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## *Reporting on...*

# *Nursing Workload Measurement Systems- A Discussion of the Issues*

The work performed by nurses is essential to the well being of patients and clients accessing the healthcare system. Registered nurses provide the greatest hours of care and coordinate the care provided by other healthcare providers. They are the primary interface between the patient and the health care system.<sup>1</sup> It is therefore essential that the work that nurses perform is understood. This requires the development of a means for identifying the specific contribution of nurses to patient outcomes as well as the resources required to affect this outcome.

At this time the majority of automated healthcare records do not include the interventions that nurses perform nor the outcome linked to these interventions.<sup>2</sup> The only information currently contained in provincial databases<sup>3</sup> is the actual hours of nursing provided, including the skill mix and employment status of these nurses, and nursing workload. As data provided in provincial databases is limited, it is even more important to ensure that accurate data is captured locally to describe the work that nurses perform and the relationship between nursing workload and patient outcomes using sound methodology. To date, workload measurement systems (WLMS) are the only mechanism whereby nursing interventions are captured to reflect the work involved in professional nursing. The purpose of this paper is to highlight some of the key issues in the measurement of nursing workload, the use of workload measurement data, and the implications for nurses, the system and patient care. The focus is on nurses in direct care in the hospital sector rather than those in advanced practice roles or other sectors.

While there is a lack of empirical evidence to support the identification of issues affecting the capture and use of workload measurement data, there is a plethora of anecdotal evidence which point to issues. This evidence indicates that issues face both front line nurses and those in administration. This paper will identify and address some of these issues in WLMS. Discussion and debate is critical in order for nurses to explain the work that they do, the contribution of this work to outcomes, and impact of workload on nurses. In this way nurses can begin to exercise control of their practice and advocate for a work environment that supports quality care and the critical role of the professional nurse in successful health delivery systems.

## **Background Context in Workload Measurement**

### 1) The Development of Nursing Workload Tools

Workload measurement systems were originally developed to assist nurse managers in determining the volume of nursing required for the next shift.<sup>4</sup> These systems, dating back as far as the 1930's, have relied upon a variety of methodologies to achieve this goal. At that time, task based methodologies arose from the manufacturing industry whereby workers performed their activities on an assembly line.<sup>5</sup> The outcome of early tools was centered primarily on the variance, between the number of staff booked to work a particular shift and the number predicted.

Nursing workload systems are used to measure patients' needs for nursing care and determine the time required to meet those needs.<sup>6</sup> Some WLM methodologies are task based and focus on the tasks that nurses perform and standard times for completing these tasks. The outcome of task based tools is that they focus on tasks rather than holistic care. Other methodologies have been developed to use patient care needs to classify patients according to relative need for care and then assign the number of hours required to provide this care based upon patient type and an established target hour. The target hour, which is developed, is specific to the standard patient type of the patient population served within a care setting. The goal of classification systems is to correctly classify the patient in the correct patient type.<sup>7</sup> The patient care indicators selected have associated regression weights. When combined they place or classify a patient into a patient type.

While workload methodologies might be used prospectively, that is they may be used to predict nursing care requirements for the following shift, some organizations use workload data retrospectively. They track what has happened over time to predict what is likely to happen in the future given a similar patient mix. Retrospective methodologies have been frequently used in care settings that are unpredictable and episodic in nature, for example the emergency department, operating room, or post anesthetic care unit. Most recently, prospective classification methodologies have been designed and deployed to better reflect patient care requirements.

Early workload data was captured manually and was not linked to payroll data patient registration data or health records. Indicators that linked the workload data to this other data were not routinely collected. Workload information was not normally shared with senior administrators or staff nurses. Internal trends in workload were not routinely available and workload data was not compared across nursing units and comparative data across hospitals was not available. The process for capturing workload manually was time consuming, susceptible to error and limited the use of workload data.

Workload systems have evolved greatly over the years. They have changed not only in format, but also more importantly for the purposes for which they are being used. There are primarily two reasons for WLMS. First, data is collected for internal purposes to

assess the work being delivered – to understand resource use and argue for resource allocation. The collection of WLM data is done in concert with other data collection such as patient classification systems, patient census, staff turnover rates, and skill mix (novice and expert)– all of which is pulled together to develop a profile, identify needed resources and demonstrate the impact of workload on patient and nurse outcomes. Secondly, based on the recommendation of nurse experts, workload is required to meet the external reporting requirements (Version IV) mandated by the Ministry of Health and Long Term Care<sup>8</sup>.

Nursing workload data has been a required (legislated) MIS reporting element in Ontario since the introduction of Version 4.0 of the Ontario Hospital Reporting System. As of that version, nursing workload had to be reported in minutes for each functional centre, both inpatient and ambulatory. The methodology employed for capturing workload was also to be reported. Unit producing personnel (UPP) by way of the MIS Guidelines and patient type is reported in case costing.

