

## HEALTH AND LEARNING

Knowledge Centre

### **Health Literacy: What can health practitioners do about it?**

**Irving Rootman, Ph.D., Executive Director, Health and Learning Knowledge Centre, University of Victoria**

Presentation for Healthcare Providers  
Chan Centre, B.C. Children's and B.C. Women's Hospital  
Vancouver, B.C., October 28, 2008

## Outline

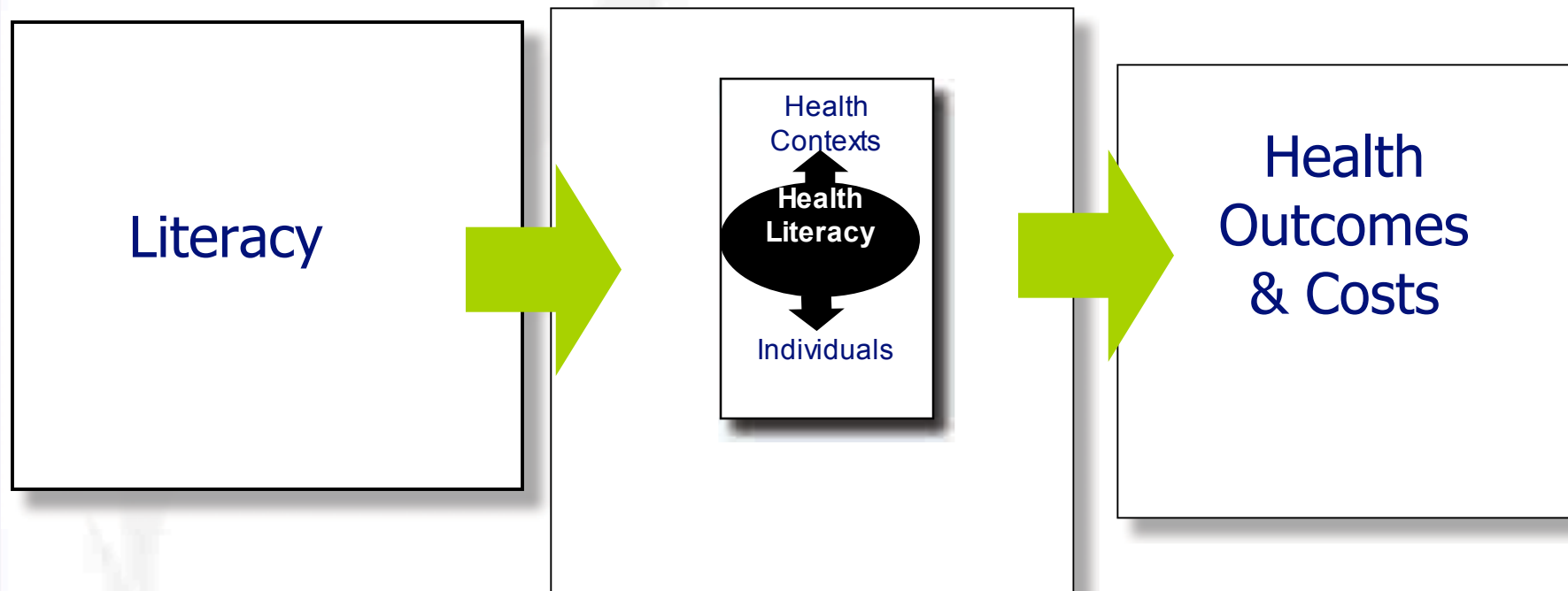
- **Video on health literacy**
- **What is health literacy?**
- **Why should it concern health practitioners?**
- **What can health practitioners do about it?**

## U.S. Institute of Medicine Definition of Health Literacy

- The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (I.O.M., 2004)



## *Health Literacy Framework (I.O.M., 2004)*



## Canadian Expert Panel on Health Literacy Definition

- the ability to access, understand, evaluate and communicate information as a way to promote, maintain and improve health in a variety of settings across the life-course (Rootman and Gordon-El-Bihbety, 2008).



## European Definition

- **“the capacity to make sound health decisions in the context of everyday life – at home, in the community, at the workplace, in the health care system, the marketplace and the political arena”**  
(Kickbusch, 2007)

## How do Literacy and Health Literacy Differ?

- **Literacy refers to basic skills required to succeed in society**
- **Health Literacy requires literacy skills but also:**
  - **Skills required to find health information**
  - **Skills required to evaluate health information**
  - **Skills required to integrate information from a variety of sources**
  - **Some knowledge of the vocabulary of health and culture of the health system**

## Commonly Used Tools to Measure Health Literacy

- **REALM: Rapid Estimate of Adult Literacy in Medicine ( Davis et al., 1993)**
- **TOFHLA: Test of Functional Health Literacy in Adults (Parker et al., 1995)**
- **NVS: Newest Vital Sign (Weiss, 2005)**
- **HALS: Health Activity Literacy Scale (CCL, 2007b)**

## HEALTH AND LEARNING Knowledge Centre

### **Health Activity Literacy Scale:**

- **Using 350 unique items in International Literacy Surveys**
- **191 items judged to measure health-related activities**
- **Health-related items assigned to health literacy sub-domains (Health Promotion; Health Protection; Disease Prevention; Health Care and Disease Management; and Navigation)**
- **Individuals scored on a scale from 1-500 and placed into 5 levels**

## Why should health literacy concern health practitioners?

1. Large numbers of people using the health care system appear to have low levels of health literacy
2. Lower levels of health literacy appear to be related to poorer health outcomes
3. Increasing rates of chronic disease will likely increase need for health literacy skills
4. Lower health literacy appears to be related to higher health care costs
5. Increasing complexity of the healthcare system and the deluge of health information now available put high demands on people for health literacy skills
6. Low health literacy may reflect inequities in health

## 1. Extent of low health literacy in Canada and BC

- Based on the 2003 IALSS, **11.7 million** working age residents of Canada (**55%**) are estimated to lack the minimum level of health literacy needed to effectively manage their health information needs (CCL, 2007a). **1.4 million** B.C. working age residents (**50%**) are at this level.
- When seniors are added, an estimated **14.8 million (60%)** may be without adequate health literacy skills. (CCL, 2007a). **1.8 million (54%)** in B.C.

