PositionStatement

NURSING INFORMATION AND KNOWLEDGE MANAGEMENT

CNA POSITION

CNA believes that information management and communications technology are integral to nursing practice.

Competencies[1] in information management and the use of communications technology are no longer add-ons to traditional methods of health-care delivery. Rather, these competencies are an integral part of health care and nursing practice. CNA supports the Health Council of Canada's statements that health-care providers "need reliable and accurate patient health information at the point of care and the best evidence available to determine treatment options" and that electronic tools to manage this information are a necessity.[2]

CNA believes that essential information about the impact of nursing services is being lost. Registered nurses should advocate for and lead efforts toward the collection, storage, retrieval and use of nursing care data[3] to generate information on nursing outcomes.

The impact of nursing care on the health of clients[4] must be documented to be understood. Registered nurses' interventions, and client outcomes relative to those interventions, need to be captured in a standardized way for the purpose of aggregation, comparison and reporting. A coordinated, centralized system to collect, store and retrieve data about nursing practice in Canada is missing. These data are essential to expand knowledge, to evaluate the quality and impact of nursing care, to promote patient safety and to support integrated health human resources planning.

To address this gap, registered nurses should collaborate with relevant provincial, territorial and national agencies responsible for the collection of health-care information. Registered nurses must be involved in identifying clinical care and health system questions about nursing services and the data that are required to answer them. Registered nurses may contribute to or conduct such a data analysis and must be involved in interpreting the results.

It is important that nurses be able to retrieve and use data they have collected at the point of care. The nursing profession in Canada has reached a consensus on the general data elements that are required to understand the impact of nursing practice: client status, nursing interventions and client outcomes. In addition to these clinical data elements, unique registered nurse identifiers and nursing resource intensity[5] are also key to representing nursing practice within a larger system of client-centred health information.[6]

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[1] Competencies describe the integrated knowledge, skills, judgment and attributes required of a registered nurse to practise safely and ethically in a designated role and setting. (Attributes include, but are not limited to, attitudes, values and beliefs.)

[2] (Health Council of Canada, 2006, para. 1)

[3] "*Data* are discrete observations that are not interpreted, organized or structured. *Information* is data that has been interpreted, organized or structured to provide meaning to the data. And knowledge is the synthesis of information to identify relationships that provide further insight to an issue or subject area." (Canadian Nurses Association [CNA], 2001)

[4] *Client* refers to the individual, family, group, community or population that is the recipient of nursing services.

[5] *Nursing resource intensity* can be defined as "a combination of the amount of care and the skill level at which the care is provided." (as cited in CNA, 2001)

[6] (Hannah, 2005)

CNA advocates data standards and supports the adoption in Canada of a single clinical care terminology with the capacity to represent client health data and the clinical practice of all health-care providers.

In order to have comparable nursing care data in our national databases, data must be collected and coded using structured languages (clinical terminologies).

CNA supports the adoption of a single clinical terminology that is appropriate to the Canadian health-care system and its values; that facilitates communication across all health-care settings, spoken languages and geographic regions; and that has the capacity to represent client health data and the clinical practice of all health-care providers. The adoption of a clinical terminology for interoperable electronic health records (EHRs) in Canada must be based on these requirements.

For a clinical terminology to adequately represent the practice of registered nurses across all regions and settings, it must be developed in collaboration with the International Council of Nurses (ICN), which represents more than 129 national nursing associations. ICN has developed a major unified nursing language system – the International Classification of Nursing Practice (ICNP) – which is compliant with international standards in a manner consistent with other disciplines.[7] ICN's expertise must be included in the ongoing development of a terminology that will support interprofessional practice in our changing health system. Canadian registered nurses have contributed to the development of the ICNP and continue to work with ICN to advance the ICNP as an international standard.

CNA advocates for a client-centred, pan-Canadian electronic health record.

An EHR integrates information from many sources into a single, lifetime record of an individual's key health history and care.[8] EHRs improve patient safety by reducing errors caused by multiple files and data entry points, and they make the overall system more efficient by reducing duplication and improving the flow of information.[9]

To improve patient safety, CNA advocates for a client-centred, pan-Canadian electronic health record. The EHR must:

• respect and protect the privacy of client information;

• include the establishment and integration of unique identifiers for registered nurses;

• include clinical care data from all disciplines; and

• be designed in collaboration with registered nurses to ensure that clinical data is captured in a standardized way that reflects the practice and impact of nursing care.

CNA believes that to implement the information and communications technology (ICT) and data standards that the Canadian health system needs, registered nurses must be given support in making the transition to electronic information systems.

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[7] (International Standards Organization, 2003)

[8] (Health Council of Canada, 2006)

[9] (Health Council of Canada, 2006)

CNA has developed the *E-Nursing Strategy for Canada* to promote and ensure changes that support quality nursing practice. The strategy explores the major challenges that face nursing and begins to elaborate on how information management and communications technology can effectively address every one of those challenges. The strategy provides direction by setting out three requirements: [10]

- **Access:** Health-care systems and organizations need to provide registered nurses with access to user-friendly ICT that supports evidence-based care.

- **Competency:** Registered nurses need opportunities to acquire the competencies to use ICT throughout their practice.

- **Participation:** It is essential that nurses play an active role in the selection, design, deployment and evaluation of ICT solutions.

Collaboration among the following groups will be critical in advancing the e-nursing strategy.

- **Nurses in clinical practice**
  - Participate in all stages of the development of ICT initiatives.
  - Increase competence in use of ICT.
  - Access multiple sources of information for evidence-based practice.