## 2) The Process for Workload Collection

The system for capture of workload measurement data has evolved from the introduction of software to support this activity. Early workload measurement systems, whether employing task based methodologies or patient classification methodologies, whether prospective or retrospective were captured using stand alone software that was not integrated with any other hospital information system.

The specific process for capturing workload in hospitals today depends on the software that has been implemented and the methodology upon which the software has been based. Some workload measurement systems have now been integrated into patient documentation systems, which attempt to tie nursing workload to documentation. This is done in an effort to eliminate the need to enter data on a separate workload system and to allow the integration of workload data with other data that resides in other modules of the hospital information system. The success of this approach has been modest and inconsistent.

As the process of data collection is determined by the software used by the institution as well as by the methodology employed, the product of data capture and resulting data quality may vary. This makes comparison of data between health care organizations difficult.

Workload data is only meaningful when it can be linked to staffing data, patient demographics, diagnoses and outcomes and cost data.<sup>9</sup> The introduction of computerized stand-alone workload measurement systems that transformed the manual tool into a computerized tool did not significantly address these issues. Some software firms and information system staff in hospitals have attempted to computerize manual systems without the benefit of nursing input. These efforts have led to an array of computerized workload tools that have not been validated and may not accurately capture the work of nursing or be compliant with MIS reporting guidelines. In addition, nurses remain very

skeptical regarding workload measurement systems related to lack of understanding and unrealistic expectations regarding the application of the tools and methodologies deployed.

The process of maintaining workload measurement methodologies requires that data is tested for validity and reliability on an ongoing basis. While some organizations have made this a priority and can subsequently depend on their data to be accurate, other organizations have not managed this process well, rendering their data of questionable use.

The burden of workload collection and the validity and accuracy of workload collection will only be reduced when workload is a by-product of routine nursing activities and nurse experts are involved in the development, implementation and, maintenance of workload tools. The linkage of workload to other data can only be enabled when stand-alone workload measurement tools are interfaced with other hospital systems or workload measurement systems are part of an integrated information system. Workload data will only be meaningful when these linkages are made.

### 3) Nurses' Role in the Collection of WLM Data.

Nurses are challenged in today's work environment to provide safe effective care, given the intensity of workload due to high patient acuity and staff shortages. Adding to the burden of providing care is the burden of capturing workload measurement data, which may require an additional activity beyond documenting patient care. It requires that nurses' understand both the methodology and the software system and apply their knowledge properly.

The increased use of nursing task times through task based systems requires that each nurse be tested regularly on her or his ability to achieve interrater reliability. Again this places a burden on the nurse with a heavy patient load.

Finally while staff are expected to capture workload data accurately, they are often not given the benefit of knowing the outcome of the data collected, nor how the data will be utilized. Subsequently there may be a bias on the part of the nurses when capturing data.

Although nurses are expected to use WLMS to collect data related to the work they do, the systems in place often add to the nurse's workload by requiring the nurse to describe the work she does.<sup>10</sup> This is inefficient and is often perceived as adding to the nurse's workload. While there may be initial training in the system, there is often no access to ongoing training and education. In addition the lack of dedicated staff to WLMS places a burden on those who have been delegated responsibility to provide support along with their additional work responsibilities.

#### 4) The Use of Workload Measurement Data

Nursing workload measurement systems or tools have been developed to determine the staffing requirements for specific patients<sup>11</sup>, used to answer the question faced by managers and administrators “how many nurses are needed to provide safe effective care?” This is not surprising in view of the fact that nurses comprise the largest budget item for hospital staffing and is vulnerable to cuts<sup>12</sup>. There will always need to be some way to determine the appropriate staffing for patient care.

Nursing workload measurement data, provided that it is valid and reliable can be used effectively by patient care managers to predict staffing needs on a short term basis. When coupled with data from other related systems, it can help predict staffing needs in the future, based on skill mix, case mix, and expected patient activity. It may be used by administrators to make resource allocation decisions between patient care settings and may be use by senior administrators to make strategic decisions based on cost per case and funding incentives. There has been an attempt by Ministry officials to use data to make efficiency comparisons between similar health facilities. However, this has been limited by the variety of methodologies and systems employed in the hospital sector as well as by the validity and reliability of data which ahs been reported.

Traditional task based systems tend to reflect timed nursing activities or tasks. Although the limitations of various WLM systems have been documented in the literature, there remains a tremendous reliance on such tools and decisions, which have a major impact on nursing staffing.<sup>13</sup> More recent classification systems are based on a professional framework of practice that reflects a more multidimensional, relative weighting of services (nursing care).<sup>14</sup> Some tools have been relatively effective in securing adequate staffing levels. The success of workload measurement tools is related more to the willingness of decision-makers to use this information for staffing decision making than the comparative merits of the system itself. Ideally, professional judgment should equal objective judgment (the tool’s classification system) if employed correctly.

#### **Other Considerations**

WLMS have evolved to produce data for the purposes of budgeting, staffing, planning, and quality assurance- in essence to contribute to the operation of the organization and the management of work in hospitals.<sup>15</sup> The number of systems currently in use makes it very difficult to compare and contrast workload data across systems. The present WLM tools can now be integrated with computerized documentation systems to link workload to patient characteristics clinical outcomes, and standards with financial data to determine costs.