Level 3 is considered the minimum level of proficiency required to meet the demands of modern day life including those posed by health information

# HEALTH AND LEARNING

Knowledge Centre

### Health Literacy Scores by Self-perceived General Health Status, Canada, 2003

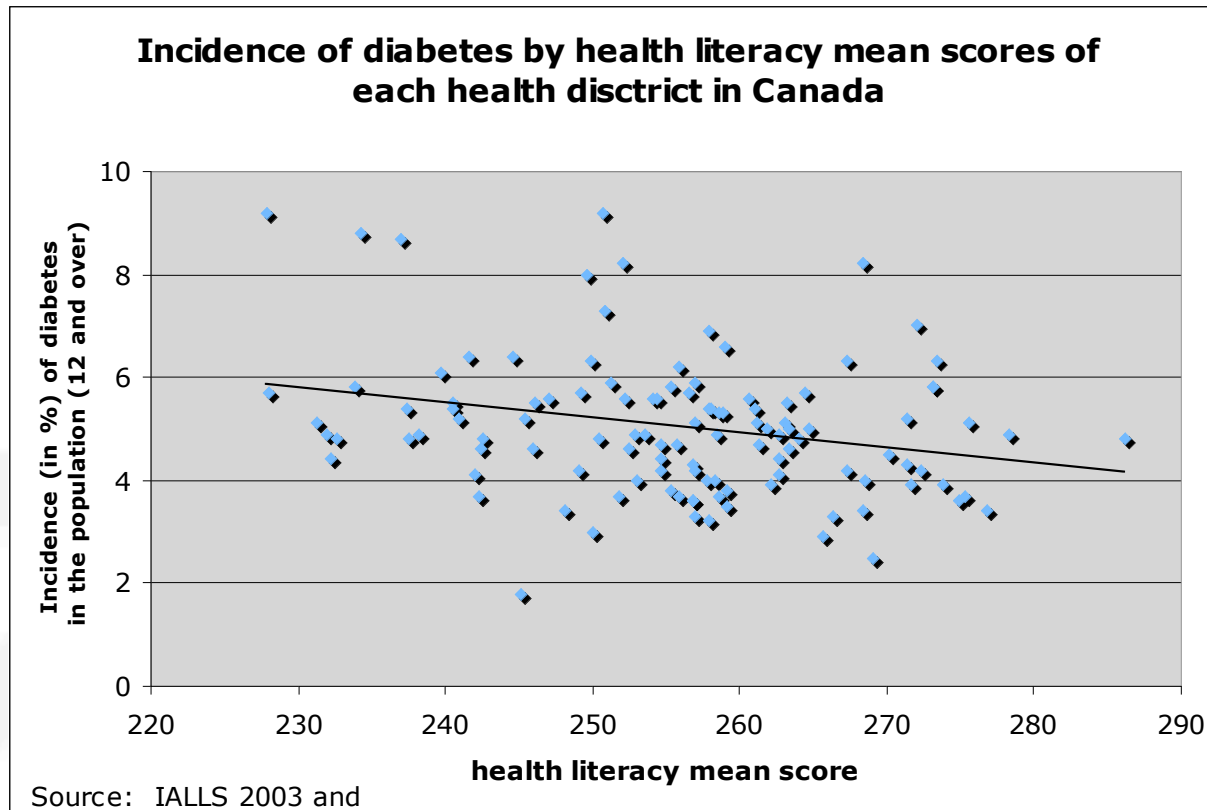


## **2. Health outcomes related to low health literacy include:**

- **Longer hospitalizations (Baker et al., 1997, 2002)**
- **Higher rates of cervical cancer (Lindau et al., 2002)**
- **Higher rates of diabetes (CCL, 2008)**
- **Higher mortality (Baker et al., 2007; Sudore, 2006)**

## HEALTH AND LEARNING

Knowledge Centre



Source: Health Literacy in Canada: A Healthy Understanding, CCL, 2008, based on IALSS, 2003

## Health Literacy and mortality

- A recent U.S. study (Baker et al, 2007) examined the all-cause and cause-specific (cardiovascular, cancer, and other) mortality of 3260 Medicare enrollees over age 56 in 4 US metropolitan areas.
- Older adults with inadequate and marginal health literacy levels had a 50 per cent higher mortality rate over a five-year period than those with adequate skills.
- Low health literacy was the top predictor of mortality after smoking, and was a more powerful variable than both income and years of education.
- Another recent study found that limited literacy, as measured by the REALM, was independently associated with a nearly two-fold increase in mortality in the elderly (Sudore, et al., 2006).

## **Low health literacy is associated with:**

- **Inappropriate medication use and compliance with physician orders (Williams, et al., 1995; Kalichman, et al., 1999)**
- **Less use of preventive services and less care seeking (Scott, et al., 2002)**
- **Less expression of health concerns (Rudd et al., 1999)**
- **Difficulties using health care system (Davis et al. 1996; Brez and Taylor, 1997)**

### **3. Increasing chronic disease and health literacy**

- **The number of people with diabetes in Canada is projected to increase from approximately 1.4 million patients in 2000 2.4 million in 2016 (Ohinmaa, et al., 2004).**
- **One of the ways to address chronic disease which is being increasingly used is patient self-management (McGowan, 2005)**
- **Low health literacy is a barrier to effective self-management. A review of randomized control trial studies found that 62% of patients with lower reading skill levels were unable or unwilling to engage in self-management (Johnston et al., 2006)**
- **Improving literacy and health literacy should lead to improved self-management of chronic diseases (Rootman and Gordon-El-Bihbety, 2008)**

