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# Incorporating nursing complexity in reimbursement coding systems: the potential impact on missed care

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## INTRODUCTION

Globally, nurses constitute the largest segment of healthcare professionals; therefore, they are also the most expensive, and in a hospital these costs can reach 25% of the total expenditure.<sup>1</sup> When costs are calculated, usually the monthly sum of nursing working hours and nursing labour costs is divided by the total number of patient days to produce mean general measures such as ‘nursing hours per patient’ or ‘nursing costs per patient day.’ This is only a general average cost calculation that takes into account large groups of nurses caring for large groups of patients, but through this system it is difficult to accurately control costs if the specific costs are unknown.<sup>2</sup> In this regard, Needleman<sup>3</sup> pointed to the ‘invisibility’ of a significant portion of nursing today, which explains why this discipline in many countries around the world is still not fully recognised by administrators, policymakers and the public. Invisible work includes monitoring patients, educating patients and families, preparing discharge plans, providing psychological support to patients who are seriously ill and their family members, and advocating for their patients.

In the last few decades, the decreasing lengths of hospital stay of increasingly acute inpatients have been putting strong pressure in terms of time and intensity of care on nurses and this is inevitably leading to missed care.<sup>4,5</sup> Missed care is an error of omission, defined as ‘any aspect of required care that is omitted either in part or in whole, or delayed.’<sup>6</sup> In 2009, Kalisch and Williams also developed and validated a tool to measure missed care.<sup>6</sup> Therefore, missed care is linked to the concept of ‘Complexity Compression,’<sup>7</sup> which has been described as ‘what nurses

experience when expected to assume additional, unplanned responsibilities while simultaneously conducting their multiple responsibilities in a condensed time frame.’<sup>8</sup> This leads nurses to select which activities to leave undone and adopt workarounds<sup>9</sup> leading to missed care. The theory of missed care is based on three antecedents: labour resources, material resources and communication, which have an impact on the way nursing care is provided.<sup>6</sup> Due to financial restraints, workarounds are often accepted by local health administrators,<sup>10</sup> and since missed care is an error of omission, it is easier to be ignored than an error of commission.<sup>6</sup> And yet, as reported by Kalisch and Williams, ‘acts of omission with potentially serious and widespread impact on patient outcomes’ definitely outnumber acts of commission.<sup>6</sup>

Therefore, we consider missed care a call to incorporate intensity of nursing care into the Diagnosis Related Groups (DRG) systems, ensuring in this way that hospitals have fresh resources for nursing to address the antecedents of missed care and, consequently, improve patient outcomes. This paradigm shift also implies that nurse administrators make appropriate decisions to implement nursing care models according to evidence-based staffing levels. Thus, also an evidence-based management approach is required to ensure that resources are effectively used.

## THE COMPLEXITY OF NURSING

Drawing from the definition of ‘complex intervention’ originally provided by the UK Medical Research Council in 2008,<sup>11</sup> a clear description of the complexity of nursing was provided by Richards and Borglin,<sup>5</sup> “Nursing’s complexity is such



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that it can be seen as the quintessential ‘complex intervention’—defined as an activity that contains a number of component parts with the potential for interactions between them which, when applied to the intended target population, produces a range of possible and variable outcomes”<sup>5</sup> (p 351). Therefore, every time a nurse interacts with a patient to provide care or with another nurse to teach them, the nurse performs a complex intervention,<sup>4</sup> inside a complex system, such as the healthcare system.

Nevertheless, very often ‘...the work of nurses is not well understood. The most visible work of nurses is task oriented: delivering ordered care, taking vital signs, helping patients eat, ambulate, toilet and so forth’<sup>3</sup> (p 3). In fact, healthcare administrators, funders and policymakers, unaware of the complexity of nurses’ work, frequently only see the nurses’ visible bedside tasks. They do not see all the ‘invisible’ work they do based on monitoring symptoms and assessing their patients to determine, for instance, if patients are at risk of developing complications, at risk of falls, and providing self-care education to patients before they are discharged.<sup>3</sup>

### IMPLICATIONS OF MISSED CARE

The lack of resources caused by global health cost crisis<sup>2</sup> combined with complexity compression<sup>7 8</sup> and lack of full understanding by hospital administrators of the complexity of nursing<sup>5 11</sup> can lead to high levels of missed care,<sup>12</sup> and also generate phenomena such as workarounds.<sup>9 10</sup> Missed care, if left unaddressed by health policymakers, could have important implications in terms of negative patient outcomes, reduced levels of patient safety and quality of care.

Missed care also has financial implications in terms of higher healthcare costs due to longer lengths of stay and repeated readmissions to manage complications and adverse outcomes, which, instead could have been avoided if nurses had fully provided all their care.<sup>13</sup> Moreover, this generates other costs in terms of higher nurse staff turnover rates<sup>14</sup> and higher social costs related to mortality and human suffering.<sup>3</sup>

In addition, this situation generates a vicious cycle where healthcare policymakers, especially with the current global crisis, do not recognise the invisible work of nurses. Therefore, they reduce the resources for nursing and trigger a mechanism that widens the scope of missed care. This also creates the illusion of false financial savings, which is why hospital administrators, under pressure to cut costs as much as possible, are sometimes tempted to replace registered nurses with other lower skilled and less educated personnel.<sup>15</sup>

### INTENSITY OF NURSING CARE

Due to the complexity of nursing care,<sup>5 11</sup> which involves a holistic assessment of the patients’ needs, the clinical diagnosis on which most health organisations base their reports is only the ‘tip of an iceberg’

compared with the actual intensity of nursing care provided. To illustrate this point, we propose two scenarios with two different patients included in the same DRG category, admitted to a trauma unit.

