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Early Consultations with Specialists Increase Patients’ Voice Restoration Options After Total Laryngectomy

by Jude Richard and Dawn Chalaire

“Voice—the way we sound—identifies us as who we are. Following total laryngectomy, patients don’t want to be different, to look different, or to be singled out because of the sound of their voices.”

– Jan Lewin, Ph.D., speech pathologist

In the treatment of laryngeal cancer, physicians do all they can to preserve laryngeal function without sacrificing cure. If, however, the larynx must be removed, patients still have options for recovering their voices—options that are maximized when care is appropriately planned and coordinated before treatment begins.

“Our first goal is to cure the cancer, but a secondary goal is to restore function whenever possible,” said Helmut Goepfert, M.D., Professor and Chairman of the Department of Head and Neck Surgery at The University of Texas M. D. Anderson Cancer Center. “So we do the utmost in our evaluation before treatment to answer the question: ‘What can we do for this patient so that surgery can be avoided? Or, if surgery is necessary, can we preserve the voice?’”

By far the most common alternative to surgery in the treatment of laryngeal cancer is radiation therapy, which has long been used to control cancer while preserving function.

(Continued on next page)
Another option is chemotherapy, a newcomer in the treatment of laryngeal cancer that is being combined with either surgery or radiation therapy in clinical trials at M. D. Anderson to determine if such therapy will improve patient outcomes. Various combinations are being investigated, even though combining treatments can increase the risk of acute and long-term side effects.

"Certainly, there is some benefit in trying to identify protocols in which you combine the better of any number of treatments to get the job done, but there are patients with early cancer who require only one treatment: radiotherapy or surgery," Dr. Goepfert said.

When surgery is required, the treatment team's goal remains preservation of the larynx and its function. In recent years, surgical procedures that remove the cancer but preserve all or part of the larynx (partial laryngectomy) have become widely used.

"All of the surgeries we perform are conservative," Dr. Goepfert said, "because we always try to preserve function."

Some early-stage vocal cord cancers can even be removed in an outpatient surgical procedure using a carbon dioxide laser. According to Dr. Goepfert, patients who receive this treatment usually recover quickly and have few related side effects. "The problem," he said, "comes about when there is more advanced disease and the patients have significant comorbidities, which may affect the patient's ability to tolerate the temporary aspiration of food that occurs after many endolaryngeal laser surgical resections."

Patients whose treatments have failed or whose cancer is so advanced that partial laryngectomy, radiation therapy, and chemotherapy are no longer options are best treated by completely removing the larynx, Dr. Goepfert said. During this procedure, the pharynx is permanently separated from the trachea (thus eliminating the need for the valving function of the larynx when swallowing), the trachea is brought out to the skin, and a permanent tracheostoma is created to allow the patient to breathe.

"In a certain number of patients with advanced laryngeal cancer, you cannot preserve the larynx," Dr. Goepfert said. "At our institution, the rate is probably 20%. But we would like all of those patients to recover their voices."

At M. D. Anderson, the process of helping patients recover their voices begins well before they receive treatment. Each patient's diagnosis is reviewed, and the risks and benefits of treatment options are discussed in a weekly planning conference that includes surgeons, radiation oncologists, medical oncologists, dental oncologists, speech pathologists, nutritionists, and research nurses.

"The head and neck team first tries to determine how we can best treat the tumor and then determines the best methods or alternatives we have to preserve and/or rehabilitate function that has been affected or lost," said Jan Lewin, Ph.D., Assistant Professor and Director of the Section of Speech Pathology and Audiology in the Department of Head and Neck Surgery.

In some cases, radiation therapy preserves the larynx but significantly affects the patient's voice and the ability to swallow immediately after treatment. In other cases, the effects of radiation therapy do not become evident until years later. To prevent or at least minimize these occurrences, Dr. Lewin and the members of her team evaluate and design appropriate exercise protocols for patients prior to the initiation of radiation therapy. Patients follow the exercise regimens from the onset of treatment, throughout the treatment course, and after radiation therapy is completed to prevent loss of function due to the effects of radiation. Many patients will continue to perform these exercises for the rest of their lives to maintain their voices and their ability to swallow.

Patients who undergo partial laryngectomies will also experience some degree of change in both voice and swallowing.