## 4. Health Literacy (Reading Proficiency) and Cost:

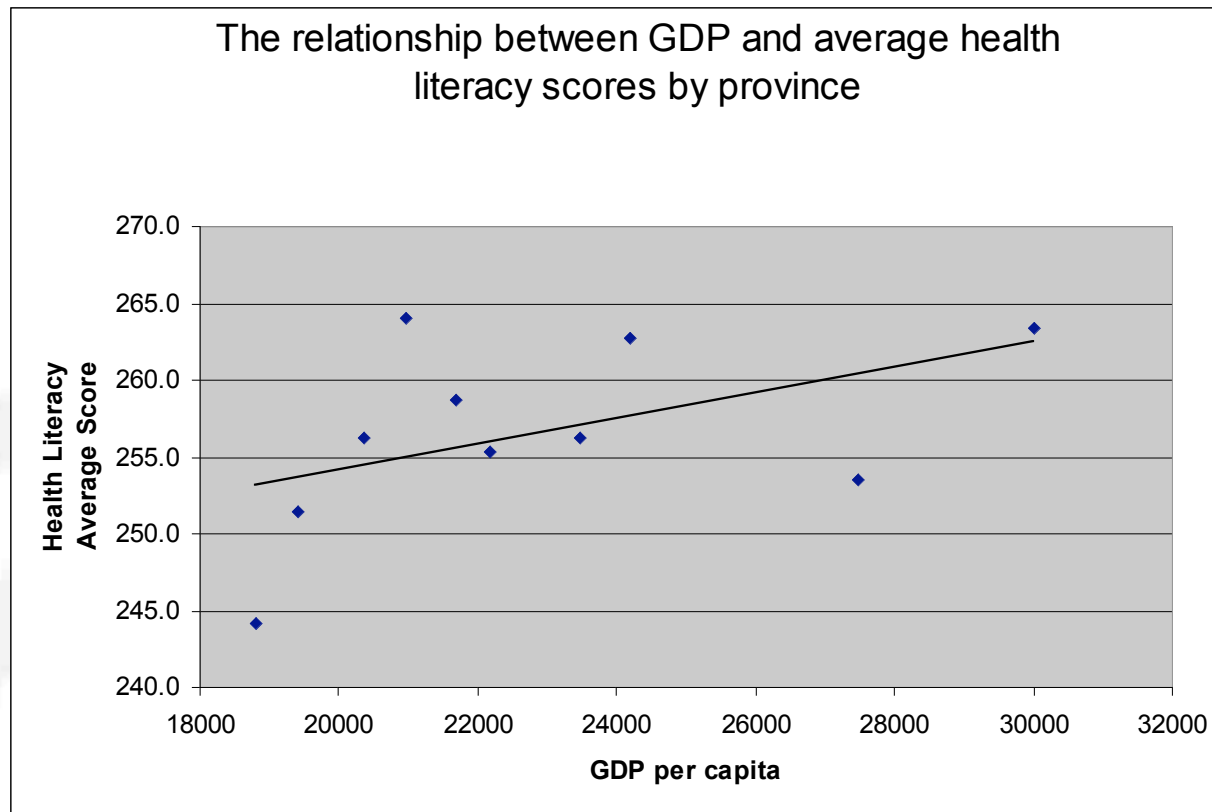
- An analysis of expenditure data from a study of public hospital patients found that predicted in-patient spending for a patient with inadequate HL (Reading Proficiency) was \$993 higher than a patient with adequate reading skills. A difference of \$450 remained after controlling for health status (IOM, 2004).
- Another study which looked at Medicare users found that the Medicare costs of those with less than a 3rd-grade reading level were \$10,688/year, while the costs for those with greater than 4th-grade reading level were \$2,891 (Weiss and Palmer, 2004)

## Estimated Economic Drain of Low Health Literacy on U.S. Economy

- “initial approximation places an order of magnitude of the cost of low health literacy to the U.S. Economy in the range of \$106 billion to \$238 billion **annually**” (Vernon et al., 2007)
- “When one accounts for the future costs of low health literacy that result from current actions (or lack of action), the real present day cost of low health literacy is closer in range to \$1.6 trillion **to** \$3.6 trillion” (Vernon et al., 2007)

## HEALTH AND LEARNING

Knowledge Centre



Source: Health Literacy in Canada: A Healthy Understanding 2008, CCL, based on IALSS 2003

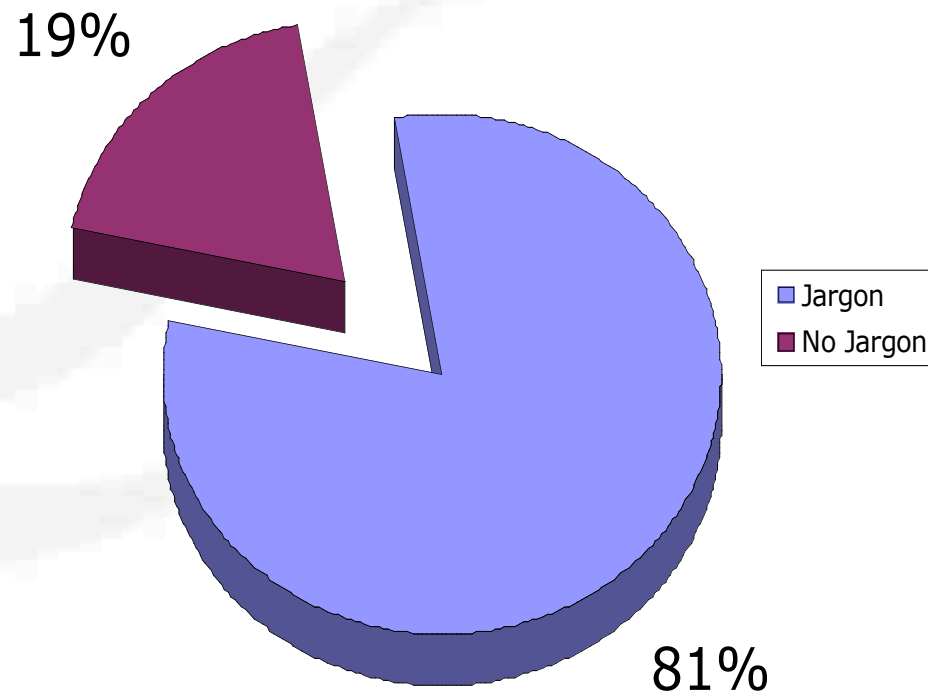
## **5. Demands of health information materials**

