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Discourse

Nursing's Valued Resources: Critical Issues in Economics and Nursing Care

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Nursing's first steps into the 21st century have been charted by a set of pressing economic issues around the composition and allocation of nursing resources. Buffeted by a deepening nursing shortage of global dimensions, health-care demand that is outpacing resources, and consumer demands for safe, effective, and responsive care, nursing finds itself at a critical juncture regarding two fundamental questions: what resources (financial and other) are necessary to build and maintain a qualified and effective nursing workforce, and how can nursing resources be most effectively allocated to meet evolving health-care needs. The current plight provides us with an opportunity to address such questions in new and creative ways, by critically examining how we are supporting the current nursing workforce and preparing the future one, the settings and roles in which the workforce is deployed, and the degree to which decisions in these matters are based on research that demonstrates the most cost-effective ways of allocating nursing care. The aggressive pursuit of these questions requires the input of every branch of the profession: practice, administration, education, research, and policy. It also requires that we grapple with the following issues.

First, nursing finds itself once again battling a workforce shortage. Though the causes may vary, this shortage has serious implications for the kind of nursing care we are able to provide and for how well current and future health-care needs will be met. While we have stared down previous nursing shortages, largely through short-term financial

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solutions, many argue that the current shortage is more ominous. A depressed pipeline of new entrants is colliding with an aging workforce, suggesting a much smaller workforce in the future, if no substantial effort is made to change the course of events (Buchan, 1999; Buerhaus, Staiger, & Auerbach, 2000). If the contracted workforce were coupled with a decline in demand for nursing services, there would not be cause for great concern. But there are no signs that demand is abating. Nurses have been and continue to be employed in record numbers. Furthermore, as the nursing population ages so does the general population. The demand for services is consequently rising, for acute as well as chronic care. The burden is falling squarely on the shoulders of all care providers but especially nurses. The multi-faceted needs and complex regimens of elders and the chronically ill require heightened levels of coordination and monitoring that are central to the role of nursing. Carrying out this work without the necessary resources and organization has become an enduring struggle and is causing the system to fray. Early discharge from acute-care facilities has strained the post-acute-care system, where the delivery of essential care and the coordination of services across far-flung providers and agencies/settings are overwhelming the system. Those considering nursing as a career and those among the ranks of practising nurses are looking at this state of affairs and having second thoughts about the profession.

Evidence from both Canada and the United States underscores the predicament. According to the Canadian Institute for Health Information, the RN-to-population ratio in Canada fell from 80.3 to 74.6 RNs per 10,000 population between 1994 and 1999 (Canadian Institute for Health Information [CIHI], 2000). This change was the result of a 2.5% decline in the number of practising RNs and a simultaneous increase in the population over the period. In the US, where data on the workforce are collected quadrennially through a national sample survey of RNs, the 1996 ratio, at 79.8 RNs per 10,000 population, was comparable to Canada's 1994 figure (Moses, 1996). By 2000 the US ratio was also beginning a descent, to 78.2 (Division of Nursing, 2001), due to a much slower rate of growth in practising RNs than in the population. At 4.1%, the growth rate in practising RNs between 1996 and 2000 in the US was the lowest recorded since 1977 when the sample surveys started collecting this information (Division of Nursing).

In both Canada and the US, nursing care is increasingly moving out of the hospital and into the community (Sochalski, Aiken, & Fagin, 1997). In Canada, the proportion of RNs working in hospitals declined from 61.1 to 59.4% between 1994 and 1999. This was a result of not only a growth in the number of RNs in other sectors but also a 5.5% decline

in the absolute number of nurses reporting to work in a hospital (CIHI, 2000). After hovering near 70% since 1984, the proportion of RNs in hospitals in the US fell to 60.1% in 1996 and to 59% in 2000 (Division of Nursing, 2001; Moses, 1996). Not only did the proportion of hospital nurses decline, but the absolute number of inpatient bedside nurses fell, by 6.2% in 1996 and by another 8.5% in 2000. The proportion of total health expenditures devoted to hospitals has similarly declined in the two countries. In Canada, hospital spending fell from 45.2% of total spending in 1976 to 32.2% in 1999 (CIHI, 2001). In the US, the hospital portion of total health expenditures decreased from 42% in 1980 to 32% in 1999 (Heffler et al., 2001).

While one would expect that as patient care moves out of hospitals to alternative settings so too will nursing expenditures, one wonders if the exodus of nurses from hospitals is occurring at a disproportionately greater pace, and for reasons other than the transfer of patient care to other sites. Widespread reports from nurses of stressful and unsafe working conditions in hospitals in both countries suggest that this question is worth investigating (Buerhaus & Needleman, 2000; Kaiser Family Foundation and Harvard School of Public Health, 1999; Shindul-Rothschild & Duffy, 1996). A recent five-country study of nursing staffing and patient outcomes in hospitals surveyed thousands of hospital staff nurses (Sochalski & Aiken, 1999; Sochalski, Estabrooks, & Humphrey, 1999). Of the Canadian nurses surveyed, fully one third reported dissatisfaction with their current job, more than one third reported significant levels of job burnout, and nearly half reported that the quality of nursing care in their hospital had declined over the preceding year (Aiken et al., 2001). Among US nurses, levels of job dissatisfaction and burnout were even higher, at 41% and 43%, respectively, and comparable numbers reported declining quality of nursing care in their hospital. In each country nearly one third of nurses under age 30 indicated they intended to leave their nursing job within the year. These findings suggest that, without attention to the role of nurses and the working environment in hospitals and other health-care settings, efforts to address the shortage by increasing the supply of nurses in these settings will do little to ameliorate the situation.