"Most people have little understanding of the role of the larynx and its relationship to normal swallowing and voice production, nor do they realize the impact that changes in the laryngeal anatomy and physiology will have on both abilities," Dr. Lewin said.

"Early consultation with a speech pathologist is important in that it helps to prepare the patient and his or her family for the effects of treatment," Dr. Lewin continued. "At the same time, pretreatment consultation reassures the patient and the family that help will be available after treatment and provides patients with a clearer understanding of their treatment and its possible outcomes. These consultations prevent unrealistic expectations and prepare patients to be actively involved in and responsible for their own rehabilitation."

The necessity of and benefit from preoperative speech pathology consultation are most clearly demonstrated in the patient who is about to undergo a total laryngectomy.

"It is absolutely critical that we see these patients ahead of time,"
Dr. Lewin said, "I have had many patients come to see me who are vehemently opposed to surgery. They are frightened and do not understand what to expect. They reject surgery because the only other person they have known who had similar surgery could not swallow or speak intelligibly.

"But after we explain the rehabilitative process, demonstrate the various alternatives for speech production, answer questions regarding swallowing, and reassure them about their quality of life after surgery, patients often go back to their doctors and say, 'You need to take out my larynx and let me get on with my life.'"

More than 95% of all patients who have a total laryngectomy will be able to speak using one of three methods of laryngeal voice restoration: the artificial larynx (electrolarynx), esophageal speech, or tracheoesophageal (TE) voice restoration, Dr. Lewin said. It is the speech pathologist's responsibility to help patients choose the method that will afford them the best possible quality of life.

"The prevailing method of voice restoration still remains the artificial larynx," Dr. Lewin said. "This is in large part due to the limited experience of speech pathologists with laryngectomy outside of large cancer centers. However, for some patients, the mechanical sound of the electrolarynx is not acceptable. They prefer a more natural or 'normal' sounding voice, so they come to us for laryngeal voice restoration."

A second option for restoring voice following total laryngectomy is esophageal speech. This technique, developed more than 100 years ago, involves trapping air in the oral cavity, diverting it into the esophagus for sound production, and shaping it into speech by the movements of the articulators. Although esophageal speech production is a viable alternative for laryngeal communication, it is extremely difficult to learn and requires frequent therapy sessions throughout a lengthy rehabilitative period (up to several years). It is also very different in quality and intelligibility from laryngeal speech production. For these reasons, many patients do not choose it, preferring a method more similar to laryngeal speech.

At M. D. Anderson, patients who have had a total laryngectomy have a third option for laryngeal communication: TE speech production. TE speech is the closest alternative patients have to speaking with a larynx. The method depends on the surgical creation of a small opening, or puncture, between the walls of the trachea and the esophagus. The opening is maintained by a prosthesis that acts as a one-way valve to allow air from the lungs to pass into the esophagus for sound production when the stoma is covered but prevents food or liquid from entering the trachea during swallowing.

"If the patient is a good candidate for TE voice restoration, I ask the surgeon to perform a tracheoesophageal puncture and prepare a place that will accommodate the TE voice prosthesis," Dr. Lewin said.

Most of the time, according to Dr. Lewin, the surgeons at M. D. Anderson perform the TE puncture at the time of the total laryngectomy, thus eliminating the need for a second surgery and enabling patients to speak immediately. However, the TE puncture can also be performed after the patient has recovered from the laryngectomy. Following surgery, a small rubber catheter is placed in the tracheoesophageal puncture for five to seven days, after which time the patient returns to be fitted with an appropriate TE voice prosthesis. Complications are rare, and patients usually leave the office speaking.

"TE speech is not just popping in any prosthesis," Dr. Lewin said. "Success depends on careful evaluation of many factors and selection of the best prosthesis for the particular patient. People respond differently to different prostheses, and the same one is not the best for every patient. The success of the patient ultimately depends on the familiarity of the speech pathologist with the method. At M. D. Anderson, all of the members of the medical team work together to ensure the patient's success. I am delighted to say that our patients rarely fail to speak. As a matter of fact, once their voice is restored, they rarely stop speaking."

Once the proper TE prosthesis is fitted, patients can speak by covering their stomas using one of two methods. Many TE speakers use a finger or thumb to divert air through the voice prosthesis; others wear an adjustable tracheostomal breathing valve to automatically shunt air through the prosthesis for hands-free speech production. Dr. Lewin works closely with maxillofacial surgeons, plastic surgeons, and surgeons in the Department of Head and Neck Surgery to optimize the attachment of the valve.

