Cancer Annual Report-1990

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1990 cancer annual report
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The "winds of change" blow across medicine as a whole effecting patients and their families, their physicians, and the institutions within which they receive medical care. More information about a medical problem and potential alternative treatments is often requested by the patient and given by their physicians. Participatory decision making is encouraged. Regrettably, insurance companies and governmental programs at times seem to weave a web of detours and delays in personal medical journeys. And the final challenge for all of us together is to evaluate the cost and effectiveness of medical procedures, and if need be to make individual and societal choices.

This environment of medical care in transition presents special problems for the patient and their family confronted with cancer. Recognizing the need and desire for more information to be made available to concerned individuals in this increasingly complex and humanly often intimidating health care system, the Cancer Committee at St. Luke's Medical Center is trying an experiment with this year's Annual Report - yes, a clinical trial of sorts. We want this year not just to inform the physicians who care for cancer patients on the activities of the Cancer Program at St. Luke's Medical Center, but to create a unique institutionally personal resource for patients and their families focusing on the most common cancer in men - prostate cancer.

Please participate with us; let us know if we are pursuing a useful course with this change from the past by responding on the enclosed evaluation.

Marcia J. S. Richards, M.D.
Chair/Cancer Committee
St. Luke's Medical Center
Introduction

The era of the 90's has ushered in new awareness of men's health problems. Just as the 80's centered on women's health concerns, especially breast cancer early in the decade and ovarian cancer in the latter part, the 90's has centered on the concern of the male population and the second leading cause of cancer deaths - prostate cancer.

Each year 106,000 cases occur with a death toll of 30,000 men. Vast research has been going on in the epidemiology as well as the early detection of this disease. It has been stated in the urologic literature for years that if a man lives long enough, he will develop prostate cancer. But who is most at risk? What diagnostic tools are available for early detection? When found, which cancer will go on to impair a man's life and which will never cause him a problem? These are some of the questions still needing answers.

Preventing prostate cancer is not possible but the key to treatment and survival is early detection. The standard rectal examination is still important but along with this a new blood test, prostatic specific antigen, has been developed as a marker to follow progression of disease and possibly detect early cancers before one can feel it. Transrectal ultrasound helps us look at the prostate and provides easier biopsy techniques. Other x-ray and diagnostic tools are also being utilized to evaluate the extent of disease. The surgical treatment of localized disease has changed drastically with the thorough understanding of the nerve and vascular supply to the male genital region and prostate. Not only can men maintain continence and potency but their quality of life is much improved.

Radiation therapy for localized disease has changed with the ability to pinpoint treatment to maximize beam penetration where it is most needed with less tissue damage. Larger glands, which used to be thought too large for cure, can be treated with newer modalities - iridium implants, hormonal manipulation and chemotherapy.

Barry H. Usow, M.D.
Urology
Incidence
Cancer of the prostate has become the number one cancer in American men, and the second leading cause of cancer deaths. It is estimated that in 1990 there will be 106,000 newly diagnosed cases and 30,000 cancer deaths. Approximately 1 man in 12 will develop prostate cancer during his lifetime, and in Afro-American males this incidence is 1 in 10. Less than one percent of prostate cancer cases are detected before age 50, but it becomes increasingly common with each decade of life. Over 80 percent of all cases are diagnosed in men over 65, with a median age of 72 years at diagnosis.

The incidence of prostate cancer has increased 47% from 1973 to 1987. This increased incidence of prostate cancer is thought secondary to several factors: better methods of detection, including prostate specific antigen levels, and transrectal ultrasound; increased efforts at early diagnosis; and the aging of the population, with more people at risk. Cumulative data from several autopsy series have demonstrated that the pathologic prevalence of prostate cancer is greater than the clinical prevalence. The frequency of prostate cancer in the fifth, sixth, seventh, and eighth decades of life were 8%, 22%, 37%, and 53%. Several factors explain this high incidence of prostate cancer found at autopsy. Because prostate cancer cells are felt to have an extremely long doubling time of about 6 months, it has a long natural history from inception to death of about 20-30 years.

Most prostate cancer remains clinically undetectable at the time of death (death occurring from other causes). Tumors which have undergone more divisions, thus reaching larger volumes are more likely to be clinically detected and result in disease progression.

Epidemiology
Solid evidence for a particular etiology of prostate cancer is not available, but many factors are felt to play a role.

Hormonal effects
Changes in the sex hormone milieu occur with advancing age and thus have been implicated in the etiology of prostate cancer. Other factors suggesting a hormonal influence include: the presence of steroid hormone receptors in the prostate, the androgen dependence for normal prostatic growth, the failure of prostate cancer to develop...
in men castrated before puberty, the favorable clinical response to androgen ablation in men with advanced prostate cancer, and the ability to induce prostate cancer in laboratory rats by administering exogenous testosterone and estrogen.

**Genetic influences**
Some studies suggest a genetic predisposition to prostate cancer and an increased risk for blood relatives of men with the disease.

**Race**
Afro-American men have the highest reported incidence of prostate cancer worldwide; Oriental men have the lowest. The observation that immigrants from low-risk countries, such as those coming from Japan to the U.S., have incidence figures between those of the country of origin and the U.S. implies that in addition to race, environmental factors may play an important role.

**Environmental factors**
An increased risk of prostate cancer has been documented in men living in industrialized countries, and in men residing in urban areas compared against those residing in rural areas.

**Diet**
The association between diet and prostate cancer remains controversial. Some studies suggest a diet rich in fat increases the risk of the disease.

**Occupational exposure**
Occupational exposure to carcinogens, especially cadmium which is used in welding, electroplating, and in alkaline batteries may increase the risk of prostate cancer.

**Infectious agents**
The possible role of sexually transmitted viral diseases in the development of prostate cancer is still being explored.

**Benign prostatic hypertrophy (BPH)**
The incidence of both prostate cancer and BPH increases with age and are often found simultaneously. However, the relationship between prostatic carcinoma and hyperplasia remains controversial and undefined.

**Clinical presentation**
It must be emphasized that in the early stages of prostate cancer, there may be no symptoms. At the time of presentation 56.8% of patients have localized disease, 19.5% regional involvement, and 23.7% have distant metastases.
The majority of patients have either an asymptomatic prostatic nodule discovered on digital rectal examination or bladder outlet obstructive symptoms. The symptoms of obstructive uropathy due to carcinoma are identical to those from BPH, and may include diminution in the force and caliber of the urinary stream, hesitancy in initiating voiding, terminal dribbling, sensation of incomplete emptying, urinary frequency, nocturia, and retention. Patients may also have moderate irritative bladder symptoms in the absence of infection, but isolated hematuria or hematospermia is unusual. Patients with metastatic prostate cancer most often complain of bone pain. Lower extremity edema, renal failure, visceral metastases, anemia, or cachexia may also be the presenting symptom.

Conclusions
The incidence of prostate cancer can be expected to only increase. Although often considered an indolent neoplasm, only 71% of patients with prostate cancer will have 10 year survival comparable to that of the general population. Patients dying of prostate cancer will lose approximately 9 years of life. The best way to decrease the impact of prostate cancer is to work toward early detection of the disease and to further the research of epidemiology so those at risk can be identified.

Elliott Silbar, M.D.
Urology

(There were no patients diagnosed or treated for the ages of 1 to 44)

Nationwide, over 80% of all Prostate Cancers are diagnosed in men over the age of 65. A similar trend was observed at St. Lukes where 79% of our patients were diagnosed over the age of 65 in 1985 and 87% were over 65 years of age in 1990.
Prostate Screening

Because of the major impact prostate cancer has on the male population in the United States, early detection has become a pressing issue. With early diagnosis and effective local control, the course of the disease can be altered and the mortality reduced.

Routine rectal examination has been the most effective method available for screening. The American Cancer Society recommends that all men over the age of 40 have a digital rectal examination as part of a yearly physical examination.

In September 1990, as part of the second annual public education effort of the Prostate Cancer Education Council, St. Luke’s Medical center offered free prostate screenings. The goal of the Prostate Awareness Week was to focus public attention on prostate cancer and to urge men over the age of 40 to get a digital rectal examination that could detect the disease at a curable stage. More than 150,000 men were screened nationwide.

St. Luke’s screened 234 men during the week long screenings. Fifty two individuals were found to have an abnormal digital rectal exam (22%).

A questionnaire which identified risk factors, lifestyle habits, past medical history, family history, and significant signs and symptoms, was completed by all participants prior to the digital rectal exam (DRE). Men screened were given educational materials on prostate cancer and prostate health and a sheet indicating the results of their DRE. Any individual with abnormal findings was counseled to follow-up with a physician, and a letter indicating the results of the exam was sent to his personal physician.

