

Literacy and Health Research Workshop: Setting Priorities in Canada

National Workshop on Literacy
and Health Research Priorities
October 27-28, 2002
Ottawa, Ontario

Final Report
January, 2003

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Acknowledgements

The workshop which is summarized in these proceedings would not have been possible without the generous contributions of many individuals and organizations. The Canadian Public Health Association (CPHA) and the University of Toronto's Centre for Health Promotion would first like to thank those organizations that provided funds to support the workshop—The Canadian Institutes for Health Research (Population and Public Health, Aboriginal Peoples and Gender and Health), the Canadian Medical Association and Pfizer Canada Inc. and Pfizer U.S.

We would also like to thank the Social Sciences and Humanities Research Council (SSHRC) for their support of the Canadian Literacy and Health Research Project which led to this workshop. We are grateful for the hard work of the members of the Workshop Planning Committee: Peggy Edwards, Linda Day, Erica DiRuggiero, Judy King, Barbara Ronson and Millicent Toombs.

We would like to express our gratitude to all of the presenters (Dr. Rima Rudd, Ms. Dorothy Silver, Dr. Eileen Antone, Dr. Barbara Ronson, and Mr. Darryl Quantz) whose leading edge research and experience in the field of literacy and health made them passionate and articulate advocates for further research and expanded practice.

We are grateful to Mr. Ross Hammond for his hard work and inspired ideas as our workshop facilitator. We would especially like to acknowledge the contribution of Barbara Ronson in preparing these proceedings.

We would like to thank all of the participants for their thoughtful and enthusiastic involvement in this important exercise. We are confident that the success of this workshop will lead to the development of an outstanding program of research in literacy and health in Canada which in turn will help to improve the health of Canadians.

Finally, we would like to thank the Research Investigator team for their hard work and dedication: Deborah Gordon-El-Bihbety, Irving Rootman, Jim Frankish, Heather Hemming and Margot Kaszap.

"We need more understanding of the impact of literacy levels on health status and medical outcomes as they are linked to the top five killers in Canada, and more attention to laws and litigation related to literacy and health."

Workshop Participant

Executive Summary

The National Literacy and Health Research workshop, held October 27-28, 2000 in Ottawa, provided 32 leaders in research, policy and practice with an opportunity to share information about current and past work and research in literacy and health and then to identify priorities for future research in this area in Canada.

A strong foundation was set on the first day through presentations and discussions about terms and working concepts, the decade of work of the National Literacy and Health Program, the research undertaken this year through the National Literacy and Health Research program, and the perspective of three guest speakers: Dr. Rima Rudd of Harvard School of Public Health, Dorothy Silver of Second Chance Learners, and Dr. Eileen Antone of the Ontario Institute of Studies in Education, University of Toronto.

The second day, the group identified eight priority research themes within an agreed-upon organizational framework of "Understanding the Issue", "Building the Case" and "Making a Difference." "Understanding the Issue" involved the following priority themes:

- Understanding the relationship of literacy to mental, spiritual, physical and emotional health;
- Understanding the impact of literacy skills on access and use of health promotion, prevention and treatment; and,
- Understanding the relationship of literacy to the determinants of health.

It was emphasized that in order to better "Understand the Issue", further attention is needed to define what we mean by "literacy and health" and "health literacy". The latter was

generally agreed to be a subset of the former. The importance of understanding what other people, including learners and diverse groups, understand by these terms was also noted. The group called for special attention to distinct literacy and health issues within various populations with priority given to Aboriginal and francophone groups, but also including diverse ethnic and language groups, different age groups, disease and risk specific groups, urban and rural populations, the disabled and the mentally ill.

"Building the Case" was subdivided into the following themes:

- Building the case for better access and use of health services;
- Building the case for better knowledge about the effect of literacy on health status and medical outcomes; and,
- Building the case for better literacy and health services through law and litigation.

Regarding "Building the Case" for literacy and health work, there was a recurring emphasis on the need to undertake cost/benefit studies that demonstrate the impact of interventions on health care costs, appropriate medication use, and safety. More work was recommended to move beyond assessments of written materials, to look more closely at oral and aural skills, and to study the value of using pictograms, the internet, audio-tapes, video, and DVD as well as print material in plain language.

New assessment tools need to be developed and tested; literacy measures need to be more broadly included in health studies; and literacy concerns need to be more widely included in programs, investments and policy. More attention to laws and litigation related to literacy and health is also needed for this work.

"This is a new area of research and relatively few studies have, thus far, moved beyond assessments of written materials. More work needs to be done to link outcomes to materials and processes and measure health behaviours and outcomes. Furthermore we need to expand beyond the written word and look more closely at oral and aural skills, the value of visuals such as pictograms, and the benefits of new technology such as the internet."

Dr. Rima Rudd, Harvard School of Public Health

"Making a Difference" consisted of the following themes:

- Making a difference by researching best practices/interventions and approaches; and,
- Making a difference by influencing, developing and evaluating policy.

In order to "Make a Difference" to the quality of life in Canada, we need to know best practices and approaches to literacy and health, and undertake more participatory evaluation of interventions. We also need to do more work in influencing, developing and evaluating policy. Making a difference also involved an emphasis on:

- cultural sensitivity, partnership building, and involvement of the public especially learners;
- research process as well as outcomes;
- organizational and institutional health as well as individual health; and,
- the importance of literacy and health to civic engagement, participation and equity.

Another key recommendation was to study not only the link between "literacy" and "health", but the links among "literacy", "lifelong learning" and "health" in order to better acknowledge the current universal need for multiple, changing kinds of literacy and to avoid targeting and stigmatizing literacy programs, thereby making adult learning more appealing and readily attended. It was suggested that "Each additional dollar spent on education reduces mortality more than each additional dollar spent on medical care."

In the session on clarifying terms and working concepts, Irv Rootman showed that the term "literacy" is a "moving target" with definitions ranging from the technical to definitions encompassing mental, emotional, social and spiritual components. "Health literacy" was presented as one of a number of kinds of literacy within the new school of "multiple literacies" including media literacy, computer literacy, political literacy and others. Definitions of "health literacy" were presented that similarly ranged from the technical to those involving the broader determinants of health. Several conceptual frameworks founded on such concepts were also presented for discussion.

Deborah Gordon-El-Bihbety presented an overview of a decade of work by the National Literacy and Health Program. She concluded by describing the current research situation in this field as follows:

"Though there are a number of studies on readability of health information, there is a dearth of research on literacy's relationship to the other determinants of health, even though we know that the cost of health care delivery is greatly affected by the direct and indirect impacts of literacy."