"Following successful TE voice restoration, it is often difficult to tell that a patient has had a laryngectomy," Dr. Lewin said. "Most patients will speak in a voice that is somewhat more hoarse and lower pitched than before the laryngectomy, but the voice is quite acceptable and the speech is very intelligible."

According to Dr. Lewin, the responses from people who are unaware that the patient has had a laryngectomy and is a TE speaker can be ironic.

"People will usually say to the TE speaker, 'Gee, you've got a bad cold. It sounds like you have laryngitis.' That's an incredible compliment for a person without a larynx!" she said.

For more information, contact Dr. Goefferti at (713) 792-6925 or Dr. Lewin at (713) 745-2309.
Experience Leads to More Effective Treatment for Limited-Stage Small Cell Lung Cancer

by Kerry L. Wright

Surgery. Radiation therapy. Chemotherapy. All are common components of therapy for a variety of cancers, but the trick is finding just the right combination to best treat a particular disease — especially one like small cell lung cancer (SCLC), which has the most aggressive clinical course of any pulmonary tumor and an overall five-year survival rate of less than 10%.

Researchers have spent decades establishing the current standard treatment for SCLC — etoposide and cisplatin for four courses, early integration of twice-daily concurrent chest radiation, and prophylactic cranial irradiation (PCI) to prevent brain metastases in complete responders — and while patients with extensive-stage disease still face daunting prognoses, the outlook for those with limited-stage SCLC is brighter.

“In limited disease, it is clear that we can cure somewhere between 15% and 25% of patients if we treat them correctly, but it requires early integration of thoracic radiotherapy, it may require dose-intensive radiotherapy, and relapse within the brain is a big problem,” said Bonnie S. Glisson, M.D., a professor in the Department of Thoracic Head and Neck Medical Oncology at the University of Texas M. D. Anderson Cancer Center. “So for patients who really are candidates for curative treatment, you have got to go with what’s been proven to work,” she said.

Today, patients with limited-stage disease, which accounts for one third of all cases of SCLC, are defined as those who are candidates for curative radiation therapy and chemotherapy, said Dr. Glisson. This modern definition now excludes patients with ipsilateral pleural effusion or with contralateral supraventricular or mediastinal lymph node involvement because of the risk to normal lung tissue during treatment.

The other two thirds of patients with SCLC — those with malignant pleural effusion, pericardial effusion, lymph node disease above the supraventricular area, or visceral metastases — have extensive-stage (stage IV and some cases of stage IIIb) disease, for which standard treatment is similar to that for limited-stage SCLC. But even under the most ideal conditions, extensive-stage SCLC has a five-year survival rate no higher than 5%.

As with many other solid tumors, surgery alone was the first approach to treatment of limited-stage SCLC, and it wasn’t until the late 1970s that a combination of chemotherapy and radiation therapy was shown to make the biggest impact on the disease. Chemotherapy with cyclophosphamide, doxorubicin, and vincristine produced promising survival rates but was associated with severe treatment complications. This regimen was soon replaced by an effective and less toxic combination of etoposide and cisplatin that facilitated concurrent chemoradiation.

In 1993, a pivotal randomized study by the National Cancer Institute of Canada showed that beginning radiation therapy in the second cycle of chemotherapy resulted in higher survival rates than starting radiation therapy during the sixth cycle of chemotherapy. The benefits of early integration of thoracic radiation were soon compounded by increasing the frequency of radiation treatments.

“Small cell lung cancer divides very quickly, so we thought if we hit those dividing cells twice a day instead of once a day, maybe we could kill those cancer cells much faster,” said Ritsuko Komaki, M.D., a professor in the Department of Radiation Oncology.

A flurry of clinical trials throughout the 1990s proved this theory. In particular, a large multicenter trial led by the Radiation Therapy Oncology Group and Eastern Cooperative Group compared giving 1.5 Gy twice a day for three weeks to giving 1.8 Gy

Ritsuko Komaki, M.D., a professor in the Department of Radiation Oncology, examines a patient’s computerized radiation treatment plan. Dr. Komaki and colleagues are investigating new radiotherapy and chemotherapy regimens to increase survival rates for patients with small cell lung cancer.
Reunions Give Lung Cancer Survivors an Opportunity to Celebrate

by Kerry L. Wright

Am I going to die? How long do I have? These may often be the first thoughts of people who receive a diagnosis of lung cancer, but for the lung cancer survivors attending a five-year survivors' reunion, the celebration was all about life as they enjoyed food and drinks, renewed acquaintances, met other survivors and their families, and looked toward the future.

