November 2018

West Allis Memorial Hospital Cancer Program Annual Report, 1993

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ABOUT THE COVER

The logo of West Allis Memorial Hospital (the shaded area of the design on the cover) was chosen in the late 1960’s from the many submitted by the now defunct E. F. Schmidt Printing Company. I put down in print, in the 1985 Cancer Program Annual Report, the extended meaning before the memory was lost.

The bottom half is a stylized M, which stands for Memorial dedicated to the memory of those who served in our war. It is also a symbol of the broad base of community support: the foundation, if you will, upon which the hospital was built and continues to flourish. The upper half is a W and, with the central spire representing an A, stands for West Allis. Together then, it is West Allis Memorial: But it is more. The upper gracious concave is chalice-like, signifying the fullness of the offering: the gift this hospital was meant to be. The central spire signifies the desire for excellence that is central to our mission.

These are the elements that are in our Cancer Program. The broad base of support is in the community, as well as the enthusiasm of the medical and paramedical personnel.

Nursing, dietary, rehab services, laboratory, radiology, pharmacy, medical records, administration, volunteers, and medical library services provide the broad base on which our search for excellence in patient care stands. The sharp point of the spire represents the cutting edge of technology and the constant reassessment of what constitutes excellent care. It is this constant reassessment that is the heart of intellectual curiosity and professionalism. Perhaps most important to the Cancer Program is the “chalice” portion of the logo. In appreciation of the awesome problems the patient with cancer confronts, it is this that we have to offer. Into this is poured our knowledge, our skills, our compassion, our commitment. Let’s try to see that this cup “runneth over”.

In 1988 the Cancer Committee created the design for the cover of the Annual Report which was illustrated by hospital employee, Jeri Jende. The crab which is the universal symbol for cancer and the sword which is symbolic of the fight against cancer were added to the hospital logo. This design symbolizes, in addition to the above, the underlying commitment of West Allis Memorial to the fight against cancer.

Daniel P. Collins, M.D.
Cancer Committee Chairman
1985-1992
CANCER COMMITTEE CHAIRMAN'S FOREWORD

Kevin J. Murray, M.D., Chairman

To colleagues and friends, on behalf of the Cancer Committee at West Allis Memorial Hospital, I am pleased to present the 1993 Cancer Program Annual Report. This report contains extensive information regarding our Cancer Program at West Allis Memorial Hospital and demonstrates that physicians and staff continue to maintain a strong commitment to excellence in clinical research and educational activities. One of our educational activities, the weekly Tumor Board, serves as a focal point for the multidisciplinary discussion of patient care and as a catalyst in the delivery of the new cancer therapy.

As you will see later in this report, analysis of our tumor registry data demonstrates continued growth in the number of patients seen and treated at our institution. While our patient numbers decreased slightly from our banner year of 1992, we have increased approximately 6% over 1991. West Allis Memorial Hospital continues to show its strength in the delivery of oncology-related therapy when one looks at the diversity of patients that are treated at our institution. All sub-categories of oncologic therapy are delivered except those which require an extensive technical component or are associated with limited patient numbers (such as bone marrow transplantation).

In this report, two major areas are highlighted. As part of our continued accreditation by the American College of Surgeons, we have participated in an analysis of patients with a diagnosis of pancreatic carcinoma. We will introduce this topic through a series of brief discussions by our physicians at West Allis describing the surgical, chemotherapy, and radiation therapy aspects of the treatment of this disease. This will then be followed by a report from the American College of Surgeons on cancer of the pancreas. Additionally, this report will also describe the rehabilitative therapy which is available for patients with cancer.

I would like to thank all those members of the Cancer Committee who have volunteered their time to serve on the committee and who have helped generate this report. I would also like to thank all the people involved in the delivery of oncology-related services. Their kindness and support is constantly mentioned by the patients and is truly deeply appreciated.
INTRODUCTION

The fight against cancer demands technology, vision and commitment. The Cancer Program of West Allis Memorial answers this demand. Over the years we have seen a steady increase of people needing our oncology services. This year we have served an additional 880 new patients with cancer. We answer this need proudly.

Recently we passed the stringent guidelines of the American College of Surgeons, Commission on Cancer designating our Cancer Program as a Community Hospital Comprehensive Cancer Program. This designation is the highest any non-teaching hospital can achieve.

Our Cancer Committee is multidisciplinary and is charged with continually monitoring the care of cancer patients to identify possible improvements or enhancements to their care. This committee and the overall Cancer Program embrace the concepts of Continuous Quality Improvement (CQI). CQI is a philosophy that directs change and the tools necessary to meet patient, physician and payer satisfaction. This is a continuous journey that will never allow us to feel comfortable with where we are and how much we have achieved at any given time. We are proud of this achievement.

Excellence is our way of life, emphasizing personalized care in the delivery of services. People are our most important resource manifested by our belief in the worth, dignity, and unique contributions of each individual. We are here to serve others providing services that are responsive to the needs of the community.