#### *Expectations for Accountability*

The 1980’s saw the emergence of medical case mix groupings as the basis for case costing and a measure of the relative resource use of different patients in American and

Canadian hospitals<sup>16</sup>. The use of this data for performance evaluation and funding has increased the need to cost out nursing services and to articulate the contribution of nursing to overall facility cost and quality. Today there is strong pressure to link outcomes of patient care to nursing care.<sup>17</sup>

### *Cost Containment*

Nursing interventions and outcomes are not currently captured and maintained in health records. Nursing notes for example, do not identify outcomes and nursing care plans are not maintained or part of the health record. It has been a challenge to link nursing work to related costs and outcomes and, as a result, nursing has become very vulnerable to cost cutting. This approach, reflecting an underlying “if you can’t count it, it doesn’t count” attitude has undervalued the complexity and expertise of nursing practice. The result is that nursing remains in many ways invisible. Although there are many limitations to workload measurement tools, nurse administrators have used this data to justify and defend nursing costs. Nurse administrators constantly have to compete for resources in the face of budget restrictions. Diagnostic and therapeutic managers have historically used workload tools to identify their resource needs but nurses have traditionally had little or no information or data generated by tools that may not adequately capture the essence of nursing work.

### *Provincial and National Reporting Requirements*

In Ontario, hospitals are required to collect data on workload for all care providers and submit this information to the Ministry of Health and Long Term Care using the framework, accounts and rules of the national standard, the MIS Guidelines. The Ontario Hospital Reporting System (OHRS) User Guide describes the reporting requirements that are unique for Ontario. Workload data is required for the Annual Hospital Survey (AHS) that all provinces submit to the Canadian Institute for Health Information (CIHI) to enable national evaluation of hospital activity and costs. Although all hospital staff is required to submit this information, nursing has been particularly challenged by this initiative because of the limitations of the available tools.<sup>18</sup>

At present the Canadian Institute for Health Information (CIHI) is actively communicating with many nursing groups to enhance their data related to nursing including workload and outcomes and is planning to develop a process to ensure that the ongoing needs of data users are met. This will help ensure that the data collected reflects quality care and takes into account the needs of nursing staff, qualifications, and nurse patient ratios. The Canadian Nurses Association has been working over the past several years to integrate health information into national databases.<sup>19</sup> RNAO is also a member of the Ontario Health Informatics Standards Committee, which is working to develop standards for collection and sharing of health information.

### *Hospital Funding*

Collection of the data is important to hospitals, to facilitate strategic and operational planning, to allocate and budget resources and to monitor and evaluate their performance on an ongoing basis. In addition, hospital budget allocations by the province depend on comprehensive and accurate reporting of MIS data. The methodologies used for funding Ontario hospitals have evolved to provide more equitable funding based on evidence and linked to performance. The Joint Policy and Planning Committee (JPPC) Funding Formula Committee has provided a forum for hospitals to influence and guide these changes. Facility performance indicators link financial data to clinical resource intensity weights (RIWs). At this time clinical weights are only available for acute care, day surgery and chronic care activity. In order to calculate the costs of these weights a method for determining the expenses related to these activities is required.<sup>20</sup>

Workload has been used to determine diagnostic and therapeutic expenses for many years. In the absence of nursing workload, proxies, not supported by evidence, have been used to determine nursing expenses. The methodology is described in the JPPC Ontario Cost Distribution Methodology document. It should be noted that the methodology uses only the relative value and not the absolute value of workload. Research had shown that despite the differences in absolute values, the relative values of different workload measurement systems are similar. This makes the collection of workload data, including nursing data, critical.<sup>21</sup>

### *Nursing Information*

A number of initiatives in informatics and information technology have been occurring which are not the same as workload measurement but the distinctions are likely not clear to many nurses, or nurses are simply unaware of them. Examples would be the work being carried out to establish minimum data sets, efforts to describe a common nomenclature for the work in nursing, and work being done to look at nurse sensitive outcomes in patient care.<sup>22</sup>

The contribution made by nurses is not captured in any permanent database of health information. Most health care data tends to include medical diagnoses. Decisions made about funding are made in the absence of data that reflects the contribution and value of professional nursing.<sup>23</sup>

### *Concerns Regarding Workload Data*

Recent changes in Ontario have had a dramatic impact on nursing practice and the ability to capture that professional work. Funding cuts to hospitals and the requirement to do more with less (or fewer staff) have compromised nurses ability to capture data related to the work they do. Staff are also required to maintain systems but without the necessary infrastructure support to do so. In an environment in which nurses are challenged to provide basic safe care, the demand to collect data about the care they provide may be seen as unreasonable and unrealistic by nursing. Many nurses do not see the data they have collected related to issues of resourcing. They realize the importance of documentation in workload but sometimes see it as separate from the care they provide.