Survivors from 10 different clinical trials that began at The University of Texas M. D. Anderson Cancer Center in the mid-1990s were invited to the third annual event, held Dec. 9, 1999, at M. D. Anderson. The trials included chemotherapy and radiation therapy for patients with limited-stage small cell lung cancer (SCLC) or locally advanced, nonresectable non-small cell lung cancer (NSCLC). Patients with locally advanced but potentially resectable NSCLC underwent surgery with or without chemotherapy, while patients with extensive-stage SCLC were treated with chemotherapy alone. Jin S. Lee, M.D., and Bonnie S. Glisson, M.D., professors in the Department of Thoracic Head and Neck Medical Oncology, Ritsuko Komaki, M.D., a professor in the Department of Radiation Oncology, and Jack A. Roth, M.D., Professor and Chairman of the Department of Thoracic and Cardiovascular Surgery, each led at least one of the clinical trials. Together, they enrolled 290 patients into trials that had a collective five-year survival rate of 18%.

"We tried to spread the word that cancer is not always an incurable or terminal disease," said Dr. Lee, who planned and organized the most recent reunion.

Five-year survival rates for patients with locally advanced but potentially resectable NSCLC are now higher than 30%, as it has recently been shown that chemotherapy followed by surgery is more effective than surgery alone in many of these patients. Since the 1980s, five-year survival rates for locally advanced, nonresectable NSCLC have also increased from about 5% to more than 20% in some trials. And although some perceive that only a small number of patients with SCLC can be cured, survival rates for limited-stage disease are now comparable to those of nonresectable NSCLC when both diseases are treated with chemotherapy and radiation therapy. All of this means that of the 164,000 people who are predicted to be diagnosed with lung cancer this year, approximately 8000 more of them will survive today than would have just a decade ago.

The next reunion for lung cancer survivors is planned for 2001, and this time patients treated off-protocol will also be encouraged to attend. The expanded reunion is intended to boost morale for both patients and physicians, Dr. Lee said, and show them that a diagnosis of lung cancer is not a reason to give up—the application of new treatments can make an impact on survival.

Among the other factors that contribute to long-term survival, according to Dr. Lee and his colleagues, are institutional experience, supportive care, patient assurance and acceptance, and physician attitude. Dr. Lee believes that the attitude of the very first physician or surgeon a patient sees can have a strong influence on the patient's expectations.

"It makes a big impression on the patient's mind," said Dr. Lee. "When patients have some hope, they can fight." ●

For more information, contact Dr. Lee at (713) 792-6363.
Small Cell Lung Cancer Clinical Trials

Clinical trials in progress at The University of Texas M. D. Anderson Cancer Center include the following for patients with small cell lung cancer:

- A phase I dose escalation study of thoracic radiation with concurrent chemotherapy for patients with limited-stage small cell lung cancer (RT0957-12). Physician: Ritsuko Komaki, M.D.
  This study is designed for patients at least 18 years of age who have histologically or cytologically confirmed extensive-stage small cell lung cancer with possible asymptomatic brain metastases. Chemotherapy will be given in the outpatient setting unless extreme side effects occur, and G-CSF shots may be administered at home after proper training. Patients who have had a prior malignancy other than basal cell skin cancer or have had prior chemotherapy, immunotherapy, or radiation therapy are excluded.

- A phase II randomized trial of accelerated chemotherapy with granulocyte colony-stimulating factor (G-CSF) versus standard chemotherapy with etoposide and cisplatin in extensive-stage small cell lung cancer (DM06-248). Physician: Jin Soo Lee, M.D.
  This trial is designed for patients at least 18 years of age who have histologically confirmed extensive-stage small cell lung cancer with at least one bidimensionally measurable indicator lesion (not in the central nervous system) defined by radiological study or physical examination. Patients must be at least 18 years old, have a life expectancy of at least three months, and be able to return to M. D. Anderson for follow-up. Patients with symptomatic central nervous system metastases or pre-existing cardiac disease may not participate.

