, J., Divin-Cosgrove, C., Faner, N.L. & O'Connell, M. [2000] Increasing the knowledge base of asthmatics and their families through asthma clubs along the south coast border. **Journal of the American Academy of Nurse Practitioners, 12(7), 260-266.**
- Ardichvili, A., Page, V. & Wentling, T. [2002] Motivation and barriers to participation in virtual knowledge-sharing communities of practice. Paper presented at the Organizational Knowledge Learning and Capabilities 2002 Conference, Athens, Greece. [www.alba.edu.gr/OKLC2002](http://www.alba.edu.gr/OKLC2002)
- Backer, J.E. [2000] The failure of success: Challenges of disseminating effective substance abuse prevention programs. **Journal of Community Psychology, 28(3), 363-373.**
- Bailey, C. [2003] Using knowledge management to make health systems work. **Bulletin of the World Health Organization, 81(11), 777.**
- Barker, K.E., Bosco, C. & Oandasan, I.F. [2005] Factors in implementing interprofessional education and collaborative practice initiations: Findings from key informant interviews. **Journal of Interprofessional Care, May, Supplement 1, 166-176.**
- Barwick, M.A., Boydell, K.M. & Omrin, C. [2002] **Knowledge Transfer Infrastructure for Children's Mental Health in Ontario.** Toronto, ON, Hospital for Sick Children.
- Barwick, M.A., Boydell, K.M., Stasiulis, E., Ferguson, H.B., Blase, K. & Fixen, D. [2005] **Knowledge Transfer and Implementation of Evidence-based Practices in Children's Mental Health.** Toronto, ON, Children's Mental Health Ontario.
- Bernstein, K. & Turner, B. [1999] Queen's positive: The Queen's health network's comprehensive AIDS program. **Body Positive, August, 28-33.**
- Berwick, D. [2003] Disseminating innovations in health care. **Journal of American Medical Association, 289(15), 1969-1975.**
- Briggs, M.H. [1999] Systems for collaboration: Integrating multiple perspectives. **Child and Adolescent Psychiatric Clinics of North America, 8(2), 365-377.**
- Child, J., & Faulkner, D. [1998] **Strategies of Cooperation: Managing Alliances, Networks and Joint Ventures.** Oxford University Press, Oxford, UK.
- Cook, D.A. [2005.] Models of interprofessional learning in Canada. **Journal of Interprofessional Care, Supplement 1 (May), 107-115.**

- 
- Cross, R., Bogatti, P. & Parker, A. [2001] Beyond answers: Dimensions of the advice network. **Social Networks**, **23(3)**, 215-235.
- Cummings, S. & van Zee, A. Communities of practice and networks: Reviewing two perspective on social learning. [2005] **KM4D Journal**, **1**, 22. [www.km4dev.org/journal](http://www.km4dev.org/journal)
- Delong, D. & Fehey, L. [2000] Diagnosing cultural barriers to knowledge management. **Academy of Management Executive**, **14(4)**, 113-127.
- Dimmick, S.L., Burgess, S. G., Robbins, S., Black, D., Jarnagin, B. & Anders, M. [2003] Outcomes of an integrated telehealth network demonstration project. **Telemedicine Journal**, **1**, 13-23.
- Double, D. [1999] What do GPs want from mental health services? **Journal of Mental Health**, **8**, 385-389.
- Duhl, L.J. [2000] Health information community networks. **Public Health Reports**, **115**, 271-273.
- Dunn, W.N. & Holzer, B. [1988] Anatomy of an emergent field. **Knowledge in Society**, **1(1)**, 3-26.
- Eilertsen, M.-E.B., Reinfjell, T. & Vik, T. [2004] Value of professional collaboration in the care of children with cancer and their families. **European Journal of Cancer Care**, **13**, 349-355.
- Flax, V.L. & Earp, J.L. [1999] Counseled women's perspective on their interactions with lay health advisors: A feasibility study. [1999] **Health Education Research**, **14(1)**, 15-24.
- Fontaine, M.A. & Millen, D.R. [2005] Understanding the benefits and impact of communities of practice. [www.chrsf.ca/knowledge\\_transfer](http://www.chrsf.ca/knowledge_transfer)
- Freeman, A.C. & Sweeney, K. [2001] Why general practitioners do not implement evidence: Qualitative study. **British Medical Journal**, **323**, **1100**, 1-5. [www.bmj.com](http://www.bmj.com).
- Fuller, J, Edwards, J., Martinez, L. & Edwards, B. [2004] Collaboration and local network for rural and remote primary mental healthcare in South Australia. **Health and Social Care in the Community**, **12(1)**, 75-84.
- Gilbert, J.H.V. [2005] Interprofessional learning and higher education structural barriers. **Journal of Interprofessional Care**, May, Supplement 1, 87-106.
- Gilchrist, A. [1995] **Community Development and Networking**. Community Development Foundation, London, UK.
- Gilchrist, A. [2000] The well-connected community: Networking to the 'edge of chaos'. **Community Development Journal**, **36(3)**, 264-275.
- Gowdy, E. A. [2000] Grass roots tips on exhibit display. Prepared for **Alberta Community Council on HIV/AIDS**, Red Deer, AB.