The result has been that the quality of data that is collected is not as reliable or as complete as it could be but is used anyway as a basis for organizational and funding decisions.

Nursing WLM is supposed to and often can contribute to the effective management of patient care and the organization. Although hospitals are required to report WLM to the Ministry, such tools have also been used to control costs and maximize efficiency.<sup>24</sup> Nurses have rightly in some cases, questioned the use of the information gained and suspected that in part, the data would be used to justify rationalization (cost cutting). Hospitals understandably have been eager to maximize efficiency. What is lost is that when only “necessary” care is provided, standards are not met.

Nursing is holistic and very complex. When the complexity is reduced to a series of tasks it becomes more visible and therefore easier to monitor, but it is also fragmented. This may be easier for administrators who are managing a health facility, but it is not helpful for nurses who are collecting the data and who may not be able to access the data, let alone use it. There is a perception among some nurses that they must justify the nursing resources being used in patient care.

#### *Factors Affecting Nursing Workload*

Technology has transformed the work all of us do regardless of the field. It has had a profound influence through its ability to impact the nature of work and the way we communicate within and about that work. While technology can rarely be characterized as good or bad, it is never value free. The technologies that arrive in the workplace not only reflect the current state of research and development, they also reflect the choices made by those who design and develop the technology and by those who decide which technologies are used (and thus purchased).<sup>25</sup>

The nursing profession is not immune from the effect of technological change. Indeed, technological change has permeated all sectors of the health-care system, with subsequent implications for resource use, infrastructure, and organizational restructuring.<sup>26</sup> Nurses are now required to manage the growing and ever more complex technology at the bedside. It is not simply a matter of being able to “use more complicated equipment”. The fact is that the interface between patient and technology has increasingly meant higher patient acuity, which in turn requires more sophisticated knowledge and skill.<sup>27</sup>

The decreased length of stay has been accompanied by an increase in nursing hours per inpatient hospital stay. One of the problems for nursing is that higher patient acuity is occurring in a climate of cost cutting, resulting in decisions being made from a fiscal basis and which can compromise patients and nurses’ work even as they struggle’ to provide high quality care.<sup>28</sup>

Another effect of technological changes is the kind and amount of information that nurses have to process. Nurses play a central role in managing information on behalf of the patient and organization. They maintain and support the connection between the patient,



the hospital, and the health care system. Nurses not only coordinate the care they provide to the patient, they coordinate the patient's stay in hospital in part by integrating a wide variety of information in the hospital from many sources.<sup>29</sup>

Nurses vary in their willingness to embrace the many changes that have occurred in their work environment and in their practice but are more likely to do so if they have participated in the change. Workload measurement has been part of the changes in the work environment. Many nurses regard WLM purely as extra paper work they have to do and not as having the potential to support professional practice to improve care. The lack of value attached to workload measurement is relative to a lack of understanding and inappropriate or unrealistic expectations of a static tool deployed in a dynamic environment. In the busy work environment, nurses may not see the power of WLM to enhance their work.

### **Implementing Workload Measurement Systems**

WLM systems should contribute to the quality of care rendered to patients. If the workload measurement system can recommend or project the number of nurses required to meet professional standards of care based upon a snapshot of a typical workload for the patient population and the work setting and if the facility uses the output of the measurement system to make staffing decisions, nurses will be able to meet the nursing care needs of their patients. Implementation based on these systems will improve the care to patients in hospitals.

All healthcare providers are required to measure workload. However, previous to the requirement to report, there was a need to understand and manage the organization of work for nursing- that is to say, to understand the cost of nursing work for resource allocation and predict future needs. Hospital administrators (including nurse administrators and managers) need to implement WLMS in order to understand and manage the organization of work (functions), the costs of nursing care and the impact of nursing resources (on patient outcomes). The WLMS can be used to better understand the impact of the work environment on the practice and the ability of care providers to perform their work of professional nursing.

Workload measurement presents opportunities for nurses and needs to be implemented to give a voice to the practice of nursing. In conjunction with other data, workload data can be used to demonstrate how the relationship between staffing levels and workload can affect the quality and cost of care and how the work environment can facilitate or limit these outcomes. It is a vehicle to communicate what nursing care is about, particularly to groups with decision-making power. It is an opportunity to shape discussion about the nature and outcomes of nursing work.

Nurses need to understand how information derived from workload measurement can be used to describe their practice more fully and be actively involved in how WLM tools are implemented and used. If they resist participating or neglect to ask the difficult questions, they may unintentionally relinquish responsibility for their practice to others.

This relinquishment has major long-term implications for the profession of nursing. It is essential to assert what nursing practice is and it is especially important considering the current changes within the present health economy.

We are witnessing a fundamental change in the structure and operation of our healthcare system. The issue of workload measurement is part of a broader issue of information technology, which has created fundamental change in the patterns of practice and work. Advances in information technology will facilitate the use of evidence to make better decisions—decisions about the organization of work, the providers required and the environment in which care is provided. Nurses need to ensure that data related to nursing are captured comprehensively, consistently and accurately. Nurses can then use this information to participate in the processes to define data elements and the processes for data collection—otherwise these decisions will be based on erroneous or incomplete data.

