

The Role of Licensed Nursing Personnel in Radiation Oncology Part A: Results of a Descriptive Study

Giselle J. Moore-Higgs, ARNP, MSN, AOCN®, Deborah Watkins-Bruner, RN, PhD,
Laura Balmer, RN, MS, ANP, Janice Johnson-Doneski, RN, BSN, OCN®,
Paulette Komarny, RN, BSN, OCN®, RT(T), Beatrice Mautner, RN, MSN, OCN®,
and Karima Velji, RN, MSc, AOCN®, PhD(c)

Purpose/Objectives: To identify the specific administrative, clerical, patient care, patient education, and research responsibilities that licensed nursing personnel perform in the field of radiation oncology.

Design: Descriptive.

Sample: 281 licensed nursing personnel employed in the field of radiation oncology in North America.

Methods: Subjects completed a six-page, self-administered questionnaire comprised of fixed-choice and open-ended questions.

Main Research Variables: Demographics, employment settings, and administrative, clerical, patient care, patient education, and research responsibilities.

Findings: Nurses in radiation oncology tend to be older (41–60 years of age) and considerably well educated, with many years of experience in this field. Nurses are responsible for a wide variety of tasks. The study found a strong demonstration of the role of nurse educator among radiation oncology nurses.

Implications for Nursing: Radiation oncology nursing is a subspecialty in evolution. The data should provide support for further exploration of how patient education and support influence patient outcomes in radiation oncology.

Key Points . . .

- Staff nurses in radiation oncology have a wide variety of administrative, clerical, patient care, and research responsibilities within their departments.
- Patient education was identified as a very important role of nurses in radiation oncology.
- The overall aging of the nursing workforce in the United States is reflected in radiation oncology, raising the concern of significant shortages in radiation oncology nurses in the near future.

and private practice radiation oncology centers. The primary goal of the subcommittee was to describe the current roles and responsibilities of licensed nursing personnel working in the

Across North America, the role of licensed nursing personnel (licensed practical nurses, RNs, and advanced practice nurses [APNs]) in the field of radiation oncology has not been clear. Informal discussions at national and local meetings have made evident that nurses may be underutilized or that determination of their role may be subject to non-nursing supervisors. To date, a paucity of nursing literature has described the role, with which job descriptions for new positions can be developed or current roles further enhanced. With significant advances in radiation technology resulting in more patients receiving radiation therapy (RT) with curative intent, the role of licensed nurses in the field has grown. It also has the potential for substantial expansion in the near future as patients are given more options for treatment with new approaches to brachytherapy, intensity-modulated procedures, proton beam programs, and nonmalignant disease protocols.

To address this issue, the Oncology Nursing Society (ONS) RT Special Interest Group (RT SIG) established a subcommittee comprised of RNs and APNs who worked in both academic

Giselle J. Moore-Higgs, ARNP, MSN, AOCN®, is coordinator of clinical programs and a nurse practitioner in the Department of Radiation Oncology at the University of Florida in Gainesville; Deborah Watkins-Bruner, RN, PhD, is an associate member of Population Science and Radiation Oncology and director of the Prostate Cancer Risk Assessment Program, Systems and Outcomes Research, at Fox Chase Cancer Center in Philadelphia, PA; Laura Balmer, RN, MS, ANP, is a radiation oncology nurse practitioner at Associated Radiologists of the Finger Lakes, P.C., Falck Cancer Center, in New York; Janice Johnson-Doneski, RN, BSN, OCN®, is nurse manager of the outpatient oncology department at Mount Auburn Hospital in Waltham, MA; Paulette Komarny, RN, BSN, OCN®, RT(T), is a radiation oncology nurse in the Arlington Hospital Department of Radiation Oncology in Virginia; Beatrice Mautner, RN, MSN, OCN®, is clinical practice coordinator at Valley Radiotherapy Associates Medical Group in Chatsworth, CA; and Karima Velji, RN, MSc, AOCN®, PhD(c), is vice president of professional practice and chief nursing officer at Toronto Rehabilitation Institute in Canada. This project was funded by a grant from the Oncology Nursing Society Special Interest Groups. (Submitted October 2001. Accepted for publication May 15, 2002.)

