

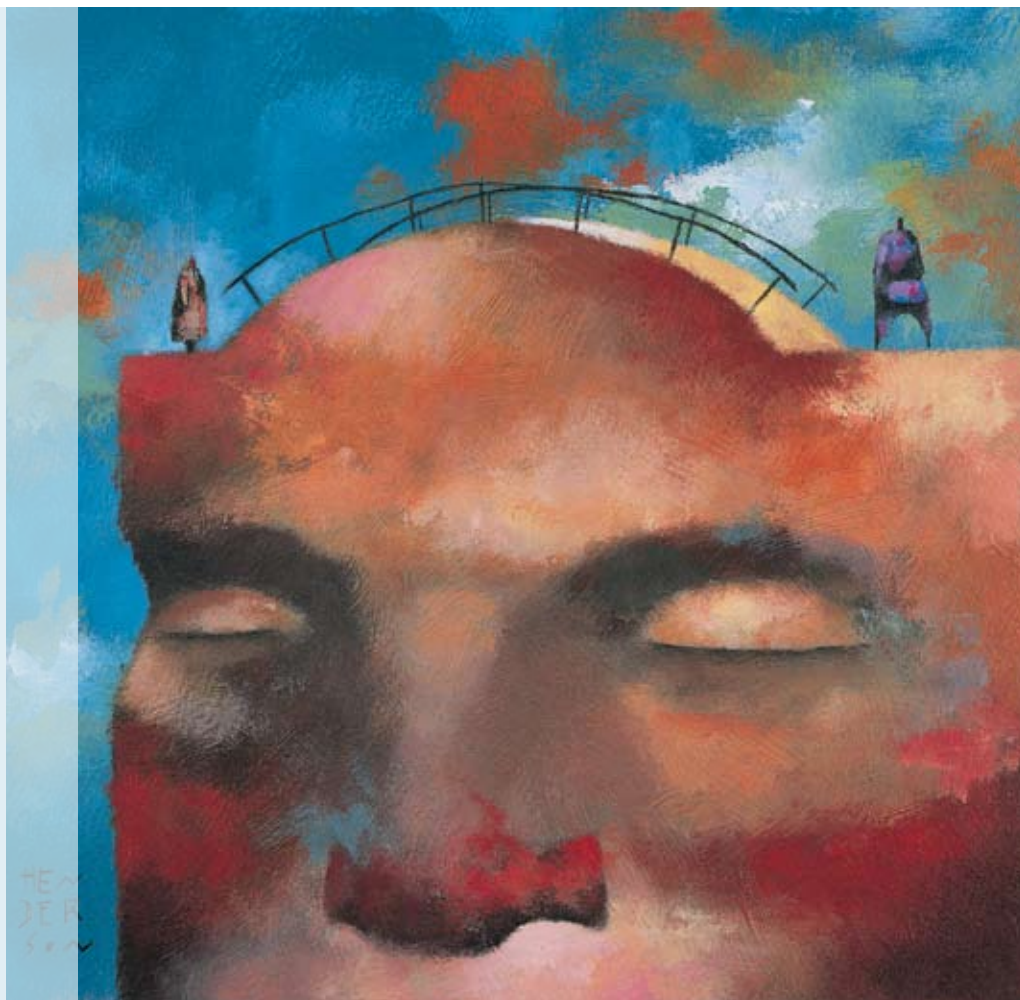
Staff Education In Radiation Oncology

A Model Interdisciplinary Program

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Today's radiation oncology departments provide a broad continuum of care. Along with providing quality care, radiation oncology staff must *also* be prepared to educate patients (and caregivers) of varying age groups, ethnicities, educational and socioeconomic backgrounds, and diagnoses. For some patients with cancer and their caregivers, key concepts about radiation therapy can be confusing and difficult to comprehend.² A well-designed patient education program can provide patients and caregivers with factual information about radiation oncology treatment, professional advice, and appropriate resources, as well as an overview of what to expect from a course of radiation therapy. In addition, radiation oncology patient education programs

MOST HOSPITAL-BASED radiation oncology departments are able to provide an interdisciplinary approach to care. However, not all healthcare professionals comprising the interdisciplinary treatment team may have educational backgrounds specific to radiation oncology.¹ Nursing, psychosocial, and nutritional support staff, for example, are less likely to have radiation oncology-specific educational experiences. One hospital-based cancer program designed an in-house interdisciplinary radiation education oncology program that explores new methods of patient care and helps staff engage patients and their caregivers in decision-making and self-care.



