



## **Nursing Data & Information Management**

### **Report from the Nursing Health Services Research Unit (NHSRU) Roundtable Discussion**

The NHSRU Roundtable discussion on nursing data and information management was held on Wednesday November 16, 2005 and featured two presentations from leading researchers at the NHSRU. The presentations were followed by discussion and exchange of information and recommendations between the presenters and participants.

#### **Better Data, Better Decisions**

**Presenter: Dr. Andrea Baumann**

A leader in the management of financial, human resources, and clinical information, the health industry is considered “data rich”, and concurrently “information poor”. Public accountability and the introduction of stringent reporting requirements to the government are some of the factors that have resulted in a move towards providing research evidence to support policy. Quality data are necessary to:

1. Expand the horizons of health human resources.
2. Understand the complexity of hospital workforces.
3. Provide evidence for workforce planning and decision making.

While the need to produce quality data is recognised, there are challenges associated with this, including:

- Lack of standardised definitions and frameworks.
- Accuracy of reporting.
- Diversity of information needs.
- Large workforces, which include many categories of workers and different work patterns.

The human resources database of a large Canadian hospital, the Hamilton Health Sciences Corporation, was analysed to identify trends in the nursing workforce. The database was examined at the beginning and end of a fiscal year and the resulting analysis provided information about the following nursing workforce characteristics:

- Full-time to part-time ratios: The number of full-time employees increased as the age of the employee increased.
- Recruitment cycles: 5-year recruitment cycles were identified with obvious spikes in the number of nurses recruited. This may be linked to funding.
- Paid and unpaid leave: As the age of the nurses increased so did the amount of unpaid leave. This may be linked to organizations holding jobs for nurses who take a long leave of absence. An organizational strategy may be to encourage shorter leaves of absence.

Recommendations to improve data and better inform health care decisions include:

1. Use the research model as a standard for collection of data.
2. Invest in the human component (i.e., training).
3. Go beyond reporting templates.
4. Use an inductive approach to data.

#### **The Data Evolution: Intricacies & Possibilities**

**Presenters: Dr. Linda O’Brien-Pallas, Dr. Sping Wang & Raquel Meyer**

The Health Human Resources (HHR) Conceptual Framework (O’Brien-Pallas, Tomblin Murphy, Birch, & Baumann, 2001) identifies the need to enhance planning beyond supply and production. This framework illustrates the different forces that impact on planning for an adequate supply of healthcare professionals to meet demand.

Limitations of administrative databases include:

- Delays in reporting and accessing data.
- Variation in data availability and quality.
- Provider identification.
- Matching of hospitals across years and sectors.

Health services data challenges and opportunities:

- Challenges: MIS guidelines are not used in community agencies and long-term care; efficiency data regarding absenteeism and unpaid overtime hours are not collected in MIS.
- Opportunities: Workload and staffing data, if collected, could be compared across sectors which would lead to a better understanding of factors attributed to inefficiencies.

HHR data challenges and opportunities:

- Challenges: Annual payment form and data validation varies from year to year, data are not compatible over all jurisdictions, and difficulty in tracking nurses across provinces and sectors.
- Opportunities: National provider ID would allow better understanding of migration and comparison of characteristics of nursing would be more meaningful if the data collection tool was universal.

Education data challenges and opportunities:

- Challenges: Attrition is complicated by lock-step sequence of most entry-to-practice nursing programs and extended program enrolment, and we are currently unable to follow students as they move within education and then into the workforce.
- Opportunities: The development of an enhanced student information system (Statistics Canada and CIHI) has been suggested including the assignment of a unique identifier to each student upon entry to a nursing program.

Better health care data will facilitate more accurate analyses that will, in turn, better inform policy and management decision making. Combined with improved access to data, hierarchical linear modeling may be conducted to determine the impact of HHR policies on outcomes.

## **Discussion**

Highlights from the discussion portion of the roundtable include the following:

1. A need for unique identification numbers for providers to link to outcomes was identified; how do we move forward?
  - Keep reminding national and provincial regulatory bodies of this need.
2. A need to compare data across Canadian provinces and across sectors (e.g., mobility, wages, and working conditions), historically it has been very difficult to obtain access to these data.
  - Manitoba provides a good example as this province has been able to maintain privacy while still allowing access to the data.
3. The privacy issue. Shield vs. real?
  - A unique healthcare provider identifier number would help to maintain privacy while making the data easier to use and compare.
4. How to progress with nurse practitioner workforce modelling, especially when the data are unreliable, unavailable, or when they are not clean?
  - In Ontario, nurse practitioners register in the extended class so the quality of the regulatory data is good in comparison to other provinces. The problem encountered with other provinces is that they overestimate the supply of nurse practitioners because the categories are not clear. CIHI is currently working on this. Overall however, information gaps remain in Ontario and better data is required for more accurate NP workforce modelling.

5. A challenge for researchers is that sometimes the most important data are not available.
  - Sometimes an assumption is made that
    1. The data exist.
    2. The data are good.
  - Access to data is sometimes not granted because there are problems related to its quality, which could result in misinterpretation.

## Recommendations

Recommendations arising from the roundtable discussion include:

1. Use an electronic record for data collection. This would speed up data collection and improve access.
2. Move towards collecting only key data to improve quality of data and reduce the data collection burden and cost.
3. Free up nurses from non-nursing tasks.
4. Expand MIS into the long-term care sector and integrate it into the Local Health Information Networks (LHINs) in Ontario.
5. Submit data quarterly.
6. Balance the burden of reporting with the cost of processing data.
7. Use Nursing Plan data to create a provincial rolled up perspective with a comprehensive overview of all hospitals.
8. Look at data from other health professionals as nurses do not work in isolation.
9. Define underserved areas; is this a clinical area or is the term related to geography?

The Research Forum was hosted by the Nursing Health Services Research Unit (NHSRU), in co-operation with the Ontario Ministry of Health and Long-Term Care (MOHLTC) Research Unit and the Nursing Secretariat.

This report was prepared by the NHSRU.

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