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field of radiation oncology. The subcommittee designed a research project to assess the current practices of ONS members in North America who identified radiation oncology as their field of practice on their membership forms. The specific objectives of the project were to

1. Identify the specific administrative, clerical, patient care, patient education, and research responsibilities that licensed nursing personnel currently perform in radiation oncology.
2. Develop a document based on the descriptive data that clearly describes the role of radiation oncology nurses within the licensed scope of practice endorsed by the RT SIG and ONS.
3. Develop a plan to distribute this document to the physicians and administrators currently employing licensed nursing personnel in radiation oncology facilities.

Literature Review

Little has been published regarding the specific role of nurses in radiation oncology. Traditionally, nursing in radiation oncology was overshadowed by the technical aspects of the therapy and highly trained professionals who remain part of the treatment today, including physicians, physicists, dosimetrists, and therapists. The first in-depth discussion of the licensed nursing role was by Hilderley (1980). She detailed the process of establishing the licensed nursing position, selecting the candidate, developing nursing skills, and defining role function. Five broad nursing responsibilities were identified: patient care (the primary responsibility), education, administration, research, and consultation. These roles have been repeated in similar publications by Bucholtz (1987), Strohl (1988), and Sitton (1992). Direct patient care activities have been described as those tasks that nurses perform in the physical care of patients. The tasks often performed in a radiotherapy setting include physical assessments, urinary catheterizations, enemas, placement of feeding tubes, wound dressings, starting IV lines, and giving medications. Educational tasks include teaching patients, families, staff members, and the community. The supervision of clinical staff, development of procedures and protocols, evaluation of care, quality assurance, and development of other types of patient care programs fall in the realm of administrative duties. Clinical trials performed as part of national, cooperative group trials, industry trials, or in-house trials are conducted using nurses to collect data and assist data managers with the volumes of necessary documentation. Nurses also may be consultants to patients and their families, staff in other areas of the hospital or clinic, and the community.

These roles for nurses also were reflected in a report on the American College of Radiology Task Force on Standards Development (Bruner, 1990), which defined the role and qualifications of nurses in radiation oncology as registered professional nurses who function in a collaborative role with the radiation oncology team to provide continuity and quality patient care. The document was the first attempt to provide administrators and physicians with a description of the nursing role, as well as responsibilities such as assessment, appropriate nursing intervention, teaching, counseling, and supportive functions in the care of patients and families during treatment for cancer.

Despite the published recommendations of nurse authors and the American College of Radiology, a survey sponsored

by ONS in the early 1990s found a number of differences in the use of nurses in radiation oncology across the United States. ONS's *National Survey of Salary, Staffing, and Professional Practice Patterns in Radiation Therapy-Based Oncology Nursing* (Miaskowski & Buchsel, 1991) was mailed to 1,499 institutions in the United States and Puerto Rico, and 219 usable questionnaires were analyzed. The questions included, but were not limited to, the number and educational preparation of nurses, salaries, types of services offered, nursing care delivery systems, and nurse/patient ratios. The radiation oncology departments were grouped into four sizes based on patient visits per month. Only 60% of the 219 departments had budgeted nursing positions, with smaller institutions having the fewest positions. Evaluation of how these departments used the budgeted nursing positions indicated that the nurses were used in a multitude of roles, some bearing little resemblance to those described in earlier literature or by ACR.

Using the survey data and personal communication with physicians and nurses in departments of radiation oncology throughout the United States, Bruner (1993) identified five levels of staffing and nursing role implementation. Each level was based on the types of staff available and type of care delivered.

- Level 0: Facility did not include nursing staff in its patient care delivery system. Physicians or radiation therapists took responsibility for clinical activities such as vital signs and skin care. In some settings, a nurse was available as needed for special procedures but was not assigned full-time to the facility.
- Level 1: Nursing time was spent primarily on "clinic care," then on direct patient care. Activities included tasks necessary for the department to evaluate and care for patients, such as cleaning instruments, stocking rooms, and escorting patients to rooms.
- Level 2: Provided for some direct patient care and teaching, usually physician-directed. Activities included coordinating appointments, educating patients, and providing supplies for prescribed treatment.
- Level 3: Encouraged more independent nursing care, including direct patient care, teaching, and counseling. Nurses functioned independently or in conjunction with physicians to identify and manage symptoms through the use of standardized regimens or protocols and provided patient and family education. Coordination of care with other disciplines, as well as participation in research protocols, was included.
- Level 4: Employed nurses were primarily master's-prepared and functioned as clinical nurse specialists and nurse practitioners to practice in advanced nursing roles to provide direct patient care as well as give administrative and research support to the other members of the staff.