- **Over 800 studies have found that health- related material for patient education far exceeds the reading levels of the average adult (Rudd, 2007)**
- **A recent study of health information websites in Canada, the U.K. and Australia found that the content of all sites was written at a higher level than recommended by literacy organizations. The lowest level was grade 11 (Petch, 2004)**

## HEALTH AND LEARNING

Knowledge Centre

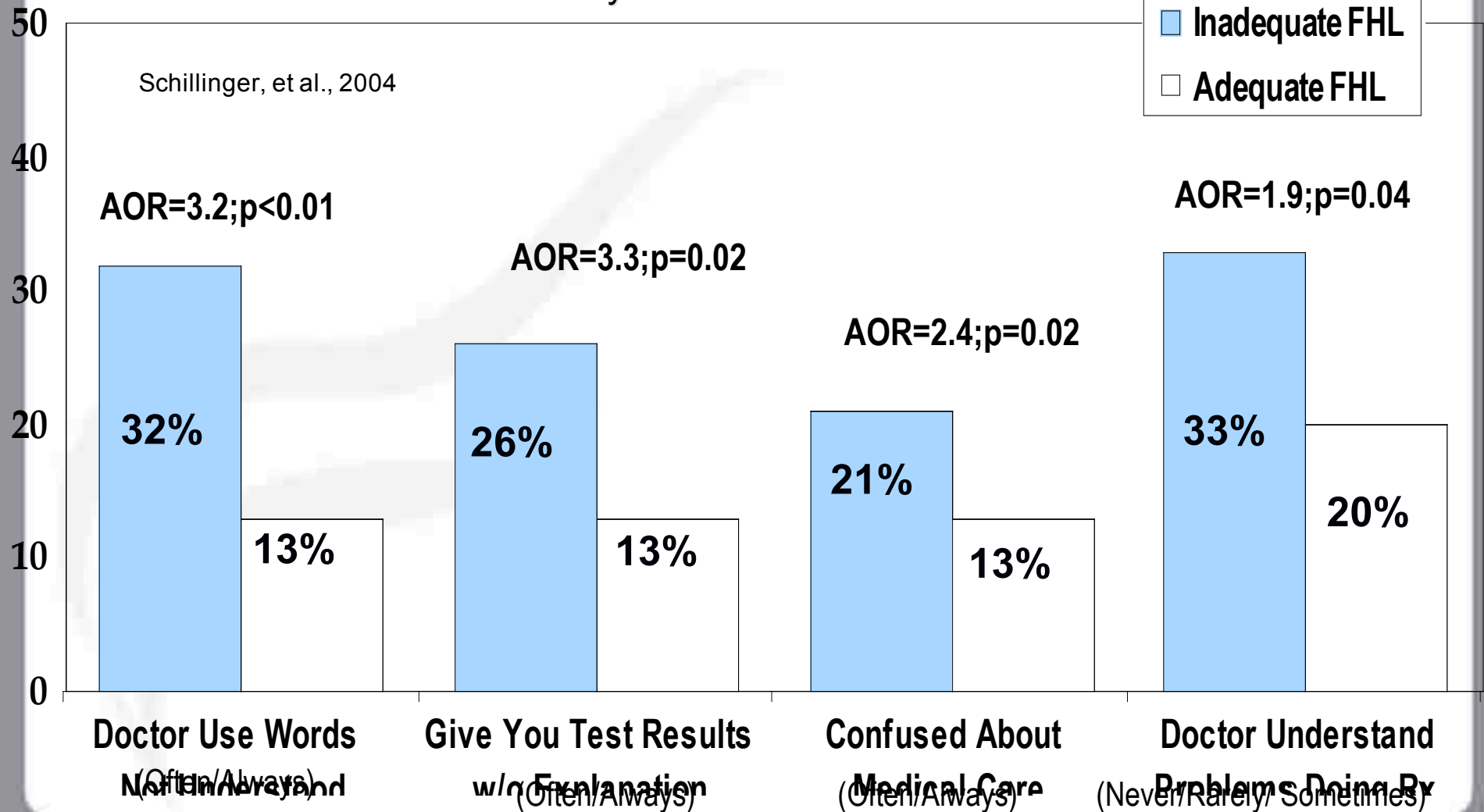
### Jargon use in physician visits



Castro. et al., 2007

HEALTH AND LEARNING  
Knowledge Centre

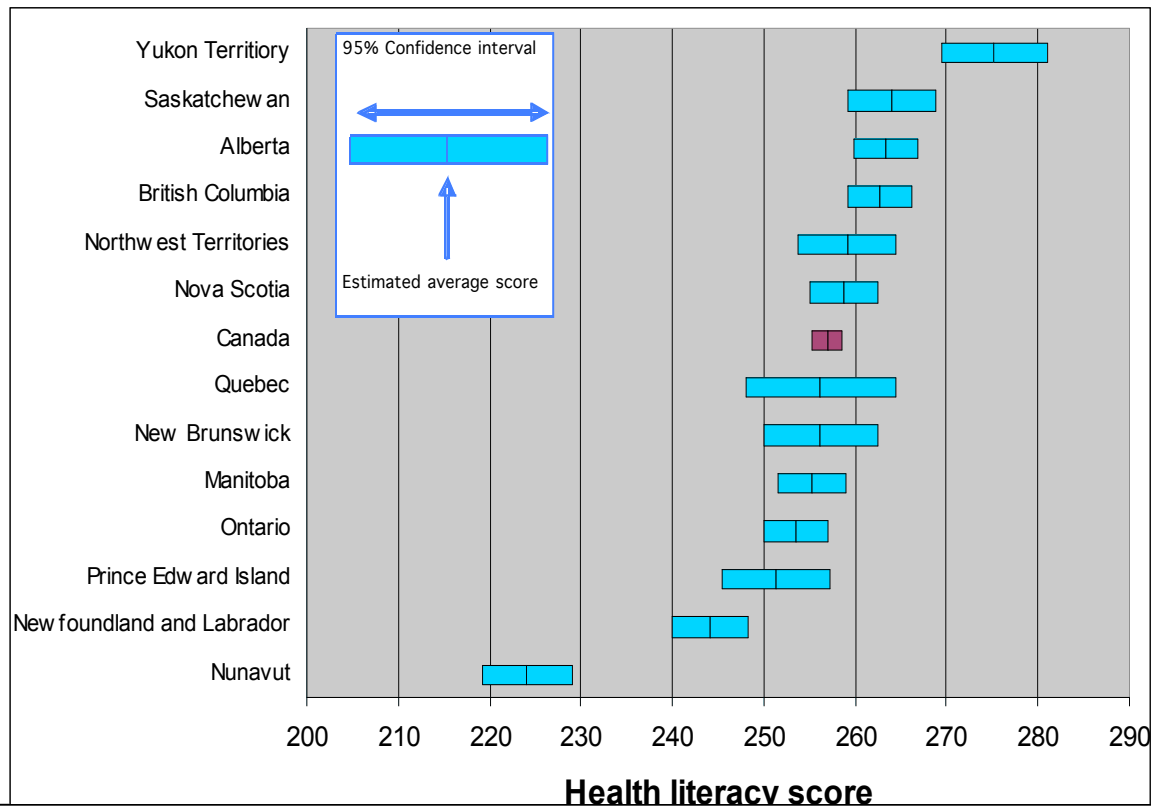
Health Literacy and Oral Communication