The purpose of this report is to inform and to document this hospital’s experience in cancer control activities during 1993.
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## 1993 CANCER COMMITTEE MEMBERS

### MEMBER

- Kevin Murray, M.D., Chairman
- Donald Blatnik, M.D.
- William Braunstein, M.D.
- Mark Dorow, M.D.
- Donald Feinsilver, M.D.
- David Foley, M.D.
- Jeffrey Gorelik, M.D.
- Ronald Hart, M.D.
- Christopher Kubat, M.D.
- Terence Roth, M.D., ACOS Liaison Physician
- Stephen Sperling, M.D.
- Robert Taylor, M.D.
- Shelly Underhill, M.D.
- Henry Waldren, M.D.
- J. Frank Wilson, M.D.
- Irving Wright, M.D.
- David Mack
- Jill Jones, R.N.
- Barbara Daso, R.R.A.
- Vicki Shackley, R.N.
- Peggy Glander, R.N., O.C.N.
- Priscilla Eckert, A.R.T., C.T.R.

### SERVICE

- Radiation Oncology
- Otolaryngology
- Internal Medicine
- Family Practice
- Psychiatry
- Gynecology/Oncology
- Physical Medicine
- Hematology/Oncology
- Urology
- General Surgery
- Diagnostic Radiology
- Hematology/Oncology
- Pathology
- Obstetrics/Gynecology
- Radiation Oncology
- Anesthesiology
- Senior Vice President
- Ass’t Nursing Administrator
- Director of Health Information Services
- Director of Quality Assessment
- Oncology Nursing
- Tumor Registrar
CANCER COMMITTEE

Role of the Cancer Committee

The Cancer Committee is a standing committee of the medical staff and is the coordinating and governing body for all cancer-related activities. The committee participates with administration in developing goals, objectives, strategic plans, approval and implementation of all new programs as well as overseeing ongoing programs. The committee met five times in 1993.

Program Accreditation

The hospital recently received three-year accreditation of the Cancer Program by the Commission on Cancer of the American College of Surgeons. The Cancer Committee has the responsibility of assuring maintenance of this accreditation status.

Patient Care Evaluation Activities

The committee is continually monitoring the care of the cancer patient for possible improvements or enhancements in patient management. The committee participated in the American College of Surgeons long and short-term studies on pancreatic cancer and the special prostate cancer study of patients treated with radical prostatectomies. One of the obvious benefits of participating in these studies is the ability to compare our results to aggregate data of approved-program hospitals nation-wide. Follow-up review was performed of studies conducted in previous years. Review is performed to evaluate the effectiveness of the monitoring, evaluation and outcome improvement activities. This year the review included the Adriamycin, stomach cancer and colon cancer studies. Study results are forwarded to the appropriate medical staff service and/or committee. Some of the results of these studies are included in another section of this report.

Tumor Registry

The committee supervises and serves as consultant to the Tumor Registry. Committee physicians provide quality assurance for the staging and abstracting activities in the Tumor Registry by routinely reviewing abstracts for accuracy and completion.

Consultative Services

An important function of the committee is to assure that consultative services in all disciplines are available for all cancer patients. Weekly Tumor Boards are conducted with this purpose in mind. A multidisciplinary approach to patient management is promoted at the Tumor Boards. Tumor Boards and educational programs are planned to cover all major cancer sites and issues of cancer care.

Screening Activities

The hospital's Mammography Screening Clinic continued to offer low cost affordable mammography to the community. In 1993, 5,599 persons had screening mammograms done at the clinic. Free mammography screening was again offered to all female hospital employees without insurance coverage.

Community Education

Activities this year included programs for nutritional counseling, smoking cessation, prevention, early cancer detection and environmental hazards. Educational cancer-related pamphlets were made available throughout the hospital.
TUMOR BOARD

Multidisciplinary Conferences

The initial evaluation and treatment decisions are critical in delivery of care for a patient with cancer. Cancer is an illness that requires treatment by physicians of different specialties. The Tumor Board offers a multidisciplinary patient-oriented conference through case discussions that can lead to improved care of the cancer patient. It also serves as a mechanism for education of physicians and other health care personnel.

Primary Goal

The primary goal of the Tumor Board is to improve the care of our community’s cancer patients through the exchange of information among participating physicians. The meeting of the Tumor Board provides an environment in which local specialists are able to share their expertise with the primary care physician. In this environment the physician is made aware of the current literature and any ongoing clinical trials that are available locally for his/her patient. Prospective case presentations ensure the patient’s access to the pretreatment consultative services of all disciplines.

Case Selection

Selection of cases is based on the complexity of problems, their educational value and need for consultation. Physicians are encouraged to recommend cases for presentation by contacting the Pathology Laboratory. Each presentation follows a protocol. The attending physician presents the history, physical findings, and initial evaluation. Findings of x-rays, scans, and pathology are presented by members of respective departments. This is followed by informal discussion by surgeons, medical oncologists, and radiation oncologists. Others are encouraged to participate. Treatment recommendations are made. Final treatment decisions are made by the attending physician and patient.

Cases Presented

Tumor Board is held every Friday at noon in meeting rooms A & B. Lunch is provided. A total of 157 cases were presented in 1993. The average attendance was 39. The total attendance for the year was 1,782. New microphone equipment was added during the year, which improved the acoustics when put to use.

Cancer-Related Continuing Medical Education Programs

In addition to the Tumor Board Conferences the following didactic Cancer Conferences were presented.