In a tight fiscal environment, policy-makers and administrators must make tough decisions. They must understand how to utilize their financial resources effectively and efficiently and demonstrate collaborative approaches to quality practice work environments. This requires an understanding of each care provider's contribution to cost and quality. All healthcare providers must be accountable for their use of healthcare resources. This means that nurses must be able to articulate their contribution to both the cost and quality of care.

When changes in practice are introduced, nurses need to fully understand the decisions that led to the change and the potential consequences of these changes. This is a shared professional responsibility within the health-care system. There needs to be support, clarity, understanding and realistic expectations. Therefore, using WLM as an example, it is important to ask questions about what assumptions and values it. Examples of such questions are:

- How is workload measurement defined? Who is defining it?
- Who decides what information will be collected and for what purposes?
- What is not collected?
- Who benefits from WLM? How are the interests of different players being met? (e.g. nurses, patients, the agency, industry, government, etc.)
- How will the data that is collected be used (the data collected from workload measurement tools)?
- What are the unintended consequences, if any when WLM systems are put in place?
- What do nurses need to communicate about their practice that reflects the nature of that practice?
- How can nurses communicate what they do in practice in a meaningful way with other professionals, stakeholders in WLMs, and patients and families?
- How can nurses describe practice in WLM tools, including the development of systems, to accomplish the above?
- How do nurses prevent technology from determining practice and instead use technology to communicate how practice is shaped?
- To what extent has the issue of fiscal restraint driven decision-making in WLM?

Nurses need to understand the value of workload measurement because it impacts their work life and their ability to provide care. Nurses are more likely to value WLM when they see its relationship to their work life and their ability to provide quality care. Nurses need to ask questions about systems that are developed and to be involved in how these systems work. Inviting nurses to learn about the value of nursing workload measurement systems and participate in how the work of nursing is described gives nursing a voice in shaping their professional practice and the work environment

### **Barriers to Workload Measurement**

There is a host of systemic barriers that have an impact on nurses, administrators, and decision makers with respect to workload measurement systems. Through a focus group meeting led by the Ontario Nursing Informatics Group (ONIG), and validated by nurses across the province, a number of issues related to WLM were identified.<sup>30</sup> These issues are as follows:

#### ***Data quality***

There is inconsistency in the data being reported as a result of hospitals using the services of different software vendors that use different methodologies. Funding cuts to front line staff and those that support the systems have created difficulties in collecting reliable and valid data. Resources are not available to ensure the systems are accurate. Nurses lack the time to collect and document workload measurement. For many nurses struggling to provide basic care, the issue of WLM is viewed as an addition to their work load.

#### ***Human and Financial Resources***

Overall, although resources are committed to the implementation of a workload measurement system, inadequate resources are set up to maintain the system, both in terms of financial and human resources – people who are knowledgeable and able to maintain and support the system. This includes a lack of clerical support, staff education, and lack of support at the unit level. The pattern of support varies tremendously between hospitals. Hospitals may begin with a commitment but it wanes in the face of resource shortages in which staff members are deployed in other roles or must assume multiple roles. The lack of a uniformly “acceptable staffing methodology” has resulted in a variety of systems being used. Hospitals and community agencies, individually, use the services of consulting companies to develop and implement systems that end up being very costly and expensive to maintain.<sup>31</sup>

#### ***Knowledge and Education***

Many nurses lack the knowledge related to WLM systems in terms of day to day auditing and maintenance, operating the systems, and impact on practice. In other words, the broader context of workload data is not clear to many nurses, making the collecting of data seem of dubious value. Some nurses do believe in the value of WLM, but may not understand the broad systems issues that go beyond the workplace. Few resources are

available for education, both for the nurses and those who maintain the system and those who have to analyze and interpret the data.

### ***Communication and Support***

In spite of collecting a great deal of data, many nurses do not see the results. The lack of feedback makes it difficult to use the data to improve data quality or make any kind of improvements. Another problem is the perception that there is no mechanism to provide feedback to the Ministry of Health and Long Term Care about issues or concerns.

### ***Actual and Potential Uses of the Data***

There is a general lack of understanding of how the data collected are used by the Ministry of Health and Long Term Care. Few nurses have access to documents such as the funding methodology paper. There is also no forum or mechanism to discuss how it may be used. Although, the data is supposed to be used for case costing, there is a lack of understanding of any other uses of the data or how the data is used for budget allocations.

In summary, there is a lack of resources to adequately maintain the system both for education and staff support. The broader issues of why the data are being collected and a pervasive lack of understanding of how the data are used make it difficult to motivate nurses around the issue of WLM. We have a situation in which nurses have responsibility to collect the data but lack a strong voice in what happens with the data. There is also a need for qualified, skilled, and knowledgeable nurses to take the leadership in managing workload measurement systems for their organization. Government bodies and agencies must be accountable in providing support for WLMS. Many nurses are understandably resistant to calls to collect data for which they see no clear purpose.

