A Survey of Web-Based Health Human Resource Planning Activities in Canada

Gail Tomblin Murphy and Debra Barrath

Introduction

Health Human Resource Planning (HHRP) has become a priority for Canadian researchers, policy-makers, and decision-makers. As social, economic, and technological developments propel health care into the information age, Web-based access to HHRP-related information is rapidly assuming greater significance. Convenient access to HHRP-related information is important for current and future HHRP and will continue to be a priority as the area develops and responds to new challenges. This paper identifies Web-based resources of interest to the HHRP community. It provides an overview of key Canadian HHRP activities, with a focus on nursing human resource planning.

Policy institutes, research units, governments and government agencies, professional associations and unions, think tanks, universities, and not-for-profit organizations release a number of reports that are seldom integrated into conventional literature vehicles (such as journals or bibliographic databases). The Web sites of these organizations frequently provide access to this unpublished or "grey" literature. Grey literature is defined by the US Interagency Gray Literature Working Group as "open source material that usually is available through specialized channels and may not enter normal channels or systems of publication, distribution, bibliographic control, or acquisition by booksellers or subscription agents" (Soule & Ryan, 1995). It includes academic papers, scientific protocols, white papers, preprints, committee reports, proceedings, conference papers, research reports, standards, discussion papers, technical reports, dissertations, theses, government

Gail Tomblin Murphy, PhD(c), is Associate Professor, School of Nursing, Dalhousie University, Halifax, Nova Scotia, Canada. Debra Barrath, MN, is Research Officer, Nursing Effectiveness, Utilization and Outcomes Research Unit, Faculty of Nursing, University of Toronto, Ontario, Canada.

reports, house journals, newsletters, working papers, essays, and electronic columns. Grey publications are valued as sources of comprehensive, concrete, and up-to-date information on research findings and investigations (System for Information on Grey Literature, 2002). They provide valuable and often unique information that can rapidly inform specific scientific communities, funding bodies, and policy-makers about the results of research projects and other initiatives.

Numerous difficulties arise when researchers attempt to use grey information. First and foremost, since grey literature is not well covered by the usual electronic databases or standard publication channels, it is less readily identified and accessed than conventionally published literature (Isenberg, 1999; Soule & Ryan, 1995). Although this situation is changing as Internet distribution expands, it has been found that Web-based information tends to be ephemeral (Isenberg) — that is, material on the Web is frequently posted and removed at the discretion of site owners with little record of its existence. Second, while thousands of health-related organizations generate literature, only a fraction of that literature is of interest to the HHRP community. Third, grey literature varies widely in quality and is seldom peer-reviewed (Soule & Ryan). These limitations place a significant burden on the traditional collection stage of the research cycle. Hence, those who wish to use grey literature as a source of information must be prepared to expend more resources in collecting and processing it than they would in the case of other published material (Soule & Ryan).

The key reason for pointing out the distinction between grey literature and conventionally published materials, however, is not to focus on the unique problems of the former but rather to highlight its value as a complementary source of information. The HHRP research community's interest in grey literature stems from its potential as a source of credible information that can be accessed quickly and inexpensively. The quality of Web information is influenced by the resources available to the Web site owner to maintain current information. Visitors must critically appraise each site for the quality of its information. The exploitation of grey literature to address HHRP issues should be part of an overall literature review strategy that includes a thorough search of all information sources (Helmer, Savoie, & Green, 1999; Weaver et al., 2002). Researchers and policy-makers must consider what role grey information can play in meeting their information needs and in what subject areas it is most likely to be advantageous or productive (Soule & Ryan, 1995).

Currently Available Web Resources

Among the few Web resources for accessing the grey HHRP literature are those provided by university-based research units, federal and provincial government departments and funding agencies, and professional associations. These are outlined in the Appendix. Academic research units typically use department Web pages to describe their HHRP research. Examples of such units are the Nursing Effectiveness, Utilization and Outcomes Research Unit (NRU) at the University of Toronto and McMaster University in Ontario, the Health Human Resources Unit (HHRU) at the Centre for Health Services and Policy Research of the University of British Columbia, and the Manitoba Centre for Health Policy (MCHP) at the University of Manitoba. Government departments and funding agencies also have an interest in disseminating information on HHRP activities. Health Canada, the Canadian Institute for Health Information (CIHI), and Human Resources Development Canada (HRDC) have each published reports on the Web that make HHRP information more widely available. CIHI, for example, publishes an annual report, *Supply and Distribution of Registered Nurses in Canada* (see Appendix). Professional associations such as the Canadian Nurses Association publish information on HHRP developments relevant to their discipline (e.g., the Nursing Sector Study at www.cna-nurses.capagesresources/nursing_sector_study.pdf). These examples are taken primarily from nursing HHRP Web sites; there are similar sites for physicians (e.g., the Physician Sector Study at www.hrdc-drhc. gc.ca/common/news/hrib/010920. shtml).