Barbara Ronson presented a synthesis of regional needs assessment studies in literacy and health in Canada, and Darryl Quantz presented an environmental scan of Canadian documents on literacy and health and discussed ways of using and disseminating these data. Findings from the needs assessment included:

- an inventory of current and proposed Canadian projects, research and researchers in literacy and health in Canada;
- gaps in literacy and health research;

- barriers to literacy and health research; and
- new opportunities for literacy and health research in Canada.

A keynote presentation by Dr. Rima Rudd of the Harvard School of Public Health and the National Center for the Study of Adult Learning and Literacy (NCSALL) on "Health Literacy Research: Starts and Silences" augmented the group's understanding of research initiatives and gaps outside Canada.

A guest presentation from Dorothy Silver of "Second Chance Learners" gave the group a Learner's perspective on literacy and health issues.

The presentation by Dr. Eileen Antone, an Oneida Nation faculty member at the Ontario Institute for Studies in Education, provided the perspective of an Aboriginal researcher.

Dr. Antone also conducted a closing ceremony, thanking the Creator for being with the group at the workshop, and raising her eagle feather to the East, South, West, and North to remind us of the many blessings of creation.

"Though there are a number of studies on readability of health information, there is a dearth of research on literacy's relationship to the other determinants of health, even though we know that the cost of health care delivery is greatly affected by the direct and indirect impacts of literacy."

Deborah Gordon El-Bihbety, Director of National Programs, Canadian Public Health Association

"A strategic initiative in literacy and health research led by the Canadian Institute for Health Research in partnership with the Social Sciences and Humanities Research Council, Canadian Health Services Research Foundation and others is my dream in technicolour."

**Dr. Irving Rootman, Michael Smith Foundation for Health Research Distinguished Scholar,
University of Victoria**

Introduction

In April 2002, a group of researchers led by Dr. Irving Rootman was funded for three years by the Social Sciences and Humanities Research Council to develop a national program of research in literacy and health for Canada in partnership with the Canadian Public Health Association. A national workshop or think tank, the subject of this report, was one of a series of activities proposed. Also proposed was an environmental scan and needs assessment involving researchers in different regions of the country.

The workshop served as a forum for bringing together these and other researchers as well as key practitioners and policymakers; presenting a synthesis of the environmental scan and needs assessment results to them; and collectively identifying priorities for further literacy and health research in Canada.

Workshop Goals and Objectives

The three overall goals of the workshop were to:

- Develop a consensus on priority policy issues and research questions on literacy and health pertinent to Canada;
- Stimulate proposals for CIHR funding of literacy and health research projects; and,
- Stimulate a proposal for a future CIHR strategic initiative on literacy and health research.

The workshop objectives were to establish consensus on a conceptual framework for literacy and health research in Canada; identify six to eight literacy and health research themes; develop a series of research questions focused on selected themes; and identify priorities for literacy and health research in Canada.

How the Workshop was Organized

The workshop was organized by a planning committee consisting of some of the Investigators, Advisory Committee Members, CIHR representatives, and research associates. A series of teleconferences took place starting in July 2002. Input was solicited on workshop design, the participant list, and fundraising opportunities. A professional facilitator proposed various workshop designs for consideration, one of which was agreed upon.

The workshop began in the afternoon of Sunday, October 27, 2002. Deborah Gordon-El-Bihbety, Director of National Programs, Canadian Public Health Association welcomed and introduced the participants. Dr. Irving Rootman, Principal Investigator of the Canadian Literacy and Health Research Project gave the participants some background information about the project, and Mr. Ross Hammond, the facilitator, presented an overview of the workshop agenda. This was followed by a series of presentations: one on working concepts for literacy and health by Irv Rootman; a presentation about the National Literacy and Health Program (NLHP) by Deborah Gordon El-Bihbety; and a report on the national environmental scan and needs

assessment by Barbara Ronson and Darryl Quantz. Participants were invited to engage in discussion following each presentation. The participants reconvened for an evening plenary session on "Literacy and Health: What Do We Know? What Do We Need to Learn?" This session was chaired by Ms. Peggy Edwards, of the Alder Group, and Chair of the Advisory Committee for the Canadian Literacy and Health Research Program. The Keynote speaker was Dr. Rima Rudd, Sc. D., of the School of Public Health, Harvard University. Guest speakers were Ms. Dorothy Silver, Founder, Second Chance Learners; and Dr. Eileen M. Antone, Ontario Institute for Studies in Education. A reception followed.

On the second day, a list of possible themes was presented to the group as a starting point for further discussion. These themes were based on the previous day's discussion and a definition of the word "theme" that was accepted by the group. As the discussion progressed, the facilitator encouraged participants to propose broad groupings for the themes.

One participant suggested: Understanding the Issue, Building the Case, and Making a Difference. Her suggestion was supported and themes were categorized accordingly. Participants voted on the priority of various themes listed under these categories. The eight themes with the most votes were discussed further in eight separate locations or "stations" within two rooms.

With the assistance of four small group facilitators, participants developed research questions for each theme, adding to and refining research questions that had been developed by previous groups on that theme. The whole group reconvened after lunch and divided into discussion groups for themes they were interested in. These groups discussed whether there was any natural consolidation of research questions within their theme, whether there was a logical order to the research questions developed, and whether there was consensus on priority research questions and possible partners.

The large group reconvened again and heard reports back from representatives of each group. A final wrap-up discussion on priorities and next steps involving the whole group concluded the afternoon.

Participants

There were 32 participants including the research team, members of the advisory committee, representatives of NLHP partner organizations such as the Canadian Medical Association, academics (from University of Toronto, University of British Columbia, Acadia University, St. Francis Xavier University, Laval University, University of Victoria, and Harvard University), policymakers (from Health Canada, Canadian Institute for Health Research, Canadian Council on Social Development, Statistics Canada, Canadian Public Health Association, Human Resources Development Canada), industry (from Pfizer U.S. and Pfizer Canada), independent consultants (from The Alder Group, and Clarke & Nolan Mediation and Consulting), literacy organizations (Movement for Canadian Literacy, Centre for Literacy Quebec, Second Chance Learners, Frontier College), and Aboriginal Literacy and Health groups (Aboriginal People's Institute, CIHR, and OISE, University of Toronto). The workshop was by "invitation only", its size and composition carefully designed to best support the development of a national agenda of literacy and health research.

"Electronic media are changing the nature of literacy and forcing a convergence of print, the visual and the oral."