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<th>Subject</th>
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<td>Ernest Borden, M.D., Director of Cancer Center of the Medical College of Wisconsin</td>
<td>The Interferons: Mechanism of Action and Clinical Applications</td>
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<td>9/28/93</td>
<td>William Hendee, M.D.</td>
<td>Radon and its Hazards</td>
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<td>10/5/93</td>
<td>David Collier, M.D., Director of Nuclear Medicine Section of the Medical College of Wisconsin</td>
<td>Monoclonal Nuclear Imaging</td>
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<td>11/30/93</td>
<td>Attorney Robyn Shapiro, Associate Professor, Bioethics of the Medical College of Wisconsin</td>
<td>Medicolegal and Ethical Issues: Surrounding the Management of Pain</td>
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</table>
1993 TUMOR BOARDS

Sites Discussed

- Female Reprod. Organs: 29 cases
- Breast: 27 cases
- Colon: 14 cases
- Head & Neck: 12 cases
- Lung: 10 cases
- Male Reprod. Organs: 10 cases
- Lymph Nodes: 8 cases
- Skin: 7 cases
- Bone & Marrow: 7 cases
- Urinary Organs: 6 cases
- Endocrine Glands: 6 cases
- Unknown Primary: 5 cases
- Pancreas: 4 cases
- Stomach: 4 cases
- Esophagus: 3 cases
- Other: 6 cases

Number of Cases
TUMOR REGISTRY REPORT

Computerized Data System

The Tumor Registry is a computerized information and tracking system designed for the collection, management, and analysis of data on patients with cancer. In 1993 the registry converted to a new computerized registry program, Electronic Registry Systems (ERS). This new program comes with full capabilities for on-line abstracting, follow-up, and reporting. Other software programs were also installed in the registry computer system to enhance the reports generated by the registry staff.

Database

The registry documents all the significant biographical, medical, and treatment information of patients diagnosed with cancer and acts as a data bank for this information. All data collected is treated with the same confidentiality as with any medical record. The registry contains data collected since the official start of the registry, January 1, 1978. In 1993, 880 new cancer cases were added to the registry. A total of 10,670 cases have been accessioned in the registry as of December 31, 1993.

Cancer Staging

Approved Cancer Programs are required to stage cancers using the TNM staging scheme. Devised originally by the International Union Against Cancer, the classification was further refined and promulgated in the United States by the American Joint Committee on Cancer (AJCC).

Cancer staging schemes are designed for different anatomical parts, systems, or organs. Currently, the anatomic extent of disease provides the primary basis for staging. The histopathologic grade and the age of the patient are also factors in some tumors. In the future, biologic, molecular, genetic and other prognostic indicators may play a part.

TNM staging is an objective assessment of the anatomical extent of disease. Proper classification and staging of cancer will allow the physician to determine treatment more appropriately, to evaluate results more reliably, and to compare, more confidently worldwide statistics reported from various institutions on a local, regional, and national basis.

In 1993, all new cancer cases were staged utilizing the new fourth edition of the AJCC staging manual. Staging forms are added to the medical record at the time of patient discharge for completion by the physician.

Lifetime Follow-up

Physicians have learned that for the best care, cancer patients require lifetime follow-up. The Registry conducts annual lifetime follow-up of each cancer patient. Most of our follow-up information is obtained through hospital readmissions and outpatient visits. Physicians are also contacted on a regular basis, usually each year, to inquire about the cancer status and any subsequent treatment for their cancer patients. Even if the patient changes physicians, hospitals, or moves, the registry will continue to follow the patient.

A patient is considered lost-to-follow-up if contact has not been made in the last 15 months. In order to produce meaningful survival statistics approved cancer programs are required to have at least a 90% follow-up rate. Over 5,000 patients are on active follow-up status. In 1993 an average 94% follow-up rate was maintained.

Cancer Data Reporting

Data is reported regularly to the medical and hospital staff members. An overview of cancer registry data is reported and published in the Cancer Program’s Annual Report. Cancer registry data is reported at Tumor Boards. Physicians and hospital staff are encouraged to utilize cancer registry data for research, grant proposals, marketing, etc. In 1993, eighteen requests for information were processed by registry staff. Responses to requests for cancer registry data are processed in a timely manner.
**Patient Care Evaluation Studies**

In addition to the data collection for the patients accessioned in the registry, registry personnel collected the data for the Cancer Committee's patient care evaluation studies. Studies completed in 1993 were the long and short-term pancreatic cancer studies and the special prostate cancer study of the American College of Surgeons. Some of the results of the pancreatic cancer studies can be found in another portion of this report. Follow-up studies were also conducted for the Adriamycin and stomach cancer studies from previous years.

**Other Activities**

The Cancer Program Annual Report is prepared by registry staff with contributions by staff physicians, under the direction of the Cancer Committee. The registrar serves as staff to the Cancer Committee and is responsible for taking the minutes of the Tumor Board meetings.

The Tumor Registry staff are active participants in the Wisconsin Cancer Registrar's Association, the National Cancer Registrar's Association, the American Cancer Society, the American Health Information Management Association and the Wisconsin Health Information Management Association. Active membership is maintained in an effort to keep abreast of all the current and future changes in the health care information management field, and in particular, as it relates to cancer.

Conferences sponsored by some of the above associations were attended by registry staff. Continuing education opportunities are welcomed both to raise the level of knowledge and improve the performance of registry personnel.