ILLUSTRATION/GETTY IMAGES

can help actively engage patients and their caregivers in decision-making and patient self-care.

At Baptist Hospital of Miami (BHM), we have designed an outcomes-based patient education program in radiation oncology. (By definition, an outcomes-based program uses “a method of measuring, evaluating, and improving patient care.”³) Ideally, an education program should be designed and implemented so that the highest benefit is achieved with the optimal use of resources. This outcome can only be evaluated if a methodical approach is used throughout the design, implementation, and evaluation processes. In assessing the clinical, humanistic, and economic outcomes of a patient education program, ultimately, we are practicing evidence-based medicine.³

Our first step in developing a patient education program was to set new patient education expectations for our practitioners. In the process, we found that some staff members were not adequately educated about some key concepts of radiation oncology. For example, through staff discussions, we learned that some patients were arriving in our department without adequate preparation for simulation procedures and that some staff members were unable to answer patients’ questions regarding advanced technologies. The radiation oncologists and radiation therapists were the only members of the interdisciplinary patient care team educated specifically to work with patients undergoing radiation therapy. The nursing staff, social workers, and dietitians were all well educated and experienced, yet had little formal education specific to radiation oncology. Therefore, “educating the educators” became an important component of the implementation plan for our patient education program.

Many hospitals provide staff education and training as a means of increasing employee satisfaction, work performance, and retention.^{1,4,5} By aligning staff and departmental goals, the hospital cancer program can realize multiple benefits in terms of staff retention, team building and enablement, employee satisfaction, and the reduction of direct operational costs.⁶ In addition, providing staff with the tools to enhance their job performance is a strong indicator of employee satisfaction.⁵

Education Options—What Is Available?

Research revealed that radiation oncology-specific education courses designed for interdisciplinary staff are hard to come by. The Oncology Nursing Society (ONS) offers a course specific to radiation therapy for nurses working in radiation oncology departments.⁷ Some commercial programs are available, and some institutional programs are offered at hospitals, throughout the United States.^{8,9} While general oncology education courses for nursing staff exist, radiation oncology-specific courses are more difficult to find. We were unable to find radiation oncology courses, similar to

the ONS course, for dietitians and social workers.

In assessing existing programs, we asked: “*Will this course provide education to BHM’s multidisciplinary staff that relates to the key concepts of radiation oncology and provides them with a working knowledge of departmental technology and processes?*” Taking into consideration cost, staff time away from the department, content, relevance to the Cancer Program’s practice, and the diversity of the staff needing training, we concluded that an in-house designed program would best meet our needs.

Assessment—Identifying Needs

Using multiple methods, including information provided in departmental patient surveys, Press Ganey Associates, Inc. patient satisfaction surveys, and cancer committee meetings, we performed a needs assessment for a staff education program. Each patient undergoing a course of radiation therapy at Baptist Hospital of Miami received a departmental survey upon completion of treatment (see Figure 1). Evaluation of patient survey responses revealed room for improvement in the patient education program and the staff’s ability to educate patients in all aspects of treatment and self-care.

In addition, the Cancer Committee met to discuss staffing needs and retention. The administrative, physician, nursing, psychosocial, and dietary staff represented on the Cancer Committee agreed that an institutional multidisciplinary program would benefit efforts to hire qualified professionals to work in the radiation oncology departments. This group also believed that such a program would improve teamwork and provide the basis for a patient education program of excellence.

Advantages to a Homegrown Education Program

For our institution, the benefits of designing an in-house education program included being able to:

- Custom tailor the program to address specific departmental and patient needs.
- Create course schedules and timelines that fit into departmental staffing needs.
- Develop assessment tools in the form of staff competencies, surveys, and patient outcomes to measure the effectiveness of our program.
- Assess and alter the program at any time in response to changing technologies, outcomes from assessment tools, or staffing needs.
- Offer training to staff outside of the radiation oncology department and possibly serve as a recruitment tool to attract healthcare professionals into open positions.