All but one of the men screened at St. Luke’s were over the age of 40. The largest number of men screened were between the ages of 61 and 70 years old. An abnormal DRE was found in individuals ranging from 36 years old to greater than 80 years old. The highest frequency occurred in the 65-69 year old group.
In looking at health care practices, 36% of the participants had a complete physical exam within the past year, but only 26% indicated that they had had a DRE within the last year. Among those who had an abnormal DRE, 38% had a physical within the past year, and 33% had a DRE performed within the past year. Twenty seven percent of those who had a digital rectal exam within the past year had it performed by an urologist.

It is significant to note that 15 of the 52 individuals with an abnormal DRE indicated they had an enlarged prostate in the medical history.

Participants were asked to identify urinary and associated symptoms within the past 6 months. Sixty-nine of the men screened indicated they experienced no symptoms. Eleven individuals with an abnormal DRE were asymptomatic. Among those with an abnormal DRE, the most frequent symptoms reported were: need to go to the bathroom frequently at night, weak urine stream, a strong need to urinate but little urine comes out, and pain or burning on urination.

Follow-up contacts with those individuals with abnormal DRE revealed that 42 individuals had been seen by a physician. Of these, 24 indicated they had been to see an urologist. Three individuals were diagnosed with poorly differentiated adenocarcinoma of the prostate as a result of the prostate screenings. One patient was diagnosed in late October after an incisional biopsy and has since completed radiation therapy. The second individual underwent a TURP and bilateral orchiectomy for prostate cancer staged as T2N1M1. The third patient was diagnosed in November 1990 and underwent a radical prostatectomy with bilateral lymph node dissection.

The response of the Milwaukee community to the prostate screenings was overwhelming. Prostate screening can be a valuable tool in the prevention and early detection of prostate cancer.

Kerry A. Twite, R.N., M.S.N., O.C.N.
Clinical Nurse Specialist, Oncology
Prostatic Specific Antigen

The traditional method of detecting prostate cancer is the digital rectal examination which is the most cost-effective method to screen large populations of men. However, there are several limitations to this examination. Not all cancers occur in an area accessible to the examiner’s finger. Not all tumors are large enough to palpate. In the screened population the cancer detection rate with rectal examination is only 1.3 to 1.7%.

For years investigators have searched for the ideal tumor marker. The ideal marker would be prostate cancer specific, indicative of the tumor’s grade, stage and volume, reflective of prognosis and inexpensive. Recently, a prostatic enzyme has been identified, characterized and found to be produced exclusively by prostatic tissue. This enzyme is called “prostatic specific antigen,” which was first isolated by Dr. Wang and associates in 1979. Prostatic specific antigen is produced by prostatic epithelial cells, not stromal cells, and is responsible for liquefaction of seminal coagulant. PSA is present in normal, hyperplastic (BPH), and neoplastic prostate tissue within the gland as well as metastatic sites. PSA is prostate specific but not prostate cancer specific.

There are several commercially available assays to measure serum prostatic specific antigen. The Tandem-R assay (Hybritech) is a monoclonal antibody immunoradiometric assay with a stated upper normal limit of 4.0 ng/ml. Proscheck (Yang) is a polyclonal radioimmunoassay with an upper normal limit of 2.5 ng/ml. Factors that may elevate serum prostatic specific antigen include digital rectal examinations (0-1.9x), cystoscopy (4x), prostatic needle biopsy (57x), TURP (53x), prostatitis, urinary retention and possible prostatic infarction. The PSA rises with age, but there is no diurnal or circadian variation. The half life of PSA is 2.2-3.2 days. One should wait 2-3 weeks before attempting to measure a reliable serum level after prostatic manipulation.

PSA AND BPH
PSA is organ specific and, as a result, it is produced by normal hyperplastic and cancerous prostatic tissue. Approximately 28% of all men with benign prostatic hyperplasia have an elevated PSA level of greater than 4.0 ng/ml (Hybritech). It has been determined that serum PSA is elevated by 0.3 ng/ml (Hybritech) per gram of benign prostatic tissue. However, this is not a consistent relationship.
PSA and prostatic carcinoma
Prostatic carcinoma elevates the serum PSA 10-12x as much as a similar volume of benign prostatic hyperplasia. Serum PSA increases with histologic grade and rises progressively as tumor stage increases. However, these are not linear relationships and there is considerable overlap between levels of PSA and various cancer stages. Serum PSA is the most effective study available today for monitoring patients known to have prostatic carcinoma. Its serial use serves as an indicator of disease status following any type of treatment (surgery, radiation and/or hormonal therapy). And, it is an indicator of disease progression in those patients who are being managed expectantly.

PSA as an immunohistochemical marker
Since PSA is organ specific it has been used extensively as an immunohistochemical marker for prostate cancer. Numerous studies have shown PSA to be highly specific and sensitive for all types of prostate tissue. The greatest role of PSA as an immunohistochemical marker has been to establish definitively whether a metastatic adenocarcinoma is of prostatic origin.

PSA in early detection and screening of prostate cancer
The ideal serum tumor marker is one that is expressed only by cancer cells and can be detected with reliability at the time the tumor is biologically active. A good screening tool must be safe and inexpensive. The disease being sought should be common to the population and effective treatment should be available at a low stage of disease. The test must be capable of identifying patients with curable disease from men with benign conditions of the prostate (benign prostatic hyperplasia). Studies have shown that 43% of patients with organ confined prostate cancer have a PSA value within the normal range and 25% of patients with benign prostatic hyperplasia have a PSA value above the normal reference range (4.0 ng/ml). Due to the tremendous overlap in PSA values between these 2 groups and irrespective of the cut off chosen, the usefulness of PSA alone as an early detector or screening tool for curable prostate cancer on an individual basis is not apparent. However, if combined with the digital rectal examination and/or transrectal ultrasound, prostatic specific antigen may lead to the detection of more early, curable prostate cancers.

Jeffrey A. Derus, M.D., Urology
Early detection of prostatic cancer is essential to curing the disease. At the present time, if the tumor has spread beyond the confines of the capsule into distant lymph glands and blood vessels, treatment is palliative rather than curative. A screening method for early detection that is more specific and sensitive than the digital rectal exam is needed. At the present time, a screening tool with 100% efficacy does not exist. However, transrectal ultrasonography (TRUS) with or without biopsy is an exciting and encouraging development.

Over the past few years, ultrasonography has developed into one of the most commonly used methods of safe diagnosis. It poses little danger of biological effect to the patient. In the past, it was not possible to get the ultrasound transducer close enough to the prostate. That has recently changed, with the development of a hand-held rectal probe. The transducer is mounted in a thin probe, and inserted into the rectum, allowing better visualization of the prostate. Two scanning planes are used for proper orientation: a transaxial plane which is perpendicular to the rectal anus and a sagittal plane which is oriented parallel to the rectum. The difference in the echogenicity is the key to interpretation. Tissues are analyzed as isoechoic, hyperechoic, and hypoechoic. It is generally felt that most tumors of the prostate are hypoechoic, although any pattern can be seen with the diagnosis. There are exceptions to this rule, e.g. diffuse, non-nodular carcinoma, which will appear as isoechoic. Once the entire prostate is visualized in both scanning planes plus the bladder, seminal vesicles, and even the rectal wall, it is relatively easy to biopsy any lesion under ultrasound visualization. Through the same instrument, a biopsy is performed without the need for anesthesia using a device called a "biopsy gun." The spring-loaded needle (size 22) with a trigger mechanism is able to obtain a core biopsy in a brief moment. This method is more accurate and less painful than other biopsy methods. Bleeding and infection are possible but rare complications.

The indications for TRUS with or without biopsy are:
1) a patient with a prostatic nodule, with or without an elevated prostatic specific antigen (PSA)
2) any patient with an elevated PSA, even though the rectal exam feels normal

3) those with known prostatic carcinoma

4) men needing evaluation of inflammatory prostatic disease

5) occasionally in individuals with fertility problems to evaluate the seminal vesicles

The diagnosis and staging of prostate cancer has markedly improved through the use of transrectal prostatic ultrasonography (TRUS) with or without core biopsy.

John D. Silbar, M.D.
Urology

An ultrasound image of stage B adenocarcinoma of the prostate. The area of tumor involvement is outlined by arrows.
Several diagnostic imaging modalities are currently available to assist in the diagnosis and staging of prostate cancer.