Dr. Linda Shohet, Centre for Literacy Québec, 2002

SETTING THE FOUNDATION

Working Concepts and Definitions

An examination of the evolving definition of literacy through history by Irv Rootman showed that this term is a "moving target" with definitions ranging from the technical (Can a person decode, say and comprehend written language at a rudimentary level?), to the functional (Can a person use written information to function in society?), to those encompassing mental, emotional and spiritual health (Can a person understand and use information and basic technology to achieve their goals and develop their potential?) and cultural and social health definitions (Can a person understand and use the dominant symbol systems of a culture for personal and community development?).

Dr. Rootman concluded with the description of one researcher's "Rainbow holistic approach to Aboriginal Literacy" (George, 2002) that defines a different kind of literacy related to each colour of the rainbow: red representing literacy in the language of origin of First Nations individuals and communities; orange, oral literacy; yellow, creative means of communicating with speakers of other languages using symbols, artwork and sign language; green, the languages of the original European newcomers, French and English -- now Canada's official languages; blue, technological literacy; and violet, balance, the holistic base to Aboriginal literacy, dealing with spiritual, emotional, mental and physical elements.

This approach to literacy is aligned with "the school of New Literacy Studies [that] situates literacy in the realm of social and cultural practices and explores the concept of multiple literacies" and the observation that "Electronic media are changing the nature of literacy and

forcing a convergence of print, the visual and the oral." (Shohet 2002) "Health literacy" was presented as one of a number of kinds of literacy within the new school of "multiple literacies" such as media literacy, computer literacy, political literacy, etc. Definitions of "health literacy" were presented that similarly ranged from the technical (ability to read and comprehend prescription bottles, appointment slips, and other essential health-related material) to those involving the broader determinants of health (achievement of a level of knowledge, personal skills, and confidence to take action to improve personal and community health by changing lifestyles and living conditions). Several conceptual frameworks founded on such concepts were presented for discussion. Key ideas that emerged from these frameworks were that:

- the different kinds of literacies influence one another;
- general and health literacy are most likely to affect health;
- their effects are both direct and indirect;
- literacy is affected by the same factors that determine health;
- literacy is a mechanism through which these determinants affect health;
- literacy affects Quality of Life and vice versa;
- health affects Quality of Life and vice versa;
- there are a number of types of actions that can affect the determinants of health and literacy; and,
- effective actions may vary depending on context.

National Literacy and Health Program

Deborah Gordon-El-Bihbety presented an overview of a decade of work by the National Literacy and Health Program, its funding, its 27 national partner organizations, its focus, goals, and activities. She outlined the direct impacts of low literacy and health, and remedies for them, and also discussed the indirect results of low literacy and health, and the broad range of programs and supports required to alleviate them.

Among the direct impacts Deborah mentioned were incorrect use of medication; not following health instruction; inability to read safety instructions; and, inability to understand baby formula directions. She said that seniors, who receive 40% of prescriptions may not be able to follow medication regimes because they can't read labels, open pill vials, or keep track of dosing intervals. This results in more visits to the doctor, lab tests, and repeat hospital admissions. The estimated cost as a result is more than \$9 billion per year.

Deborah cited the case of one 1998 workplace death in Sudbury in which low literacy was considered a major factor.

Indirect impacts of low literacy on health are deeply rooted in the economic and social conditions of people's lives. They include unemployment, dangerous work environments, poverty, unhealthy lifestyle practices, and lack or inappropriate use of health services. Since the indirect impacts of literacy on health are so far-reaching, a broad range of long-term social programs and supports are needed to improve the quality of life of adults with low literacy skills.

Deborah described the National Literacy and Health Program's activities including projects and resource development related to Plain Language, seniors' issues, youth, and violence. Among the resources developed were:

- "Easy Does It! A Health Communication Training Package"; "*Working with low-literacy Seniors: Practical Strategies for Health Providers*";
- (*plain.word*), North America's first plain language game;
- *What the Health!*, a health curriculum that can be used by literacy workers, high school teachers and other professionals working with Canadian youth; and,
- *M.O.V.E.* a Youth Literacy Project on Violence Prevention that has its roots in the What the Health! project for youth at risk.

Other activities of the NLHP project were:

- conducting a review of the literature on medication compliance, seniors and literacy;
- collecting samples of medication packaging and labelling;
- organizing consultations with stakeholders, and developing guidelines for pharmaceutical manufacturers on clear labelling and easy-to-use packaging; and,
- revising forms that are typically filled out by seniors into plain language.

Deborah explained that most patient education materials can be read and understood independently by only 20% of Canadian adults. Providing materials at a Grade 5 reading level will help an additional 60 to 70% of Canadian adults receive health information they can read and understand.

She also described the work of the NLHP in organizing the first national conference on literacy and health and producing the document "Charting the Course for Literacy and Health in the New Millennium" that summarized the key learnings from that conference.

"I'd be interested in pharmacists' awareness of the literacy issue and innovative pharmacists' programs directed at enhancing health literacy."

Dr. Linda MacKeigan, Faculty of Pharmacy, University of Toronto

Deborah spoke of the implications of low literacy for health professional education, for direct service and for health policy and finished by presenting the current research situation in this field. "Though there are a number of studies on readability of health information, there is a dearth of research on literacy's relationship to the other determinants of health," she said, "even though we know that the cost of health care delivery is greatly affected by the direct and indirect impacts of literacy."

Environmental Scan and Needs Assessment

Barbara Ronson and Darryl Quantz presented a summary of the Environmental Scan and Needs Assessment, initial steps in the National Literacy and Health Research Program undertaken in the summer and early fall of 2002 by researchers across Canada (Jim Frankish, Deborah Gordon-El-Bihbety, Heather Hemming, Margot Kaszap, Lisa Languille, Darryl Quantz, Barbara Ronson, and Irving Rootman). The objectives were to identify: gaps in knowledge in literacy and health research in Canada; current and proposed initiatives in literacy and health in Canada; and, resources and opportunities for research in literacy and health in Canada.

A series of consultations with stakeholders were undertaken. This began with key informant interviews in six different regions (British Columbia, Prairies, Toronto, Ottawa, Quebec and Atlantic Canada). 48 practitioners, researchers and policymakers who were involved or had an interest in literacy and health issues were interviewed. During these key informant interviews, questions were posed on current knowledge and involvement in the area of literacy and health, and on gaps, barriers and opportunities for research. Four follow-up focus groups were held involving a total of 33 people.