  Participants must have extensive-stage small cell lung cancer with at least one bidimensionally measurable indicator lesion (not in the central nervous system) defined by radiological study or physical examination. Patients must be at least 18 years old, have a life expectancy of at least three months, and be able to return to M. D. Anderson for three to five days every 21 days for follow-up. Patients with symptomatic central nervous system metastases or pre-existing cardiac disease may not participate.

Treatment for SCLC
(Continued from page 5)

standard therapy for SCLC, the local recurrence rate is still 35%. Hoping to decrease this rate, Dr. Komaki is examining a protocol that gives higher than normal doses of radiation to the chest. According to Dr. Komaki, increasing the duration of radiation exposure or the number of fractions of radiation given per day can potentially damage the esophagus; even the current standard treatment produces severe esophagitis, causing difficulty swallowing due to pain in about one quarter of patients treated. The new protocol will increase the total radiation dose to reduce local recurrence and decrease the fractionation schedule, keeping the duration of treatment constant to minimize esophageal complications. Patients will be given 1.8 Gy once a day at the start of treatment and 1.8 Gy (instead of the standard 1.5 Gy) twice a day toward the end of treatment to kill any remaining resistant cells, which usually grow quickly if not eliminated.

"While the tumor is big at the beginning, we are giving once-a-day radiation therapy for about three weeks," said Dr. Komaki. "But whatever is left over after large-field treatment is very hard to kill, so we give radiation twice a day with concurrent chemotherapy," she said. "Also, we do very careful treatment planning these days," Dr. Komaki added. Three-dimensional conformal treatments are used to deliver radiation from all directions, not just front and back. The length of the esophagus and volumes of the heart and lungs within the irradiated area are also taken into account to avoid complications such as radiation pneumonitis, fibrosis, and cardiac toxicity.

Additional strategies to decrease local recurrence rates include the development and testing of taxanes and biological agents for replacement of and integration into existing therapies.

"I think that the research in small cell lung cancer is going to take a turn as it has in all solid tumors, where we're going to be looking at biological-based therapy and watching to integrate that into conventional chemotherapy and radiation for patients with limited-stage disease," said Dr. Glisson. Agents in trials that are under way or being planned by single institutions or cooperative groups include paclitaxel and the topoisomerase I inhibitors topotecan and irinotecan as alternatives or additions to etoposide and cisplatin, antibodies against a ganglioside expressed on the surface of SCLC cells, inhibitors of tyrosine kinases, and antisense approaches to inhibit Bcl-2, an inhibitor of apoptosis that is overexpressed in SCLC. Trials with many of these agents are also being planned for patients with extensive-stage disease.

For more information, contact Dr. Glisson at (713) 792-6363, Dr. Komaki at (713) 792-3400, or Dr. Meyers at (713) 792-8296.
Today, many people are interested in unconventional or alternative treatments that claim to reverse, slow down, eliminate, or cure cancers but have not been medically proven to do so. If you or someone you know is considering any of these treatments, you should be aware of the possible drawbacks and outright risks.

Terms such as “unconventional treatment” or “alternative therapy” are often used to describe treatments ranging from the possibly helpful to the ludicrous to the downright dangerous. (Unconventional treatments should not be confused with research or investigational treatments that are still being evaluated in clinical trials by legitimate researchers. If, after careful scientific study, such treatments prove to be beneficial to patients, they then become conventional treatments.)

Unconventional therapies that claim to cure cancer may involve exotic herbs, plant extracts, special diets, or dietary supplements; the use of various devices that supposedly diagnose or treat cancer; or the manipulation of “energy fields” or the correction of “imbalance” in the body. Cancer-fighting claims have also been made for such practices as homeopathy, metabolic therapy, and psychic surgery. But all these substances and methods have one thing in common: Despite the claims made by the proponents of these treatments, they have not been shown, by accepted scientific methods, to be effective against cancer.

Some unconventional treatments may one day be proven to be of benefit to persons with cancer or at risk for cancer. For example, there is scientific evidence that consumption of garlic (but not garlic supplements) is linked to a decreased risk of stomach and intestinal cancer. Studies are under way to evaluate the most promising alternative therapies. But for many alternative treatments, there is little or no supporting evidence of benefits.