Transrectal ultrasonography (TRUS) of the prostate has a number of applications. TRUS may be used to evaluate patients who have an abnormal screening digital rectal examination and/or prostate-specific antigen level. If a suspicious area is identified by TRUS, ultrasound-guided needle biopsy may be utilized to confirm the diagnosis. TRUS and biopsy may also be useful when prostate cancer is incidentally discovered after transurethral resection of the prostate performed for benign prostatic hyperplasia. TRUS may assist in the local staging of confirmed prostate cancer. Accurate staging is important in the selection of the appropriate mode of therapy. Patients with disease confined to the prostate (stages A and B) and possibly minimally invasive stage C disease are generally treated surgically by radical prostatectomy. More advanced localized spread and distant metastases (stage D) are generally treated with radiation, hormones and/or chemotherapy. Since TRUS may detect extracapsular extension of tumor, it is useful in differentiating stage B from stage C disease. Limitations of TRUS for staging include its low sensitivity for detecting seminal vesicle invasion and inability to detect more distant metastases.

Computed Tomography scanning has been used for staging purposes. However, CT is limited by its inability to define the internal architecture of the prostate and has a relatively low sensitivity in differentiating stage B from early stage C disease. CT is useful for detecting locally advanced disease and lymph node metastases and for radiation treatment planning.

Magnetic resonance imaging (MRI) is a relatively recent modality in prostate imaging, used primarily for staging purposes. MRI can display the internal architecture of the
prostate. In addition, extracapsular extension of the cancer, seminal vesicle involvement, bladder invasion, and lymph node metastases may all be detected by MRI. Image quality, and consequently the accuracy of staging by MRI, have been considerably enhanced by the recent development of endorectal surface coils. MRI has been shown in a number of studies to be the most accurate of the various imaging modalities in the staging of prostate cancer.

Radionuclide bone scanning remains the procedure of choice in demonstrating skeletal metastases from prostate cancer. CT and MR scanning may incidentally demonstrate regional bony metastases but are not useful for screening purposes.

With expected improvements in technology in the future, it is hoped that these imaging procedures will be even more useful in the management of the patient with prostate cancer.

Peter A. Cooley, M.D.
Radiology

A magnetic resonance image of stage B adenocarcinoma of the prostate. The area of tumor involvement is outlined by arrows.
The decade of the 1980s brought to men with cancer of the prostate an excellent chance for cure of their disease. A new surgical procedure, minimizing risks to the patient, has revolutionized the care of men with cancer of the prostate.

After the diagnosis of cancer of the prostate has been determined through tissue analysis, men undergo staging tests to determine if there is evidence of cancer outside the prostate. If these staging tests show the tumor is confined to the prostate, and there are no other significant contraindications, this man is a good candidate for potentially curative prostatic surgery.

The surgical procedure, radical retropubic prostatectomy, is done in two stages under the same anesthesia. The first stage involves the removal of lymph node tissue to help determine the need for additional or alternative cancer care. If these lymph nodes are free of tumor, the urologist proceeds to the second stage of the procedure; the removal of the prostate and seminal vesicles (structures which are not essential for healthy, normal lives), severing the urethra and bladder neck in the process. The urethra is then reconnected to the bladder neck. A urinary catheter is left in the bladder for approximately three weeks. The patient remains in the hospital for about one week and then is sent home.

When the catheter is removed, there is frequently some transient urinary leakage which resolves spontaneously in the vast majority of men. The convalescence is six weeks during which walking and mild exercise are a benefit to the recovery of the patient. After this period, men may return to their normal activities.

Men with cancer of the prostate are concerned about their ability to maintain a normal sexual life following this kind of surgery. Often their function is preserved, but it must be remembered that the primary objective of the urologist is to cure the patient, and it becomes necessary, at times, to remove nerves (which control potency) involved by tumor tissue. There are options for restoring potency after the recovery period.

Many men are cured of this insidious disease each year through radical retropubic prostatectomy. This is documented through careful follow-up with their urologist. Today urologists can offer a potentially curative, low risk procedure to their patients that has revolutionized care for, and give hope to men afflicted with cancer of the prostate.

Samuel J. Otto, M.D.
Urology
Hormonal therapy for prostate cancer is reserved for those patients with spread of the tumor beyond the confines of the prostate gland. There is no significant chance for curing the tumor in these people. Hormonal treatment is aimed at removing or markedly decreasing the male hormone testosterone, which is a potent stimulus for prostate cancer. By removing this stimulus, the pain and fatigue which is often associated with metastatic prostate cancer is thereby relieved. This form of therapy may not increase survival, but it can significantly improve quality of life. There are currently three established forms of hormonal treatment. These include monthly injections of a substance (Zoladex or Lupron) which indirectly inhibit formation of testosterone. Another form is a tablet (Eulexin) which is taken three times per day and prevents testosterone from binding to the tissues where it normally has its affect. The third way of lowering testosterone is by surgically removing the testicles from the scrotum, since these produce the majority of testosterone in the body. A fourth modality is also taken as a tablet (Diethylstilbestrol), but is now infrequently used due mainly to aggravation of heart problems. All three therapies, whether used alone or in combination, are about equally effective and there are advantages/disadvantages to each. Prostate cancer is best treated when it is confined to the prostate gland itself. However, if the tumor has spread and is causing significant symptoms, then hormonal therapy can be extremely effective in improving the quality of life in the affected individual.

William Annesley, M.D.
Urology

According to Cancer Facts & Figures - 1990, 60% of all Prostate Cancers are discovered while still localized. This trend has been noted for 1985 as well and 1990 Prostate Cancer cases at St. Luke's Medical Center.
Care and Treatment of Prostate Cancer

When a prostate cancer is found, radiation therapy can play a vital role in the treatment of this disease. Modern radiation techniques have been available for the treatment of prostate cancer for longer than 30 years. During this time period, irradiation established an outstanding record of safety and effectiveness in the treatment of prostate malignancy.

The majority of prostate cancers are localized at the time of diagnosis. For early stage prostate carcinoma, radiation therapy rivals radical surgery in its ability to control the tumor and prolong survival. Radiation therapy can be especially valuable for elderly patients and those patients with medical problems which would make surgical resection too risky. External beam irradiation is given on an outpatient basis to safely treat men who could not tolerate curative surgery. In selected patients with limited stage prostate cancer a radiation implant may be recommended in addition to external beam irradiation. The implant requires the insertion of radiation containing catheters into the prostate gland, under anesthesia. This approach allows high dose irradiation to the cancer with relative sparing of adjacent normal tissues.

If, at the time of diagnosis, a prostate cancer is found to extend beyond the prostate gland involving adjacent tissues, surgery usually cannot be performed for cure. Fortunately curative doses of radiation can still be given. Similar to localized prostate cancer, there is a choice between external beam radiation alone or external treatments combined with a radioactive implant. Even in patients whose prostate cancer has spread to the bones or other organs, radiation therapy can prove invaluable in maintaining an optimal quality of life. A brief course of treatment to the painful area often provides gratifying relief of discomfort with minimal side effects. While irradiation for prostate cancer has an established record of safety and effectiveness, ongoing developments continue to improve tumor control while decreasing the risks of complications. The use of high energy radiation allows the dose of radiation to be better localized. Here at St. Luke's Medical Center two high energy linear accelera-
tors assure that every patient has access to state of the art treatment equipment. Recent clinical studies have better defined the appropriate treatment volumes and doses for patients with various stages of prostate cancer. Irradiation treatments are customized for each patient accounting for individual differences in cancer, size, location, and normal anatomy. The x-ray beam is shaped to avoid normal tissues (bowel and bladder) which are not involved with cancer. Continuing developments are improving the effectiveness of radiation therapy. Radiation therapy is a vital component in the overall treatment of patients with prostate cancer.

James H. Taylor, M.D.
Radiation Oncology

An implant delivers a high dose of radiation, contained in catheters, to the prostate cancer.
Chemotherapy Treatment For Prostate Cancer

According to a professional educational publication from the American Cancer Society, it is not yet possible to choose the optimal treatment for the varying stages of prostate cancer. There has been an increased focus on indicators such as tumor grade and stage in order to assist in choosing a possible mode of therapy.

The treatment of prostate cancer has improved survival. Prolonged life is related to whether this disease is localized within the prostate, is regionally localized within the limiting capsule of the prostate or has spread beyond the prostate gland into pelvic nodes or the lungs, bones or liver.

Treatment options are influenced by the extent of disease, concurrent medical problems, and age. Treatments employing radiation or surgery for both local and regional disease may be appropriate. A surgical exploration of the nodes around the prostate to define if the disease involves nodes beyond the prostate is accepted as a valuable tool in obtaining information for the best management. Complications from surgery have been reduced as the surgical execution has become more precise and is able to spare nerves responsible for potency. Improvement in radiation treatment planning has reduced the bladder and bowel irritation. Treatment for more advanced and wide-spread cancers is based on the principles of blocking androgens which act as a growth factor. Bilateral removal of the testes has equally good results as using medication such as Lupron. Surgery, radiation and hormonal therapy have improved survival in these patients. Chemotherapy will begin to play a more accepted role in the management of these patients in light of the new FDA guidelines to measure benefit from drug therapy. The goal of clear palliation without a concurrent demonstration of survival is clearly an acceptable goal for chemotherapy. Adriamycin, 5-FU and Cisplatin have been shown to cause responses. Studies are underway to find the role of immunotherapy in prostate cancer. At present, there is no clear evidence of improvement of survival or consistent palliation.