**Inquiries Welcomed**

The registry staff welcomes inquiries and the opportunity to assist medical staff members to retrieve cancer data. Requests can be made by calling 328-7122.

Priscilla Eckert, ART, CTR
Tumor Registrar

Sharon Miller
Follow-up Service
CANCER PROGRAM FACILITIES

Integration of Services

The Cancer Program provides continuity of all aspects of care (e.g., inpatient and outpatient, medical, surgical, radiation, and support). There are appropriate data collection facilities and follow-up procedures in place. Clinical research protocols are available and patients are offered the opportunity to participate in national treatment protocols.

Oncology Unit

The oncology unit is a 30-bed dedicated unit which was developed to adequately and competently intervene in the complex and unique needs of cancer patients. Qualified oncology nurses are staffed to provide expert assessment and intervention regarding the disease process treatment modalities, and symptom management. The unit provides an ambiance of patient-centered care including educational and support activities.

Outpatient Oncology Clinic

The outpatient oncology clinic is located in a newly constructed outpatient addition to the hospital which was recently opened. This unit provides convenient access to clinical laboratory services and routine diagnostic radiologic services while ensuring qualified and experienced oncology staff to administer and manage cytotoxic agents.

Rehabilitation Services

Cancer is a chronic disease and therefore requires adjustments to physical and emotional well-being for quality of life to be maintained by patients and their families. A variety of health care professionals are needed to address the rehabilitation needs of patients with cancer and their families. Each health care discipline is represented to facilitate continuity of care for rehabilitation services.

Support Services

Several support groups are available to the cancer patient and their families in the hospital. They are I Can Cope, Positive People, Living Through Loss, and Care for the Care Giver. I Can Cope is a patient education program offered by the hospital in conjunction with the American Cancer Society. Positive People is a unique support group offered by West Allis Memorial. Oncology nurses facilitate the meetings to help people understand and cope with their disease. Living Through Loss is an information series and support group to learn about loss and grief and ways to move beyond loss. Care for the Care Giver is a support group for care givers to discuss concerns, vent frustrations and share ideas for coping. Consults are arranged for breast cancer patients with Reach for Recovery volunteers of the American Cancer Society, when ordered by the physician.

Outreach Programs

West Allis Memorial offers a number of services to the cancer patients and the community. Meals prepared at the hospital are delivered to the homes of individuals who are unable to prepare meals themselves through the Meals Ala Wheels program. Home visit services offers a wide variety of laboratory and diagnostic services, 24 hours a day, 7 days a week. Other home services which can be arranged may include services from nursing to nutrition to equipment and therapy. There is a mechanism in place to inform patients and family members of the services available.
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Number of cases excluded: 0

This report INCLUDES CA in-situ cervix cases, and squamous and basal cell skin cases.
1993 CANCER INCIDENCE COMPARISON OF 4 TOP SITES
PERCENT OF RELATIVE FREQUENCY BY MAJOR SITE

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*INCIDENCE FOR UNITED STATES AND WISCONSIN ARE ESTIMATES PROJECTED BY THE AMERICAN CANCER SOCIETY*
I, PHYSICAL MEDICINE REHABILITATION
By Jeffrey B. Gorelick, M.D.

Jeffrey B. Gorelick, M.D.

Physical medicine rehabilitation is a discipline of medicine that deals with physical disability. The field itself was in its infancy in the 1940’s when veterans returning from World War II had ongoing disabilities. The field expanded dramatically since then, grown in over 10 fold to meet the needs of those individuals with physical disability. Physical disabilities can be associated with any diagnoses, including cancer. The approach physical medicine rehabilitation utilizes to treat individuals with cancer is a goal that is mostly related to function. People who experience cancer, whether they undergo surgery or not, can often times have secondary problems with swelling, decreased motion of a particular joint, difficulty bathing, dressing, performing normal hygiene skills, and difficulty ambulating. Head and neck cancer can lead to speech and cognitive deficits. All of these deficits can be treated in a formal rehabilitation program utilizing physical therapy, occupational therapy and speech pathology. These functional limitations can often times be ameliorated and occasionally resolved. Rehabilitation services enhance the quality of life of those who live with cancer and allows them to function at a higher level. Physical medicine and rehabilitation approaches can also help treat pain as it relates to the diagnosis of cancer. Pain can be a functionally limiting and impairing feature that if ameliorated or improved considerably, can allow people again to enhance their ability to function in a day-to-day activity. Utilizing different rehabilitation approaches can allow pain to be successfully treated with a non-drug approach.

In the past decade, as physical medicine rehabilitation has gotten more involved in treating individuals with cancer, strides have been made in improving people’s quality of life. These approaches need to be strongly considered when those with cancer live day-to-day with impairment and/or pain.
BREAST CANCER AND REHABILITATION

By Linda J. Barrows, M.D.

INTRODUCTION

Approximately 10% of women in the United States will eventually develop breast cancer. According to the latest statistics of the American Cancer Society, in 1994 an estimated 182,000 new cases of breast cancer will be diagnosed in women and 1,000 cases in men. Breast cancer is currently the second leading cause of cancer deaths among women.

