Demonstrating the value of the RN in ambulatory care

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Demonstrating the Value of the RN in Ambulatory Care

**Executive Summary**

- **During 2003**, an estimated 906 million visits were made to physician offices in the United States (Hing, Cherry, & Woodwell, 2005).
- **Overall**, 42% of visits to outpatient settings were attended by a registered nurse (Middleton & Hing, 2005).
- **Despite ambulatory care being the fastest growing site for care**, it is the least studied.
- **The purpose of this article** is to provide an overview of the role of the RN in ambulatory care and describe the direct and indirect economic value of RNs in ambulatory care settings.

**In May 2006, Americans for Nursing Shortage Relief**, a group of 51 national nursing organizations, convened a congressional briefing to address the ever-increasing shortage of nurses and nurse faculty in the United States. Three nurse leaders presented the evidence on the economic value of: (a) registered nurses (RNs) in hospitals, (b) advanced practice nurses, specifically certified registered nurse anesthetists, and (c) Magnet recognition (Nowicki, 2006). One of the areas not addressed was ambulatory care and the economic value of RNs in this practice setting.

There were 2.9 million RNs living and working in the United States in March 2004 (U.S. Department of Health and Human Services [HHS], 2004). Currently, RNs constitute the largest health care occupation and are projected to be the second largest number of new jobs among all occupations. In March 2004, 56% percent of the RNs were working in hospitals, this is a decrease from 59% in March 2000 (U.S. Department of Labor, Bureau of Labor Statistics [BLS], 2006). Twenty-nine percent of RNs were estimated to be employed in ambulatory care, community health, and public health settings, an increase from 24% in 2000 (HHS, 2004). While the intensity of nursing care is likely to increase, requiring more nurses per patient, the number of inpatients is not likely to increase as much. Rapid growth is expected in both patients and nurses in ambulatory care sites and hospital-based ambulatory care practices (BLS, 2006). This shift toward ambulatory care is found among all age groups but particularly among older adults (Rosenfeld et al., 2005). Overall, 42% of visits to outpatient settings were attended by a RN (Middleton & Hing, 2005). Despite ambulatory care being the fastest growing site for care, it is the least studied. The purpose of this article is to provide an overview of the role of the RN in ambulatory care and describe the economic value of RNs, direct and indirect financial benefit, in the ambulatory care setting based on outcomes of care delivered by RNs.

**Search Strategy**

A literature search was conducted using PubMed and CINAHL in May and again in June 2006 using the search terms ambulatory care nursing, ambulatory care nurses, registered nurses, advanced practice nurses, ambulatory care, ambulatory care facilities, primary health care, community health nursing, nursing role, evaluation, cost-effectiveness, effectiveness, clinical effectiveness, risk reduction, risk management, cost and cost analysis, cost benefit analysis, value, patient satisfaction, outcomes (health care), health promotion, interventions, and statistics. These terms were used in various combinations in the databases, as well as in the EBSCO Information Services Megafilee of Journals and Science Direct journals database. Tables of contents of selected nursing e-journals were scanned, as well as nursing association Web sites such as American Academy of Ambulatory Care Nursing, Oncology Nursing Society, American Academy of Nurse Practitioners, American Nurses Association, and National League for Nursing. References from
Role of the RN in Ambulatory Care

Before examining the economic value of the role of the RN in ambulatory care, it is important to define the role and role dimensions (Haas, Hackbarth, Kavanagh, & Vlasses, 1995). Readers are referred to a four-part series by Haas and Hackbarth describing the dimensions of the current staff RN role (circa 1995) and dimensions of the future staff RN role (present state). Table 1 lists the core dimensions for the current RN role and Table 2 lists the core dimensions for the future staff RN role (Haas & Hackbarth, 1995a; Haas & Hackbarth, 1995b; Haas et al., 1995; Hackbarth, Haas, Kavanagh, & Vlasses, 1995).

A recent survey conducted by the American Academy of Ambulatory Care Nursing (AAACN) explored “what is the value of ambulatory care nursing?” (Conway-Phillips, 2006). Open-ended responses included generic statements such as “I am a great asset and invaluable because of my diverse background” but did not describe how their versatility was valuable. Many responses described in broad terms roles, responsibilities, and functions that RNs perform daily. Two responses that elicited powerful images were: “I am the front and back door of the hospital” and “I am the eyes and ears of all providers.” Two overarching themes emerged: (a) coordinating care and services and (b) ensuring continuity of care. Some respondents articulated that by RNs coordinating care and ensuring continuity, quality care was provided (clients remained healthy, and thus produced value).