#### Patient 1

Hip fracture in a 75-year-old woman needing hip replacement surgery. She weighs 65 kg, is cooperative and with no cognitive impairment.

#### Patient 2

Hip fracture in a 82-year-old woman needing hip replacement surgery. She weighs 115 kg, is affected by dementia and diabetes, and non-cooperative.

On the basis of current DRG systems that do not incorporate nursing intensity weights (NIW), hospitals obtain the same level of reimbursement for these two cases. Instead, from a nursing perspective these two cases require a completely different intensity of nursing care, and where the second case presents a higher level of nursing intensity (table 1). One practical way to measure nursing intensity is to use a set of NIWs for each DRG and apply them at discharge to adjust routine care and intensive care per diem charges.<sup>16</sup> For our scenario, we based our NIW on the North American Nursing Diagnosis Association (NANDA) Nursing Interventions Classification.<sup>17</sup>

The patient in scenario 1 requires a much lower intensity of nursing care than the one in scenario 2, who will need a higher intensity of nursing care than the standard on which a healthcare organisation would plan its resources. However, according to current DRG systems the hospital will obtain the same level of reimbursement for the two patients.

Ideally speaking, if intensity of nursing care was included in the DRG system, these two scenarios would require nurses to assess and document the level of patient complexity upon admission, and then plan and provide care accordingly. This would also entail the availability of appropriate levels of reimbursement and therefore the staffing and resources needed to cover the higher intensity of nursing care.

However, this would require nurse administrators to use up-to-date knowledge and make decisions to implement nursing care models according to evidence-based staffing levels. If it is true that nurses in clinical setting must justify what they do, and how and why they are doing it, then nurse administrators/managers must justify what skill mix, and what nurse staffing level they are ensuring to determine good nursing practice without missed care, thus an evidence-based management approach.<sup>18</sup>

### NURSING-SENSITIVE OUTCOMES: A POSSIBLE STRATEGY TO TRACK MISSED CARE

It is important to consider the process that correlates nursing interventions with the outcomes to highlight the interdependent relationship between processes and

**Table 1** An example of how nursing intensity can vary within the same DRG coding system

		DRG	Nursing intensity (based on the international Nursing Interventions Classification)
Scenario 1	Patient 1 ▶ Hip fracture ▶ 75-year-old woman ▶ Hip replacement surgery ▶ Weight: 65 kg ▶ Collaborative ▶ No cognitive impairment ▶ Day 3, out of bed	Hip replacement surgery	Potential complications: a. Risk for infection (operative hip, urinary tract, blood infection, pneumonia) b. Risk of thromboembolism c. Pressure ulcer d. Risk of falls
Scenario 2	Patient 2 ▶ Hip fracture ▶ 82-year-old woman ▶ Hip replacement surgery ▶ Weight: 115 kg ▶ Dementia ▶ Diabetes ▶ Non-collaborative ▶ Day 3, still in bed	Hip replacement surgery	1. Potential complications: a. Immobilisation syndrome b. Risk for peripheral neurovascular dysfunction c. Risk for infection (operative hip, urinary tract, blood infection, pneumonia) d. Risk of thromboembolism e. Fat embolism syndrome f. Risk of falls 2. Impaired physical mobility 3. Nutrition issues 4. Multidrug management 5. Pain: hip

outcomes. Moreover, outcome measurements should not be limited to bedside tasks of nursing, but also include social, psychological, relational and physiological aspects that describe the disease experienced by patients. Therefore, it is necessary to identify specific tools for each specialty area, which measure and keep track of the nursing activities and processes that have been delivered and then compare the outcomes. In this way, the measurement of nursing-sensitive patient outcomes would also enable to highlight any negative consequences of nursing activities left undone. Although challenging to implement due to the 'invisible' nature of a large portion of nurses' work, nursing-sensitive outcomes enable the documentation of patient outcomes directly linked to nursing care and could be useful to demonstrate the nurses' vital role in delivering high-quality care and in ensuring an effective and safe healthcare system,<sup>19</sup> a practice that at its first stage should be promoted and implemented routinely by each nursing manager on each site.

## CONCLUSIONS

Since nurses provide complex nursing interventions '24/7,' they remain the greatest element of cost for healthcare systems. Nevertheless, international literature has shown that when patient-to-nurse ratios are higher than 6 this determines high levels of missed care that increase the number of adverse events for patients.<sup>4 7 15 20</sup> This generates higher clinical, organisational, administrative and legal costs for health centres and also higher social costs.

From the perspective of nursing administrators and leaders, one possible solution to missed care could be offered by the measurement of nursing-sensitive outcomes,<sup>19</sup> which would contribute to make 'visible' all nursing activities. This would also imply a major

focus on evidence-based management<sup>18</sup> also on behalf of health and nursing administrators, who could for instance use evidence to redesign inpatient nursing care models based on low, medium and high levels of patients' nursing needs, code nursing complexity and establish NIWs.

To support this change also from a financial perspective, to ensure inpatient care reimbursement for nursing intensity, maybe it is time to link NIWs to the various DRGs.<sup>21</sup> Over time, NIWs could be optimised and adjusted using data collected through the Nursing Intensity Database.<sup>21</sup> As originally envisaged in 1979, DRGs never included intensity of nursing care in the final models,<sup>21</sup> but if it is true that we are now in the era of evidence-based practice, evidence-based management and big data, time is ripe to recognise nursing care intensity across DRGs.

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