Other treatments and techniques have already been tested and found not to successfully treat or diagnose cancer. Many devices (such as Rife generators and “radionics” devices) fall into this category. After many years and much testing, the drug known as krebiozen was found to be not only useless but essentially nonexistent. In the procedure called therapeutic touch, the practitioner waves his or her hands over the patient with cancer and claims to thereby affect the disease by manipulating the patient’s “human energy field.” No study has ever measured or even detected such a field.

A few unconventional treatments actually harm the patient. Laetrile, a compound once purported to cure cancer, was found not only to be ineffective against cancer but also to cause cyanide poisoning in some patients. Macrobiotic diets do not stop or reverse cancer, and some of these diets can cause dangerous weight loss in persons with cancer. There can be economic harm to patients as well: Billions of dollars are spent yearly on treatments that offer no benefit. And many ineffective cancer treatments result in immeasurable harm by causing seriously ill persons to delay seeking legitimate therapy. This delay can be particularly tragic when treatment for cancers with a high rate of cure by standard methods (such as leukemia and Hodgkin’s disease in young children) is postponed until the disease becomes far advanced.

Damage can also occur when patients do not inform their physicians about alternative treatments they are using or considering. Many herbs and supplements can interact with both over-the-counter and prescription medications. For example, the Food and Drug Administration recently warned that St. John’s wort, a commonly used herb, can interfere with medications for cancer, heart disease, high blood pressure, AIDS, and other diseases. Some herbs and supplements are also toxic.

If, despite the unknowns and possible risks, you are still considering an unconventional treatment, first seek out reliable sources of information. Talk to your doctor, especially if you are already using such methods. What your doctor doesn’t know about any unconventional or alternative treatments you are using could hurt you.

For more information about unconventional therapies, see the following Web sites:

★ American Cancer Society: http://www.cancer.org/

★ National Center for Complementary and Alternative Medicine, National Institutes of Health: http://nccam.nih.gov/

★ Quackwatch: http://www.quackwatch.com

For more information, contact your physician or contact the M. D. Anderson Information Line:

(IT) (800) 392-1611 within the United States, or

(713) 792-6161 in Houston and outside the United States.

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Treating Mind, Body, and Spirit

The Rev. Alfred A. Merwald, D. Min.
Director of Chaplaincy and Pastoral Education

Cancer invades the person as well as the body. It is a profound personal experience that affects every aspect of life. Because they offer support and empathy, hospital chaplains are in the unique position of being able to listen to cancer patients as they share their personal stories. These coping stories inevitably distill into mental, physical, and spiritual themes.

Mentally, persons with cancer will frequently display attitudes of renunciation and embitterment as they begin treatment. With help, most people with cancer can gradually move from renunciation to empowerment and from embitterment to acceptance and hope.

Patterns of personal identity are also challenged. Simply stated, is one a cancer patient or a person with cancer? As a person successfully copes with cancer, there is a movement toward integrating the illness into one’s larger identity.

Obviously, the body is assaulted by cancer. Through disease and treatment, most patients will face changes in appearance and physical limitations. Most of these changes are profound, and only rarely can a person successfully cope without a supportive and empathic personal or professional relationship.

Spiritually, those who cope successfully with cancer often exhibit an ontological (being) shift from a person concerned mostly about achievement, prosperity, and appearance (cultural norms) to a person who celebrates who he or she is and accepts things as they are. This paradigm shift may be possible only when the cultural norms are profoundly threatened. Perhaps this is why suffering is commonly associated with spiritual renewal.

Reorientation of the meaning of life is often characterized by a sense of joy and a renewed interest in personal relationships. Family members may need assistance in understanding the patient with cancer as he or she begins to share this reorientation with them.

Finally, for many people with cancer, coping will involve a revitalization of spirituality. The source of meaning and purpose in life will often shift to a spiritual quest, journey, or core value. This shift is often not expressed without a sympathetic ear and encouragement. Nonetheless, spiritual revitalization is the centerpiece of a successful journey through cancer diagnosis and treatment.

Chaplains at M. D. Anderson engage patients and family members and listen to stories of living and coping with cancer on a regular basis. As oncologists treat and care for their patients, chaplains help patients cope and make interventions that encourage a successful mental, physical, and spiritual response to cancer.

Persons have cancer, and only a personal response to the disease and its treatments will allow a complete healing.