Some of the risk factors for breast cancer include age, personal or family history of breast cancer, nulliparity or late age at first live birth, early age of menarche, and late age at menopause. The role of dietary fat is also being investigated. Since adult women can do little to alter their risk, early detection can have a significant impact on the type and extent of treatment required. Early detection is enhanced through a combination of regular breast self examination, clinical physician examination and mammography. With localized breast cancer the estimated 5 year survival has now risen to 93%.

Surgery is often a first treatment of choice. Other common treatments include radiation therapy, chemotheraphy and hormonal therapy, often in combination. The individual treatment options will depend on factors such as location, size, and type of tumor, involvement of axillary lymph nodes, presence of other metastases, as well as general health and patient preferences.

Previously, the Halstead radical mastectomy was a common surgical procedure, involving the resection of the entire breast, the axillary lymph nodes and the chest muscles under the breast. This left a more cosmetic deformity and also had a higher rate of postoperative lymphedema and shoulder problems.

Newer breast conserving techniques have been developed, including the modified radical mastectomy. This lessens the risk of lymphedema and spares at least one of the pectoral muscles, allowing the arm to remain stronger. Other options include the simple (total) mastectomy, partial (segmental) mastectomy and lumpectomy. These are more frequently performed and are often combined with additional radiation therapy. Also breast reconstruction may be done at the time of surgery or at a later time.

POST-MASTECTOMY REHABILITATION

The total postoperative recovery time may differ according to patient variables and type of treatment. Patients may be discharged within 48 hours after breast cancer surgery, and often with drains to be removed in the surgeon’s office. There exists a need for early education and an effective exercise training program prior to discharge. If early discharge or patient anxiety interferes with learning, an outpatient session may prove beneficial.

Lengthy therapy programs are less often necessary now with early education and interventions and more conservative surgeries. Patients with more extensive surgeries, including the removal of the pectoral muscles, extensive dissection of the axilla and removal of lymph nodes, and those with the addition of radiation therapy are at a higher risk of shoulder
complications. Currently patients may be seen for therapy as early as the first postoperative day. The history is reviewed for previous medical history and functional status (including any preexisting shoulder problems), the type and extent of surgery, as well as the extent of social support which can be provided.

Everyone involved needs to be sensitive to the anxiety the patient faces while waiting for the final pathology report. There also may be a fear of movement causing pain or injury. Adjusting to the loss of one’s breast and change in body image may also take time. The patient is therefore reassured of the purpose of the evaluation and exercise teaching, and advised that it is to be gradually progressed at home. The patient is also provided with an opportunity to request additional functional information, such as the anticipated progression of postoperative shoulder recovery or the effects of treatment on lifestyle.

The patient may benefit from advice on how to compensate for appearance until a permanent prosthesis is allowed. The Reach to Recovery volunteer from American Cancer Society can supply a temporary light prosthesis which can be pinned under clothing.

The characteristics of pain complaints are recorded. Information is provided regarding positioning techniques and to avoid incisinal stretch pain or any initial sharp pain with exercise. Without education, one may unintentionally exercise too vigorously, especially when pain is well controlled with medications. A sensory evaluation is performed as there may be numbness of the axilla and medial upper arm. This may subside or become less noticeable with time.

A postural evaluation of the head, neck, scapula and shoulder is important, as postural deviations may be used to compensate for breast weight loss and altered shoulder function. The opposite arm is evaluated for comparison of shoulder range of motion and used to demonstrate how to advance exercises properly as their healing allows. Postoperative exercise training may prevent future pain complaints related to shoulder girdle muscle imbalance, residual range restrictions and compensatory postural deviations.

Shoulder mobilization is begun when allowed by the surgeon. This may be as early as the first or second postoperative day, or after the drain is removed. There have been conflicting reports regarding the pros and cons of early postoperative exercises. Some of the recent studies have shown no significantly increased drainage or wound complications with early postoperative exercises. Early exercises are generally done with restrictions to stay within the pain barrier. Initially shoulder abduction and flexion are purposefully restricted.

Resistive exercises are avoided until drains are removed. Exercises are progressively upgraded to avoid glenohumeral joint capsular changes. Progressive active exercises and stretching gradually are allowed to become more vigorous. Stretching is required for longer periods in those undergoing additional radiation therapy. Patients are reinforced to follow the surgeons driving and lifting precautions, which can vary according to the procedure.

It has been suggested to approach lymphedema education judiciously, and some surgeons have expressed concerns that this may unnecessarily add to fears and lifestyle restrictions. Others feel that lymphedema is still frequent enough to warrant a thorough discussion of the precautions. The patient should also be informed that the current more conservative surgical procedures have lessened the incidence of lymphedema and reassured that there is treatment available. Patients are instructed to notify their physician when arm swelling occurs after discharge.

The initial postoperative swelling in the arm will generally resolve. Proper positioning, such as elevation on pillow may control swelling and increase comfort. Early lymphedema is treated by elevation and mild compressive garments to prevent progression. Antibiotics are used if there is a concern with infection. The initial compression garments used may be a tubular garment or ACE wrap, and later an off-the-shelf or custom garment can be prescribed. Manual lymph drainage and retrograde massage may later be added to help return excess fluids to circulation. These techniques can be taught to the patient and family members. When there are no contraindications, more resistant or chronic cases may be treated with the addition
of pneumatic compression devices.