In the focus group sessions, similar questions were posed after presenting a summary of findings on each topic from the key informant surveys. Participants were asked to comment and elaborate on the information presented. Preliminary regional reports were written by the investigators who conducted the key informant interviews and focus groups. These reports were then synthesized and combined with a literature search and document review to create a national report.

Participants identified many promising projects related to literacy and health. Among the projects identified were:

- plain writing services and projects;
- translation and interpretation of health information;
- awareness-raising fact sheets, publications and research;
- hospital and agency staff sensitivity training programs and reception room "literacy audits";
- conferences and networks;
- resource collections;
- incorporation of health content into literacy classes;
- participatory development of health information at various reading levels by learners;
- family literacy programs; and,
- free health and hygiene items, and eyeglasses for learners.

"There is a need for better understanding of the efficiencies of self-care in the current climate of expanding home care."

Dr. Peri Ballantyne, Faculty of Pharmacy, University of Toronto

In general, respondents reported very little knowledge of literacy and health research, especially current research. Only the current study of the Centre for Health Promotion and Canadian Public Health Association, and work out of St. Francis Xavier University was reported as ongoing today in Canada.

Respondents did, however, mention several reasons why research in this area was needed. For example, they insisted that there was still insufficient awareness of the need for adequately accessible and appropriate health and literacy services for low literacy or "hard-to-reach" adults. More people need to understand that this group comprises almost half of the adult population. More work needs to be done to improve the attitudes and approach of service providers and disseminate effective practices. Too often, simplistic solutions are adopted by decision-makers, such as relying on pamphlets at clinics and hospitals and "putting everything on the internet."

There also continues to be a great need to dispel myths and reduce the stigma of illiteracy, and empower disadvantaged groups. Research, in short, is critically needed if we are to maintain and improve the health of all Canadians in our technocratic, information age when literacy demands on consumers are higher than ever before.

Respondents spoke of many kinds of gaps in research. These were categorized into three main areas: conceptual research; action research in the health sector; and action research in the literacy sector. In terms of conceptual research, many informants recommended that an initial step is to define what we mean by "literacy and health" and "health literacy".

Many also called for better understanding of this issue in terms of how it relates to diverse populations such as urban/rural, Aboriginal, diverse ethnic and language groups, different age groups, disease and risk specific groups, the disabled, mentally ill, etc.

Another recommendation was to do research within established conceptual models such as the health belief model, the theory of reasoned action (Ajzen & Fishbein), and social learning theory (Bandura), and within the common language from the maturing fields of population health and health promotion.

Several noted the importance of teasing out the relationship between determinants of health and clear definitions of literacy – literacy level does not always correspond to years of education, the primary indicator traditionally used. Some also said there was a need for better understanding of the impact of health on literacy and learning as well as the impact of literacy on health. Several participants spoke of making a difference through action research.

Most interventions have been undertaken by professionals within the health care sector where the primary goal is to improve health; or by professionals in the education sector where the primary goal is to improve literacy and learning skills (Shohet, 2002).

A few literacy professionals have adopted combined goals, but health care providers, by and large, have remained focused on health outcomes. An exception may be public health nurses involved in family literacy programs related to "Healthy Babies, Healthy Futures" or "Best Start" programs. These areas of overlap should be encouraged more, some said.

"Too often simplistic solutions are adopted by decision-makers, such as relying on pamphlets at clinics and hospitals and 'putting everything on the internet.'"

Focus Group Participant, Toronto

Within the health sector, participants noted a need to study:

- the awareness of health care providers regarding literacy issues;
- patterns of health care use and means of information gathering by people with low literacy;
- the impact of PLAIN language and readability formula usage;
- the use of alternatives to print media;
- the impact of inequitable access to the internet;
- the efficiency of self-care in an environment of expanding home care; and,
- the need for a national strategy on interpretation and translation services in the health sector.

Within the literacy sector, they mentioned the need to study:

- effective approaches to literacy instruction;
- efforts to incorporate health content into literacy classes and involve learners in participatory development of health information at various reading levels;
- the new family literacy programs;
- the impact of recent widespread literacy testing in schools of some provinces;
- how people go beyond knowing to acting;
- where the gaps are in supports for low literacy people for reproductive health, smoking cessation and other health concerns;

- what the effect of medication and chronic disease is on concentration for learning; and,
- what the impact is of the use of computers in literacy instruction and health literacy education.

In order to influence policy-makers, practitioners and potential volunteers, respondents recommended research that generated testimonials, case studies, and fact sheets. When asked whether Canada should adopt a national research agenda on literacy and health, the answer broadly was "yes", with the following advice and caveats:

- Collaborate with researchers working on "knowledge transfer", primary care reform, the national tobacco strategy and school reform;
- Partner with major health funders;
- Collaborate with library associations, ethnocultural organizations, and risk condition groups;
- Do applied research;
- Integrate learners in action research;
- Make findings accessible and applicable; and,
- Present the agenda to the federal government in a way that it can help them build a national system for lifelong learning, as proposed in the Movement for Canadian Literacy's *National Literacy Action Agenda* document.

A number of barriers to research in literacy and health were also identified by respondents. The most commonly mentioned was the limited capacity to initiate and undertake research, largely due to the limited availability of funding and resources. A concern that came up repeatedly was that funds for research would

"A huge overwhelming problem and because people with low literacy levels isolate themselves or hide it...so it's finding out what would motivate them to become involved....so how to bring them in without the stigma."

Key Informant, Vancouver

take precedence when inadequate funding was available for actual programming. Several noted the unstable and inconsistent program availability today and the overwhelming workload of many service providers in the field. Limited capacity for research in this area was related to the lack of recognition of the need for this kind of research; the fragmentation of stakeholders and uncertainty regarding where this kind of research fits in traditional jurisdictions and departments; the lack of experts, mentors, and grants administrators in the field; and, various countervailing political and corporate influences and agendas such as the emphasis on treatment over prevention.

Another major barrier noted by participants was the stigma issue. This issue often was related to difficulty of population engagement, and sometimes with challenges with the research ethics review requirement. Other barriers that were mentioned related to the lack of clarity in terminology, and the lack of a common language and infrastructure across sectors.

In the focus groups held across the country, participants were asked to comment on and add to our knowledge of barriers and opportunities for research in the area of literacy and health and suggest solutions to the barriers in our way. Participants made the following recommendations:

- Get partners and stakeholders in the same room;
- Study the impact of institutional, organizational as well as individual change;
- Influence policymakers;
- Use research, case studies, stories, testimonials, fact sheets;
- Ensure a cohesive effort;

- Involve learners;
- Ground the research program in making people's lives better, respecting people and involving them in agenda development;
- Advocate for a provincial as well as a national agenda in literacy and health research; and
- Adopt an agenda for the "3 L's": literacy and lifelong learning.