John P. Hanson, Jr., M.D.
Medical Oncology
Impotence may result from radical prostatectomy for prostate cancer, radical cystectomy from bladder cancer and radical surgery for cancer of the rectum. These surgical procedures often sacrifice the nerves and blood supply necessary for potency.

Fortunately, there are several very effective treatments for impotence. The most successful surgery to produce an erection is a penile implant, surgically placed in the corporeal bodies (the blood filling spaces of the penis). These devices were developed in the early 1960's and have proved effective for over one million men. There are several types of implants but the inflatable penile prosthesis produces the most natural and esthetically functional erection.

Another excellent treatment is the use of vasoactive drugs. These drugs, when injected into the blood filling spaces of the penis increase blood flow resulting in an erection. Patients are taught self-injection and generally are very pleased with this result.

Another treatment option is the use of suction or vacuum devices. These devices use a cylinder which is placed over the penis. When a vacuum is created blood flow may increase, and a band or ring is slipped over the base of the penis to trap the blood. These devices are effective in some cases, but are cumbersome to use and are esthetically deficient.

Impotence resulting from radical cancer surgery of the pelvis can be successfully treated in the majority of men.

Stuart W. Fine, M.D.
Urology

Percent of Patients Surviving by Stage

<table>
<thead>
<tr>
<th>Year</th>
<th>Local</th>
<th>Regional</th>
<th>Distant</th>
<th>All Stages</th>
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<td>92%</td>
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<td>94%</td>
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<td>86%</td>
<td>75%</td>
<td>67%</td>
<td>83%</td>
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<td>80%</td>
<td>56%</td>
<td>22%</td>
<td>71%</td>
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<td>4</td>
<td>70%</td>
<td>33%</td>
<td>11%</td>
<td>59%</td>
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<tr>
<td>5</td>
<td>68%</td>
<td>33%</td>
<td>11%</td>
<td>57%</td>
</tr>
</tbody>
</table>

Our patient with an unknown/undetermined stage graphed above has a 5 year survival.
Prostate cancer is now the most common non-skin cancer affecting men. The treatment of prostate cancer depends on the stage of the disease, physical status and age of the patient. The pain associated with prostate cancer can usually be controlled and successfully managed by a variety of treatment modalities. The clinical pharmacist can make a difference in these pain modalities. Pharmacists collaborate with the Cancer Pain Management Team to contribute to the patient’s care by educating staff, maintaining current reference materials and by acting as a drug information resource identifying potential drug with drug interactions when multiple therapies are prescribed.

The use of oral analgesic agents is the mainstay of treatment for cancer pain. Adequate analgesia can be achieved in the large majority of patients if sound pharmacological principles are employed. Use of agents appropriate for the nature and severity of the patient’s pain is essential in controlling both the pain and anxiety created by these disease states. Pain control is made easier for patients by the availability of newer drug delivery systems such as controlled release morphine tablets or transdermal (through the skin) fentanyl patches which improve pain relief and facilitate patient compliance. Other drugs such as nonsteroidal anti-inflammatory drugs, tricyclic antidepressants, anticonvulsants, corticosteroids and others may be added to narcotic analgesics to maximize pain control. Most cancer patients have a long-term venous access device. When oral therapy is not possible, this parenteral route allows for continuous analgesic therapy. Portable ambulatory infusion pumps make home infusion of these drugs possible and pain therapy more convenient for the patient.

An anesthesiologist may be consulted at times to prescribe epidural pain control which delivers medications 50-100 times stronger than morphine or with advanced disease to
provide pain relief with a variety of neurodestructive nerve blocks. The local recurrence or bony metastasis common to prostate cancer may require radiation therapy or orthopedic intervention (for parirologic femur fracture). Epidural techniques may permit the temporary control of pain to facilitate manipulating the patient for radiation therapy to proceed. Epidural narcotics are frequently combined with dilute local anesthetics which can be carefully titrated using pumps for both outpatient and inpatient management. These methods may restore patients to virtually normal activities of daily living.

Once the proper medication is selected and the dosing interval prescribed, the pharmacist provides expertise to assure that serum and tissue levels are maintained. A change from the oral route to an alternative route, often requires an equivalency calculation which the pharmacist can provide. Daily monitoring of therapy enables the health team members to anticipate and promptly treat any side effects of these drugs. Overall, pharmacy participation with the members of the multidisciplinary team at St. Luke’s Medical Center assures patients full access to all of the resources available to successfully manage their cancer pain.

Michael A. Farina, RPh
Clinical Oncology Pharmacist

Jonathan Kay, M.D.
Anesthesiology

Pain associated with prostate cancer can usually be successfully managed by a variety of treatment modalities.
Support Groups for Adults Experiencing Cancer

"Coming to a support group made me realize I was not the only one with this disease. It helps me to talk to someone who has the same thing you do," remarked Nelson Brockway, a patient with prostate cancer.

St. Luke's Medical Center offers two support groups for adults experiencing cancer. Your Caring Connection, is a support group for people whose lives have been touched by cancer and Make Today Count, is a support group for persons affected with a life-threatening disease. More and more people are joining support groups which offer hope, encouragement and the opportunity to share concerns in a safe, caring environment. It has long been thought that support groups can improve one's mental attitude and sense of well-being. It was recently reported that support groups boost survival rates. David Spiegel, M.D., Associate Professor of Psychiatry and Behavioral Science at Stanford University School of Medicine, believes support group therapy has been shown to be beneficial for metastatic breast cancer patients and should become an integral part of oncology treatment. In his ten year study of women with metastatic breast cancer, those who participated in a weekly support group survived almost twice as long as the control group. Both groups received the same aggressive treatment, however, those in the control group received no psychosocial intervention. Support groups offer a forum to share experiences and feelings, obtain information about cancer and its treatment, receive emotional support for those recently diagnosed with cancer, those undergoing treatment, or those who have completed their treatment. There is an opportunity for open discussions about coping, adjusting and problem solving. As Brockway stated, "coming to support groups makes people realize they are not alone." Support groups encourage new approaches to life, relationships and treatment in this time of physical and emotional upheaval.

Ginny Bourne, R.N., M.S.N., C.N.S.

Terry Ann Tingwald, R.N., B.S.N., N.C.
About 106,000 men are diagnosed with prostate cancer in the U.S. every year. Many of these men are elderly. If retired, the older man may face less radical social and financial changes than does the younger man who additionally may face physical limitations that directly affect employment or sexuality.

However, upon diagnosis both groups enter the new territory called “cancer survivorship,” with its own population, biology, language, and psychology. In the last few years better methods to manage pain and the side effects of treatment have been developed, and public awareness of prostate cancer and early detection methods has increased, but the fundamental personal issues awakened by the diagnosis remain to affect not only the patient but his family and support system.

Much of the treatment of prostate cancer will be delivered in the outpatient setting so the patients’ families and personal support people are actively involved in the process. Social work services are available to both inpatients and outpatients to arrange for:

1) community or home health assistance  
2) counseling about long-range financial and insurance planning  
3) eligibility for governmental disability or retirement benefits  
4) coping with the lifestyle changes and emotional challenges engendered by the disease process

We assist the patient and his/her support system to become mobilized on their own behalf, so that they can retain as much control of their lives as possible, and that their decisions can be congruent with their own expectations, beliefs, and goals.

Grace Jessen McCutcheon, M.S.S.W., A.C.S.W  
Oncology Social Worker

Social Work and Prostate Cancer  
Cancer support groups and social services are available at St. Luke’s Medical Center to help patients with personal issues.
New Developments

Apheresis Center of St. Luke's Medical Center

August 1991 marked the opening of the new Apheresis Center, which is an enhancement of the services provided through the Cancer Program at St. Luke's Medical Center. Apheresis is a term derived from the Greek word “aphairesis” meaning “taking away.” The term pheresis is commonly applied to a number of technical procedures in which a component of the patient’s blood is collected and processed. A prefix is added to the term “pheresis” to indicate exactly what is being removed (e.g. plasmapheresis is the removal of plasma, leukapheresis is the removal of the white blood cells).

The plasmapheresis procedure has been shown to be beneficial in the treatment of a variety of diseases that require removal of specific plasma factors from the blood. The staff of the Medical-Respiratory Intensive Care Unit currently perform this procedure. The procedure is used to treat diseases such as myasthenia gravis, Guillian Barre, and multiple myeloma.