Web-based initiatives are emerging to address the need for comprehensive online databases of HHRP resources such as publications, reports, fact sheets, and research studies. Policy-makers and decision-makers have highlighted the need for enhanced knowledge transfer and uptake between research and policy sectors (Canadian Health Services Research Foundation, 2000). The authors' own site (www.com mitted.to/hhrp) was established as a vehicle for knowledge exchange and uptake among team members. It also functions as a means of informing other interested researchers, decision-makers, and various stakeholders about the project while providing an extensive listing of HHRP-related Web sites.

Policy-makers and decision-makers often must sift through a large body of research information in order to select those contributions that have the most direct policy relevance. Likewise, in a burgeoning field such as HHRP, researchers are constantly challenged to locate and eval-

uate material in order to identify the evidence that best meets their needs. Contemporary Web-based applications provide a sophisticated environment in which these important types of knowledge transfer and uptake can be enhanced and facilitated.

Our Web site has made significant progress in this respect by providing easy access to the HHRP-related grey literature. Systematic Internet searches are conducted weekly to locate Web sites with HHRP-related grey literature. The information is retrieved, assessed, and summarized, then listed by jurisdiction and topic. By offering a mode of communication for this hard-to-find class of literature, the Web site has the dual advantage of providing ready access to a broad range of credible grey literature and informing others about developments in the field.

New means of accessing HHRP resources on the Web include the recently launched site of the Canadian Health Services Research Foundation/Canadian Institutes of Health Research Chair in Nursing Human Resources (www.hhr.utoronto.ca). Hosted by Linda O'Brien-Pallas, this site is an integral part of the Chair's communications strategy in fostering a national strategy for HHRP. Through the targeting of key stakeholders via the Web site, up-to-date information is made available to those interested in helping to stabilize the nursing human resource situation in Canada and globally. Visitors to the site are able to acquaint themselves with the Chair's vision and goals as well as new initiatives such as the Dorothy M. Wylie Nursing Leadership Institute. Even at these early stages in its development, the site offers easy access to HHRP-related resources such as publications, reports, fact sheets, and studies. Doctoral fellowships, post-doctoral fellowships, and research apprenticeships for policy-makers and decision-makers are also posted. As the site evolves, new content (e.g., a Chair newsletter and online reference database) and interactive features (e.g., listserv subscriptions and discussion groups) will be added to create a dynamic Web site. It will eventually become the backbone of a virtual network to foster interdisciplinary mentorship and to help build a critical mass of policy planners, nurse administrators, and researchers with expertise in HHRP.

As researchers gain confidence in searching and assessing the Web-based grey literature, the demand for more sophisticated and user-friendly sites will continue to grow. Technical innovations such as these promise to expand knowledge transfer and uptake in a way that will ultimately enhance research productivity and greatly impact on HHRP internationally. Researchers and others interested in HHRP should be encouraged to use and to develop sites dedicated to HHRP.

References

Canadian Health Services Research Foundation. (2000). *Knowledge transfer: Looking beyond health knowledge transfer.* Paper presented at Looking Beyond Health conference, Toronto, October 26–27.

Helmer, D., Savoie, I., & Green, C. (1999). *How do various fugitive literature searching methods impact the comprehensiveness of literature uncovered for systematic review?* Paper presented at Fourth International Conference on Grey Literature, Washington, October 4–5.

Isenberg, L. (1999, Summer). Grey literature: The literature that gets left behind. *Public Health/Health Administration Section Newsletter.* Public Health/Health Administration Section, Medical Library Association. Retrieved January 4, 2002, from www.phha.mlanet.org/summer99.html#greylit

Soule, M., & Ryan, R. (1995). Gray Literature – What it is, who produces it, and potential uses. Information Technology Summit, Columbus, Ohio, August 10.

System for Information on Grey Literature. (2002). The role of grey literature. The European Association for Grey Literature Exploitation. Retrieved January 4 from www.kb.nl/infolev/eagle/frames.htm

Weaver, N., Williams, J., Weightman, A., Kitcher, H., Temple, M., Jones, P., & Palmer, S. (2002). Taking STOX: Developing a cross disciplinary methodology for systematic reviews of research on the built environment and the health of the public. *Journal of Epidemiology and Community Health, 56,* 48–55.