Recent studies have indicated the value of education and exercise in contributing to the return of function. Advice is given for any present or anticipated difficulties with self-care activities, such as combing hair, bathing, dressing and reaching. For the older, debilitated patient with arthritis, rising from supine or sitting position may be difficult if they had been relying on pushing up with the involved arm. In this type of case, additional therapy may be required.

The final goal is to return to full use of arm, without any range of motion restrictions and return to previous lifestyle. For the patient with progressive disease, the goals are also to retain as much functional independence as possible. This may involve utilizing adapted equipment and additional multidisciplinary techniques of general rehabilitation at various stages of progression.

WEST ALLIS MEMORIAL HOSPITAL
REHABILITATION SERVICES

The Rehabilitation Services Department has been involved in several quality assurance activities. One of these included tracking the number of referrals and reasons for referral to the Post-Mastectomy Program. Opportunity was provided for ongoing discussions with the referring physicians regarding the philosophy, goals and methods of the program. The current and classic literature has been reviewed. The information regarding patient precautions has recently been refined. A brief referral request form, with a checklist for specific desired goals has been devised.

Currently the Occupational Therapy Department offers a structured Post-Mastectomy Program, which is tailored to the individual patient with breast cancer. The program is offered to both inpatients and outpatients upon physician referral. This program may be ordered in totality or in part. It has been designed to compliment the information which is provided to the patient by West Allis oncology nursing staff.

In the majority of cases, the program will involve one or two sessions of therapy. Education regarding methods to maintain or improve functional arm use following surgery is provided. The initial exercises are started as promptly as permitted by the surgical procedure and are kept within the restrictions provided by the referring physician. Pain and swelling are also used as a guide. Written information is provided and reviewed with the patient for the home program. This includes positioning to reduce temporary postoperative swelling, means of shoulder relaxation and warm up, as well as progressive methods to overcome shoulder stiffness, restore range of motion and strength and when and how to resume functional activities.

Occupation Therapy and Oncology Nurses will also provide the breast cancer inpatient with education and support. This includes information regarding other West Allis Memorial Hospital programs, such as the "I Can Cope" cancer educational program and the "Positive People" cancer survivors support group. Those with physician referral are eligible for the "Reach to Recovery" breast cancer support services of the American Cancer Society while in the hospital. This provides for an opportunity to speak with a trained volunteer who has previously had a mastectomy herself. With physician approval, those who may benefit from a group can later be referred to the YWCA "Encore" exercise support group.

CONCLUSION

The purpose of this article was to address the issues most common to the majority of postoperative breast cancer patients. In summary, the West Allis Memorial Hospital Post-Mastectomy Program has five main objectives, including:

- To assist in restoring functional use of the arm and shoulder on the affected side, utilizing an individualized and graded therapeutic and functional exercise program.

- To educate the patient and family in precautions regarding edema control and the prevention of infection, including both written and verbal instructions

- To instruct the patient in an individualized home exercise program, by demonstration and written home program.
To encourage independence in activities of daily living, through discussion of problem areas in self cares and household tasks, as well as vocational and avocational needs where indicated.

To help alleviate anxieties and fears concerning the diagnosis and subsequent loss of a breast and current physical limitations, by providing education, supportive listening and reassurance.

The patient with preexisting disability or more advanced breast cancer may benefit from a Physical Medicine and Rehabilitation physician referral as well. There may be additional issues which could be further addressed by the Rehabilitation Team. These issues may include more formal pain management and stress management techniques. Significant fatigue and weakness can also be addressed by energy conservation and work simplification principles, as well as by providing with adaptive equipment. Physical therapy may be able to provide assistance with mobility and ambulation issues. Return to work issues can also be addressed when necessary. Discharge planners may assist with obtaining help within the home, such as services through the Visiting Nurses Association. The multidisciplinary team approach can do much to enhance quality of life for the cancer patient and family.
SURGERY FOR CARCINOMA OF THE EXOCRINE PANCREAS
By Terence Roth, M.D., F.A.C.S.

The incidence of carcinoma of the pancreas has increased during this century. There were approximately 28,000 new cases diagnosed in 1992 and 25,000 deaths were attributed to pancreatic carcinoma. Surgical resection still remains as the only chance for a cure. In the best series resectability is 40% and five year survivals approach 17 - 25%. However, some series report survivals as low as 0.4%. A review of fifteen years of data by the National Cancer Institute shows a 3% five year survival.

The causes of pancreatic cancer remain unknown. However, several risk factors have been identified. A smoker’s risk of pancreatic cancer is 1.5 times that of a non-smoker. High fat diets are also implicated. A protective effect has been associated with a vegetarian diet. Peptic ulcer surgery has a 2 - 5 time increase in the risk after 15 - 20 years following partial gastrectomy. Diabetes mellitus in chronic pancreatitis is associated with pancreatic cancer. Occupational exposure has been cited. Men are more affected than women.

Since surgery represents the only chance for cure, I will review the surgical therapies for pancreatic carcinoma. The focus will be on the exocrine pancreas.