Programs interested in developing and implementing an institutional staff education program must also take into

Table 1: Costs of a Hospital-Based Education Program

Costs Associated with an In-House Multidisciplinary Education Program

- Continuing education credit applications
 - Incentives (e.g., compensation, time away from clinical duties) for educators and program coordinator
 - Incentives (e.g., compensation, meals) for staff attendance
 - Textbooks and/or other education materials
- Total estimated cost per attendee: \$840**

Costs Associated with an External Radiation Oncology Nurse Program

- Registration Fees^{7,8} (approximately \$260 – \$1,200 per staff member)
 - Paid leave of staff from clinical duties
 - Salary for per diem nursing coverage
 - Hotel and meals
 - Travel expenses (e.g., mileage, airfare, rental car)
- Total estimated cost per attendee (nurse only): \$1,500 – \$3,800**

account two other important factors: staff and physician buy-in and cost.

Staff needs to be willing and, perhaps, motivated to participate in the educational activities. Incentives can include offering professional continuing education (CE) credits to participants and incorporating learned activities in job-specific competencies and performance evaluations. Nursing staff may be motivated by learning concepts needed to take certification exams for advanced credentialing (e.g., ONS certification). Other staff may simply be motivated by the opportunity to learn and grow within their professions, the department, and the healthcare environment.

Cost differences between internal and external staff education programs can be significant (see Table 1). While (as noted earlier) we failed to identify a commercially available course that covers radiation therapy education on a multidisciplinary level, we found several somewhat costly programs designed for nursing staff. On average, sending one nurse to a one-day, out-of-town conference may cost \$1,500 or more, including wages, travel, accommodations, meals, and registration fees. Sending eight nurses to an out-of-town program could cost upwards of \$12,000.

On the other hand, an in-house education program for eight attendees from a variety of disciplines (e.g., nurses, social workers, dietitians) can be developed for about \$6,700. Our cost estimate includes applications for CE credits, textbook purchases, stipends for 12 educators, wages of attendees, and meals for each of the 12 educational sessions.

Education Program: Nuts and Bolts

Scheduling an educational program within any institution presents multiple challenges. At BHM, we plan for our interdisciplinary course to include about 25 percent of the cancer center's patient care staff. A class scheduled during department treatment hours would make 100 percent attendance nearly impossible, so our scheduling options include sessions before or after hours during the week, weekend sessions, or some combination of these two options. In advance, we surveyed both class attendees and instructors on class scheduling preferences to ensure that we could meet the majority's needs. To help entice participation in off-hour courses, programs can consider providing meals or snacks, assisting with childcare, and/or paying staff to attend.

An environment conducive to learning is important. Plan to hold classes in an appropriate room designed to accommodate the expected number of participants. Ensure that the room is set up in a style that is conducive to adult learning and is prepared with any needed audiovisual equipment.

Based on our unique needs, BHM developed a curriculum for a departmental radiation oncology interdisciplinary staff education program. The curriculum's guiding philosophies (see box, page 38) are based on the goals for

our departmental patient education program. Other radiation oncology departments may wish to use the core curriculum while substituting goals and objectives that address their own departmental needs and desired patient education outcomes.

In creating our curriculum, we followed the curriculum development process as explained by Oliva.¹⁰ This model includes:

- Defining the philosophies of the program
- Writing a mission statement (the goals of the education program)
- Completing a needs assessment
- Developing curriculum goals and objectives
- Designing instructional goals and objectives
- Conducting assessments that may lead to program revisions.

At BHM, the interdisciplinary radiation oncology staff education program will be taught in six two-hour sessions. Instructors will include radiation oncologists, radiation therapists, oncology nurses, nurse practitioners, medical physicists, and psychosocial and dietary professionals. Each instructor will design their instruction based on their particular instructional goals and objectives. Teaching methods will include PowerPoint presentations, discussions, "field trips" to clinical areas, and demonstrations.

Assessment, a key component of any outcomes-based program, will help demonstrate that learning has actually taken place. Assessment activities may include pre-testing and post-testing, role playing exercises, journals, and performance competencies. In our program, pre-testing will provide a baseline so that post-test scores, when compared, will provide a measurable outcome of the learning process.