## **6. Low Health Literacy may be a reflection of Inequities in health**

- **Certain population groups appear to be more likely to experience lower levels of literacy and health literacy. They include:**
  - **Older adults**
  - **Immigrants**
  - **Adults with low levels of educational attainment**
  - **People whose mother tongue is neither English nor French**
  - **Recipients of social assistance**
  - **Residents of particular provinces or territories**

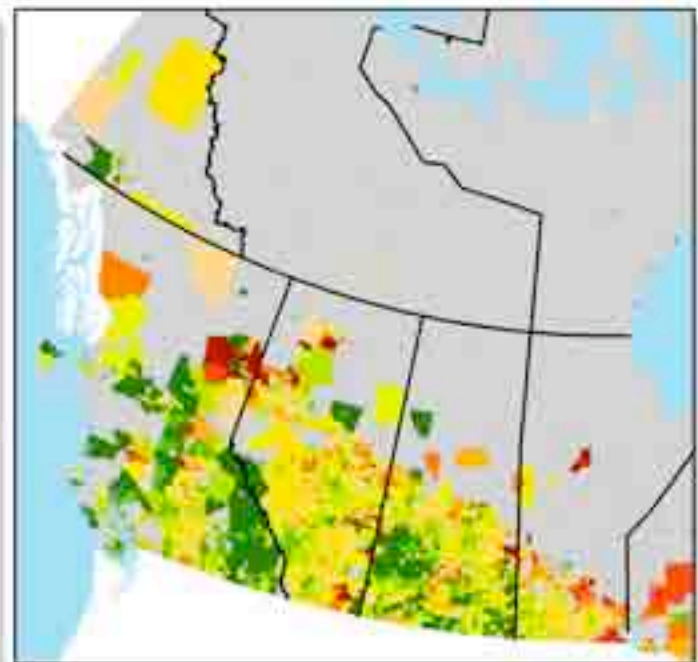
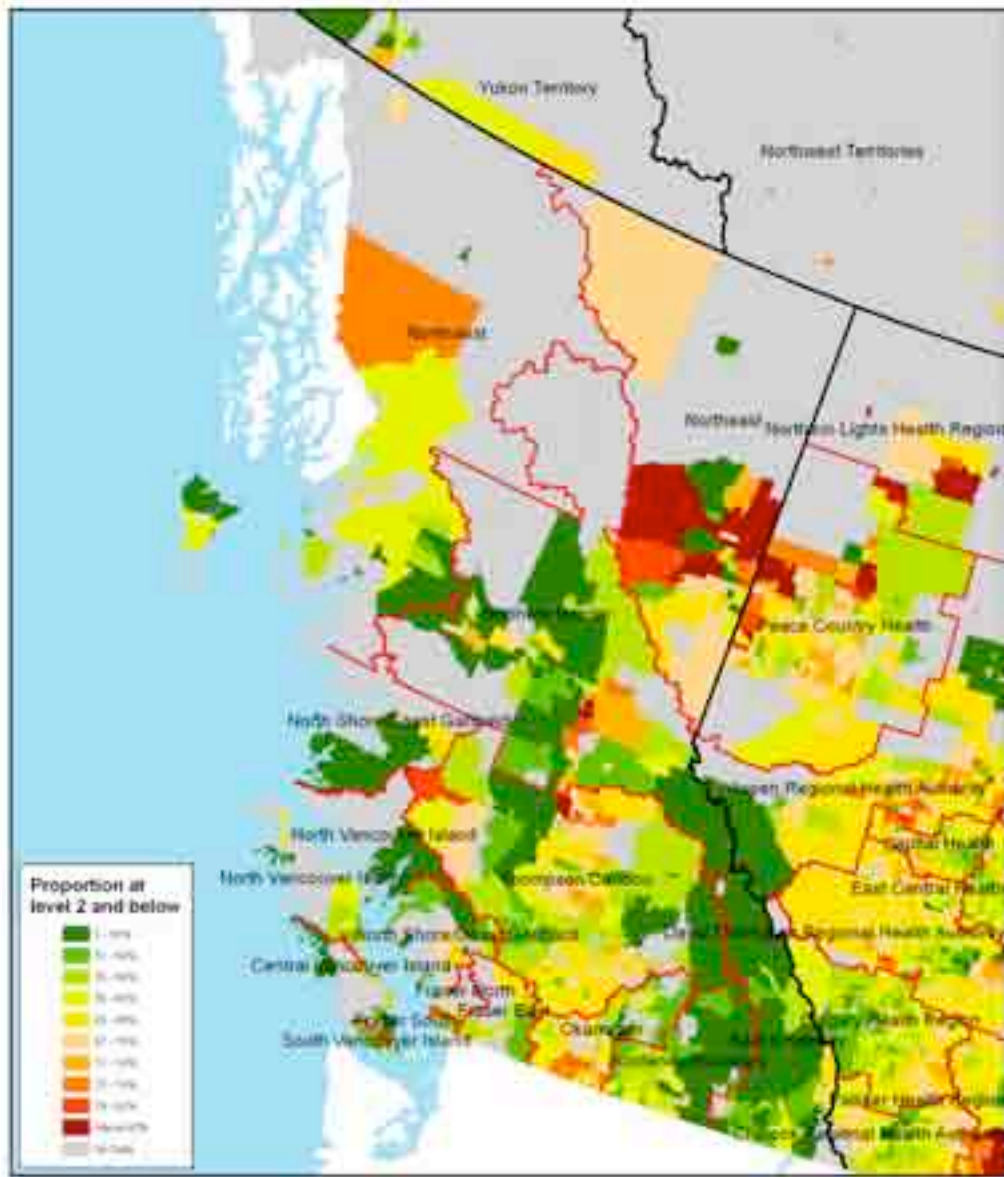
## Distribution of low health literacy in adult population in Canada (by Province/Territory)