Appendix *Canadian HHRP Activities*

Organization	HHRP Activity/Report	Description	Location
Academic research units			
Centre for Health Services and Policy Research: Health Human Resources Unit, University of British Columbia	*Literature Review of HHR Policy/Planning Models*	Summary of literature on population-based HHR policy/planning models with abstracts	www.chspr.ubc.ca// hhru/pdf/hhru01-5W.pdf
	Health Personnel Modeling 1975–1994	Bibliography of health personnel modelling with abstracts (March 1995)	www.chspr.ubc.ca/cgi-bin/pub?id=HHRU+1995:3 &order=Y
	Regional Health Human Resources Planning and Management: Policies, Issues and Information Requirements	Report describing three organizational HHRP models and discussing their advantages and disadvantages	www.chspr.ubc.ca//hhru/ pdf/hhru99-1.pdf
	Nursing Workforce Study, Vols. 1–5	*Demographic context and health system structure for nursing services in Canada*	www.chspr.ubc.ca//hhru/ pdf/hhru00-3nwpv1.pdf
		Supply of nursing personnel in Canada	www.chspr.ubc.ca//hhru/ pdf/hhru00-4nwpv2.pdf
		Inventory of nursing program enrolments and graduates in Canada by province/territory	www.chspr.ubc.ca//hhru/ pdf/hhru00-5nwpv3.pdf
		Nursing workforce deployment	www.chspr.ubc.ca//hhru/ pdf/hhru00-6nwpv4.pdf
		Changes in the nursing workforce and policy implications	www.chspr.ubc.ca//hhru/ pdf/hhru00-7nwpv5.pdf

Nursing Effectiveness, Utilization and Outcomes Research Unit (NRU), University of Toronto and McMaster University	Nursing Human Resources Planning and Modeling	Studies of appropriate supply, distribution, and deployment of nurses and how to enable nurses to meet their responsibilities following health system restructuring	www-fhs.mcmaster.ca/nru/html/research.html#1.1
	Health Human Resource Planning: An Examination of Relationships Among the Use of Nurses and Population Health in the Province of Ontario	Study to develop and test an approach to establishing, monitoring, and predicting the need for nurses based on patient requirements; will explore the relationship among Ontarians' health needs, use of nursing and hospital services, and health outcomes within a systems framework; will show the usefulness to HHRP of including variables in large-scale surveys that measure population health	www.chsrf.ca/docs/resinprog/ogc2000/tomblin_e.shtml committed.to/hhrp
Manitoba Centre for Health Policy (MCHP), University of Manitoba	*Needs-Based Planning for Manitoba's Generalist Physicians*	Report estimating the need for physicians based on age, gender, health, and socio-economic mix of the population, and comparing need with supply	umanitoba.ca/academic/centres/mchp/surdocs.htm
	Issues in the Management of Specialist Physician Resources for Manitoba	Report examining current supply of specialist physicians in Manitoba, incorporating Statistics Canada data to help project future requirements and analyzing access to specialists by area and socio-economic status	umanitoba.ca/academic/centres/mchp/reports/reports_97-00/plan.htm
	Issues in Developing Indicators for Needs-Based Funding	Report focusing on the theoretical question of how to distribute physician services for a sector in which the data are good but services are not currently distributed according to need	umanitoba.ca/academic/centres/mchp/reports/reports_97-00/allocat.htm

Appendix (cont'd)

Organization	HHRP Activity/Report	Description	Location
Professional associations			
Canadian Nurses Association	*Overview of Nursing Sector Study*	Overview adapted from The Nursing Labour Market in Canada: An Occupational/ Sector Study Terms of Reference; includes background information as well as the purpose, objectives, and scope of the study	www.cna-nurses.ca/ pages/resources/nursing_ sector_study.pdf
Canadian Medical Association	Canadian Medical Forum *Task Force on Physician Supply: Task Force One* *Task Force Two: A Human Resource Strategy for Physicians in Canada*	Paper prepared to help stakeholders make strategic decisions to address physician supply in Canada; *Task Force Two* will examine full range of existing and emerging models for health-care delivery and assess their implications for physician supply and training	www.cma.ca/cma/common /displayPage.do?pageId=/ staticContent/HTML/N0/ l2/advocacy/Taskforce/ summary.htm
Organizations at federal level			
Health Canada	Advisory Committee on Health Human Resources: Canadian Nursing Advisory Committee (CNAC)	The Federal, Provincial and Territorial Advisory Committee on Health Human Resources appointed 16 members to the new CNAC, whose establishment fulfils the first of 11 recommendations of *A Nursing Strategy for Canada* (Oct. 2000); CNAC's first priority is to recommend policy directions for a framework and context to improve nurses' working conditions at the provincial/territorial level	www.hc-sc.gc.ca/english/ for_you/nursing/cnac.htm