- 
- Graham, I. & Logan, J. [2004] Innovations in knowledge transfer and continuity of care. **Canadian Journal of Nursing Research**, **36(2)**, 89-103.
- Green, L.W. & Johnson, J.L. [1996] Dissemination and utilization of health promotion and disease prevention knowledge: Theory, research and experience. **Canadian Journal of Public Health**, **Nov-Dec**, S11-S17.
- Hall, P. [2005] Interprofessional teamwork: Professional cultures as barriers. **Journal of Interprofessional Care**, **May, Supplement 1**, 188-196.
- Harper, H.J. [2003] Buckle up and smile for life: Uncommon partners find common ground to collaborate and eliminate disparities. **The Dental Assistant**, May/June.
- Hazel, K.L. & Onaga, E. [2003] Experimental social innovation and dissemination: The promise and its delivery. **American Journal of Community Psychology**, **32(3-4)**, 285-294.
- Herbert, C.P. [2005] Changing the culture: Interprofessional education for collaborative patient-centred practice in Canada. **Journal of Interprofessional Care**, **May, Supplement 1**, 1-4.
- Hill, C. [2002] **Network Literature Review: Conceptualizing and Evaluating Networks**. Calgary AB, Southern Alberta Child and Youth Health Network.
- Jarillo, J.C. (1993) Strategic Networks: Creating the Borderless Organization. Butterworth and Heinemann, Oxford, UK.
- Johannessen, L.K., Bergmo, T.S. & Appelbom, E. [2004] Northern Norwegian health net. In **E-Health** I. Iakovidis, P. Wilson & J.C. Healy [Eds.], IOS Press.
- Joyce, C., Veitch, C. & Crossland, L. [2000] Professional and social support network of rural general practitioners. **Australian Journal of Rural Health**, **11**, 7-14.
- Kaas, M.J., Lee, S. & Pietzman, C. [2003] Barriers to collaboration between mental health professionals and families in the care of persons with serious mental illness. **Issues in Mental Health Nursing**, **24**, 741-756.
- Kim, A.J. [1999] **Community Building On The Web: Secret Strategies For Successful Online Communities**. Berkeley, CA, Peachpit Press.
- Kim, S., Koniak-Griffin, D., Fiaskerud, J. H. & Guarnero, P.A. [2004] The impact of lay advisors on cardiovascular health promotion: Using a community-based participatory approach. **Journal of Cardiovascular Nursing**, **19**, 3, 192-199.
- Lewin, S.A., Dick, J., Pond, P., Zwarenstein, M., Aja, G., van Wyck, B., Bosch-Capblanch, X., & Patrick, M. [2005] Lay health workers in primary and community health care. **The Cochrane Database of Systematic Reviews**, [www.cochrane.org/reviews](http://www.cochrane.org/reviews).
- Lyne, P., Allen, D. & Slatherly, D. [2001] **Systematic Review of Evidence of Effective Methods for Removing Barriers to Change and to Improve Collaborative Working**. National Assembly for Wales, Cardiff, UK.