Figure 1 Patient Satisfaction Survey Sample Questions

Please Rate Your Care and Experiences in Radiation Oncology

	Excellent	Good	Fair	Poor	N/A
1. Courtesy and Respect from...					
a. Receptionist					
b. Nursing staff					
c. Radiation therapists					
d. Social worker					
e. Dietitian					
f. Doctor(s)					
2. Response to Concerns and Complaints During Your Visits by...					
a. Receptionist					
b. Nursing staff					
c. Radiation therapists					
d. Social worker					
e. Dietitian					
f. Doctor(s)					
3. Concern for Your Privacy Shown by Our...					
a. Receptionist					
b. Nursing staff					
c. Radiation therapists					
d. Social worker					
e. Dietitian					
f. Doctor(s)					
4. Instructions Your Were Given about Caring for Yourself at Home by Our...					
a. Nursing staff					
b. Radiation therapists					
c. Social worker					
d. Dietitian					
e. Doctor(s)					

Class participants will be asked to assess both the program and the instructors. These assessments will indicate program strengths and areas for improvement. By administering a survey to the participants both prior to the program and following the program, our measurements can be quantified on the usefulness, quality, and limitations of the process.

Expected Outcomes

Having participants demonstrate optimal patient education and care is the expected end-result of our interdisciplinary staff education program in radiation oncology. Patient surveys and physical assessments will provide feedback on professional skill and care levels. A comparison of patient satisfaction scores prior to initiation of the program and following the staff education process will demonstrate any outcomes related to the program. A retrospective study, for example, can also track changes in outcomes in regards to patient's quality of life or acute skin reactions pre and post program implementation.

The economics of the staff education program will be assessed routinely. The operating costs of the program will

require budgetary action. We also plan to track departmental charge capture trends and determine if improvements are made as a result of the program's learning objectives. An improvement of outcomes will justify any costs and resources associated with the staff education program.

All of these tools will be used to assess the staff education program and make appropriate modifications in response to the actual outcomes. Benchmarking data and national statistics, which can be obtained from national services such as Press Ganey Associates, Inc.[®] and the Gallup Organization, can be used for comparative reporting. Measuring the clinical, humanistic, and economic outcomes provides feedback that can be used to enhance and improve the staff education process.³ In our program, the education program coordinator will be responsible for gathering data and providing it for review by the planning group on a routine basis.

Extending the Program's Shelf-Life

A continuing education program is a vital part of maintaining the capability to provide state-of-the-art, updated care and information for patients. At BHM, our original 12-hour

Guiding Philosophies for Developing an Interdisciplinary Staff Education Program in Radiation Oncology

- Patients receiving radiation therapy, and their caregivers, should be well-informed and educated in all aspects of their treatment course.
- All members of the radiation oncology team should have an advanced understanding of departmental technology, patient care, and advances in the field of radiation oncology.
- Outcomes of an interdisciplinary staff education program of excellence should be measurable and have a positive impact on staff (e.g., institutional Gallup employee opinion polls) and patient satisfaction scores.
- An interdisciplinary education program of excellence should promote teamwork and define a common goal (e.g., comprehensive patient education and patient care) for each employee of radiation oncology.
- A program of excellence should be taught by radiation oncology staff and associated medical and technical professionals, who are competent and able to communicate effectively with staff that have various educational and work-related experiences.
- An interdisciplinary education program of excellence requires a commitment and sustained efforts by administration and radiation oncology staff.

course will be videotaped and used as an orientation tool for new or prospective radiation oncology staff. Interdisciplinary conferences will be routinely scheduled and used as a platform to introduce new technologies, discuss patterns of care, promote teamwork, and assess program and patient outcomes. Building on the positive aspects of networking, we also anticipate hosting regional interdisciplinary conferences as a method of sharing best practices with other cancer programs. In all cases, CE credits will be made available for each attending professional.

For BHM, we anticipate that implementing an interdisciplinary approach to staff education will enhance and enrich our team members' professionalism, teamwork, and lifelong learning. This curriculum is not intended to replace the responsibilities of the radiation therapist, nurse, social worker, or any other well-educated professional. Rather, the education program is designed to enhance each member of the care team's ability to provide optimal care for our radiation oncology patients. Ultimately, positive effects should be measurable at the staff, patient, and cancer program levels.