Pheresis also plays a part in the exciting research being conducted through the Immunotherapy Program for patients with metastatic kidney cancer, melanoma and other advanced cancers. In this case, the procedure is called leukapheresis. Patients receive a drug called Interleukin 2 (IL-2) over a period of several days. This drug enhances the cancer fighting ability of a particular group of white blood cells called lymphocytes. The lymphocytes are then removed from the blood using the pheresis procedure.

This is done daily for four days. The staff of the Vince Lombardi Cancer Clinic have been specially trained to perform the leukapheresis procedure. The cells removed are immersed in a solution of IL-2, where they start to multiply and are transformed into Lymphokine Activated Killer (LAK) cells. These LAK cells are then reinfused into the patient and target the cancer cells.
The apheresis procedure also plays a role in autologous bone marrow transplantation. In this case, the apheresis procedure is again called leukapheresis. Stem cells are collected during the apheresis procedure. These immature cells have the ability to grow and multiply into the three types of blood cells: white blood cells, red blood cells and platelets. These cells are important in fighting infection, transporting oxygen and clotting. After the stem cells are collected, they are processed and stored while the patient receives high dose chemotherapy and/or radiation therapy. This high-dose treatment disrupts the bone marrow's ability to make blood cells. Therefore, the stem cells are reinfused to repopulate the bone marrow and restore the patient's ability to make blood cells.

These therapies are among the exciting treatments available to patients in the cancer program at St. Luke's Medical Center.

Marija Barthel, R.N., B.S.N.
Vince Lombardi Cancer Clinic
The Immunotherapy Program

The Immunotherapy Program at St. Luke’s continues to provide innovative cancer care as one of the few community hospitals in the country offering this exciting treatment modality.

Offering both Phase I and Phase II clinical trials, we have treated a growing number of patients using Alpha Interferon and Interleukin-2 along with activated white blood cells (TIL or LAK cells) to destroy cancer throughout the body. These treatments are now considered standard therapy for metastatic melanoma and renal cell carcinoma, but can be effective against a number of other malignancies as well (refractory lymphoma, cancers of the bladder, lung, colon, liver and biliary tract). In addition to these studies, we have recently become a participant in a nationwide Phase III clinical trial comparing a melanoma vaccine to combination chemotherapy in patients with widespread disease.

Great strides were made in heightening both public and professional awareness of immunotherapy in the community and beyond. Through lectures, media support and networking, we have established a broadened referral base while educating both physicians and patients about this exciting area of cancer therapy. Currently, over 60% of our immunotherapy patients treated here are from outside of Wisconsin.

Full operation of our new Immunology Research Laboratory began in 1991. Basic science research taking place at the lab will help provide scientific discoveries which will aid advances in patient treatment. The future direction of this facility will seek innovative methods to enhance the body’s own immune system utilizing the latest technologies from molecular biology and cellular immunology. The ongoing work at this level will provide support essential to the development of new immunotherapy trials.

Immunotherapy as the fourth treatment modality, will continue to evolve as a leader among new cancer therapies. Through continued recognition by the medical
community, results from immunotherapy clinical trials will lead to a broadened use of this option as a recognized standard therapy.

This was most recently evidenced by the recommendation of the FDA’s Biological Response Modifiers Advisory Committee to provide Interleukin-2 as an effective treatment of widespread renal cell carcinoma. This is a great accomplishment in which St. Luke’s is proud to have been a part.

Carol Rausch, R.N.
Immunotherapy Program

Carla Rohloff, R.N.
Immunotherapy Program

Dr. John P. Hanson, Jr., Director of the Immunotherapy Program at St. Luke’s Medical Center, examines a patient.
Ovarian Cancer: A Familial Link

While we have treatment modalities that effectively treat and/or cure ovarian cancer in its early stage, diagnosing it in early stages is the exception, and not the rule. Further, of all the risk factors for ovarian cancer, the greatest risk factor, is that of familial tendency, a first-degree relative with ovarian cancer.

Gene Wilder, actor, director, writer and Honorary Chairman of the Gilda Radner Familial Ovarian Cancer Registry, Dr. M. Steven Piver, Director of the Registry and Dr. Ronald Hart, Director of St. Luke's Medical Center's Vince Lombardi Cancer Clinic were brought together on Wednesday, April 10th, at the Pfister Hotel to discuss, "Ovarian Cancer: A Familial Link". The presentation was the opening ceremony of a two-day nursing conference on "Cancer: A Woman's Issue" and was open to the public as part of the Vince Lombardi Cancer Clinic Community Lecture Series. Over 500 people attended the panel presentation.

Mr. Wilder shared his and Gilda's experience with ovarian cancer. He eloquently shared his discovery of the Familial Ovarian Cancer Registry at Roswell Park Cancer Institute in Buffalo, New York, after Gilda's death, of how it was renamed in her honor, and how he met, befriended and took on the fight against ovarian cancer with his "sidekick" Dr. M. Steven Piver.

Dr. Piver began by noting that there had only been five reports of familial ovarian cancer (two or more close relatives) reported in the literature between 1929 and 1979 when he started the Registry in 1981. After Mr. Wilder's first public service announcement aired in 1990, containing the Registry's 1-800-OVARIAN number, over 27,000 calls were received in the next 30 days. As of May 31, 1990, a total of 435 families and 1020 cases of familial ovarian cancer have been registered.

The Registry reports that women with two or more first-degree relatives (mother, sister, daughter) with ovarian cancer may have as high as a 50% chance of developing the disease, compared to the 1.4% chance for women without a family history. The Registry recommends prophylactic oophorectomy by age 35 for these women, if they have
completed their family. Ovarian cancer in second-degree relatives (grandmother, aunts) and more distant relatives are recorded in the Registry. Surveillance at a young age and prophylactic oophorectomy after age 35 are recommended for women with one first-degree and one second-degree or two or more second-degree relatives with ovarian cancer.

Women at high risk (first-degree relatives) should receive genetic counseling in their early twenties. Pelvic and abdominal exams, CA 125 and pelvic ultrasound should be done every six months once they reach the age of thirty. The same holds true for women whose mother or grandmother or two or more aunts or an aunt and a daughter had ovarian cancer.

Dr. Ronald Hart presented data from Milwaukee on ovarian cancer. Age at diagnosis ranges from 19 to 80, with the 40-79 year old age group being the most commonly affected. Dr. Hart noted that while ovarian cancer represents only 4% of all cancers among women, it will cause more deaths than any other cancer of the female reproductive system. In Wisconsin, there are 371 new cases and 247 deaths annually. Dr. Hart stressed that: a) this is not a disease of the elderly, b) it is a common disease with a large impact, c) family history is important, d) absence of family history is not reassuring, e) early stage patients usually do have symptoms, f) routine pelvic exams are warranted for all individuals, especially those at risk and, g) multidisciplinary treatment planning is a must.

Women who attended the panel presentation found that many women in the audience shared similar experiences in their struggle to obtain early diagnosis. This shared experience served as a bond for several who challenged St. Luke's Medical Center to provide a support group for those who were at risk for ovarian cancer as well as those who struggle to beat cancer. In June 1991, the first meeting of the ovarian cancer awareness group was held. Women told their stories of diagnosis and treatment, and shared their feelings. The meeting ended with a moving letter read to the group by a nurse who had been treated for ovarian cancer over 10 years ago. The Ovarian Cancer Support Group meets on the first Tuesday of each month, in the Vince Lombardi Cancer Clinic.

Angela D. Klimaszewski, M.S.N., R.N., O.C.N.
Cancer Research Coordinator

Kerry A. Twite, M.S.N., R.N., O.C.N.
Clinical Nurse Specialist, Oncology
School of Radiation Therapy Technology

... the manpower shortage (of Radiation Therapists) in Radiation Therapy is an important national healthcare issue which must be addressed...”

American College of Radiology
January 1990

The Oncology Program at St. Luke's Medical Center has been targeted as a growing, progressive leader of cancer care in the community. They offer a variety of state of the art cancer treatments including radiation therapy.

Radiation therapy requires skilled and certified Radiation Therapists to administer radiation treatments to cancer patients; so, the staff shortage is a concern of St. Luke's Medical Center.

Efforts to develop a training program for Radiation Therapists were spearheaded by Dr. Marcia Richards, Medical Director of Radiation Oncology and supported by the administration of St. Luke's Medical Center. In September, 1990, the school of Radiation Therapy Technology opened its doors in hopes of addressing the critical staff shortage of these therapists in the cancer care community.

The school is a twelve-month certification program which trains highly skilled therapists to administer radiation treatments to cancer patients. The intensive training involves studies in math, physics, radiobiology, pathology, oncology, ethics, anatomy and physiology, radiation protection, and nursing. Students engage in extensive clinical experiences which develop their technical skills and the compassion and caring attitude required in this challenging, specialized field.