Although the nursing shortage has certainly raised the profile of economic issues in nursing, it represents only one half of the economic equation. Characterizing the shortage brings into focus the second part of nursing's economic agenda — amassing and applying the evidence of effective nursing practice. Jenkins-Clarke's (1999) excellent treatise on economic evaluations in nursing starkly reminds us of the distance we need to travel with regard to assessing which nursing interventions,

and what mix of nursing personnel, are needed to achieve the desired outcomes in patient health. A number of barriers have stood in the way of further development in this area. These include inadequate application of cost-effectiveness methodologies, inconsistent and/or incomplete cost-effectiveness measures, and lack of robust outcome measures (Allred, Arford, Mauldin, & Goodwin, 1998; Bond & Thomas, 1991; Newbold, 1995; Tierney, 1993). Indeed, the development of suitable outcome measures to distil the effect of nursing in an economic evaluation continues to be a challenge, given the interdisciplinary nature of and multiple inputs into patient care in most settings. Intermediate outcome measures, such as those that capture quality of care, are one approach to such evaluations (Sochalski, 2001). However, the relationship among cost, quality of care, and outcomes is complex, and care must be taken regarding the measures that are used and the causal effects being asserted (Jenkins-Clarke). For example, total nursing costs per patient may have a modest relationship with incidence of skin breakdown and pressure ulcers, but cost per hour of nursing care can have a pronounced effect on length of stay, an outcome that theoretically will be influenced by the occurrence of pressure ulcers. The conclusions one might draw about the relationship among quality of care (occurrence of pressure ulcers), outcomes (length of stay), and cost (workload hours) could vary greatly depending on the measures used and the causal direction modelled in the analysis.

Galvanized by the increasing demand for answers within and outside of nursing, economic evaluations of nursing have become more frequent over the last decade, and have expanded into many clinical settings and across various types of patients and care needs. Single-site and multi-site studies evaluating the cost-effectiveness of nursing interventions, some employing randomized controlled trial designs, can be found with increasing frequency in the literature (Helgessen et al., 2000; Kitzman et al., 2000; Mandelblatt et al., 1997; Naylor et al., 1999; Stewart, Pearson, Luke, & Horowitz, 1998; Uhari & Mottonen, 1999). These empirically robust studies are offering evidence of innovative and cost-effective ways of using nurses across the continuum of care. One area of considerable development going back several decades has been nurse-physician substitution in primary-care and other settings (Brown & Grimes, 1995; Mundinger et al., 2000; Prescott, 1994; Richardson, Maynard, Cullum, & Kindig, 1998). While many of these studies show that the quality of nursing care is equivalent to or surpasses physician care, with few exceptions they are dated and lacking in rigorous cost analysis (Jenkins-Clarke, 1999; Richardson et al.).

So, despite progress in this area, the reservoir of studies that include economic evaluations of nursing care is still quite low and is plagued by many problems. Moreover, our collective understanding of what works, and at what cost, has been hampered by the absence of a method for amassing the information and assessing its gaps. These deficiencies can and should be addressed. Nursing is well positioned to launch a concerted effort to evaluate its care, one that develops both theoretical approaches and a robust set of outcome measures to assess interventions, and that applies the full array of cost-effectiveness methodologies and analytic tools. Collaboration with other disciplines such as economics, public health, and health services research would enhance not only the investigations themselves but nursing's accountability regarding the allocation of its resources in the pursuit of public-health improvements. Amassing the evidence of cost-effective practice around key clinical areas and nursing workload, and assessing the knowledge gaps, might be stimulated by establishing new study areas through entities like the Cochrane Collaboration. For example, investigation protocols have been established under the Cochrane Collaboration on the substitution of nurses for physicians in primary care (Laurant, Sergison, & Sibbald, 2001) and on organizational infrastructures to promote evidence-based nursing practice (Foxcroft, Cole, Fulbrook, Johnston, & Stevens, 2001). By both initiating and participating in such interdisciplinary forums, we will be able to disburse the evidence of cost-effective nursing practice to a wider audience and direct our nursing resources wisely.

However, efforts to establish evidence-based practice that ignore the question of cost, cautions Maynard (1995, 1997), run the risk of endorsing unethical practices — wasting resources on care that while beneficial for an individual is not cost-effective when considered over society as a whole. These are tough questions that must be addressed head-on if health-care resources are to be allocated in ways that are in keeping with both societal and professional goals.

Economics has had the dubious distinction of being termed the "dismal science," and its application in health care has often pitted clinicians against economists in a struggle to lay claim to the mantle of patient advocacy. Practically speaking, economics provides a framework for the allocation of resources, in this case nursing care, among competing ends and the costs, both financial and non-financial, of allocation decisions. The economics question facing nursing is not what the value of nursing care *is* (i.e., costing out nursing services for the sake of determining its costs) but *how* to allocate this valuable resource to best meet the health-care needs of our patients and the population. The goal

is to ensure that the resources allocated to nursing are sufficient and directed towards building a high-quality workforce deployed in the most effective way possible.

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