



Outcomes sensitive to nursing service quality in ambulatory cancer chemotherapy: Systematic scoping review

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A B S T R A C T

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Background: There is long standing interest in identifying patient outcomes that are sensitive to nursing care and an increasing number of systems that include outcomes in order to demonstrate or monitor the quality of nursing care.

Objective: We undertook scoping reviews of the literature in order to identify patient outcomes sensitive to the quality of nursing services in ambulatory cancer chemotherapy settings to guide the development of an outcomes-based quality measurement system.

Methods: A 2-stage scoping review to identify potential outcome areas which were subsequently assessed for their sensitivity to nursing was carried out. Data sources included the Cochrane Library, Medline, Embase, the British Nursing Index, Google and Google scholar.

Results: We identified a broad range of outcomes potentially sensitive to nursing. Individual trials support many nursing interventions but we found relatively little clear evidence of effect on outcomes derived from systematic reviews and no evidence associating characteristics of nursing services with outcomes.

Conclusion: The purpose of identifying a set of outcomes as specifically nurse-sensitive for quality measurement is to give clear responsibility and create an expectation of strong clinical leadership by nurses in terms of monitoring and acting on results. It is important to select those outcomes that nurses have most impact upon. Patient experience, nausea, vomiting, mucositis and safe medication administration were outcome areas most likely to yield sensitive measures of nursing service quality in ambulatory cancer chemotherapy.

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Introduction

There is a long standing and enduring interest in identifying patient outcomes that are sensitive to nursing care. There are an increasing number of measurement systems that include or focus on outcomes in order to demonstrate or monitor the quality of nursing care. The most notable and probably the largest scale examples are widely implemented in US hospitals: for example Collaborative Alliance for Nursing Outcomes (CALNOC) and the American Nurses' Association backed National Database of Nursing Quality Indicators™ (NDNQI®). These systems allow benchmarking of performance between comparable units and enable individual

clinical units to monitor the quality of care delivered over time. While such systems are by no means exclusively targeted at acute inpatient settings, the vast majority of development has been undertaken in such areas (Griffiths et al., 2008), although there are several extensive reviews which identify outcomes that are potentially sensitive to nursing care in a range of settings and specialties (e.g. Doran, 2003), including cancer care (e.g. Gobel et al., 2006). In this paper we describe the results of a series of scoping reviews undertaken in order to identify patient outcomes that could form the basis of a quality measurement system to include monitoring nurse-sensitive outcomes in ambulatory cancer chemotherapy.

Ambulatory chemotherapy is frequently a nurse-led care and treatment management environment, where quality of nursing care may have a significant impact on patient outcomes and experience. In the UK, quality of services has been identified as variable (Mort et al., 2008; National Chemotherapy Advisory Group, 2009), and it seems clear that variable quality is an issue in other

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countries worldwide (e.g. Malin et al., 2006; Weingart et al., 2007; Arora, 2009; Ekwall et al., 2011; Hjörleifsdóttir et al., 2010). Although the causes of variable quality do not relate exclusively to nursing practice, assessment of the quality of care provided by nurses in this context is a high priority because of the role they take in administering therapy and providing on-going support and assessment in both the management of toxicities and the complex psychosocial challenges faced by patients undergoing cancer treatment.

There are many potential nurse-sensitive outcomes in ambulatory cancer chemotherapy which might provide a focus for assessment of quality by measuring the impact of nursing on patient outcomes. Nurse-sensitive outcomes are defined by the US Oncology Nursing Society (ONS) as “...those outcomes arrived at, or significantly impacted, by nursing interventions.” (Given et al., 2004). The ONS framework gives an indication of many possible outcomes across the broad domains of symptom experience, function and safety. Since quality indicators can never fully measure ‘quality’ as a whole, it is important that across a system there is a range of indicators (Mainz, 2003). The ONS definition also raises an important caveat when selecting areas to focus on, in that “...interventions [which result in nurse-sensitive outcomes] must be within the scope of nursing practice and integral to the processes of nursing care; an empirical link must exist.” Our previous review of outcome metrics in nursing (Griffiths et al., 2008) identified that although claims for the sensitivity of nursing are legion, the empirical basis for such claims is often scant and the evidence base for interventions around even widely accepted nurse-sensitive outcomes, such as pressure ulcers, can be surprisingly elusive (Jull and Griffiths, 2010).