Several articles outlining the role of APNs in radiation oncology have been published (Hilderley, 1991; Kelvin et al., 1999; Kelvin & Moore-Higgs, 1999; Moore, 1996). With the decline in the number of resident training positions, some institutions have explored the role of the nurse practitioner and clinical nurse specialist in providing cost-effective patient care and management. These roles combine patient care provider, researcher, counselor, and educator with advanced nursing education and skills to provide employers with cost-effective, independent healthcare providers.

Changes in healthcare systems recently have led to changes in the role of nurses in many departments of radiation oncology. With declining reimbursement, nursing positions have been deleted and nurses have struggled to be identified as a necessary component of the care of patients in the radiation oncology setting. Unfortunately, the literature is void of information specifically related to cost/benefit analysis and the impact of nurses on patient outcomes in radiation oncology.

Without a clear description of the role, analyzing the effect of nurses on patient outcomes is difficult. Therefore, the focus of this study was to further expand the broadly defined role of licensed nurses to identify specific tasks and responsibilities that were being performed in radiation oncology departments for the purpose of assisting nurses in further developing their professional practice and planning educational programs for radiation oncology nurses.

Methods

Sample

The target population for this study consisted of licensed nursing personnel currently practicing in the field of radiation oncology. The sampling frame included ONS members in North America who identified themselves as working in radiation oncology on ONS membership forms and those who were members of the RT SIG.

Instrument

The committee developed a semistructured questionnaire to elicit information related to the role of the licensed nurse. The instrument consisted of a six-page, self-administered questionnaire with both fixed-choice and open-ended questions regarding respondents' demographic and professional characteristics, practice settings, employment characteristics, and administrative, clerical, patient care, and patient education, and research responsibilities. The committee members submitted lists of tasks currently performed in their departments (academic, private practice, and free-standing settings), which were compiled into a master list. The master list was sent to each committee member for final review to ensure that it was comprehensive and accurate.

Procedure

In October 1998, a questionnaire, personalized cover letter, and return envelope were mailed to 98 ONS members who identified themselves as working in radiation oncology on ONS membership forms and 402 members of the RT SIG. A reminder postcard was sent to nonresponders about six weeks after the questionnaire was sent ($n = 154$). A total of 284 questionnaires were returned (57%). Of those, 260 (92%) were from members of the RT SIG. Three questionnaires were considered ineligible because the respondents indicated that they no longer were employed in radiation oncology, leaving 281 eligible questionnaires for evaluation.

Data Analysis

All data were entered into an Access (Microsoft®, Redmond, WA) database. Descriptive statistics were calculated, and response distributions were used to represent individual responses to the questionnaire items.

Results

Demographics

Table 1 shows the demographic characteristics of the sample. The majority of the respondents were female (94%), were between 40 and 49 years of age (46%), and had a bachelor's degree as the highest level of education (40%). Sixty-eight percent were oncology certified nurses. The majority of respondents had spent more than five years in radiation oncology (64%), with 31% having more than 10 years of experience.