- 
- McCary, J., Schainker, E., & Liu, P. [1999] A community care initiative: Maryland and Hopkins students take to the streets in Baltimore City. **Maryland Medical Journal**, **48(1)**, 26-32.
- McClure, M. & Faraj, S. [2000] 'It is what one does': Why people participate and help other in electronic communities of practice. **Journal of Strategic Information Systems**, **9(2-3)**, 55-173.
- McGrath, P., Patterson, G., Yates, P., Treloar, S. Oldenburg, B. & Loos, C. [1999] Study of postdiagnosis breast cancer concerns for women living in rural and remote Queensland. Part II: Support issues. **Australian Journal of Rural Health**, **7**, 43-52.
- McKnight, D.H., Cummings, L.L., & Chervany, N. [1998] Initial trust information in new organizational relationships. **Academy of Management Review**, **23(3)**, 473-490.
- Malhotra, Y. [2002] [www.yogeshmalhotra.com/www.kmnet.com](http://www.yogeshmalhotra.com/www.kmnet.com)
- Ministerial Advisory Council on Rural Health [2001] **Rural Health in Rural Hands: Strategic Directions for Rural, Remote, Northern and Aboriginal Communities.** [www.laurentian.ca/cranhr](http://www.laurentian.ca/cranhr)
- Nguyen, H.Q., Carrieri-Kohlman, V., Rankin, S.H., Slaughter, R. & Shulbarg, M.S. [2004]. Supporting cardiac recovery through ehealth technology. **Journal of Cardiovascular Nursing**, **19 (3)**, 200-208.
- O'Connell, D. & Baker, L. [2000] Communication skills for the health care team: Physicians, medical and office staff. **The Satisfaction Monitor**, May-June. [www.pressganey.com](http://www.pressganey.com)
- O'Connor, A.M., Stacey, D., Entwistle, V., Llewellyn-Thomas, H., Rovner, D., Holmes-Rovner, M., Tair, V., Fiset, V., Barry, M. & Jones, J. [2005] Decision aids for people facing health treatment or screening decisions. **The Cochrane Database of Systematic Reviews**, [www.cochrane.org/reviews](http://www.cochrane.org/reviews).
- O'Donnell, P. [2000] Doing things with -not to- the community. **Health Progress**, Jan-Feb, 14-15.
- Purden, M. [2005] Cultural considerations in interprofessional education and practice. **Journal of Interprofessional Care**, May, Supplement 1, 224-234.
- Racher, F. E. & Annis, R.C. [2005] Community partnerships: Translating research for community development. **Canadian Journal of Nursing Research**, **37(1)**, 169-175.
- Ricketts, T.C. [2000] The changing nature of rural health care. **Annual Review of Public Health**, **21**, 639-657.
- Rogers, E. L. [2001] Community partnering and coalition development. **Journal of Dental Education**, **65(9)**, 892-895.
- Rogers, E. M. [2003] **Diffusion of Innovation (5<sup>th</sup> Ed.)** New York, Free Press.