The program accepts four to eight students per year from candidates around the state and the country who meet stringent admission criteria.

The expertise of the Radiation Oncology staff, the variety of clinical experiences, and the progressive atmosphere of the Radiation Oncology department at St. Luke's Medical Center will prepare Radiation Therapists for the challenges that lie ahead of them in helping patients with their battle against cancer.

Pam Kresl, R.T.T.
Radiation Oncology
High-dose combination chemotherapy with autologous bone marrow reinfusion (HDC/ABMR) and peripheral stem cell support has been available at St. Luke's Medical Center as a treatment option since early 1991 for women with advanced or recurrent breast cancer. Eleven patients have been treated on two active protocols to date. These women were either at high risk for recurrence (greater than 10 positive lymph nodes or other poor prognostic factors) or had recurrent/metastatic disease. Recurrent breast cancer is incurable using standard therapy. HDC/ABMR offers these women a chance for long-term, disease-free survival. This treatment modality can also be used as adjuvant therapy in women who are at high risk for recurrence, hopefully preventing recurrence and metastasis.

The two protocols available at St. Luke's Medical Center for the treatment of breast cancer with HDC/ABMR involved (1) the surgical collection of bone marrow stem cells, (2) the collection of peripheral stem cells through pheresis, (3) freezing and storage of these cells, (4) administration of high-dose combination chemotherapy and (5) subsequent reinfusion of both bone marrow and peripherally derived stem cells. Hematopoietic growth factors are administered to increase the number of stem cells available for collection during pheresis and to decrease the period of neutropenia following bone marrow reinfusion. Patients treated with growth factors appear to recover their white blood cell counts more quickly than those patients who do not receive growth factors. The use of growth factors appears to have decreased the hospital length of stay, in general, for patients being treated with HDC/ABMR.

The patients treated with HDC/ABMR for breast cancer are overall doing well. We hope that through continued improvements in supportive care, development of new technologies and more effective combination chemotherapy/radiation regimens, results will continue to improve.

Kathy Oldham, R.N., B.S.N., O.C.N.
ABMR Coordinator
The Vince Lombardi Cancer Clinic was dedicated at St. Luke’s Medical Center in 1989. In addition to providing active patient care and treatment, the Vince Lombardi Memorial Classic funds enable us to focus on cancer prevention, detection, education and research.

The Vince Lombardi Cancer Clinic is the entry point for nearly 950 new cancer patients a year, who receive about 12,000 treatments. These services include chemotherapy treatments, immunotherapy, counseling and support services.

Each year the Vince Lombardi Lecture Series offers community education programs on such topics as cancer prevention, nutrition and site specific programs such as prostate and breast cancer. In order to keep physicians and health professionals aware of the latest cancer treatments, the clinic publishes a newsletter three times a year which is circulated to approximately 5,000 health professionals in the state of Wisconsin.

Individual cancer education and information is available through the Cancer Hotline. Phone calls to the hotline come from the general public, cancer patients and their families, and health professionals.

Because we know that early detection can affect an individual’s survival from cancer, the clinic participates in a number of community health fairs, and offers public screening programs for such cancers as prostate, skin, colorectal and head and neck.

Research is another commitment of the Vince Lombardi Clinic. Each year physicians and nurses participate in a variety of research studies which look at cancer prevention and detection as well as cancer treatment and symptom management.

We believe that the key to saving the "Vince Lombardi's" of the future from untimely cancer deaths lies in establishing services that will make cancer a preventable and controllable disease. The Vince Lombardi Cancer Clinic at St. Luke’s Medical Center is actively striving to make that vision a reality.

Nancy Nowak, R.N., M.A.
Cancer Program Manager
Vince Lombardi Cancer Clinic Sponsored Activities:

Active patient care and treatment

A health fair for community education.

An informative newsletter for health professionals

Individual education and information through the Cancer Hotline.


Analytic Cases: Cases which are first diagnosed and/or given their first course of treatment at St. Luke's Medical Center.

Androgen Hormone: Any hormone that produces male physical characteristics (facial hair, deep voice, etc.). The main androgen hormone is testosterone.

Antiandrogen Drug: A drug that blocks the activity of an androgen hormone.

Benign: A term for a tumor that does not normally threaten a person's life (that is, a tumor that is not cancerous and does not attack).

Bladder: The hollow organ that stores urine.

Cancer: A tumor that attacks and poses a serious threat to a person's life.

Capsule: The layer of cells around an organ such as the prostate.

Cells: The basic structural and functional units of the body.

Chemotherapy: Treatment with powerful drugs that attack cancer cells.

Combined Therapy: Refers to any combination of surgery, radiation, chemotherapy, hormone therapy or other therapy administered jointly as a single course of treatment.

Diagnostic Only: Cancer related treatment was not given; this may occur for many reason; for example, the patient refused treatment, or the patient's general condition is unsatisfactory for treatment.

Distant Stage: A neoplasm that has spread to other organs or lymph nodes remote from the primary tumor.

Estrogen: A female sex hormone.

External Radiation Therapy: Radiation therapy that uses rays from a machine.

First Course of Treatment: The tumor directed treatments started within the first four months after diagnosis.

Hormone Therapy: In prostate cancer, treatment that reduces the male hormone which promotes prostate tumor growth.

Impotence: Inability to have an erection.

Incontinence: A loss of urinary control.

In situ: A tumor classified microscopically as in situ, non-invasive, pre-invasive, non-infiltrating, intraductal, intraepithelial or intraepidermal.

Interstitial Radiation Therapy: Treatment with high-energy radiation from tiny radioactive seeds inserted into the tumor.

Local Stage: Tumor restricted to the organ of origin, but may be invasive or infiltrating within the organ of origin.

Luteinizing Hormone: A hormone secreted by the pituitary gland that stimulates the secretion of sex hormones in both men and women. Also called LH.

LHRH Analogue: Man-made compounds that are similar to natural LHRH.

Lymph: A nearly clear fluid collected from tissues around the body and returned to the blood via the lymphatic system.

Lymphatic System: vessels that carry lymph, together with lymph nodes and several organs that produce and store infection-fighting cells.

Lymph Nodes: Small bean-shaped structures scattered along the vessels of the lymphatic system. The nodes filter bacteria and cancer cells that may travel through the system.

Malignant: A term for a tumor that can threaten a person's life; that is, a tumor that is cancerous. Malignant has the same meaning as cancerous.

Metastasis: The spread of cancer from its original site to distant areas. The cancer cells are carried to distant sites by blood and lymph.

Glossary continued on next page
**Glossary**

**Non-Analytical:** Cases which are seen at St. Luke's Medical Center after the first course of treatment.

**Oncologist:** A doctor who specializes in treating cancer.

**Orchiectomy:** The surgical removal of the testicles.

**Prostatectomy:** The surgical removal of the prostate gland.

**Radiation Therapy:** Treatment with high-energy radiation from x-rays or other sources of radiation.

**Regional Stage:** A tumor that has extended beyond the limits of the organ of origin into 1) surrounding organs or tissues by direct extension, 2) regional lymph nodes by metastasis, 3) or a combination of 1) and 2) and appears to have spread no further.

**Scrotum:** The external bag or pouch containing the testicles.

**Seminal Vesicles:** The pouches above the prostate that store semen.

**Stage:** A term used to describe the size and extent of spread of the cancer.

**Staging:** Tests conducted to determine the stage of a cancer.

**Surgery:** The partial or total removal of the tumor excluding a biopsy.

**Testicles:** Two egg-shaped glands that produce sperm and sex hormones.

**Testosterone:** A male sex hormone produced chiefly by the testicles. Testosterone stimulates a man's sexual activity and the growth of other sex organs, including the prostate.

**Tissue:** A group of cells organized to perform a specialized function.

**Transurethral Resection:** The use of a special instrument inserted through the urethra in the penis to remove a small prostate tumor. Also called TUR.

**Tumor:** An excessive growth of cells resulting from uncontrolled and disorderly cell replacement.

**Ureter:** The tube that carries urine from each kidney to the bladder.

**Urethra:** The tube that carries urine from the bladder and semen from the sex glands to the outside of the body.

**Urologist:** A doctor who specializes in urologic cancer, such as prostate cancer, and in diseases of the urinary organs in women and both the urinary and sex organs in men.
In 1990, 1,371 new patients were accessioned into the St. Luke's Medical Center Cancer Registry: 1,210 analytic, 161 non-analytic. This brings the registry to a total of over 17,000 patients. The registry has worked closely with the physicians to maintain a 98% follow-up rate and the growing data base now offers more data opportunities to varied requestors than ever before. We have accessed the data to participate in the Quality Assurance Survey for Localized Prostate Cancer and Long/Short Term Patient Care Evaluations for Ovarian Cancer. The updated CanSur 3.0 software version installed in 1989 has improved access to statistical reports and assisted in presenting the graphs and charts on the following pages. These graphs and charts present a brief overview of cancer diagnosis and treatment at St. Luke's Medical Center.