Employment Settings

Radiation facilities commonly are hospital-based or free-standing. However, the staff generally are not hospital employees but are hired by physician practices, cancer centers, or managed care organizations. Table 2 lists information pertaining to the employment settings of the respondents. The majority of respondents described their local communities as urban (51%) and practiced in a community-based hospital facility (49%). The remainder of the respondents were distributed among private practice hospital-based (19%), private practice freestanding (10%), and academic (14%) facilities. The most frequently cited employer was private practice physician groups (70%), followed by managed care organizations

Table 1. Characteristics of Respondents

Characteristic	n	%
Gender		
Female	264	94
Male	3	1
No response	14	5
Age (years)		
20–29	2	< 1
30–39	48	17
40–49	130	46
50–59	85	30
60 or older	15	6
No response	1	< 1
Highest education level		
Diploma	64	23
Bachelor's degree	115	40
Master's degree	47	17
Doctorate	1	< 1
Other	53	18
No response	1	< 1
Credentials		
Radiation Therapy Technology	7	2
Oncology Certified Nurse®	192	68
Advanced Oncology Certified Nurse®	14	4
Other	14	4
No response	54	20
Time in radiation oncology (years)		
0–2	40	14
3–5	63	22
6–10	92	33
11–15	53	19
> 15	33	12

N = 281

Note. Because of rounding, percentages may not total 100.

Table 2. Respondents' Employment Settings

Characteristic	n	%
Title of position		
RN–radiation therapy technology	3	< 1
RN–staff nurse	142	51
RN–clinician	34	12
RN–supervisor	13	5
RN–nurse manager	36	13
Clinical nurse specialist	16	6
Nurse practitioner	11	4
Other	24	9
No response	2	< 1
Type of facility		
Private practice freestanding	30	10
Private practice hospital-based	53	19
Academic practice	40	14
Community-based hospital facility	137	49
Other	20	7
No response	1	< 1
Type of community		
Rural	40	14
Urban	142	51
Suburban	96	34
Other	0	0
No response	3	< 1
Employer		
Sole practice physician	4	1
Group practice physician	196	70
Comprehensive cancer center	25	9
Managed care organization	42	15
Hospital	0	0
Other	12	4
No response	2	< 1
Immediate supervisor		
Sole practice physician	15	5
Group practice physician	17	6
Non-nursing administrator (department or center)	106	38
Nursing director (department or center)	63	22
Other	77	28
No response	3	1
Salary range (\$) ^a		
< 25,000	1	< 1
25,000–30,000	4	2
31,000–35,000	11	5
36,000–40,000	33	15
41,000–45,000	42	19
46,000–50,000	44	20
51,000–55,000	26	12
56,000–60,000	24	11
Other	30	13
No response	10	4

N = 281

^a Salary range includes 225 full-time nurses.

Note. Because of rounding, percentages may not total 100.

(15%). Supervision was provided by non-nursing administrators (38%), nursing directors (cancer center or hospital) (22%), physicians (11%), or unspecified individuals (29%). When the nurses were asked whether a job description for their current role existed, 83% responded yes.

In regard to specific employment titles, the majority indicated that their title was staff nurse (51%), with only 18% indicating a title of nurse supervisor or nurse manager. APNs made up 10% of the respondents. Of those respondents with master's or master of science in nursing degrees (n = 47), 11 (23%) reported functioning as RN–staff nurses, RN–clinicians, or RNs with RT technology certification (RN–RTT); 6 (13%) responded that they were nurse supervisors or nurse managers.

The majority (n = 158, 56%) of respondents worked 32–40 hours per week, whereas 16% worked part-time, and 24% reported averaging more than a 40-hour work week. Two hundred twenty-five (80%) reported working 40 or more hours per week. An analysis of their salary ranges are reported in Table 2. Most indicated a salary of \$41,000–\$60,000 per year. A chi-square analysis of salary and length of time in nursing was performed for each group. Because of the number of respondents who had been in nursing for more than five years, these data were not significant.

Analysis of Responsibilities

To evaluate administrative, clerical, patient care, patient education, and research responsibilities, the researchers divided the respondents into three groups, staff nurse, nurse manager, and APN, depending on their identified title. Nurses who identified themselves as RN–RTT, staff nurse, or nurse clinician were included in the group titled staff nurse. Respondents who identified themselves as RN–supervisor or RN–nurse manager were included in the group titled nurse manager. Nurse practitioners and clinical nurse specialists were grouped as APNs. Twenty-six respondents identified themselves in the category “other” or did not respond and were not eligible for this part of the analysis, leaving a total of 255 respondents for evaluation.