Source: Health Literacy in Canada: Initial Results, 2007b, CCL,  
based on IALSS 2003

# The Distribution of Health Literacy in British Columbia

Proportion of adult health literacy at level 2 and below, ages 16 and older

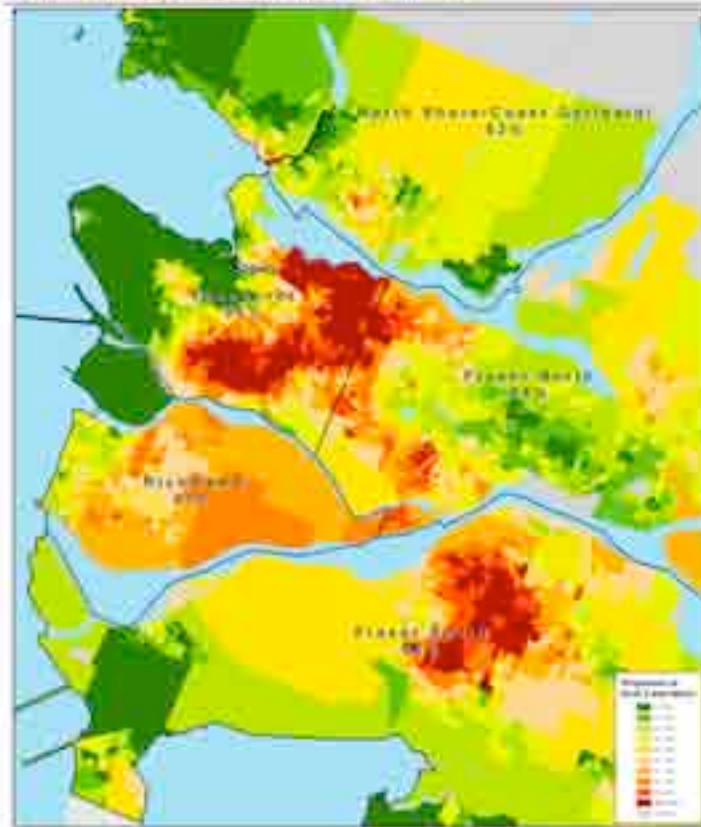


| Health Region               | Proportion at level 2 and below |
|-----------------------------|---------------------------------|
| British Columbia            | 34%                             |
| East Kootenay               | 43%                             |
| Kootenay/Boundary           | 48%                             |
| Chamagne                    | 50%                             |
| Thompson/Cariboo            | 58%                             |
| Fraser East                 | 58%                             |
| Fraser North                | 54%                             |
| Fraser South                | 58%                             |
| Richmond                    | 61%                             |
| Vancouver                   | 59%                             |
| North Shore/Coast Garibaldi | 50%                             |
| South Vancouver Island      | 49%                             |
| Central Vancouver Island    | 50%                             |
| North Vancouver Island      | 53%                             |
| Northwest                   | 61%                             |
| Northern Interior           | 49%                             |

# HEALTH AND LEARNING

Knowledge Centre

Vancouver  
Health Library: Proportion of Level 2 and below



## **What can health practitioners do about health literacy?**

- 1. Inform yourself about the issue**
- 2. Identify people who are likely to have difficulty understanding health information**
- 3. Practice clear communication**
- 4. Create supportive environments**
- 5. Advocate for improvements**

## 1. How can you inform yourself?

- **Attend sessions like this one**
- **Read key literature**
- **Observe your patients and environment**
- **Join a discussion group**
- **Undertake research**

## **2. Strategies to identify people with low HL:**

- **Observation**
- **Questioning**
- **Testing**

## Signs to look for:

- Routinely miss appointments
- Arrive without completed forms
- Never refer to written information
- Avoid filling out forms
- Rely on others to read material
- Claim to have vision problems when asked to read

(Gillis, 2004)

## HEALTH AND LEARNING Knowledge Centre

### **Signs to look for (Cont.):**

- **Ignore or misunderstand advice**
- **Read slowly with obvious effort**
- **Read something faster with no comprehension**
- **Never jot down instructions**
- **Show facial signs of frustration or anxiety when reading**
- **Have problems understanding how to access appropriate services**

**(Gillis, 2004)**

## **Informal Questions to ask:**

- **“How do you learn best?”**
- **“What would help you most as you learn about your illness and how to take care of yourself?”**
- **“What help do you need for taking this medicine properly?”**

**(IOM, 2004, p.54)**

## Promising Screening Questions:

- How often do you have someone help you read hospital materials?
- How confident are you in filling out medical forms by yourself?
- How often do you have problems learning about your medical condition because of difficulty understanding written information?