Value of the RN in Ambulatory Care

Once the roles of the RN in ambulatory care are identified, links can be made to nursing interventions and patient outcomes in the context of available resources. Porter-O’Grady and Malloch (2006) state: “The value equation in which there is an examination of clinical practice, performance outcomes, and the available payment structure serves as a template to assess overall value” (p. 201). Value is defined as “a principle, standard, or quality considered worthwhile or desirable; worth in usefulness and importance” (American Heritage Dictionary, 2000, p. 1900).

Ambulatory care nurses care for patients with a variety of illnesses and injuries on an outpatient basis, either in physicians’ offices, hospital outpatient departments, or clinics. Some ambulatory care nurses are involved in telehealth care, providing care and advice through electronic communications media such as the Internet or video conferencing (BLS, 2006). According to the AAACN Ambulatory Care Nursing Administration and Practice Standards (2004), ambulatory care nursing practice, “includes direct patient care, telehealth nursing

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### Table 1. Dimensions of the Current Staff Nurse Role

| Factor I | Enabling Operations: Maintain safe work environment, maintain traffic flow, search for space/equipment, set up room, locate records, order supplies, transport clients, provide emotional support, and take vital signs. |
| Factor II | Technical Procedures: Assist with procedures, prepare client for procedures, chaperon during procedures, inform client about treatment, witness signing consent forms, administer oral/IM medications, and collect specimens. |
| Factor III | Nursing Process: Develop nursing care plan, use nursing diagnosis, complete client history, assess client learning needs, conduct exit interview, evaluate client care outcomes, and chart each client encounter. |
| Factor IV | Telephone Communication: Telephone triage, call pharmacy with prescription, and call client with test results. |
| Factor V | Advocacy: Make clients aware of rights, promote positive public relations, act as a client advocate, and triage client to appropriate provider. |
| Factor VI | Teaching: Instruct client on medical/nursing regime and instruct client on home and self-care. |
| Factor VII | Care Coordination: Long-term supportive relationship, act as a resource person, coordinate client care, assess needs and initiate referrals, find resources in the community, and instruct on health promotion. |
| Factor VIII | Expert Practice Within Setting: Expertise in advanced nursing practice, function as advanced nurse resource, serve as preceptor for students, design and present in-service education. |

Reliability alpha = .9163

### Quality Improvement/Research Role

| Factor I | Quality Improvement: Implement professional standards, participate in preparation of QI plan, collect and analyze QI data, use QI plan in practice, participate in interdisciplinary QI teams, and develop expected client outcomes. |
| Factor II | Research: Participate in research of others and follow guidelines to protect human subjects. |
| Factor III | Continuing Education: Participate in on-site continuing education and participate in off-site continuing education. |

Reliability alpha = .8647


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Reference List

BLS. (2006). Ambulatory health care, and advice through electronic communications media such as the Internet or video conferencing (BLS, 2006). According to the AAACN Ambulatory Care Nursing Administration and Practice Standards (2004), ambulatory care nursing practice, “includes direct patient care, telehealth nursing.
Table 2

Dimensions of the Future Staff Nurse Role

| Factor I | Enabling Operations: Order supplies, locate records, set up room, search for space/equipment, schedule appointments, transport clients, witness consent forms, maintain traffic flow, and enter data in computer. |
| Factor II | Technical Procedures: Assist with procedures, prepare client for procedures, chaperon during procedures, inform client about treatment, administer oral/IM medications, measure vital signs, and collect specimens. |
| Factor III | Nursing Process: Develop nursing care plan, use nursing diagnosis, and conduct exit interview. |
| Factor IV | Telephone Communication: Telephone triage, call pharmacy with prescription, and call client with test results. |
| Factor V | Advocacy: Make clients aware of rights, promote positive public relations, act as a client advocate, and triage client to appropriate provider. |
| Factor VI | Client Teaching: Assess client learning needs, instruct client on medical/nursing regime, instruct client on home and self-care, and evaluate client care outcomes. |
| Factor VII | High-Tech Procedures: Administer blood/blood products, perform complex treatments, and monitor clients before and after procedures. |
| Factor VIII | Care Coordination: Long-term supportive relationship, act as a resource person, coordinate client care, assess needs and initiate referrals, and instruct on health promotion. |
| Factor IX | Expert Practice/Community Outreach: Expertise in advanced nursing practice, function as advanced nurse resource, design and present in-service education, serve as preceptor for students, independently provide primary care, organize and conduct group teaching, participate in community outreach, follow-up clients in the home. |