The first successful resection of a peripancreatic carcinoma in the United States was performed by Halstead in 1898. The surgery was a local excision and the patient died seven months later. In 1912 the first successful resection for ampulillary carcinoma was done in two stages. A cholecystojejunostomy and then an end-to-end pancreaticoduodenostomy. In 1934, Allen Oldfather Whipple resected an ampullary carcinoma in two stages. A cholecystogastro-stomy and then a resection of the second and third portions of the duodenum, along with a wedge of the pancreatic tissue that included the tumor. Thus we learn the McBurney’s point was actually a line and that the original Whipple procedure was done for an ampullary carcinoma and not a pancreatic carcinoma by reviewing the literature. In the original operation the bile duct was ligated and the first and fourth portions of the duodenum were sutured together.

There was no gastric resection or pancreatico-enteric anastomosis. The first successful pancreaticoduodenectomy was done by Whipple and reported in 1935. The one stage procedure was done in 1941 by Trumble and associates at John Hopkins. Whipple’s operation has been modified but nothing is particularly new. Even Whipple had spared the pylorus in his original operation. In 1951 the resection and reanastomosis of the superior mesenteric vein was reported by Moore. This was the procedure that was added to the original Whipple operation.

Today the standard operation is the pancreaticoduodenectomy or Whipple operation. A total pancreatectomy is being advised by some surgeons. However, this procedure produces a difficult to manage diabetes and does not seem to add to the overall survival. The pylorus sparing part of the procedure avoids the gastric resection and the attendant nutritional problems. It does not seem to compromise survival.
The mortality rate of the Whipple procedure approaches 5%. There was a time when the rates approached 50% in some series and the operation was almost abandoned. In selected patients with tumor less than two centimeters, no nodal metastases, and no dissection from blood vessels, the survival rates are up to 30 - 57%. Other factors that are associated with improved survival are less blood transfused perioperatively, absence of vascular invasion, and tumor diploidy. The histologic factors that are associated with poorer survival include: malignant infiltration of the pancreatic capsule, round cell infiltration at the margins, and epithelial atypia in the involved pancreatic ducts.

Those patients that fail have both local and systemic recurrent disease. About 75% is local recurrent disease. This begs the case for a more radical surgical procedure. However, many studies can not demonstrate a survival advantage of the more radical procedures. Actually the more radical procedures offset any theoretic advantage with an increase in operative mortality and post operative morbidity rates.

Therefore, any future developments will not be in the area of more radical surgery but in earlier diagnosis, risk assessment, and improved adjuvant therapies.

The surgeries themselves are associated with several complications. These include: intestinal obstruction, hemorrhage, intra-abdominal abscess, fistula, anastomotic complications, wound infections, wound dehiscence, sepsis, and endocrine and exocrine pancreatic insufficiency.

Before resective surgery can be performed, an assessment of resectability must be done. This is done on a clinical basis and intraoperatively. Clinically back pain is an ominous sign. About 25% of patients have it at presentation. In one series 29 of 33 patients were not resectable when they had a presenting complaint of back pain. If the lesion is in the body or tail, 56% having this finding preoperatively, none were resectable. Other physical signs connected with nonresectability are; cervical adenopathy, ascites, rectal shelf, and an umbilical nodule (the Sister Mary Joseph sign). CT findings of no local extension or hepatic metastases are generally resectable. Ultrasound can demonstrate an unresectable lesion if positive lymph nodes, liver metastases, or major blood vessel involvement is found.

Intraoperative assessment is also necessary to determine resectability. Initial dissection to separate the superior mesenteric and portal veins from the head and neck of the pancreas are crucial to determine resectability. Lymph node involvement can be determined and resectability is still possible if the nodes can be dissected en bloc. A normal splenic vein allows resection. Pancreatic biopsy should be done to confirm the diagnosis and can be 85 - 90% accurate. Liver masses should also be biopsied for confirmation since lesions such as hamartomas may mimic metastases.

If nonresectability is found, a palliative resection may be considered. Thirty to sixty percent of resections are in effect palliative. This is because tumor is left behind. The resection of the tail could be considered even with liver metastases if the operative mortality can be acceptably low. This is 5 - 10% in some series. However, even this is usually not possible for cancer of the body of the pancreas. Unfortunately this is usually a surgical exercise in futility and its undertaking should be considered in only the appropriate candidates. Bypasses should be the primary consideration in those patients that are found to be unresectable for cure.

Relief of biliary obstruction should be considered when possible. However, jaundiced patients have a 15 - 20% mortality and a 40 - 60% morbidity. Therefore, the first consideration should be to relieve the jaundice with either an endoscopically or percutaneously placed stent. This may not be possible and therefore other procedures should be considered. The most common is cholecystojejunostomy. Cholecystojejunostomy should also be considered as presumably a better diversion procedure. Some prefer the cholecodo- or cholecystoduodenostomy. The involvement of the duodenum later may not make these procedures the best choice. Cholecystogastrostomy is another procedure to be used. However, the bile gastritis may preclude this operation as the one of choice.
Relief of duodenal obstruction is another consideration. Nausea and vomiting are present in 30 - 45% of patients with pancreatic cancer. Actual obstruction occurs in only 5% of patients. Tumors of the head obstruct the second portion of the duodenum and may result in jaundice. Tumors in the head and neck may also obstruct the pancreatic duct. If a patient only undergoes the biliary bypass, 17% will develop duodenal obstruction within 8 - 9 months after the operation. The mortality rate of the second operation has been reported to be between 6 - 100%. Delayed gastric emptying may occur after duodenal bypass and upper gastrointestinal bleeding can occur after the double bypass. However, they are usually treated by conservative measures and quite successfully.