(Chew, et al., 2004)

## **Possible Tests:**

- **Wide-Range Achievement Test (WRAT-3; Justak and Wilkinson, 1993)**
- **Rapid Estimate of Adult Literacy in Medicine (REALM; Parker, et al., 1995)**
- **Newest Vital Sign (Weiss, 2005)**

### **3. General Principles of Clear Communication:**

- Use plain language
- Link information to previous knowledge
- Tailor information
- Personalize the message
- Be respectful, sensitive and caring
- Reinforce and repeat information
- Communicate in whatever ways work

**(Andrus and Roth, 2002; Osborne,2005)**

## Plain Language:

- Plain language is a way of organizing and presenting information so that it makes sense and is clear and easy to understand for the intended audience. ([www.cpha.ca/en/pls.aspx](http://www.cpha.ca/en/pls.aspx))

## The CPHA Plain Language Service uses the L.I.D. Approach:

### Language

The language of the text uses:

- plain words
- point form
- short sentences

- **Information**

The information in the text is organized to make it easy to understand. Less important or redundant information is removed

- **Design**

The material is designed to guide readers through the text easily

([www.cpha.ca/en/faq.aspx](http://www.cpha.ca/en/faq.aspx))

## HEALTH AND LEARNING

Knowledge Centre

### How to make verbal Communication clearer:

- Limit advice to key information
- Partition information into easy to understand parts
- Provide visual or verbal images
- Present context first
- Make instruction interactive
- Offer examples
- Tailor message
- Verify comprehension

(Doak, et al., 1998)

## **The teach-back/show me techniques:**

- **Do not simply ask, “do you understand”?**
- **Instead, ask to explain or demonstrate how they will undertake a recommended treatment or action**
- **If person does not explain correctly, assume that you have not provided adequate teaching. Re-teach the information using alternative approaches**

**(Weiss, 2003)**

## **Planning Steps for Developing Written Materials:**

- **Assess educational needs of audience**
- **Limit educational objectives**
- **Focus content on behaviour**
- **Present context first**
- **Build to complexity**
- **Include reader interaction**
- **Select visuals and layouts that match culture and gender**

**(Doak, et al., 1996)**

## **Clear Design Tips:**

- **Use left flush justification**
- **Choose type that is clear and easy to read**
- **Use mixture of uppercase and lowercase letters**
- **Use bullets for lists**
- **Use ample “white space”**
- **Pay attention to how the text looks on the page**
- **Use appropriate illustrations and graphics**

**(CPHA, 2005)**

## **4. How to provide a supportive environment:**

- **Increase use of non-written information**
- **Assess suitability of materials**
- **Invite relatives and friends to participate**
- **Include community workers in team**
- **Offer ways to learn more**
- **Provide training to colleagues**
- **Collaborate with others**
- **Participate in research**

## HEALTH AND LEARNING Knowledge Centre

### **Non-written information:**

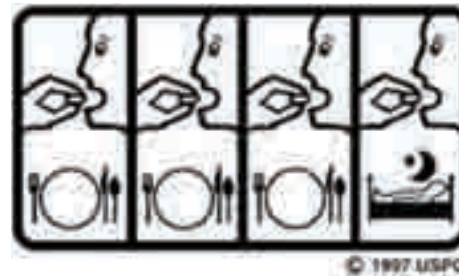
- **Videos**
- **Audiotapes and CD's**
- **Photographs and illustrations**
- **Pictograms**

**(Andrus and Roth, 2002)**

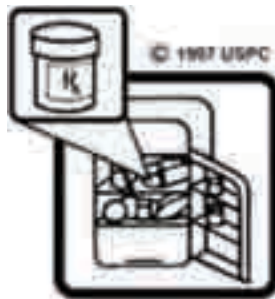
## Examples of Pictograms (from <http://www.usp.org/>):



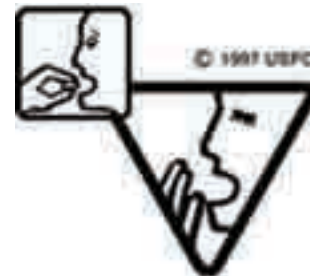
Take by mouth



Take 4 times a day, with meals and at bedtime



Store in refrigerator



This medicine may make you drowsy

## **Using Visuals in Text:**

- **Place visual adjacent to the text to which it refers**
- **Explain the visual within the text**
- **Use captions**

**(Andrus and Roth, 2002)**

## HEALTH AND LEARNING

Knowledge Centre

### **Other Possibilities:**

- **Picture books**
- **Storytelling**
- **Drama**
- **Puppets**
- **Computer-based programs ([www.2aida.org](http://www.2aida.org))**
- **Small discussion groups**

**(Andrus and Roth, 2002)**

## **Assessment of Readability:**

- **Flesch-Kincaid score (Microsoft Word)**
- **S.M.O.G. Readability Formula (NLHP/CPHA, 1998)**
- **Plain Language G.R.I.D. (NLHP/CPHA, 1998)**

## **Advancing Research:**

- **“the literature provides very few evidence-based strategies for improving health literacy or meeting the needs of those with limited literacy” (Andrus and Roth, 2002)**
- **“Collaborative efforts between the health professions, education, public health, social work, and individual patients are needed” (Andrus and Roth, 2002)**