	Advisory Committee on Health Human Resources: *Nursing Strategy for Canada* (ACHHR)	The Federal, Provincial and Territorial Ministers of Health, through ACHHR, released *A Nursing Strategy for Canada* at their meeting in Winnipeg on Oct. 4, 2000; this report was developed by ACHHR, which has been tasked with preparing options to strengthen HHR development	www.hc-sc.gc.ca/english/ for_you/ nursing/index. htm
	Building a Stronger Foundation: A Framework for Planning and Evaluating Community-Based Health Services in Canada	Important tool for planning and assessing the appropriateness and effectiveness of community-based health services and the conceptualization, utilization, management, and regulation of HHR	www.hc-sc.gc.ca/hppb/ healthcare/Building.htm
	Applied Research and Analysis Directorate: *Health Human Resources: Cost Driver of the Canadian Health Care System*	Paper addressing the question of why the share of national income devoted to health expenditure has risen over the past 25 years	www.econ.queensu.ca/ cea2001/papers/ carr-ariste.pdf
Canadian Institutes for Health Information	*Canada's Health Care Providers*	Special report on HHR in Canada: compilation of current research, historical trends, and new data, findings and analysis on what we know and do not know about Canada's health-care providers as a foundation for some of today's critical and complex issues in health care	ecomm.cihi.ca:80/ec/ product.asp?dep%5Fid= 3&sku=01CHCP

Appendix (cont'd)

Organization	HHRP Activity/Report	Description	Location
Canadian Institutes for Health Information	*Supply and Distribution of Registered Nurses in Canada, 2000*	Reference document to support RN research and planning; presents summary and detailed tables reflecting RNs in Canada, including: demographic and practice characteristics such as age and sex, basic and post-basic nursing education, year and province of graduation, post-basic education other than nursing, employment status, full-time/part-time status, location of employment, type of employer, primary area of responsibility, and position of employment	ecomm.cihi.ca:80/ec/ product.asp?dep%5Fid= 8&sku=SDRN+2000
	Supply and Distribution of Registered Nurses in Canada, 1999	Reference document to support RN research and planning; presents summary and detailed tables reflecting RNs in Canada, including: demographic and practice characteristics such as age and sex, basic and post-basic nursing education, year and province of graduation, post-basic education other than nursing, employment status, full-time/part-time status, location of employment, type of employer, primary area of responsibility, and position of employment	ecomm.cihi.ca:80/ec/ product.asp?dep%5Fid= 8&sku=SDRN+2000

	Health Personnel in Canada, 1991 to 2000	Data on various types of health professionals for 1991–2000, including figures on licensure, activity status, and number of graduates	ecomm.cihi.ca:80/ec/ product.asp?dep%5Fid= 8&sku=HP+1991+TO+2000
	Health Personnel in Canada, 1988 to 1997	Data on 19 types of health professionals for 1988–1997, including figures on licensure, activity status, and number of graduates	ecomm.cihi.ca:80/ec/ product.asp?dep%5Fid= 8&sku=HP+88+TO+97
	Health Personnel Database Reports	Data on various types of health professionals for 1991–2000, including figures on health professionals by licensure, activity status, and number of graduates	www.cihi.ca/wedo/ hlthpers.shtml
Canadian Health Services Research Foundation	Description of Priority Themes: Health Human Resources	HHR seen as the dominant issue for the next 2 to 5 years by policy-makers and managers	www.chsrf.ca/about/ descripthemes_e.shtml#hhr
	Policy Synthesis: *Commitment and Care: The Benefits of a Health Workplace for Nurses*	Policy synthesis looking at the effects of health-system restructuring on nurses' health and at ways of improving nurses' work environment	www.chsrf.ca/docs/ finalrpts/pscomcare_e.pdf

Appendix (cont'd)

Organization	HHRP Activity/Report	Description	Location
Human Resources Development Canada