Administrative responsibilities were identified as tasks associated with the supervision of other staff or management of a clinical area. Responses were correlated with the identified clinical titles: staff nurse, nurse manager, or APN (see Table 3). The majority of nurse managers (88%) reported having responsibility for supervising staff, with 59% of APNs and 34% of staff nurses reporting responsibility for the task. The nurse managers reported responsibility for writing nursing policies and procedures (80%), and 47% also reported writing non-nursing policies and procedures. The responsibility for ordering medical supplies was shared by both nurse managers and staff nurses (78% and 79%, respectively). Although APNs were involved in all three activities, their involvement was much less than that of nurse managers. Staff nurses, nurse managers, and APNs reported participating in weekly or monthly quality assurance activities within their clinical areas (75%, 94%, and 78%, respectively). These activities included checking emergency equipment, refrigerator and medication monitoring, and quality improvement studies.

Clerical responsibilities were identified as tasks associated with scheduling procedures, written orders, and third-party payment documents (see Table 4). The majority of staff nurses, nurse managers, and APNs reported scheduling diagnostic procedures for patients (79%, 78%, and 56%, respectively), as well as completing written procedure requests (87%, 82%, and 67%, respectively). Staff nurses and nurse managers reported responsibility on a regular basis for requesting films and records prior to new patient evaluations (69% and 65%, respectively). Almost half of the staff nurse respondents reported responsibility for completing disability

Table 3. Administrative Responsibilities

Responsibility	Staff Nurse (n = 179)		Nurse Manager (n = 49)		Advanced Practice Nurse (n = 27)	
	n	%	n	%	n	%
Supervision of other staff	61	34	43	88	16	59
Write nursing policies and procedures	82	46	39	80	16	59
Write non-nursing policies and procedures for the department	40	22	23	47	9	33
Update and maintain policy and procedure manuals for the department	82	46	38	78	14	52
Order medical supplies for the department	142	79	38	78	9	33
Order nursing equipment for the department	86	48	37	76	8	30
Daily or weekly checks of crash cart	108	60	29	59	11	41
Daily or weekly checks of other equipment (e.g., medication refrigerators)	109	61	32	65	8	30
Provide required annual in-service classes for staff (e.g., fire, safety)	45	25	27	55	6	22
Maintain employee health records, including annual immunizations and screening studies	13	7	17	35	2	7
Daily or weekly checks of medication	100	56	35	71	9	33
Participate in weekly or monthly quality assurance monitoring or studies	134	75	46	94	21	78

or insurance forms (49%). Coordination of radiation and chemotherapy schedules was distributed relatively evenly among the three groups (75%, 71%, and 59%, respectively).

Traditional **patient care responsibilities** of nurses in radiation oncology include escorting patients to examination rooms, cleaning instruments, stocking rooms, and obtaining vital signs. The majority of respondents continued to perform these responsibilities, as outlined in Table 5. Additional responsibilities reported included performing a complete initial nursing assessment, obtaining a detailed history, performing an initial physical examination, monitoring patients during light sedation,

administering IV fluids, performing telephone triage, obtaining consents, assessing and managing symptoms, and educating patients.

Patient education responsibilities included activities that provided patients and families with educational materials and information about radiation procedures, side effects, and counseling for social service needs. The majority of staff nurses, nurse managers, and APNs said they spent time with new patients and families to provide education about RT (92%, 80%, and 93%, respectively), and many respondents also provided symptom management education (98%, 92%, and 93%, respectively). However, as procedures became technologically more complicated (e.g., stereotactic radiosurgery), the respondents reported providing less education (50%, 47%, and 48%, respectively). This may have reflected the availability of the procedure in the respondent's department rather than a void in the patient education process. Social service evaluations also were identified as a responsibility, particularly in regard to transportation (70%, 59%, and 70%, respectively). Responsibility for specific education regarding nutrition or sexuality was provided by about half of the respondents. Community education, including prevention and screening for cancer, was a responsibility of about half of the respondents.

Research responsibilities included activities identified in the literature as being tasks completed by nurses participating in clinical trials. The tasks included patient recruitment, obtaining consent, data management, and coordination of patient activities while working on a clinical trial. The majority of respondents did not participate in clinical trials in their settings. Of those who did, coordinating follow-up examinations and studies and data management services were the primary responsibilities (see Table 7).