## **5. Advocating for change:**

- **Advocate for attention to literacy and health literacy in your workplace**
- **Lobby your politicians to pay more attention to literacy and health literacy issues**

## What could and should be done by a Health Authority?

- Commit to addressing literacy, particularly as it relates to health
- Establish Literacy and Health Committee
- Conduct audit of facilities, services and programs in terms of literacy and health literacy demands on public
- Examine health literacy maps and consider implications for action
- Implement and evaluate health literacy interventions
- Provide training opportunities for staff related to health literacy
- Form stronger links with the literacy community
- Support the development of research on literacy and health and health literacy

## Some Helpful Resources

### Canadian:

- National Literacy and Health Program
- Writing Health Information for Patients and Families
- Family Literacy and Health Module
- Literacy Audit Tool Kit
- Health Literacy Maps
- McGill University Health Centre Project

### American:

- The Health Literacy Environment of Hospitals and Health Centers
- Pharmacy Health Literacy Assessment Tool
- Health Literacy Manuals for Clinicians
- Health and Literacy Discussion List

## HEALTH AND LEARNING Knowledge Centre

### **National Literacy and Health Program:**

- **Established in 1994**
- **Involves 24 National Organizations coordinated by C.P.H.A.**
- **Promotes awareness among health professionals of the links between literacy and health and provides resources to help health professionals serve clients with low literacy skills more effectively (e.g. Guidelines for medication packaging and labeling for older adults; Plain Language Service)**
- **Go to: [www.cpha.ca/en/programs/literacy.aspx](http://www.cpha.ca/en/programs/literacy.aspx)**

## **Writing Health Information for Patients and Families:**

- **Developed by Patient Education, Hamilton Health Sciences Centre**
- **128-page resource book for health care providers and educators interested in developing patient education materials in plain language to promote health literacy**
- **To order, e-mail [PatientEducation@hhsc.ca](mailto:PatientEducation@hhsc.ca)**

## **Family Literacy and Health Module:**

- **Developed by Centre for Family Literacy, Edmonton**
- **One module in a training resource for practitioners in health and in family literacy**
- **Objectives: Explore relationship between health literacy and family literacy; Explore ways that health and family literacy practitioners can work together; Establish a shared framework for bringing about positive changes in practice that will promote health literacy among Canadian families**
- **Go to: [www.nald.ca/library/research/famlithea/first.htm](http://www.nald.ca/library/research/famlithea/first.htm)**

## Literacy Audit Tool Kit:

- Developed by Literacy Alberta to help organizations provide more literacy-friendly customer service
- Go to: [www.literacyalberta.ca](http://www.literacyalberta.ca)

## **Health Literacy Maps:**

- **Developed by Doug Willms at the University of New Brunswick for Canadian Council on Learning**
- **Interactive maps available on CCL website**
- **Go to: [www.ccl-cca.ca/cclflash/healthliteracy/](http://www.ccl-cca.ca/cclflash/healthliteracy/)**

## **Health Literacy Environment of Hospitals and Health Centers:**

- **Developed by Rima Rudd (Harvard School of Public Health) and Jennie Anderson (National Center for Study of Adult Learning and Literacy) and released in 2006.**
- **Covers Navigation, Print Communication, Oral exchange Technology and Policies and Protocols. Also includes suggestions specific to health care settings and background and resources on health and literacy (mostly U.S.), as well as examples of strategies for action, and tools for conducting needs assessments including a “Walking Interview Guide”**
- **Available at: [www.bcsall.net](http://www.bcsall.net)**

## **Pharmacy Health Literacy Assessment Tool:**

- **Developed U.S. Agency for Healthcare Research and Quality for outpatient pharmacies of large public hospitals and released in October, 2007.**
- **Includes assessment tour of pharmacy, survey of pharmacy staff, patient focus groups and advice on how to use results as well as associated tools**
- **Available at: [www.ahrq.gov](http://www.ahrq.gov)**

## Health Literacy Manuals for Clinicians:

- A.M.A. has developed two manuals for clinicians
- The first, written by Barry Weiss, was published in 2003 as part of educational program about HL which also included a video. The second, which is a revised version by the same author was released in 2007. Both used in CME and are eligible for credit.
- Current version covers extent and implications of limited HL, assessment and measurement, strategies for enhancing patients' HL, improving communication with patients, and creating and using patient-friendly written materials. It also include case discussion, resources, a CME questionnaire and references.
- Available at: [www.ama-assn.org](http://www.ama-assn.org)

## HEALTH AND LEARNING Knowledge Centre

### **Health and Literacy Discussion List:**

- **Hosted by National Institute for Literacy**
- **Purpose is to provide an on-going professional development forum to discuss health literacy needs, goals and strategies**
- **Go to:**  
**[www.nifl.gov/lincs/discussions/subscribe\\_all.html](http://www.nifl.gov/lincs/discussions/subscribe_all.html)**

## Key readings

- Canadian Council on Learning, *Understanding Health Literacy*, Ottawa: CCL, 2008.
- Chiarelli L. *Increasing Understanding of the Impact of Low Health Literacy on Chronic Disease Prevention and Control*. CPHA 2006. Report for the Public Health Agency of Canada.
- Institute of Medicine, *Health Literacy: A Prescription to End Confusion*, Washington: National Academies of Science, 2004.
- Osborne, H., *Health Literacy from A to Z*, Toronto: Jones and Bartlett Publishers, 2005.
- Romilly, L., *Patient self-management: Health literacy skills required*, Ottawa: Canadian Council on Learning, June 19, 2007. [[www.ccl-cca.ca](http://www.ccl-cca.ca)]
- Rootman, I. & El-Bihbety, D., *A Vision for a Health Literate Canada*, Ottawa: CPHA, 2008.

## HEALTH AND LEARNING Knowledge Centre

### To Contact me:

- [irootman@uvic.ca](mailto:irootman@uvic.ca)