There is no absolute criterion for establishing what constitutes a sufficient evidence base that an outcome is nurse-sensitive. Previous reviews have used overviews of intervention studies as evidence that an outcome is nurse-sensitive (Doran, 2003; Gobel et al., 2006) but have applied limited research synthesis or formal critical appraisal because of the breadth of the exercises. It is unclear from these whether the nursing interventions represent a fully evidence-based approach and are definitively established as sufficiently effective to enter routine practice. It is only when this is established that there can be certainty that a good quality nursing service, which routinely and effectively uses established effective nursing interventions, can deliver better outcomes than one of lower quality.

In part because of the difficulty in identifying appropriate patient outcomes for quality measurement, there is significant interest in using care processes, as opposed to patient outcomes, as quality measures. Structural factors are also identified as potential quality measures. The US National Quality Forum defines “nursing-sensitive performance measures...” as “...processes and outcomes-and structural proxies for these processes and outcomes (e.g., skill mix, nurse staffing hours)-that are affected, provided, and/or influenced by nursing personnel(National Quality Forum, 2004). There is much argument over the relative merits of process and outcome measures (Lilford et al., 2004; Donabedian, 2005). Desires within the nursing profession for articulation of its important contribution and among the public for improved standards point toward outcomes as a significant component of any indicator system, as their importance is more clearly understood and harder to contest. Furthermore, since a process measure is established as a measure of quality because its relationship to outcome is known (Donabedian, 1966), the starting point for developing any system should be identifying relevant outcomes.

Thus this review was undertaken to identify an evidence base for nurse-sensitive outcomes in ambulatory chemotherapy as a forerunner to developing a set of indicators that are suitable for benchmarking performance against other organisations, and can be

used to identify the need for local quality improvement. The work replicated the approach taken in our previous work (Griffiths et al., 2008) but with a more detailed focus on this clinical setting. To do this we undertook a series of literature reviews in consultation with clinical experts. Because of the breadth of the topic area we used scoping review methodologies. Scoping reviews “aim to map rapidly the key concepts underpinning a research area and the main sources and types of evidence available... [suitable for] ...an area is complex or has not been reviewed comprehensively before” P194 (Mays et al., 2001). The aim of the review was to identify outcomes for which there is a strong evidence base to establish that associated nursing interventions should form part of routine nursing practice or outcomes that are strongly associated with nursing-related organisational characteristics, such as workforce capacity or characteristics. Thus we aimed to identify outcomes that would vary with the quality of a nursing service either because of its organisational characteristics or because of its use of evidence-based interventions.

Methods

We broadly followed the approach to scoping reviews outlined by Arskey and colleagues (Arksey and O'Malley, 2005). The project progressed in 2 stages.

Stage 1. The databases Medline, Embase and the British Nursing Index, Google and Google scholar were searched to identify indicator systems and potential areas for nurse-sensitive outcomes. Searching continued until November 2009. The search was repeated in May 2011 to ensure currency. We sought papers that proposed quality measures or provided overviews of nurse-sensitive outcomes that could be relevant to ambulatory chemotherapy. Searching was iterative but based around a core strategy of combinations of terms for “nurse”, “cancer/oncology” and “outcome/quality/measurement/metrics” combined (Boolean ‘AND’). Although we focussed our searches on cancer care we considered material from other clinical areas where we came across it. Where evidence was derived from clinical settings other than ambulatory chemotherapy its relevance was assessed by a clinical reference group consisting of senior clinical nurses and managers of ambulatory chemotherapy services.

Stage 2. We undertook searches of Medline and the Cochrane library for research evidence supporting the outcomes that were identified as a priority by the reference group or which were identified in a large number of sources during stage 1. The searches were again iterative but based around a core structure of keyword/index term for the outcome AND terms for cancer AND nurse. We sought primary research evidence from controlled trials or observational studies for sensitivity of particular outcomes to known markers of quality and quantity of nursing care (for example well-staffed units, units recognised as high quality, units with good leadership or teamwork) and we sought systematic reviews or evidence-based guidelines for evidence of clearly effective nursing interventions. In seeking evidence for interventions we did not seek to comprehensively review all possible interventions for each domain, but rather to identify authoritative evidence-based guidance or reviews that addressed outcomes/problems within that domain. Therefore we stopped searching and study retrieval once we had identified such a source from recent years. In general this meant that most such sources were less than five years old at the time of the search, many were more recent and all were published after 2002. As is consistent with our scoping review methodology, we did not formally assess the quality of each source. Rather, we selected only sources that showed evidence of a formal process of searching for and selecting evidence and which offered explicit quality assessment. So for example for fatigue we used a National

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