Quality Improvement/Research Role

| Factor I | Quality Improvement: Implement professional standards, participate in preparation of QI plan, collect and analyze QI data, use QI plan in practice, participate in interdisciplinary QI teams, develop expected client outcomes, and utilize a client classification system. |
| Factor II | Research: Facilitate nursing research, participate in research of others, follow guidelines to protect human subjects, serve on research review board, identify research questions, evaluate nursing research findings, and conduct own nursing research. |
| Factor III | Continuing Education: Participate in on-site continuing education and participate in off-site continuing education. |

Reliability alpha = .9098

Reliability alpha = .9318

The literature is replete with research of the value of advanced practice nurses in outpatient settings (Aiken, Clarke, Cheung, Sloane, & Silber, 2003; Buerhaus, Donelan, Ulrich, Norman, & Dittus, 2006; Clarke & Aiken, 2006; Laurant et al., 2005; Laurant et al., 2006; Needleman, Buerhaus, Stewart, Zelevinsky, & Mattke, 2006; Richardson, Griffiths, Wilson-Barnett, Spilsbury, & Batehup, 2001; Spilsbury & Meyer, 2001; Vahay, Aiken, Sloane, Clarke, & Vargas, 2004). However, there is less research about the value of the RN in ambulatory care (Griffin & Swan, 2006; Mastal, 2000; Richter & Felix, 1999). Table 3 provides an overview of the studies examining the role of the RN in providing direct care interventions in ambulatory care and the outcomes of their care.

Twenty-three articles were reviewed: 21 articles represented single studies and two articles were systematic reviews of the research literature (Casey & Ormrod, 2003; Hamner, 2005). For example, Hamner summarized 16 studies: ten studies of RN-led interventions in outpatient heart failure clinics and six studies using telephone or technology-based RN interventions with heart failure clients (Hamner, 2005). Outcomes demonstrated were reduction in hospital admissions, reduction in emergency room visits, improved self-care and quality of life, and decreased mortality.

The settings or populations studied included health maintenance organizations; community health centers; telehealth nursing practices; psychiatric-mental health clinics; ambulatory care, general medicine clinics; pre-operative assessment clinics; ambulatory procedure and surgery centers; outpatient hemodialysis; adult specialty clinics such as care of clients living with HIV/AIDS, anticoagulation clinic, diabetes clinics, heart failure clinics, care of high risk pregnant women; gastroenterology clinic, oncology clinic, otoLOGY clinic; and pediatric specialty clinics such as infant hip dysplasia clinic.