- 
- Roussos, S.T. & Fawcett, S. B. [2000] A review of collaborative partnerships as a strategy for improving community health. **Annual Review of Public Health, 21**, 369-402.
- Scullion, P.A. [2002] Effective dissemination strategies. **Nurse Researcher, 10(1)**, 65-77.
- Selsky, J.W. [1991] Lessons in community development: An activist approach to stimulating interorganizational collaboration. **Journal of Applied Behavioral Science, 27(1)**, 91-115.
- Simmons, T.M., Novins, D. S., & Allen, J. [2004] Words have power: (Re)- defining serious emotional disturbance for .American Indian and Alaska native children and their families. **American Indian and Alaska Native Mental Health Research. 11(2)**, 59-64.
- Skelly, A., Arcury, T.A., Gesler, W. M., Cravey, A.J., Dougherty, M.C., Washburn, S.A. & Nash, S. [2002] Sociospatial knowledge networks: Appraising community as place. **Research in Nursing and Health, 25**, 159-170.
- Sloper, P. [2004] Facilitators and barriers for co-ordinated multi-agency services. **Child Care, Health and Development, 30(6)**, 571-580.
- Swan, W.W. & Morgan, J. L. [1993] **Collaborating for Comprehensive Services for Young Children and Their Families**. Brookes, Baltimore, MD.
- Thomasgard, M., Warfiel, J. & Williams, R. [2004] Improving communication between health and infant mental health professionals utilizing ongoing collaborative peer supervision groups. **Infant Mental Health, 25(3)**, 194-218.
- Thomson O'Brien, M.A., Freemantle, N., Oxman, A.D., Wolf, F., Davis, D.A., & Herrin, J. [2001] Continuing education meetings and workshops: Effects on professional practice and health care outcomes. **The Cochrane Database of Systematic Reviews**, [www.cochrane.org/reviews](http://www.cochrane.org/reviews).
- Thomson O'Brien, M.A., Oxman, A.D., Haynes, R.B., Davis, D.A., Freemantle, N. & Harvey, E. L. [1999] Local opinion leaders: Effects on professional practice and health care outcomes. **The Cochrane Database of Systematic Reviews**, [www.cochrane.org/reviews](http://www.cochrane.org/reviews).
- Tschannen-Moran, M. & Hoy, W.K. [2001] A multidisciplinary analysis of the nature, meaning and measurement of trust. **Review of Educational Research, 70(4)**, 547-593.
- Watson, D, Townsley, R. & Abbott, D. [2002] Exploring multi-agency working in services to disabled children with complex healthcare needs and their families. **Journal of Clinical Nursing, 11**, 367-375.
- Wenger, E. [2004] Knowledge management as a doughnut: Shaping your knowledge strategy through communities of practice. **Ivey Business Journal**, January/February, 1-8.
- Wenger, E., McDermott, R. & Snyder, W. M. [2002] **Cultivating Communities of Practice**. Harvard Business School, Boston MA.

---

Zwarenstein, M., Reeves, S., Barr, H., Hammick, M., Koppell, I., & Atkins, J. [2000]  
Interprofessional education: Effects on professional practice and health care outcomes.  
**The Cochrane Database of Systematic Reviews, [www.cochrane.org/reviews](http://www.cochrane.org/reviews).**

---

## List of Websites Reviewed

[www.arfmn.ab.ca](http://www.arfmn.ab.ca) (Alberta Rural Family Medicine Network)

[www.bchealthguide.org](http://www.bchealthguide.org) (BC HealthGuide Program)

[www.beststart.net](http://www.beststart.net)

[www.cachecanada.org](http://www.cachecanada.org) [Canadian Association of Continuing Health Education]

[www.caipe.org.uk](http://www.caipe.org.uk) [Centre for Advancement of Interprofessional Education (UK)]

[www.cfha.net](http://www.cfha.net) [Collaborative Family Healthcare Association]

[www.chcnet.bc.ca](http://www.chcnet.bc.ca) (British Columbia Community Health Centres)

[www.childhealthnetwork.com](http://www.childhealthnetwork.com) (Child Health Network for the Greater Toronto Area)

[www.child-youth-health.net](http://www.child-youth-health.net) [Child and Youth Health Network for Eastern Ontario]

[www.chsrf.ca](http://www.chsrf.ca) [Canadian Health Services Research Foundation]

[www.familyservicecanada.org](http://www.familyservicecanada.org)

[www.hbg.psu.edu](http://www.hbg.psu.edu)

[www.hc-sc.gc.ca/english/hhr/interprofessional](http://www.hc-sc.gc.ca/english/hhr/interprofessional) [Health Canada]

[www.holistickids.org](http://www.holistickids.org) (Holistic Kids: Pediatric Integrative Medicine)

[www.mchfamilylibrary.ca](http://www.mchfamilylibrary.ca) (Montreal Children's Hospital Family Resource Library)

[www.nchn.org](http://www.nchn.org) [National Cooperative of Health Networks (USA)]

[www.northwestern.edu](http://www.northwestern.edu)

[www.physicianpatient.org](http://www.physicianpatient.org) [American Academy on Physician and Patient]

[www.sacyhn.ca](http://www.sacyhn.ca) [Southern Alberta Child and Youth Health Network]

[www.srl.cam.ac.uk](http://www.srl.cam.ac.uk)