The needs assessment and environmental scan led to the conclusion that current sociological, technological and political trends have made literacy and health research a wise investment for Canadians. It is widely acknowledged that we have been going through a period of rapid change in all our social, cultural, and economic institutions and traditions. In Canada, our ethnic and linguistic make-up is changing rapidly; the use of computers and new technologies is proliferating; and there are unprecedented stresses on our health care and educational systems.

We have an aging population at the same time as there is a growing reliance on home and community care in place of institutional care. In our present "knowledge economy" greater literacy skills are required for adequate functioning in society.

We have pressing needs in our own communities, and yet Canada is looked to around the world for leadership in public education and health delivery. Canadians are finding increasing opportunities and responsibility to provide healthcare information, support and education internationally as well as locally. It is commonly proposed that intersectoral collaboration could provide urgently needed solutions to many kinds of problems related to our public services today. Canadians are experimenting with partnership-

"We cannot afford to miss this opportunity for forging ahead in promising new directions for the health and well-being of Canadians."

Dr. Barbara G. Ronson, University of Toronto

building in many realms. The collaboration of literacy workers and health care providers may provide a guiding light to the kind of work that is needed. Intersectoral collaboration is a key strategy of health promotion and the field has gained much expertise in this area over the past few decades. Moreover, the literacy and health work to date on the part of the National Literacy and Health program and others is highly regarded.

It is clear that research in literacy and health can help us spend our scarce health care dollars more efficiently. There are pockets of very promising work being done across the country, but huge gaps in-between with very little shared knowledge of what is being done elsewhere and what works best. Research of this nature can help span the divides between traditional jurisdictions of work for improving the lives of Canadians and impact upon effective use of government spending in education as well as healthcare. Dr. Barbara concluded that "We cannot afford to miss this opportunity for forging ahead in promising new directions for the health and well-being of Canadians."

Health Literacy Research – Starts and Silences

A keynote presentation from Dr. Rima Rudd of the Harvard School of Public Health and the National Center for the Study of Adult Learning and Literacy (NCSALL) augmented the group's understanding of research initiatives and gaps outside Canada.

Dr. Rudd began with current definitions of functional literacy and health literacy. She spoke of the purpose and content of the International Adult Literacy Survey (IALS) and described existing tests for "health literacy". She explained that of the five components of functional literacy (prose literacy, document literacy, numeracy, oral presentation, and oral/aural comprehension), current tests measure only the first three. At the same time, she noted, spoken communication is of critical concern to public health and medicine and we will need to assess these skills in the future.

Dr. Rudd noted that accumulated studies have established a strong link between education and health outcomes. She described "literacy" as a key component of "education", which has generally been used only as a marker variable for socio-economic status. New studies focused more specifically on literacy may help us understand the pathways.

She said that the bulk of research to date has been conducted on the reading level of health materials. Researchers are just starting to look at the effectiveness of print alternatives. Several studies have examined increased knowledge and understanding and some have looked at behavioural change. However, very few have included health outcomes.

"Health people usually have their eyes shut to the [literacy] problem...But what do you do when you are sick and feeling helpless? When everyone else in the world seems to think that we can all read and write? ... The health care system is not set up to understand the helplessness and fear that goes along with health problems. With waiting lists and less access to health care, the people who are least empowered suffer the most...."

Dorothy Silver, Second Chance Learners

Furthermore, very few studies have looked at issues outside of the medical encounter so that there is a gap in research on literacy related to health promotion, health protection, risk communication, and engagement in policy decisions. In addition, she noted a dearth of evaluation studies focused on access barriers or oral communication barriers. Dr. Rudd noted that we need to measure the value of the use of plain language materials and innovative processes. Evaluation studies can help us determine best practices. Because research is critical to our work, she suggested that we encourage colleagues to include measures of literacy in their studies.

Most certainly, researchers need to assess their own research tools in terms of readability. The field would be well served by a wider use of readability and document assessment tools. We would all benefit from new assessment tools that would help us more closely examine the readability levels of survey instruments and other open-ended questionnaires.

Dr. Rudd concluded with a recommendation that we consider the kinds of data we need to help us build an argument for attention to literacy in health-related practice and research and to garner new investments to support such work.

"Health and Literacy – A Learner’s Perspective"

A presentation from Dorothy Silver of "Second Chance Learners" gave the group a Learner’s perspective on the field. Dorothy described her a series of frustrations trying to learn to read in school with unsympathetic teachers who lacked skills and knowledge of dyslexia. Efforts to return to school in a one room school house as an adult, and to take a correspondence course served only to continue to batter her self-esteem.

She described a litany of difficulties with the health system that she and her family encountered related to reading difficulties before her final conquest of reading skills as an adult, through undaunted courage and determination, and the support of her family and local literacy council.

After Dorothy learned to read at age 48, at a time when her husband was ill and she was raising 4 children, she was hired for nine months as a "literacy ambassador", talking about the importance of literacy to "whoever would listen." In order to continue to encourage others to go to literacy programs, she has volunteered in this role for the past decade.

She explains that people with low literacy skills may use medicines incorrectly because it’s hard to read labels. They may incorrectly mix baby formula, and have more experiences of helplessness and fear in the health system in general. Her own husband almost died when she gave him an incorrect dosage of aspirin after a heart attack, causing a G.I. bleed. After an allergic reaction to paint that affected her husband’s voice, nurses insisted that he communicate by writing and could not understand why he was not cooperating. Moreover, she explains "people are unemployed, are poor, are addicted, are ripped off and are discriminated against because they can’t read. People get in trouble with Revenue Canada, employment insurance and have a hard time to fill out their health information forms or insurance forms because they can’t read. People are in jail because they can’t read. I know that people die because they can’t read."

"Think about the numbers of patients who miss their appointments for blood work, x-rays or other procedures and what this costs the health care system. But you can't put a dollar value on the embarrassment and the heartache it causes"

Dorothy Silver, Second Chance Learners

After Ms. Silver and her husband both learned to read in adulthood, she says, "literacy helped us take control of our health...If we had not learned to read, we would not have changed our eating habits. We would not be able to read labels on food. We would not have learned about vitamins. We would not have learned about the importance of exercise. Reading, learning and becoming aware changed us." Dorothy continues today as an articulate spokesperson for the Movement of Canadian Literacy and a Founder of "Second Chance Learners" which received the Canada Post literacy award.