Outcomes-Based Curriculum Objectives for an Interdisciplinary Staff Education Program in Radiation Oncology

At the completion of this course, each participant will be able to:

- Understand basic principles of departmental linear accelerators and external beam radiation therapy.
- Discuss radiation therapy technology with a lay person.
- Discuss the purposes and technical procedures of simulation.
- Assess and prepare patients for simulation procedures.
- Describe the indications for high-dose rate (HDR) brachytherapy.
- Assess and prepare patients for HDR procedures.
- Discuss brachytherapy options for prostate cancer patients.
- Assess and prepare patients for prostate brachytherapy procedures.
- Describe purpose and patient preparation for BAT® (B-mode Acquisition and Targeting) ultrasound.
- Differentiate between intensity modulated radiation therapy (IMRT), three dimensional conformal, and two dimensional treatment approaches.
- Distinguish the difference between palliative and radical dose schemas.

- Describe patient flow through the department (e.g., consult, simulation, treatment planning, treatment delivery, follow-up) and hospital (e.g., chemotherapy, dental consultations)
- Discuss roles of each professional in the care of the radiation oncology patient.
- Discuss and demonstrate management of acute and chronic radiation therapy side effects in the following areas: brain, skin, head/neck, chest, abdomen, pelvis, genitourinary, reproductive, nerves/spinal cord, bone/bone marrow, lymphatics, sexuality, nutritional, and psychosocial.
- Specify self-care instructions to be used by patients for prevention and treatment of side effects throughout and following a course of radiation therapy.
- Apply patient assessment methods to adequately diagnose signs and symptoms of expected and rare complications.
- Assess patient's quality of life (QOL) and performance levels.
- Practice and discuss the principles of radiation protection (e.g., ALARA, dosimeter badge use)
- Explain procedures and safety issues to patients and their caregivers regarding departmentally used radionuclide therapies.
- Discuss the radiation therapy treatment planning and quality assurance processes with patients.
- Discuss the patient's expectations while in the simulator and treatment rooms.

Sample of Curriculum Goals for an Interdisciplinary Staff Education Program in Radiation Oncology

Participants Shall:

- Develop the skills and knowledge base to educate all patients, and their caregivers, about radiation therapy processes, potential side effects, and self care, from the time of initial consultation through a period of follow-up post-treatment.
- Acquire basic radiation protection knowledge.
- Develop competence, within their scope of practice, in the prevention of serious radiation therapy related complications.
- Develop competence, within their scope of practice, in the care of radiation therapy related complications.
- Acquire knowledge of departmental equipment and processes.
- Understand cancer therapy modalities and their potential synergistic effects (e.g., concurrent chemotherapy and radiation therapy).
- Understand the effects of cancer and cancer therapies on the human body, mind, and spirit.
- Effectively educate all patients, and their caregivers.
- Become aware of basic economics of radiation therapy care.
- Develop teambuilding skills and approaches to problem-solving.
- Develop an awareness of changing radiation therapy technologies and processes.
- Become competent in accessing current radiation therapy professional and patient-care information.
- Participate in ongoing assessments of the patient education and staff education programs.

Through ongoing assessment and program modifications, we hope that our interdisciplinary education program will expand to include more teaching and learning opportunities for each member of the radiation oncology care team.

In designing this interdisciplinary program, our goal has been to allow each professional team member to gain insight and knowledge from other interdisciplinary team members. Once this program is established for nursing, psychosocial, and dietary staff, it may be possible to develop

- Explain the common disease-specific uses of chemotherapy, timing of use, and patient assessments when used with radiation therapy.
- Discuss the psychosocial considerations of caring for cancer patients.
- State the hospital, local, written, and electronic resources available for oncology patients.
- Discuss the religious/spiritual considerations of caring for cancer patients.
- Discuss costs and resource consumption associated with departmental radiation therapy procedures.
- Apply current billing and charge practices.
- Apply patient education techniques based on individual literacy skills and learning abilities.
- Practice teambuilding skills within the department and hospital.
- Use an outcomes-based, interdisciplinary approach to problem solving and patient care.
- Demonstrate use of key aspects of EMR.
- Discuss current and upcoming technologies in radiation oncology (e.g., IGRT, Cyberknife®, Tomotherapy®).
- Demonstrate use of the Internet to find accurate information and provide patients with appropriate resources.
- Demonstrate appropriate use of patient education materials and methods.
- Assess patient education materials and staff education programs.

additional curricula specifically for radiation therapists, dosimetrists, physicists, and even support staff. Our belief is that providing an interdisciplinary approach to education will open the doors to exploring new methods of patient care and patient education; strengthen the interdependence of staff as professionals in the multidisciplinary environment; and enhance opportunities for personal, professional, and departmental growth. ☛

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