Any questions or requests for information may be directed to 649-6720.

Sandy Blixt, R.R.A.
Cancer Registrar

1990 Site Distribution

Total number of cases: 1,371
Analytic: 1,210
Non-Analytic: 161

This site distribution presents Breast Cancer as the most frequently diagnosed cancer site in 1990. A comparison made to the same distribution in 1989 revealed Lung Cancer as the most frequent site and Breast Cancer as a very close second.
Cancer Registry Report

General Summary Stage for Top 5 Sites

Breast (218 patients)

LOCAL 54.1%
UNKNOWN 0.5%
INSITU 8.7%
REGIONAL 30.7%
DISTANT 6.0%

Colon (104 patients)

LOCAL 24.0%
UNKNOWN 4.8%
INSITU 4.8%
REGIONAL 44.2%
DISTANT 22.1%

Lung (176 patients)

LOCAL 20.5%
UNKNOWN 4.5%
REGIONAL 35.2%
DISTANT 35.8%

Prostate (131 patients)

LOCAL 63.4%
UNKNOWN 1.5%
REGIONAL 17.6%
DISTANT 17.6%

Skin (152 patients)

LOCAL 87.4%
DISTANT 2.6%
REGIONAL 6.6%
INSITU 3.3%
New Case Distribution By Age

AGE AT DIAGNOSIS

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<thead>
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<th>Number of Patients</th>
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<td>80 - 84</td>
<td>10</td>
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<tr>
<td>85 PLUS</td>
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Total number of patients accessioned: 1,371
Female 715
Male 656

The age distribution presents the age group of 55 to 84 as the largest percentage of accessioned population at St. Luke's Medical Center. The patients from ages 55 to 84 make up 73% of the new cases for 1990.

1990 General Summary Stage for All Sites

<table>
<thead>
<tr>
<th>Stage</th>
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<tr>
<td>Localized</td>
<td>593</td>
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<tr>
<td>Regional</td>
<td>379</td>
<td>27.6%</td>
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<tr>
<td>Distant</td>
<td>277</td>
<td>20.2%</td>
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<tr>
<td>Unknown</td>
<td>51</td>
<td>3.7%</td>
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<tr>
<td>TOTAL</td>
<td>1371</td>
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</tbody>
</table>

The graph represents the General Summary Stage at diagnosis for patients entered into the registry in 1990. Over 40% of those patients diagnosed had a Local Stage malignancy.
St. Luke's Medical Center Cancer Research

ABMR PROTOCOLS
High Dose VP-16, Cytoxan, TBI and Autologous Bone Marrow Transplant for Resistant Non-Hodgkin Lymphoma
R. Taylor, M.D., 2/90, ongoing

High Dose Chemotherapy with Autologous Bone Marrow Reinfusion for Patients with Refractory Hodgkin's Disease
R. Taylor, M.D., 2/90, ongoing

Autologous Bone Marrow Transplant for Early Recurrent Breast Carcinoma
R. Taylor, M.D., 3/91, ongoing

High Dose Intensification and Autologous Hematopoietic Stem Cell Reinfusion in Advanced Breast Cancer
R. Taylor, M.D., 6/91, ongoing

A Randomized, Double-Blinded, Placebo-Controlled Trial with Two Dosage Levels of Human GM-CSF Following Autologous Bone Marrow Reconstitution for Lymphoma
R. Taylor, M.D., 11/90 to 11/91

High Dose BCNU and ABMT for Malignant Glioma
R. Taylor, M.D., late 1991, ongoing

CALGB PROTOCOLS
MYELODYSPLASTIC SYNDROME
CALGB #8965 Utility of Flow Cytometric DNA Content and Reticulocyte Analysis as Prognostic Indicators in Myelodysplastic Syndromes
R. Hart, M.D., 1/12/90

BREAST
CALGB #8622 (Re-activated) Monitoring Circulating Breast Cancer Associated Antigens with the 15-3 Radioimmunoassay in Metastatic Breast Cancer
R. Hart, M.D., 1/29/90

CALGB #9082 A Randomized Comparative Study of Adjuvant CAF Followed by Standard CPA/cDDP/BCNU vs. Intensive CAPA/cDDP/BCNU Plus Autologous Bone Marrow Support with Local Regional Radiation Therapy and Hormonal Therapy for Patients with Stage II/III Breast Cancer Involving 10 or more Lymph Nodes
R. Hart, M.D., 11/91

CALGB #8944 Intensive Doxorubicin, Surgery, CMF, and Radiation Therapy for Stage III Breast Cancer - A Study of Efficacy with Pharmacokinetic and Antigenic Monitoring - Phase II
R. Hart, M.D., 11/90

CALGB #9194 Phase III Comparison of Adjuvant Chemoendocrine Therapy with CAF and Concurrent or Delayed Tamoxifen to Tamoxifen Alone in Postmenopausal Patients with Involved Axillary Lymph Nodes and Positive Receptors
R. Hart, M.D., 5/10/91

CALGB #9193 Phase III Comparison of Cyclophosphamide, Doxorubicin, and 5-FU (CAF) and a 16 week Multi-Drug Regimen as Adjuvant Therapy for Patients With Hormone Receptor Negative
R. Hart, M.D., 7/12/91

CALGB #9041 Subcutaneously Administered Recombinant Human Interleukin 2 and Interferon Alfa-2A for Advanced Breast Cancer: A Phase II Study
R. Hart, M.D., 9/6/91

CALGB #9192 Phase III Comparison of Combination Chemotherapy (CAF) and Chemohormonal Therapy (CAF + Zoladex or CAF + Zoladex + Tamoxifen) in Premenopausal Women With Axillary Node Positive Receptor - Positive Breast Cancer
R. Hart, M.D., 12/13/91

COLORECTAL
CALGB #8966 Laboratory Studies on Frozen Tumor Tissue of Colorectal Carcinoma
R. Hart, M.D., 4/13/90

CALGB #9092 Phase III protocol for the Evaluation of 5-FU vs. 5-FU + PALA or 5-FU + Oral Leucovorin or 5-FU + Intravenous Leucovorin or 5-FU + rIFNa-2a in Patients with Advanced Colorectal Cancer
R. Hart, M.D., 7/12/91

LYMPHOMA
CALGB #9061 Clinical Significance of Bcl-2 Rearrangements in Lymphoma Utilizing the Polymerase Chain Reaction
R. Hart, M.D., 6/8/90

LEUKEMIA
CALGB #9021 High Dose Cytarabine with or without Concurrent GM-CSF in the Remission of Induction of Relapsed or Refractory Acute Myelogenous Leukemia and Untreated Blast Crisis of Chronic Myelogenous Leukemia - A Phase III Study
R. Hart, M.D., 12/14/90

LUNG
CALGB #9033 Oral vs. Intravenous Etoposide in Combination with Intravenous Cisplatin in Extensive Small Cell Lung Cancer: Phase III, Includes Pharmacology Companion Protocol CALGB #9062
R. Hart, M.D., 1/11/91
CALGB #9132 Ifosfamide/MESNA/Cisplatin or Etoposide/ Cisplatin + G-CSF in Advanced Non-Small Cell Lung Cancer (NSCLC): A Phase II Study
R. Hart, M.D., 9/6/91

OTHER
CALGB #9072 Smoking Cessation in Relatives of Cancer Patients - A Pilot Study of Intervention by Patients and Oncologists
R. Hart, M.D., 6/14/91

IMMUNOTHERAPY PROTOCOLS
MELANOMA
A Randomized Phase III Trial of Melacine vs. Chemotherapy in Patients With Disseminated Malignant Melanoma (BRM-91-0002)
J.P. Hanson, M.D.

MELANOMA AND RENAL
Tumor Infiltrating Lymphocyte Therapy for Advanced Melanoma and Renal Cancer (BRM 89-0001)
J.P. Hanson, M.D., 9/8/89

UROEPITHELIAL
IL-2/LAK Cell Therapy for Advanced Uroepithelial Cancers (BRM-90-01)
J.P. Hanson, M.D., 3/9/90

OTHER
Alpha Interferon Pretreatment in IL-2/LAK Therapy for Advanced Cancer (BRM-89-0002)
J.P. Hanson, M.D., 1/12/90

PDQ LISTINGS
MELANOMA OR RENAL
STLMC-BRM-89-0001, NCI-V90-0025
Phase II Study of Tumor Infiltrating Lymphocytes in Patients With Advanced Melanoma or Renal Cancer
J.P. Hanson, M.D.