- **Employers and administrators**
  - Recognize ICT as a tool of professional nursing practice.
  - Recognize roles for registered nurses in health informatics and support and value such roles in the practice setting.
  - Encourage adoption of ICT that supports nursing practice.
  - Provide access to ICT and opportunities for nurses to acquire competencies in the work setting.

- **Federal, provincial and territorial ministries**
  - Ensure the adoption of standards for health information systems, including clinical information systems.
  - Ensure appropriate funding needed for the adoption of information management and communications technology in Canada's health system – for the material resources, for the learning needs of the current workforce and for payment mechanisms that recognize telehealth visits and consultations.
  - Promote Internet access for all Canadians – clients and health-care providers.

- **Nursing organizations – professional associations, regulatory bodies and unions**
  - Provide leadership for nurses' involvement in ICT.
  - Recognize ICT competencies as entry-level requirements.

- **Educators and researchers**
  - Incorporate ICT competencies into undergraduate and graduate curricula as well as continuing education. [11]
  - Develop research programs to optimize nurses' use of ICT.

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[10] (CNA, 2006)

[11] (Canadian Nursing Informatics Association, 2002)

BACKGROUND

Improving health information is a high priority for health-care providers and governments around the world who work to strengthen health systems for a greater positive impact on the health of their citizens. Every health system task force or commission in Canada over the last 10 years has highlighted the importance of having better information with which to manage the health-care system.[12] Although standardizing, collecting and exchanging health information across the provinces and territories is a challenge for our country, Canada's national health system provides clear opportunities.

The Canadian Institute for Health Information (CIHI), mandated by Canada's health ministers, is responsible for the development and maintenance of a comprehensive and integrated health information system for Canada "that provides essential data and analysis on Canada's health system and the health of Canadians."[13] While there is national data on the *supply* of registered nurses (from the annual provincial and territorial registration of RNs), there is little to no data about nursing practice and related clinical outcomes or the utilization of nursing resources within the health system. The ongoing evolution of CIHI's national coding systems is creating opportunities to formalize data collection processes that will capture nursing care data within the larger health-care information system.

Canada Health Infoway, also mandated by Canada's health ministers, is responsible for accelerating the development and adoption of pan-Canadian electronic health record (EHR) systems.[14] The development and adoption of health information and technology standards are needed to create interoperable EHRs for Canadians. Such records can improve the quality of care by giving citizens and appropriate health-care providers timely access to the right information when and where they need it.

CNA has been recognized as instrumental in promoting nurses' involvement in health informatics.[15] Currently, nurses use informatics for many kinds of clinical, education, administrative, research and health system initiatives (e.g., telehealth, EHR, decision support systems, workload measurement, virtual learning environments).[16] Registered nurses have been leaders in telehealth and nurse-led patient advice lines that are now improving access to primary care in many provinces and territories. Information management and communication technologies are rapidly emerging in support of clinical care delivery, bringing both challenge and opportunity for nurses to optimize client health outcomes.

Approved by the CNA Board of Directors, November 2006

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[12] (College and Association of Registered Nurses of Alberta, 2004)

[13] (Canadian Institute for Health Information, 2006)

[14] Canada Health Infoway aims to have an interoperable EHR in place across 50 per cent of Canada (by population) by the end of 2009 (Canada Health Infoway, 2005)

[15] (Hannah, Hammell, & Nagle, 2005)

[16] (Hannah, K., 2005)

References:

Canada Health Infoway. (2005). *Who we are.* Retrieved October 6, 2006, from http://www.infoway-inforoute.ca/en/WhoWeAre/Overview.aspx

Canadian Institute for Health Information. (2006). *CIHI – Taking health information further.* Retrieved September 17, 2006, from http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=profile_e

Canadian Nurses Association. (2001). What is nursing informatics and why is it so important? *Nursing Now 11,* 1-4.

Canadian Nurses Association. (2006). *E-Nursing Strategy for Canada.* Ottawa: Author.

Canadian Nursing Informatics Association. (2002). *Educating tomorrow's nurses: Where's nursing informatics?* Ottawa: Author. Available from http://www.cnia.ca

College and Association of Registered Nurses of Alberta. (2004). *Position statement on the role of the registered nurse in health informatics.* Edmonton: Author.

Hannah, K. (2005). Health informatics and nursing in Canada. *Healthcare Information Management and Communications, 19*(3), 45-51.

Hannah, K. J., Hammell, N., & Nagle, L. (2005). Nursing informatics in Canada. In V. K. Saba & K. A. McCormick (Eds.), *Essentials of nursing informatics* (4th ed.). (pp. 607-619). New York: McGraw Hill.

Health Council of Canada. (2006). *Healthcare renewal in Canada: Clearing the path to quality.* Retrieved September 16, 2006, from http://www.healthcouncilcanada.ca/en/index.php?option=com_content&task=view&id=83&Itemid=84

International Standards Organization. (2003, September). Nursing language – terminology models for nursing. *ISO Bulletin,* 16-18.

Also see:

Baernholdt, M., & Lang, N. M. (2003). Why an ICNP? Links among quality, information and policy. *International Nursing Review, 50,* 73-78.

Related CNA publications:

Evidence-Based Decision-Making and Nursing Practice (2002)

Privacy of Personal Health Information (2001)

International Classification of Nursing Practice: Documenting nursing care and client outcomes (*Nursing Now,* 2003)

Replaces:

Collecting Data to Reflect the Impact of Nursing Practice (2001)