"Health and Literacy – An Aboriginal Perspective",

The presentation by Eileen Antone, a faculty member at the Ontario Institute for Studies in Education, added the perspective of an Aboriginal researcher. Dr. Antone told us that the Aboriginal name given to her by an elder, meant "she who gathers information". She was born in the Turtle Clan of the Oneida Nation, and has learned the importance of reviving the language of her people. She explained that the general view equates poor literacy with poor health, but that this was problematic because it could be used for assimilationist policies if English literacy is viewed as a solution to health problems. Dr. Antone said that Aboriginal literacy should be considered a way of life with a holistic world view balancing mind, body, heart and spirit as in the four components of the medicine wheel. In order to be well, you have to be whole. Music, the arts, hunting, fishing and other cultural activities are thought to be distinct but related to literacy. Health is not viewed from a disease model, but from a holistic model encompassing mental, spiritual, emotional and physical components. She noted the importance of high self-esteem and confidence to articulate one's health needs. She said that a positive health

identity was taken away by the residential school system.

The importance of the individual in community with the environment is a lesson we still need to learn. Dr. Antone spoke of the stresses related to Native mental health. She said that literacy alone was not the issue, nor suicide alone, nor poverty alone. Aboriginal people still experience cultural poverty and want access to their own gentler systems of health and literacy. She said partners are needed to make it happen. She pointed out that often Aboriginal people are considered to have one perspective, but there are many Nations and points of view.

She told a story of Turtle Island where there was good governance and a system of wellness in the Aboriginal communities. Along came another people who brought the technology of industries, thereby causing great amounts of pollution, and soon there was almost nothing left. In this situation all the people began to get cold and hungry. One day a group of these other people noticed a gathering of Aboriginal people huddled around a little fire, the last spark left in the world. The other group came and wanted to take the spark and almost extinguished it... But the Aboriginal people knew that they themselves needed to tend the spark so it could keep its distinctiveness and so it could grow enough to be shared by all. Dr. Antone concluded by saying that the workshop was about the health of Canadians, but we must consider the health of the Aboriginal peoples of Canada too.

"Literacy alone is not the issue. Suicide alone is not the issue. Health alone is not the issue. Poverty alone is not the issue. In terms of Health Promotion, the issue is that some Aboriginal Peoples are still experiencing cultural poverty reflected in the dearth of knowledge in contemporary mainstream health and literacy about Aboriginal health, literacy and wellness strategies. They desperately need and want access to their own gentler systems of literacy and health."

Dr. Eileen Antone, OISE/UT

RESULTS OF THE DISCUSSION

Understanding the relationship of literacy to mental, spiritual, physical and emotional health

In the discussion of this theme, it was noted that its formulation originated in an Aboriginal symbol, the medicine wheel, with its four segments representing physical, emotional, mental and spiritual health or mind, heart, body and spirit. Discussion of this theme centred on the importance of cultural literacy, multiple literacies, social inclusion, traditional knowledge, non-textual communication, storytelling and other forms of oral knowledge.

Facets of mental health to consider were depression, self-esteem, suicide, substance abuse, diet, violence and incarceration. The importance of complementary and alternative therapies, and communication intermediaries for patients was also discussed. The need to first clarify terms before doing research was emphasized. The research questions developed and grouped for this theme are as follows:

Relationship of literacy to mental, spiritual, physical and emotional health:

1. What is the impact of low literacy on mental, spiritual, emotional and physical health (e.g., risk factors, vulnerability)?
2. What is the impact of different kinds of health (emotional/mental etc.) on literacy, accessing literacy services, and the ability to comprehend?
3. How does literacy interact with/influence mental health (e.g., depression, self-esteem, suicide, substance abuse, dietary issues, crime, violence)?

4. How is literacy affected by and how does it interact with cognitive impairments due to medicine interactions, illness, surgical procedures, aging?

Barriers to literacy and learning:

1. What are the barriers to literacy and learning?
2. How can we avoid developing a research framework from a Euro-centric perspective?

Relationship to social support and inclusion:

1. How are literacy and social support related as they affect well-being?
2. Who are the intermediaries who support literacy/health and well-being?
3. What are the links between social inclusion, literacy and health?

Other:

1. What is the role of literacy in promoting a holistic approach to health including alternative and complementary therapies?
2. What partnerships can be established with Aboriginal Peoples in terms of acknowledging and implementing this "model", i.e., medicine wheel?
3. What is the role of traditional knowledge, ways of knowing and communicating (e.g., oral tradition) in literacy?
4. What are the multiple types of literacy that underlie health literacy, and the implications?
5. What are the sorts of coping skills that persons with limited literacy use – what implications for health, positive and negative, are there?

"We could organize our priority themes within the categories of 'Understanding the Issue', 'Building the Case'; and 'Making a Difference'"

Peggy Edwards, The Alder Group

Understanding the impact of literacy skills on access and use of health promotion, prevention and treatment

Discussion of this theme involved questions regarding patterns of use of health promotion, prevention and treatment services of people with literacy limitations. The group found it difficult to group the research questions developed, but recommended a general process or order for research: 1) determining what is out there; 2) determining what is missing; and 3) determining what new understandings are needed.

They also recommended determining the relationship between literacy and medical outcomes as they are linked to the top five killers in Canada as the research priority, and also to pay attention to the impact of different settings on this research. The following list of research questions was developed for this theme:

1. How do you assess impact? (Develop models.)
2. What evidence exists in relation to literacy and medical outcomes (e.g., death)? (Literature review.)
3. Is there a correlation between literacy levels and health promotion? Who does and who does not access health promotion?
4. What is the impact of existing interventions (e.g., plain language, anti-smoking, media, nutrition and product labelling, package design)?
5. What are the roles/responsibilities of practitioners? (Establish partnerships.)
6. What messages and effective methods should be used? (Informants/learners and target audiences, building on existing research.)

7. What are the issues and needs in the deaf community?
8. What is the impact of the various environments (e.g., communities, workplace, schools)?
9. To what extent is background knowledge essential to understanding health information?
10. Are there disenfranchised groups that do not access services? Why are these groups not accessing services? How can we reach these groups? What are the barriers to reaching these groups?
11. Are we talking to the users of the system? What specific sets of skills are essential among consumers to access health (from the learner's perspective)?
12. What are some examples of high health literacy in low literacy situations? What interventions worked?
13. To what extent do limitations in literacy skills increase the health inequalities gap?
14. To what extent do training programs for health practitioners (pre- and in-service programs) include sensitivity to literacy and communications strategies?
15. When is culture rather than literacy the issue/barrier?