RADIATION ONCOLOGY PROTOCOLS
BRAIN
FLUOSOL -PO 9132-A: A Controlled Phase II Study: Fluosol as an Adjuvant to Stereotactic Radiosurgery in the Treatment of Solitary Brain Metastasis
M. Pincus, M.D., 8/9/91

OTHER
Clinical Study -SAL 89-01, Salitron System, Multi-center Clinical Study Program of Efficacy and Safety in Patients with Xerostomia due to various Etiologies other than Sjogren’s Syndrome
J. Bruckman, M.D., 2/9/90

OTHER PROTOCOLS
LEUKEMIA
Group C Protocol: Fludarabine Phosphate in Patients with Refractory Chronic Lymphocytic Leukemia
J.P. Hanson, M.D., 4/13/90

BREAST
NSABP B24: A Clinical Trial to Evaluate the Worth of Tamoxifen in Conjunction with Lumpectomy and Breast Irradiation for the Treatment of Non-Invasive Intraductal Carcinoma (DCIS) of the Breast
R. Hart, M.D., 7/12/91

URCC 1190M: Control of Vasomotor Symptoms Associated with Tamoxifen Therapy in Women with Breast Cancer
R. Hart, M.D., 12/13/91

LUNG
A Double-Blind, Randomized, Placebo Controlled, Multicenter Study of Diethyldithiocarbamate (DDTC) Used as a Protective Agent Against Cisplatin-Induced Toxicities in Patients with Small Cell and Non Small Cell Lung Cancer
R. Hart, M.D., 10/11/91

OVARY
A Double-Blind, Randomized, Placebo Controlled, Multicenter Study of Diethyldithiocarbamate (DDTC) Used as a Protective Agent Against Cisplatin-Induced Toxicities in Patients With Ovarian Cancer
R. Hart, M.D., 10/11/91

OTHER
URCC 2790: Fluoxetine (Prozac) as a Co-analgesic
R. Hart, M.D., 12/13/91

CUI-019003: A Randomized, Double-Blind, Parallel Group Study of MAROGEN Sterile Powder (100 IU/kg & 200 IU/kg) vs. Placebo in the Treatment of Anemia Associated with Chemotherapy
R. Hart, M.D., 1/11/91

Trial to Reduce Alloimmunization to Platelets (TRAP)
Sponsor: Dr. Taylor for the Blood Center of SE Wisconsin
K. Taylor, M.D., 2/8/91
A. Divgi, M.D., has referred 30% of the projected 1991 goal of the Blood Center of Southeast Wisconsin.
CANCER CONTROL RESEARCH

Active Protocols
Community Compliance with Cancer Screening Recommendations Hart
Smoking Cessation Training for House Officers Laufenberg
Impact of Nursing Intervention in Breast Self Examination Muchka
Assessment of Hope in the Adult Cancer Patient Utecht
A Test of the Smoke Free Maternal Smoking Cessation Program Pletsch
Sandostatin, 5FU, LV for Advanced Colon Cancer Hart

Pending Activation
Radiation Dermatitis Pinkus
Effect of Interpersonal Counselling on Quality of Life Muchka
Dietary Counselling in Adjunctive Breast Cancer Thompson
Topical Anesthesia Prior to Venipuncture Hart

NATIONAL RESEARCH TRIALS

Leukemia
AML, New Standard Induction - HiDAC, CYT/VP-16, DHAD/AZQ CALGB 9022
AML, AGE 60, GM-CSF vs Placebo during Standard Induction CALGB 8923
ALL, New Five Drug Induction = Consolidation CALGB 8811
Mult Myel, CBDCA CALGB 8911
CLL, Fludarabine vs Chlorambucil vs Fludarabine + Chlorambucil CALGB 9011
CML, Ara C, Alfa Interferon CALGB 9013

Lymphoma
Hodgkins, New Dx, I-II, Etoposide, Vinblastine, Adriamycin +RT CALGB 9051
Hodgkins, New Dx, III-IV, ABVD vs MOPP/ABV Hybrid Inter Group 8952
NHL, New Dx NPDL, Cytoxan vs Cytoxan + Interferon CALGB 8691
NHL, Relapsed, Hydroxyurea + AraC CALGB 8951

Lung
Small Cell Limited, ACE x 3 then PCE+RT +/- Warfarin CALGB 8534
Small Cell Limited, Hyperfractionation RT + CT CALGB 8837
Small Cell Extensive, PACE + IL2 CALGB 8835
Small Cell Resected, Solitary Pulm Nodule Natural History CALGB 8867
Non Small Cell Regional, CT->SURGERY->RT CALGB 8935
Non Small Cell Advance, CisPlatin + Vinblastine + Oral Hydrazine CALGB 8931
Mesothelioma, Trimetrexate CALGB 8933
NATIONAL RESEARCH TRIALS

Colon
Stage C 1,C2, Obst’s B2, Fu Lv Vs Fu High Lv Vs Fu Lev Vs Fu Lv Lev
Rectal B2 + C, Post Op 5FU LV and Radiation

Inter Group 8896
Inter Group 9081

Other Sites
Bladder, Cystectomy vs Neoadjuvant M-VAC + Cystectomy
Testicular, Cisplatin and VP-16 with Bleo or Ifosphamide

CALGB 8891
Inter-Group 8991

Cancer Control
Cancer Cachexia Megace, Three dose level Trial In Lung, Colon Ca
Severe Pain, Continuous Infusion MS vs PCA MS
Prostate, Limited Disease, Coping with Prostate Radiation
First Line Chemotherapy, Managing Chemotherapy Side Effects
First Line Chemotherapy, Anxiety In Chemotherapy Side Effects
Loc-Regional Breast Cancer, Can Alkaline Phos Predict Relapse

CALGB 8971
CALGB 8872
URCC C-01
URCC C-02
URCC 2988P
URCC 2182M

Presentations at National Conferences

Nursing

“Photodynamic Therapy - A Nursing Protocol”
Lynn Marzinski, R.N. - St. Luke’s Medical Center, 8GHJK

“A Method of Charging Patients in an Ambulatory Oncology Setting”
Marija Barthel, R.N., B.S.N. - St. Luke’s Medical Center, Vince Lombardi Cancer Clinic

“Charting by Exception - A Method of Documentation in an Ambulatory Oncology Setting”
Marija Barthel, R.N., B.S.N. - St. Luke’s Medical Center, Vince Lombardi Cancer Clinic
St. Luke's Cancer Conferences

Tumor Board Conference
Conferences are held on the second and fourth Monday of every month at noon. This is a patient oriented, multi-disciplinary cancer conference. For more information or questions, please call 649-6720.

Head and Neck Tumor Conference
This is a conference to discuss selected difficult head and neck tumors from a multi-disciplinary approach. Conferences are held on the first and third Monday of every month at noon. For more information or questions, please call 649-3900

Security Savings & Loan Cancer Lectureship Series 1990

January 4, 1990  BONE MARROW TRANSPLANTATION
James O. Armitage, M.D.
Professor & Vice Chairman
Department of Internal Medicine
University of Nebraska Medical Center
Omaha, NE

May 24, 1990  CURRENT STATUS OF LOCAL & INTERSTITIAL HYPERThERMIA
Carlos A. Perez, M.D.
Director, Radiation Oncology Center
Mallinckrodt Institute of Radiology
St. Louis, MO

June 21, 1990  COMBINED MODALITIES: RADIATION THERAPY & CHEMOTHERAPY
Theodore Phillips, M.D.
Professor & Chairman
Department of Radiation Oncology
Long Hospital
San Francisco, CA

September 27, 1990  THE MULTISUBUNIT IL-2 RECEPTOR: A TARGET FOR IMMUNOTHERAPY OF LYMPHOMA, AUTOIMMUNITY AND ORGAN ALLOGRAFTS
Thomas A. Waldmann, M.D.
Chief, Metabolism Branch/NCI
National Institutes of Health
Bethesda, MD

November 15, 1990  PITUITARY TUMORS: DIAGNOSIS AND MANAGEMENT
A. Blake Tyrrell, M.D.
Metabolic/Research Unit
University of California
San Francisco, Ca

December 6, 1990  CHEMOTHERAPY FOR CANCER: OVERCOMING THE PROBLEM OF RESISTANCE
Vincent T. DeVita, Jr., M.D.
Physician and Chief
Benno C. Schmidt Chair in Clinical Oncology
Memorial Sloan Kettering Cancer Center
New York, NY
ANNUAL REPORT EVALUATION

1. Did you find this information useful?____________________________________

2. Was the information easily readable?____________________________________

3. Did you share this with family or friends?________________________________

4. Suggestions: __________________________________________________________

(Optional) Name: _______________________________________________________

Department: _____________________________________________________________

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