Some of the issues related to workload measurement are summarized in the table below.

## **Strengths and Limitations Related to Workload Measurement Systems**

<b>Strengths</b>	<b>Limitations</b>
<ul style="list-style-type: none"> <li>• It can be used by administrators to make resource allocation decisions between patient care settings and make strategic decisions based on cost per case and funding incentives.</li> <li>• Some WLM tools can now be integrated with computerized documentation systems to link workload to patient characteristics clinical outcomes, and standards with financial data to determine costs.</li> <li>• Has the potential to contribute to quality of care and nursing's contribution to patient care by providing support for appropriate resource allocation.</li> </ul>	<ul style="list-style-type: none"> <li>• Some WLM systems have been integrated into patient documentation systems but the success of this has been inconsistent.</li> <li>• Not all WLM tools have been validated and may not accurately capture the work of nursing.</li> <li>• Not all nurses have a strong grasp of the potential of WLM or have unrealistic expectations regarding application of the tools.</li> <li>• Comparisons between similar health facilities are difficult because of the different methodologies and systems used in the hospital sector and the validity and reliability of data collected.</li> </ul>

	<ul style="list-style-type: none"> <li>• Reliability and validity can vary within the hospital sector as well – in part due to inadequate human resources and because the necessary supporting infrastructure is not provided. to adequately support the system</li> <li>• WLM tools may be inappropriately used for purposes other than that for which they were created such as controlling costs; this can contribute to the lack of endorsement from staff to participate.</li> <li>• Some WLM tools do not capture the complexity of nursing knowledge and skill.</li> </ul>
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### Some Current Issues

Prior to mandating the nursing workload reporting the JPPC consulted with nursing leaders representing a cross section of hospitals across the province and a representative from the University of Toronto with expertise in nursing workload. This Nursing Advisory Committee, chaired by Dr. Judith Shamian, met regularly for a period of 2 years and presented recommendations related to nursing data collection and reporting to the MOHLTC. These recommendations were developed after considerable input from nurses across the province obtained during regional sessions that were held for this explicit purpose. Two documents were produced to help nurses understand the implications of MIS reporting and in particular nursing workload. These documents were distributed to all hospitals in the province in 1996 and 1997 and are available on the JPPC web site. Not all of the recommendations were implemented initially but additional recommendations have been implemented in recent years.

The Joint Provincial Nursing Committee meets regularly with government staff to discuss issues related to nursing. In addition the Nursing Task Force created by the MOHLTC for the purpose of addressing nursing concerns has made a significant contribution to the profession of nursing in Ontario. The MOHLTC has committed resources to address the concerns and groups have been actively meeting over the past two years. As a result of their deliberations, additional requests for data collection have been submitted to the MIS Committee of the MOHLTC and these requests are currently under consideration. The MOHLTC has retained the services of a nurse with workload knowledge and experience for the past 6 years to provide advice and support during the early years of workload reporting. The MOHLTC also provides core funding to the Nursing Research Unit at the University of Toronto. Researchers associated with this unit conduct research related to analysis of workload data, validity of measurement tools and factors that affect nursing workload and the work environment and costing of nursing services.<sup>32</sup>

In spite of the progress being made in workload measurement research, many nurses believe that WLM systems do not reflect the actual work that they do. In fact there is some evidence that different workload measurement tools show significant clinical and statistical differences in estimated hours of nursing care.<sup>33</sup> One of the concerns nurses

have about WLMS is that they reflect the unit when patient care needs are relatively stable. They cannot be adjusted for the constant variability on the unit, which is a growing problem with short length of stay, high patient acuity and reduced professional staff complement.<sup>34</sup>

One argument that has been made is that nurses' interpretation of workload measurement systems may be different from that of administrators or decision makers. Although many tools describe areas of nursing work, they may not capture the dimensions of workload, as nurses perceive them. Many nurses are concerned that no matter how sophisticated the tool, they can never replace sound clinical judgment.<sup>35</sup> It is important to remember that patient classification or task based systems were never designed to capture unpredictable workload.

However, approaches are being proposed. O'Brien-Pallas, Irvine, Peereboom, and Murray (1997) developed a meta-paradigm for examining nursing work that examines the variability in resource use across patients and environments. They found that nursing diagnoses demonstrated a positive relationship with nursing intensity and explained a great deal of the variability in nurse resource use. Nursing diagnoses provided an estimate of the complexity and variability in patient conditions that in part, create the demand for nursing care and influence the intensity of the response.<sup>36</sup>

In a study by O'Brien-Pallas, Thomson, Pink, Kerr, Wang, Li, and Meyer (2004), the interrelationships between a number of variables that influence patient, nurse, and system outcomes were explored. The findings suggest that costs will be reduced and quality of care improved with adequate full time nursing staffing and positive work environments that support nurses' health, safety, security, and satisfaction.<sup>37</sup>

The level of responsibility that nurses have can be daunting and many of the supports that used to be in place have been taken away for financial reasons. It is difficult to talk about nursing workload without addressing the issues of human resource planning. Workload issues prevent nurses from practicing in a way that is fulfilling and meets patient needs. The challenge is to support nurses in giving voice to what WLM should be about and the development of tools that reflect nursing practice.<sup>38</sup>

## **Conclusions**

Issues with respect to WLMS do not exist in isolation from other challenges nurses face in the workplace. These are challenges that need to be addressed to enable nurses to participate in a meaningful way. Many nurses have already been engaged in this process for some time. The key is to see issues in workload measurement as an opportunity.