Respondents were asked to estimate the average percentage of time spent performing administrative tasks, clerical tasks, direct patient care, indirect patient care, telephone triage, patient education, research, consultation, professional education, and professional responsibilities. This part of the questionnaire was completed by 230 respondents. The results were

Table 4. Clerical Responsibilities

Responsibility	Staff Nurse (n = 179)		Nurse Manager (n = 49)		Advanced Practice Nurse (n = 27)	
	n	%	n	%	n	%
Order and obtain outside records and films	123	69	32	65	8	30
Schedule treatment planning and start	104	58	26	53	9	33
Complete forms for laboratory studies, x-rays, or referrals	156	87	40	82	18	67
Schedule follow-up appointments with other physicians	113	63	29	59	11	41
Schedule diagnostic studies	142	79	38	78	15	56
Coordinate radiation and chemotherapy scheduling	134	75	35	71	16	59
Complete disability, insurance, or other financial forms	87	49	17	35	5	19

Table 5. Patient Care Responsibilities

Responsibility	Staff Nurse (n = 179)		Nurse Manager (n = 49)		Advanced Practice Nurse (n = 27)	
	n	%	n	%	n	%
Stock examination rooms	161	90	39	80	11	41
Clean examination rooms after patient use	167	93	45	92	21	78
Clean instruments used for patient examination	160	89	40	82	13	48
Escort patient from waiting room to examination room	174	97	43	88	23	85
Obtain initial weight and vital signs	171	96	44	90	23	85
Perform and complete an initial nursing assessment. If yes, does this include	166	93	42	86	23	85
• Obtaining a detailed history?	142	79	36	73	21	78
• Performing an initial physical examination?	44	25	12	29	11	41
Give medications (e.g., antiemetics)	121	68	31	63	16	59
Monitor patients during light sedation for procedures	73	41	28	57	6	22
Administer IV fluids	67	37	21	43	5	19
Administer blood	5	3	3	6	3	11
Administer IV medications	37	21	12	24	2	7
Triage patient phone calls	166	93	44	90	23	85
Triage pharmacy, home health, or hospice calls	158	88	41	84	22	81
Call patients with laboratory or x-ray results	152	85	39	80	20	74
Obtain treatment or procedure consents	130	73	25	51	14	52
Place Foley catheters for procedures	93	52	32	65	11	41
Chaperone and assist with examinations	172	96	44	90	20	74
Symptom assessment and management during treatment	173	97	44	90	26	96
Participate in patient care during brachytherapy procedures	100	56	24	49	12	44
Treat patients with radiation therapy	5	3	1	2	–	–

analyzed using the same three groups of nurses: staff nurses (n = 146), nurse managers (n = 41), and APNs (n = 24) (see Table 8). Staff nurses spent the majority of time performing direct patient care (\bar{X} = 33%), followed by patient education (\bar{X} = 24%), telephone triage (\bar{X} = 11%), and clerical tasks (\bar{X} = 10%).

Nurse managers reported dividing the majority of their time between direct patient care (\bar{X} = 24%) and administrative tasks (\bar{X} = 24%), followed by patient education (\bar{X} = 15%) and telephone triage (\bar{X} = 11%) (see Table 9).

Table 6. Patient Education Responsibilities

Topic	Staff Nurse (n = 179)		Nurse Manager (n = 49)		Advanced Practice Nurse (n = 27)	
	n	%	n	%	n	%
Expectations of radiation therapy	165	92	39	80	25	93
Specific symptom management education	175	98	45	92	25	93
Implant procedures	152	85	35	71	20	74
Special procedure information	89	50	23	47	13	48
Nutrition counseling to all patients	137	77	34	69	22	81
Nutrition counseling only when patients begin to lose weight	46	26	12	24	8	30
Social services evaluation or counseling for housing	77	43	15	31	11	41
Social services evaluation or counseling for transportation	125	70	29	59	19	70
Social services evaluation for home health or hospice	101	56	21	43	16	59
Sexuality counseling	104	58	25	51	22	81
Discharge education at completion of treatment	162	91	41	84	24	89
Follow-up education during routine return visits regarding symptoms	166	93	43	88	23	85
Follow-up counseling during routine visits for depression	91	51	22	45	16	59
Community education services	104	58	28	57	17	63
Prevention, screening, and detection education	101	56	28	57	15	56