Understanding the relationship of literacy to the determinants of health

Discussion centred on literacy as a determinant of health and the complex interaction between determinants. The distinction between literacy (a skill) and education (exposure) was emphasized. The importance of culture as a determinant of health was noted in relation to literacy. Questions were consolidated into the following topics:

Culture, language and literacy

1. How can we better understand and respect the relationship between literacy and culture (including traditions) in Aboriginal communities/Nations/Peoples – and the impact on health and healing?
2. How do determinants of health/literacy package together? Can literacy be isolated from other determinants of health?
3. Are there distinct identifiers/measures at each life stage – specific to cultures – that are related to literacy and health? (i.e. literacy may differ between cultures and over life stages)
4. How can we overcome language barriers (e.g., through communications strategies)? How can we better understand culture as a determinant of health?

Methodology

1. What range of methods are available to better understand literacy as linked to the determinants of health? How can we develop further measurement tools to determine the impact of literacy as a determinant of health?
2. How to establish a longitudinal study: Test the "use it or lose it" hypothesis as related to health literacy?

Other

1. If literacy is a determinant of health, how does it manifest itself (e.g. in terms of health outcome, use of services, etc.)? How does it manifest itself as a determinant of health?
2. What are the direct and indirect effects of literacy on the determinants of health and vice versa? (This question can be applied to different populations, life stages and settings – it is a good fit with CIHR funding priorities.)
3. Are there distinct identifiers or measures at each life stage or within different cultures related to literacy and health?

BUILDING THE CASE

Building the Case for better literacy and health services through better knowledge about access and use of health services including health protection, health promotion and disease prevention

The group consolidated the questions into the following areas: Aboriginal Issues; Cost/Benefit; Barriers; Capacity; and Understanding the issues, including building in knowledge exchange with health practitioners; and, Ability to make choices and encourage healthy behaviours.

Aboriginal Issues

1. Do we understand (in the context of Aboriginal peoples) what health and literacy means for health services?
2. What do Aboriginal Nations define as services (health) that meet their needs?
3. What are the perceived barriers related to broad definitions of health in Aboriginal communities?

Cost/Benefit

1. Cost of low literacy with regard to health services?
2. Include cost/benefit analysis in all of the above.
3. How does literacy affect injury (e.g. in workplace, etc.)?
4. How effective are current health promotion efforts for people with different levels of literacy?

Barriers

1. How do cultural constraints prevent people from thinking about accessing health services?
2. What are the barriers that persons with low literacy face—in health services? What kinds of services (health promotion, health protection, etc.) are accessed?

Capacity and Understanding the issues, including building in knowledge exchange with health practitioners

1. What do health practitioners know regarding literacy levels?
2. What capacity exists in communities to address access and use of health services related to literacy level?
3. How do policymakers view literacy in making decisions related to health services?
4. What are alternative strategies to engage professional and health service users (e.g., Integration Approach)?
5. How can we facilitate collaboration between service providers to promote more awareness and effective services around literacy and health (e.g. community approaches)?

Ability to make choices and encourage health behaviours

1. How does literacy relate to personal health behaviours (e.g., smoking) and how do supportive environments factor in?
2. How does literacy affect one's ability to make healthy choices?

Building the Case for better literacy and health services through better knowledge about health status and medical outcomes

Discussion centred on cost/benefit analysis and methodologies to evaluate and measure. It was felt that the priority was to evaluate interventions in terms of costs and benefits, and secondarily to develop new tools to assess impacts. Groups and partners that would be interested in research related to medical outcomes include Pfizer Canada Inc., the College of Pharmacists and the Pharmacists Association.

Cost/Benefit Analysis

1. What are the impacts of intervention programs?
2. What are the advantages of knowing these outcomes?
3. To what extent does limited literacy relate to poor health outcomes and safety practices?
4. What are the costs/benefits of the various outcomes? What sorts of methodologies can be used to build a case?

Methodologies to evaluate and measure

1. How do we measure the impact of outcomes and programs? (Need strong indicators; whenever possible, biomarkers should be used.)
2. What do we need to ask institutions about what data to gather (pre- and post-comparisons)?

"It would be useful to begin by scanning the existing laws pertaining to health and literacy. Then it would be possible to study the implications of the status quo and proposed changes before looking at the changes themselves and their implications in terms of court challenges."

Workshop Participant

3. How do you measure outcomes other than medical outcomes (e.g., social, mental, quality of life)? (Need strong indicators.)

4. What could we do to facilitate citizen participation in the process? (We need to ask the people / public opinion.)

5. To what extent is evidence available or accessible to determine medical outcomes? Accessible to health planning bodies?

Building the Case for better literacy and health services through better knowledge about law and litigation

Discussion centred on guidelines, implications, and changing process. In terms of sequencing of research, the group felt that it would be useful to begin by scanning the existing laws pertaining to health and literacy (international, federal, provincial and institutional). Then it would be possible to study the implications of the status quo and proposed changes before looking at the changes themselves and their implications in terms of court challenges.

Guidelines

1. What are the legal guidelines/laws/cases affecting literacy (e.g., privacy laws, consent)?

2. What is the behavioural effect of these guidelines/policies/programs/laws/cases on health professionals? Begin with literature review.

3. How does Aboriginal law and justice figure into literacy and health in general?

Implications

1. What are implications of various laws and legal systems on literacy-related encounters in the health care system?

2. What are the implications of legal literacy on health outcomes?

3. How are legal requirements barriers to literacy and health?

Changing Process

1. How can laws be changed to ensure informed consent (e.g., change in legislation, law reform)? Look at five literacy skills.

2. How can we choose court challenges, making sure those of limited literacy are included (e.g., change privacy laws, informed consent, groups denied services)?

3. How can the process of informed consent be improved? What research is being done to investigate informed consent?

Other

1. How can we best take into account literacy skills in legal situations/issues?

2. How can we advocate/enable people with low literacy skills as they participate in legal/health situations?

"It is important to recognize the culturally sensitive nature of practices and not to assume there is a universal 'best practice' for all communities."

Dr. Margot Kaszap, Laval University

MAKING A DIFFERENCE

Making a difference by researching best practices and approaches of interventions

The group that discussed this theme felt strongly that identifying best practices in literacy and health interventions as related to diverse communities was of paramount importance. It was important to recognize the culturally sensitive nature of practices and not to assume there is a universal "best practice" for all communities. In order to identify best practices, moreover, one must first identify what the practices are and then the best process for defining best practices (typology, demonstration projects, etc.) The priority direction was felt to be "What are 'Best' practices relative to the community group case or population?" The importance of ensuring community input was noted in answering this question. Of secondary importance was the question "How do we evaluate what works and what does not?"