Workload measurement systems contribute meaningful data to the complexity of nursing practice but other issues such as human resource and work environment issues, need to be addressed. Nurses as the largest stakeholder group, must be involved in decision making and have access to ongoing support. Nurses need systems that capture the complexity of nursing knowledge and skill. Nurses need to know that WLMS are compatible with their clinical judgment and decision-making. An important strategy would be to actively

support nurses in adopting a more proactive role in WLM, beginning with asking some fundamental questions. The work of caring is an essential component of the art and science of nursing and must be the foundation for negotiating tools related to professional practice. This implies the need for judgment and decision making at the policy and organizational levels. The profession depends on nurses being able to seize the opportunity.

January 2005

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<sup>1</sup> Hannah, Kathryn, *Nursing management of information*. In *Managing Information in Canadian Health Care Facilities*. 1992. Ed by Marion Ogilvie and Eleanor Sawyer. Also see an RNABC document (need to explore further). See also O'Brien-Pallas, L., and Baumann, A., (2000) Toward evidence-based policy decisions: a case study of nursing health human resources in Ontario, Canada, 7, 248-257.

<sup>2</sup> Personal communication, Sally Remus, December 2002.

<sup>3</sup> The databases referred to are the Ontario Hospital Reporting Data Base and the Nursing Manpower Database.

<sup>4</sup> Van Slyck, Ann, Using patient acuity data to manage patient care outcomes and patient care costs. *Outcomes Management for Nursing practice* 2001, 5(1), p 36.

<sup>5</sup> O'Brien-Pallas, Linda. (1988) An analysis of the multiple approaches to measuring workload. *Canadian Journal of Nursing Administration*, 1(2)8-11.

<sup>6</sup> Cockerill, R., & O'Brien-Pallas, L. (1990). Satisfaction with nursing workload systems: Report of a survey of Canadian Hospitals. *Canadian Journal of Nursing Administration* May/June, 17-22. Giovanetti in the *Journal of Nursing Administration* (1979) notes that patient classifications systems, which classify patients in categories according to the nursing care required over a period of time, may or may not be used to determine workload. p 4.

<sup>7</sup> Seago, Jean Ann. (2002). A comparison of two patient classification instruments in an acute care hospital. *Journal of Nursing Administration*. (32)5, 243-249.

<sup>8</sup> O'Brien-Pallas, L., Thomson, D., Alksnis, C., & Bruce, S., (2003) the economic impact of nurse staffing decisions: Time to turn down another road. *Hospital Quarterly*, Spring, 42-50.

<sup>9</sup> Rauhala, A. & Fagerstrom, L. (2004). Determining optimal nursing intensity: the RAFAELA method. *Journal of Advanced Nursing*. 45(4), 351-359.

<sup>10</sup> Goossen, W., Epping, P., Van den Heuvel, W., Feuth, T., Frederiks, C., Hasman, A. (2000) Development of the nursing minimum data set for the Netherlands; identification of categories and items, 31(3) 536-547. In this article the authors cite reasons nurses give for not documenting patient problems, the most significant of which is time constraints.

<sup>11</sup> Gaudine, Van Slyk, and Arthur and James in *Determining nurse staffing levels: a critical review of the literature*, *Journal of Advanced Nursing*, 1994, 19, 558-565 are several authors who have addressed the use and purpose of workload measurement.

<sup>12</sup> O'Brien Pallas, Linda, Irvine, D., Peereboom, E., Murray, M., *Measuring nursing workload: understanding the variability*. *Nursing Economics*, 1997, (15)4, 171-182.

<sup>13</sup> Van Slyck, Ann, Using patient acuity data to manage patient care outcomes and patient care costs. *Outcomes Management for Nursing practice* 2001, 5(1) p 36. Van Slyk has written several articles in *Nursing Management* on staffing and patient classifications systems.

<sup>14</sup> Ibid.

<sup>15</sup> Hannah, Kathryn, *Nursing management of information*. In *Managing Information in Canadian Health Care Facilities*. 1992. Ed by Marion Ogilvie and Eleanor Sawyer p 105-107.

<sup>16</sup> O'Brien-Pallas, Linda, Irvine, Diana, Peereboom, Elizabeth, Murray, Michael. *Measuring Nursing Workload: Understanding the Variability*. *Nursing Economics*. 1997, 15(4) p. 171.