APNs spent the majority of their time performing direct patient care (\bar{X} = 44%) and patient education (\bar{X} = 11%), followed by administrative tasks (\bar{X} = 9%) and consultations (\bar{X} = 8%). They reported spending more time participating in research (\bar{X} = 6%) than either staff nurses (\bar{X} = 2%) or nurse managers (\bar{X} = 2%) (see Table 10).

Discussion

This survey is the first detailed description of the role of the licensed nurse in radiation oncology and portrays the current status of nursing in the primarily ambulatory setting. The results provide a intelligible picture of the issues unique to the field with which radiation oncology nurses contend on a daily basis. Three important findings of the study are that nurses in radiation oncology tend to be older (41–60 years of age), considerably well educated, with many years of experience in radiation oncology; staff nurses perform a wide variety of administrative, clerical, patient care, and research activities

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Table 7. Research Responsibilities

Responsibility	Staff Nurse (n = 179)		Nurse Manager (n = 49)		Advanced Practice Nurse (n = 27)	
	n	%	n	%	n	%
Recruit patients for clinical trial participation	33	18	8	16	10	37
Obtain consents for clinical trial	31	17	9	18	6	22
Provide data management services	43	24	18	37	9	33
Coordinate follow-up examinations and studies	61	34	18	37	10	37
Distribute forms or medications for clinical trial	34	19	8	16	5	19
Complete tumor registry forms	33	18	16	33	6	22
Plan, develop, or participate in nursing research projects	31	17	10	20	10	37

within their departments; and the role of educator is found strongly among radiation oncology nurses.

Seventy-six percent of respondents were 41–60 years old, a reflection of the overall aging of the nursing workforce in North America. The group was highly educated, with 58% having a bachelor's or master's degree. The respondents also had a considerable amount of experience in radiation oncology, with 64% reporting more than five years of employment in the field. Many of the nurses (36%) were about 10 years from retirement, which will leave a significant shortage of experienced nurses. This implies the emphasis that nursing leadership in radiation oncology needs to place a significant emphasis on renewing the nursing workforce, attracting younger and well-qualified nurses into this field.

The second important finding was that nurses in radiation oncology perform a wide variety of tasks and responsibilities within their defined role (i.e., staff nurse, nurse manager, or APN). Each radiation oncology department functions differently in terms of the types of equipment available, types of patients treated, and availability of support staff. For example,

Table 8. Percent of Time Spent Performing Tasks—Staff Nurse

Responsibility	Median	\bar{X}	SD	Range
Administrative tasks	1	4.10	6.92	1–50
Clerical tasks	10	10.30	10.33	5–7
Direct patient care	30	32.70	19.38	5–100
Indirect patient care	5	4.97	4.73	1–25
Telephone triage	10	10.60	6.86	3–3
Patient education	20	23.80	15.04	5–65
Research	—	1.87	4.54	2–40
Consultations	2	5.70	9.30	2–60
Professional education	2	2.90	2.96	2–15
Professional research	2	3.03	3.86	2–25

N = 146

Table 9. Percent of Time Spent Performing Tasks—Nurse Manager

Responsibility	Median	\bar{X}	SD	Range
Administrative tasks	10	23.50	24.69	2.5–90
Clerical tasks	5	8.70	9.25	4–40
Direct patient care	21	23.80	16.57	5–75
Indirect patient care	5	4.04	4.25	5–20
Telephone triage	10	11.20	12.59	5–75
Patient education	10	15.00	11.88	5–50
Research	—	2.30	3.78	5–15
Consultations	2	4.20	7.06	2–40
Professional education	3	3.60	3.58	3–10
Professional research	2	3.50	4.91	2–20