Sector studies supporting the federal govern-ment's skills and learning agenda by helping sector representatives understand and address human resources issues and generally increasing sectoral capacity | Nursing Sector Study | Planned two-phase study.
Phase 1 (20 months): comprehensive analysis of the nursing labour market based on the most accurate data available, some of which will be developed by special surveys of nurses, nursing employers, and nursing students; research phase to include development of nursing requirements under various delivery model options. Phase 2 (5 months): systematic strategy development process based on Phase 1, structured to provide input from stakeholders in the nursing sector, including provincial/territorial governments | www.hrdc-drhc.gc.ca/ common/news/hrib/ 011005.shtml

www.hrdc-drhc.gc.ca/hrib/hrp-prh/ ssd-des/english/projects/ nursing/index.shtml |
| | Physicians Sector Study | Canadian Medical Forum and other partners to lead a national human resource study of physicians, to examine a full range of existing and emerging models for health-care delivery and to assess their implications for physician supply and training | www.hrdc-drhc.gc.ca/ common/news/hrib/ 010920.shtml

www.hrdc-drhc.gc.ca/hrib/ hrp-prh/ssd-des/english/ projects/physicians/index. shtml |

Appendix (cont'd)

Organizations at provincial level

Alberta Government: Premier's Advisory Council on Health	*Mazankowski Report*	See Part 1: "Ensuring an adequate supply and the best use of health providers"	www2.gov.ab.ca/home/ health_first/documents_ maz_report.cfm
		Context paper: Do we have a shortage of health professionals?	www2.gov.ab.ca/home/health _first/documents/partI. pdf
		Key recommendations of this report regarding HHRP include: "Put better incentives in place for attracting, retaining, and making the best use of health providers, develop a comprehensive workforce plan, improve workforce morale, implement alternative ways of paying physicians, and encourage health providers to implement new ways of delivering services."	www2.gov.ab.ca/home/ health_first/documents/ shortage.pdf
	The Government's Response to the Mazankowski Report: Making the Best Use of Health Professionals	The government's response to the Premier's Advisory Council on Health Report outlining its HHRP strategy	www2.gov.ab.ca/home/ health_first/documents/ response_maz_final.pdf
			www2.gov.ab.ca/home/ health_first/response_3.cfm

Organization	HHRP Activity/Report	Description	Location
British Columbia Ministry of Health Planning: Strategic Planning and Nursing Directorate Division	The Strategic Planning and Nursing Directorate Division	Report to the Minister of Health on the Recruitment and Retention of Registered Nurses and Registered Psychiatric Nurses in British Columbia, March 2000	www.healthplanning.gov.bc.ca/strategic/
	Assess and Intervene: Report to the Minister of Health on the Recruitment and Retention of Registered Nurses and Registered Psychiatric Nurses in British Columbia, March 2000		www.hlth.gov.bc.ca/cpa/publications/rpnurses/assessintervene.pdf
Ontario Ministry of Health and Long-Term Care	*Good Nursing, Good Health: An Investment in the 21st Century – Report of the Nursing Task Force (Jan. 1999)* Nursing and Health Outcomes Project	The Nursing Task Force was established to examine the impact of health-care reform on nursing and to recommend strategies to ensure and enhance quality of care through the use of nursing human resources; its Report makes short-, medium-, and long-term recommendations for improving nursing services in Ontario; the purpose of the Nursing and Health Outcomes Project, which was created in response to these recommendations, is to identify nursing-sensitive patient outcomes and their attendant nursing inputs and processes	www.rnao.org/html/pdf/JPNC.pdf www.gov.on.ca/health/english/program/nursing/nursing_mn.html

Appendix (cont'd)

Prince Edward Island Health and Social Services	Prince Edward Island Advisory Committee on Health Human Resources: *Health Human Resources Supply and Demand Analysis*	A comprehensive profile of health and social services employees in the public and private sectors, identifying demand, supply, and predicted surpluses and shortages in major occupational groups over the next 5 years; includes a dynamic human resource planning model to support collaborative planning among educators, employers, and professional associations	www.gov.pe.ca/photos/ original/hss_nov162001_b. pdf
Saskatchewan Health	*Job Satisfaction, Retention, Recruitment and Skill Mix for a Sustainable Health Care System*	Health WORCS was assigned the task of developing, within the context of the many factors affecting supply and demand, recommendations to help Saskatchewan Health and health employers understand their human resource challenges, and of providing examples of delivery models to help health employers meet their recruitment and retention challenges	www.health.gov.sk.ca/info_ center_pub_WORCS.pdf
	Labour Market Analysis: Saskatchewan Nursing (Nursing Supply and Demand Study)	Report commissioned by the departments of Health and Post-Secondary Education and Skills Training in March 1999; the research goals were to: examine trends in the supply of nurses; examine trends in the demand for nursing; and develop a short-term forecast for the size of the imbalance between supply and demand	http://www.health.gov.sk. ca/info_center_pub_ nursestudy.pdf