The interventions delivered by the RN included RN-managed clinics (Adams, 1997; Casey & Ormrod, 2003; Hamner, 2005; Lee, 2005; Leenerts, Koehler, & Neil, 1996; Shimabukuro, Kramer, & McGuire, 2004; Uppal, Jose, Banks, Mackay, & Coatesworth, 2004; Vazquez, 2001), RN-delivered counseling and education (Dewar, Craig, Muir, & Cole, 2003; DiScenza, Nies, & Jordan, 1996; Phlis-Tsimikas & Walker, 2001; Phlis-Tsimikas et al., 2004; Wolosin, 2003), telephone-mediated care by RNs (Gulanick, Green, Crutchfield, Myers, & Marren, 1996; Kastens, 1998; Muender, Moore, Chen, & Sevick, 2000; O’Connell,
<table>
<thead>
<tr>
<th>Citation</th>
<th>Setting/Population</th>
<th>Intervention Delivered by RN</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams, 1997</td>
<td>Community Health Centers</td>
<td>RN care manager</td>
<td>Fewer hospitalizations and fewer emergency room visits.</td>
</tr>
<tr>
<td>Casey &amp; Ormrod, 2003</td>
<td>Pre-Surgical Assessment Clinic</td>
<td>RN-managed surgical pre-assessment clinic</td>
<td>Review of the literature demonstrated high patient satisfaction, reduced costs, improved efficiency, and decreased waiting time.</td>
</tr>
<tr>
<td>Dewar et al., 2003</td>
<td>Ambulatory Surgery</td>
<td>Pre-op educational intervention, Post-op follow-up, and telephone advice</td>
<td>Improved pain management.</td>
</tr>
<tr>
<td>DiScenza et al., 1996</td>
<td>HIV Service</td>
<td>RN counseling on high risk sexual behaviors</td>
<td>Significant difference/change in behaviors from pre to post counseling.</td>
</tr>
<tr>
<td>Gulanick et al., 1995</td>
<td>General Medicine Clinic</td>
<td>Telephone nursing program</td>
<td>Increased patient and provider satisfaction; increased access to quality health care information.</td>
</tr>
<tr>
<td>Hamner, 2005</td>
<td>Heart Failure Clinics</td>
<td>RN managed clinic</td>
<td>Ten studies reviewed demonstrated reduction in hospital admissions and emergency room visits, decreased mortality, improved self-care and quality of life.</td>
</tr>
<tr>
<td>Joseph &amp; Freda, 2001</td>
<td>Ambulatory Care Clinics</td>
<td>RN patient recruitment</td>
<td>94% of the patients interviewed agreed to make appointments for their family members who were not already patients; 82% of the appointments were kept by the family member.</td>
</tr>
<tr>
<td>Lee, 2005</td>
<td>Pediatric Clinic for Hip Dysplasia Infants</td>
<td>RN managed clinic</td>
<td>Increased patient satisfaction related to waiting time, appointments, and quality of service; RNs able to see 80% of infants referred within 2 months; 100% acceptance of service.</td>
</tr>
<tr>
<td>Citation</td>
<td>Setting/Population</td>
<td>Intervention Delivered by RN</td>
<td>Outcomes</td>
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<tr>
<td>Leenerts et al., 1996</td>
<td>Clients living with HIV/AIDS</td>
<td>RN-managed program</td>
<td>Less-frequent hospitalizations; reduction in ER visits; estimated cost savings in 1993 dollars: $884,000 by preventing 1 hospital stay in 20% of clients; $122,536 by shortening length of hospital stay by 1 day in 20% of clients; $583,848 by providing 25% of complex medical treatments and saving 1 hospital day each; overall cost savings $1.6 million.</td>
</tr>
<tr>
<td>Muender et al., 2000</td>
<td>High-Risk Pregnant Women</td>
<td>Prenatal nursing support via telephone</td>
<td>Reduced pre-term and low birth weight infants; cost savings from adverse events; net economic benefit $277/participant.</td>
</tr>
<tr>
<td>O’Connell et al., 2001</td>
<td>Telehealth Nursing</td>
<td>Telephone-based RN triage using algorithm</td>
<td>High overall satisfaction with service; 90% adherence/compliance with RN recommendations; 95.7% caller agreement with RN recommendations; use of medical service following a triage call: 6% scheduled followup with physician and 1% used emergency room.</td>
</tr>
<tr>
<td>Piette et al., 2000</td>
<td>Diabetes Care</td>
<td>Automated calls with RN telephone followup</td>
<td>Fewer symptoms of depression; greater self-efficacy to perform self-care activities; fewer days in bed because of illness; greater satisfaction with their health care overall, quality of their health outcomes, technical quality of service; greater satisfaction with continuity of care and communications with providers.</td>
</tr>
<tr>
<td>Quirk, 1998</td>
<td>Outpatient Hemodialysis</td>
<td>RN primary patient care model</td>
<td>Increased patient satisfaction and decreased venipuncture infiltrations.</td>
</tr>
<tr>
<td>Schroeder et al., 2000</td>
<td>Ambulatory Managed Care</td>
<td>RN expanded role: case management and coordination of care for complex clients</td>
<td>Decreased cost for complex procedures performed by RN; increased RN productivity; lowered system demands; higher attainment of clinical targets translated into lowered costs for future care for enrollees with chronic illness.</td>
</tr>
</tbody>
</table>
Table 3. (continued)