Questions developed under theme:

1. How are best practices defined in relation to literacy and health?
2. What is the best process for defining best practices (typology, demonstration projects, etc.)?
3. How do we evaluate what works and what does not?
4. To what extent do health and other practitioners understand and identify literacy and health in their work?
5. What research methodologies are most effective/important (e.g., use of

participatory/qualitative methods such as talking circles, etc.)? Examine specific methodologies

6. How effective are non-print technologies for people with different levels of literacy and different kinds of literacy? Also, how effective are non-print technologies in literacy/health knowledge exchange considering population relevancy?
7. What are the health-related outcomes of the plain language initiative (all languages)?
8. How do people want to receive information?
9. What research frameworks assist us in the health/literacy knowledge gathering?
10. What are the effective messages and methods of delivery (in terms of different populations and multi-literacies)?
11. What are best practices—broadly defined? For each determinant? (Literacy in general, specific populations)
12. What can be learned from best practices in literacy learning?
13. What are the best practices in integrating multiple literacies? (Honouring knowledge within communities)
14. How can we ensure that alternative strategies (e.g., drama therapy) are considered for best practices?
15. "Best" practices are relative to the community. What best suits a group case or population? (Ensure community input)

"Given the importance of community involvement in health planning and decision making related to public policy, we need a better understanding of literacy and health as related to civic engagement, participation and democracy."

**Dr. Doris Gillis, Department of Nutritional Sciences,
St. Francis Xavier University**

Making a difference by influencing, developing and evaluating policy

This group proposed that a first step would be to identify the healthy public policies and how they were created. They said it would also be useful to poll decision-makers and gauge their awareness of the issues. A plenary participant said that such a poll has been conducted in the U.S. and that it could be adapted for the Canadian context. They grouped questions in this theme under the following sub-headings: What decision-makers know and what strategies need to be in place to educate them; Understanding public policy around literacy and health; and How to involve the public/communities in changing public policy.

What decision-makers know and what strategies need to be in place to educate them

1. What do politicians / decision-makers understand now about literacy and health? What do they need to know?

- Which decision-makers do we need to influence?
- How do we educate these policymakers regarding literacy and health?

2. How do you transcend levels of jurisdiction (federal, provincial, municipal, institutional)?

Understanding public policy around literacy and health

1. What policies have an impact on literacy and health (e.g. transportation policy and driver's licence)?

- Who are the policymakers?

- At what levels of jurisdiction?
2. What is the process for creating "healthy public policies"?
 3. What are "healthy public policies" around literacy and health?

How to involve the public/communities in changing public policy

1. Public opinion polling

- What are different methods for public engagement?
 - How to promote as an inclusive approach?
2. How can we facilitate public participation in influencing policies around literacy/health?

Other

1. How do we evaluate the impact of plain language initiatives / cultural approaches on health access and outcomes?
2. What is the impact of institutional policy?

The group designated the following research priorities: evaluating interventions, conducting cost/benefit analyses, studying the impact on health of literacy and life-long learning, and studying literacy and health within the unique circumstances of the Aboriginal community, the Francophone community, and culturally diverse and challenged groups across the country.

Closing

Dr. Eileen Antone directed the closing ceremony of the four directions. Raising her eagle feather to the east, she gave thanks for the gifts of the east--vision, illumination, new beginnings--and the far-seeing eagle of the east. Raising her eagle feather to the south, she gave thanks for the gifts of the south--movement, moving on the first vision of setting priorities. The animal of the south--the mouse--pays close attention to detail, which will be required to get the work done. Raising her eagle feather to the west she gave thanks for the gift of introspection to see how we impact the needs and research necessary. The bear shows us that it is time to go in and hibernate and then come back out with answers. The north has the gift of strength and wisdom. The buffalo will give us strength and wisdom to take the information and priorities back to the working world and use them in the literacy and health field. Finally, Dr. Antone thanked the Creator for being with the group at the workshop.

Evaluation

Most participants found that the teaching aids (slides, handouts) were well prepared and appropriate, but that it would have been useful to have more time for questions and discussion periods.

Overall, the workshop was very well received by participants and most felt that they gained some new knowledge in the area of literacy and health. One individual indicated "that in terms of Western models, this was a good, even an excellent workshop. However there was a gap in terms of the interface with Aboriginal protocols and this was disconcerting. Researchers in general could perhaps be educated in this area. An area of research that is Aboriginal specific (through SSHRC) in health and in literacy with regard to health is/seems to be missing." Another indicated that the "presentation was a bit long the first afternoon. Can we have a participant contact list if possible and the expertise of people when we get the research workshop document?"

Conclusion

The workshop was very successful, attracting knowledgeable, talented and influential participants. The size and format worked well, and the objectives were achieved. The group reached consensus on priority policy issues and research questions on literacy and health pertinent to Canadians. Eight literacy and health research themes were identified and a series of research questions within each theme was developed.

The group designated the following research priorities: evaluating interventions, conducting cost/benefit analyses, studying the impact of literacy and life-long learning on health, and studying literacy and health within the unique circumstances of the Aboriginal community, the Francophone community, and culturally diverse and challenged groups across the country. The group recommended building a strong argument based on the workshop findings, posting the workshop report on the NLHP website, and distributing hard copies to participants and others who may be able to follow through on the workshop objectives, particularly "stimulating proposals for CIHR funding of literacy and health research projects" and "stimulating a future CIHR strategic initiative on literacy and health research."

Some participants wanted the workshop to lead to a compendium of resources and policies related to literacy and health -- the inventory of projects begun in the environmental scan would be completed and continually updated. Much interest was expressed in continuing to develop awareness of literacy and health issues -- "at least as important as more research", according to some.

The group strongly recommended continuing to build new partnerships, for example between researchers and hospital workers, unions, etc. They also called for supporting and training new researchers. With such a strong and positive experience at the Ottawa workshop, there appeared to be every indication that such suggestions would lead to ever greater benefits and achievements for all Canadians.

The workshop evaluations were very positive and contained enthusiastic responses regarding what was accomplished in the workshop. The presenters were found to be highly knowledgeable on the subject of literacy and health and participants felt that their questions were adequately answered. The workshop facilitator, Ross Hammond, was very effective at ensuring that discussion was fluid and that the workshop objectives were met.

As a whole, participants thought that the workshop was well organized, that the content was consistent with its objectives, and that the information presented was useful to better understand the issues and to arrive at a consensus at the end of the workshop.

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