N = 41

a department that has one physician, one nurse, and two linear accelerator machines; treats an average of 40 patients a day; and does not perform any advanced radiation procedures such as brachytherapy, stereotactic radiosurgery, or intensity modulated RT functions differently than an academic facility that has 10 faculty members, 8 residents, an APN, 4 RNs, 3 nursing assistants, 5 linear accelerators, and 3 specialized treatment machines and performs all of the advanced radiation procedures. In larger departments, nurses may be assigned to one or two physicians who specialize in one or more sites of disease, allowing nurses to focus on those disease sites, possibly participating in specialized procedures (e.g., prostate volume studies); in smaller departments, nurses may care for all sites of disease and spend more time educating patients than participating in specialized procedures. In addition, the focus of departments may differ. For example, many departments only see patients for consultation and treatment, returning them to their medical or surgical oncologists for long-term follow-up, but others have developed specialized follow-up clinics for the evaluation of late effects, which requires significantly more patient education programs and materials.

The majority of the respondents reported performing non-nursing tasks such as stocking rooms, cleaning rooms and equipment, and completing forms. The tasks, called “clinic care” by Bruner (1993), undermine the role of the nurse, taking time and resources away from other responsibilities such as patient assessment, triage, and education. In this study, staff

Table 10. Percent of Time Spent Performing Tasks—Advanced Practice Nurse

Responsibility	Median	\bar{X}	SD	Range
Administrative tasks	5	8.83	14.68	5–50
Clerical tasks	3.5	4.83	6.16	3.5–25
Direct patient care	45	43.75	25.63	7.5–90
Indirect patient care	—	1.46	2.17	4.25–5
Telephone triage	5	6.46	5.76	5–20
Patient education	10	10.67	10.83	10–40
Research	—	5.71	16.01	5–75
Consultations	5	8.33	15.95	0.25–80
Professional education	5	3.88	3.87	5–10
Professional research	5	6.00	5.69	0.25–20

N = 24

nurses reported spending 10% of their time performing clerical tasks and another 5% doing indirect patient care. Using an average 40-hour work week, this equates about six hours a week performing such tasks. Many non-nursing tasks can be completed by a more cost-effective level of staff, such as nursing assistants or clerks.

The final important finding was the strong demonstration of the role of nurse educator among the respondents. All three groups of nurses reported spending an appreciable amount of time educating patients. During the 1970s, 1980s, and 1990s, patient education became widely recognized as a professional role of nurses (Rankin & Stallings, 1996). Although the entire healthcare team is responsible for patient and family education, it is central to the role of every nurse providing patient care, regardless of job title or clinical setting. This is particularly true with triage and management of treatment-related toxicities. In this study, respondents reported conducting patient education that included symptom management during the treatment period and in the months and years of follow-up. This requires significant knowledge of RT and medical oncology because radiation causes site-specific and general acute and long-term side effects that can be potentiated by other concurrent or sequential therapies (e.g., chemotherapy). In addition, many respondents also reported providing social service evaluations and counseling for housing, transportation, and psychosocial needs such as depression.

Study Limitations

This study had several limitations. The first was that the survey was sent only to ONS members who reported working in radiation oncology. Determining what percentage of nurses

across the United States and Canada work in radiation oncology is represented by these results is difficult. Second, the instrument limited the respondents to answering yes or no to a list of tasks determined by the committee; they were unable to report other activities that they may have performed within their individual practices. A third limitation was that the respondents were left to interpret what was meant by category labels (e.g., administrative tasks) in the question about percentage of time spent performing tasks. What may be considered an administrative or clerical task at one institution may not be considered administrative at another.

Summary

This study revealed that the nursing workforce in radiation oncology in 1998 was older and highly educated with many years of experience. Nurses performed a wide variety of nursing tasks and roles in radiation oncology. A strong demonstration of the role of the nurse educator was found, which implies a professional practice model in radiation oncology that values significant contributions by nurses to patient education.

The results of this study indicate the importance of the role of educator in radiation oncology. The data should provide support for further exploration of how this education and support role influences patient outcomes, including issues such as number of treatment delays, severity of side effects, and need for costly interventions such as hospitalizations or inpatient rehabilitation services.

Author Contact: Giselle J. Moore-Higgs, ARNP, MSN, AOCN®, can be reached at mooregj@shands.ufl.edu, with copy to editor at rose_mary@earthlink.net.

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