<sup>17</sup> Ibid. The authors note that nurse administrators face pressure in rationalizing the costs associated with patient care.

<sup>18</sup> Personal communication-Julia Scott, 2001. O'Brien-Pallas, Irvine, Peereboom, and Murray in *Measuring nursing workload: Understanding the variability*. *Nursing Economics*, 1997, (15)4, 171-182, also note that using workload measuring systems to determine nursing costs is far beyond what they were intended for.

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<sup>19</sup> Through its workgroup HI:NC (Health information: nursing components), consensus was reached on three nursing care data elements: client status, nursing intervention, and client outcome. The CNA is also seeking consensus on choosing a classification system that would allow the collection, coding, and retrieval of nursing data within the national health care information systems.<sup>19</sup>

<sup>20</sup> Personal Communication, Donna Thomson, 2001.

<sup>21</sup> ONIG Nursing Workload Measurement System issues- A Briefing Document April 2000.

<sup>22</sup> ONIG Nursing Workload Measurement System issues- A Briefing Document April 2000.

Susan Grobe has done work in the area of nursing nomenclature. The Nursing and Health Outcomes project (MOHLTC) looking at nurse sensitive outcomes has released its Phase I report

<sup>23</sup> Canadian Nurses Association. Collecting Data to Reflect Nursing: A Discussion paper. March 2000. Author.

<sup>24</sup> O'Brien-Pallas, Linda, Irvine, Diana, Peereboom, Elizabeth, Murray, Michael. Measuring Nursing Workload: Understanding the Variability. *Nursing Economics*. 1997, 15(4) p. 171-182. The authors note that using workload measurement systems to determine nursing costs pushes these systems beyond the purpose for which they were created.

<sup>25</sup> Menzies, Heather. *Whose Brave New World?* 1996. Between the Lines. Toronto. p 58-59.

<sup>26</sup> Menzies writes at length about the changes to the nature of work using health and education as examples. She asserts that the information highway and resulting software systems have contributed in a direct way to the loss of full time jobs and increase in part time employment.

<sup>27</sup> Hannah, Kathryn, *Nursing management of information*. In *Managing Information in Canadian Health Care Facilities*. 1992. Ed. by Marion Ogilvie and Eleanor Sawyer.

<sup>28</sup> Aiken, Sochalski, and Anderson, (1996) secondary source cited in Shullanberger. G. *Nurse staffing decisions: an integrative review of the literature*. *Nursing Economics*. May-June 2000, 18(3). See also

<sup>29</sup> Hannah, Kathryn, *Nursing management of information*. In *Managing Information in Canadian Health Care Facilities*. 1992. Ed. by Marion Ogilvie and Eleanor Sawyer, p.101. See also O'Brien-Palls, L., Thomson, D., Alksnis, C., & Bruce, S., (2003) The economic impact of nurse staffing decisions: Time to turn down another road. *Hospital Quarterly*, Spring, 42-50.

<sup>30</sup> Ontario Nursing Informatics Group. *Nursing Workload Measurement System Issues: A Briefing Document*. April 2000. Please refer to the briefing document prepared by ONIG for a full discussion of the issues.

<sup>31</sup> Shullanberger, Ginger. *Nursing staffing decisions: an integrative review of the literature*. *Nursing Economics*. May June 2000 18(3). P3.

<sup>32</sup> Personal communication. Donna Thomson, 2001

<sup>33</sup> Cockerill et al, 1993 quoted in Shullanberger, Ginger. *Nursing staffing decisions: an integrative review of the literature*. *Nursing Economics*. 2000 18(3). P3.

<sup>34</sup> Gaudine, A.P. *What do nurses mean by workload and work overload?* *Canadian Journal of Nursing Leadership*, 2000, 13(2), 22. Secondary source quoting Cockerill and O'Brien-Pallas.

<sup>35</sup> Gaudine, A.P. *What do nurses mean by workload and work overload?* *Canadian Journal of Nursing Leadership*, 2000, 13(2), 22.

<sup>36</sup> O'Brien-Palls, L., Irvine, D., Peereboom, E., & Murray, M. *Measuring nursing workload: understanding the variability*. *Nursing Economics*, 1997, (15)4, p.171-182.

<sup>37</sup> O'Brien-Palls, Linda, Thomson, Donna, Hall, McGillis Linda, Pink, George, Kerr, Mickey, Wang, Sping, Li, Xiaoqiang, & Meyer, Raquel. 2004. *Evidenced Based Standards for Measuring Nurse Staffing and Performance*. Canadian Health Services Research Foundation.

<sup>38</sup> Gaudine (2000) describes some of the supports nurses need including the importance of listening to their concerns and feelings of responsibility for patients. See also comments made in O'Brien-Palls, L., Thomson, D., Alksnis, C., & Bruce, S., (2003) The economic impact of nurse staffing decisions: Time to turn down another road. *Hospital Quarterly*, Spring, 42-50.