<table>
<thead>
<tr>
<th>Citation</th>
<th>Setting/Population</th>
<th>Intervention Delivered by RN</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shimabukuro et al., 2004</td>
<td>Anticoagulation Program</td>
<td>RN-managed care</td>
<td>Increase in patient and provider satisfaction; no adverse events such as ER visits, hospitalizations related to therapy, no significant bleeding events, no excessive bruising, no deep-vein thrombosis.</td>
</tr>
<tr>
<td>Philis-Tsimikas &amp; Walker, 2001</td>
<td>High-Risk Diabetics</td>
<td>Multicomponent RN-led outreach and education, recruitment, screening, diagnosis, clinical care</td>
<td>Significant beneficial effect, HgbA1c, blood pressure, total cholesterol, and LDL are decreased significantly.</td>
</tr>
<tr>
<td>Philis-Tsimikas et al., 2004</td>
<td>Ear Clinic</td>
<td>RN-managed clinic for common otological procedures</td>
<td>Increased patient satisfaction; increased patient access; less cost, mean cost of outpatient visit was 75 GBP ($140 USD) less in RN-managed group equivalent to a reduction in cost to the hospital of more than 47,000 GBP ($88,000 USD) for 626 patients seen.</td>
</tr>
<tr>
<td>Uppal et al., 2004</td>
<td>Schizophrenia Patients</td>
<td>RN competencies</td>
<td>Providing clinically competent care.</td>
</tr>
<tr>
<td>Vasquez, 2001</td>
<td>Ambulatory Oncology</td>
<td>Telephone-mediated care by RN</td>
<td>Increased patient satisfaction and improved continuity of care.</td>
</tr>
</tbody>
</table>

Economic Value of the RN in Ambulatory Care

How can RNs in ambulatory care demonstrate their economic value based on patient outcomes such as client/patient satisfaction? Client satisfaction is an important outcome that assesses quality in ambulatory care and is a valid measure of quality of nursing care that translates to value. There is much research about the antecedents and consequences of patient satisfaction. Previous research revealed that the following antecedents are related to patient satisfaction: individual’s demographic characteristics, overall quality, humaneness, and competence (Hall & Dornan, 1988; Pascoe, 1983). Consequences of patient satisfaction include better adherence to care recommendations, loyalty toward health care providers, and financial success in terms of revenue generation, cost avoidance, and cost reduction (Kaldenberg & Becker, 1999). Thus patient satisfaction is a proxy that can be used to demonstrate the
economic value of the RN. In addition, this review illustrates other nurse-sensitive outcomes that quantify the contribution of the RN role being an economically vital component to health care delivery in the ambulatory care setting.

In linking the role dimensions, nursing interventions, and patient outcomes to the economic value of the RN, questions persist such as is the value of the RN diluted by performing tasks that could be performed by other personnel, or is value added because of the comprehensiveness of the RN role? Does value equal role, responsibilities, and functions or is it something more? Is the value proposition only important when there is a shortage of RNs? From a business perspective, RNs represent a high cost human resource, but RNs are critical to the operational and financial success of health care delivery systems as demonstrated in this evidence review.

Next Steps

Answers to these questions may be elusive, vary among ambulatory care specialties, and vary among organizational practice models. National quality standardized performance measure sets are used in ambulatory care, most are at the practice level or health plan level not at the individual provider level (National Committee for Quality Assurance, 2006; National Quality Forum, 2006). When the individual provider is used, the physician is used as the unit of analysis. Gaps exist in quantifying the influence and value of the RN in ambulatory care.

There are national nursing quality performance measures for acute care and non-acute care community-based nursing practice (American Nurses Association [ANA], 1999; ANA, 2000a; 2000b; National Quality Forum, 2003). Through the National Database of Nursing Quality Indicators (NDNQI), nurses in acute care have been successful in identifying, measuring, and benchmarking patient outcomes and the value of the acute care RN (ANA, 2006). For ambulatory care nursing, measure development and standardization are underdeveloped. Ambulatory care nursing/nurses need to organize efforts and explore collaboration with the NDNQI as a practice area to be developed and included in their database. This would provide a vehicle for collecting uniform information that is standardized, identifiable, and measurable across ambulatory care practice settings.

A second lesson from RNs in acute care that can be applied to RNs in ambulatory care is the linking of RN interventions to patient safety. For example, research on acute care RN staffing demonstrated a relationship between RN staffing levels, education, and patient deaths (Aiken et al., 2003; Aiken, Clarke, Silber, & Sloane, 2003). In the ambulatory setting, mortality may not be the outcome of choice, but patient safety indicators would be applicable, such as medication management, risk reduction, and symptom severity management. It is imperative for ambulatory care nurses to recognize that there must be a clear delineation of value; that value should be identifiable, actionable, and quantifiable; and that value exists as part of a whole, not in isolation.

REFERENCES

Nursing Economics, 13(3), 152-165.