Pain may be present in 70 - 90% of patients with pancreatic cancer. Pain in the back is a characteristic of cancer of the body and tail of the pancreas. The greater the pain that is present the less that can be done surgically to resect the tumor. Pancreatic duct decompression into the stomach with a T-tube can be a consideration if the obstruction can be demonstrated. Another way to do it is to place a pancreatic stent endoscopically or percutaneously. Chemical ablation of the celiac ganglia is an option. Chemical splanchnicectomy has given relief. The pain can also be treated with the addition of external beam therapy if the above fail or as a primary therapy. A percutaneous celiac block can also be done and is repeatable at a later date.

Other considerations in pancreatic surgery including IORT (Intraoperative Radiation Therapy) should be covered elsewhere in the report.

A few words about pylorus preserving pancreaticoduodenectomy: it can be done with a low operative mortality and morbidity, is faster to do than the standard Whipple operation, reduces the incidence of marginal ulceration after pancreaticectomy, minimizes the long-term physiological disturbance to the patient. Gastric emptying may be prolonged transiently but it is easily treated. The incidence of enterogastric reflux, dumping, and diarrhea is lower than with the classic Whipple operation. The procedure can be considered for curative and palliative resections. This procedure does not compromise long-term survival in malignant disease.

Pancreatic cancer has been treated with partial and total pancreatic resection. Total pancreatectomy was advocated in the past. It was felt to be superior to partial pancreatectomy because of concerns regarding tumor involvement of any remaining pancreas and anastomotic problems such as obstruction and fistula. There has been little if any support for total pancreatectomy recently. One must be always mindful of the diabetes caused by total pancreatectomy as it can be difficult to manage or life threatening.

A few words about the extended pancreaticoduodenectomy are in order. This is done to include the various nodal pathways that the tumor can follow. Celiac, splenic, portal, choledochal, superior mesenteric, aortic, and vena caval nodes are included in the resection. The operative mortality can be acceptable as one gains experience. This procedure may be most helpful in early, small, localized tumors. However, this usually represents fewer than 5% of patients and over half of them already have nodal metastases.

In conclusion, surgery is the only real chance the patient has for a cure. After resectability has been determined, an extended pancreaticoduodenectomy should be considered with the pylorus sparing procedure being included. Pain therapy should be started with some sort of nerve block. In the future improvement of adjuvant therapies should improve survival. The long-term hope is that earlier diagnosis procedures would be developed. Risk factors need to be identified and molecular biology including genetics will become important. Considerable amounts of time and resources will be necessary if any significant improvement in the treatment of carcinoma of the pancreas is to be accomplished.
RADIATION THERAPY FOR PANCREATIC CARCINOMA
By Kevin Murray, M.D.

Kevin Murray, M.D.

The pancreas, a small organ located in the upper abdomen, is intimately associated with digestion and helps, through its production of insulin, control the level of sugar within the blood. The pancreas is immediately adjacent to major structures including the aorta, superior mesenteric artery, stomach, duodenum and liver. There is no actual capsule surrounding the pancreas which therefore makes it quite easy for cancers to invade all of these adjacent structures.

As shown in our review of patients with pancreatic carcinoma at West Allis Memorial Hospital (see tables later in this book), the most frequent symptoms are pain, indigestion, a weight loss of greater than 10 lbs. and jaundice. This latter problem is secondary to obstruction of bile outflow from the liver and the gallbladder.

Following presentation, the patients will undergo a work-up generally consisting of ultrasonography of the upper abdomen and CT scan of the abdomen. Surgical exploration is then recommended for patients with a pancreatic mass so that:

1. A biopsy of this mass can be made and a diagnosis made
2. If feasible, a total excision of this mass can be performed
3. If not surgically resectable, a diverting procedure can be performed to improve the drainage from the gallbladder and liver.

Following the surgical procedure, there are two main rationales for delivering postoperative external beam irradiation. The first is that in patients who are deemed to be unresectable, local external beam radiation may cause significant tumor shrinkage and relief of their debilitating symptoms. The second is that, except for patients who present with an extremely small (less than 1 cm.) lesion of the pancreas, there remains a substantial risk of local regional failure in patients following surgery. Postoperative external beam radiation generally in conjunction with systemic chemotherapy is used to decrease this rate of failure. An important study demonstrating the value of combined modality therapy was performed by the Gastrointestinal Tumor Study Group in the early 1980's. This group randomized 157 patients following potentially curative resection of pancreatic carcinoma to receive 5-FU chemotherapy and 40 Gy external beam irradiation versus no further treatment. The survival at one year was only 49% for patients who had no further therapy versus 63% for the treated patients. This difference is even more striking at two years where only 15% of the control patients were alive versus 42% for treated patients.

Unfortunately, the long-term outlook for patients with this disease is poor. Because of the poor results alternative strategies continue to be developed to combat this disease. While this focuses mainly on developing more effec-
tive chemotherapy agents, other radiation modalities have been considered. One possibility is the implantation of radioactive materials, such as Iodine 125, directly within the tumor bed. This has been combined with external beam radiation as well as with systemic chemotherapy and does seem to show a very modest improvement in median survivals for those patients with small and well localized lesions. Another technique, intraoperative radiation, delivers a single large exposure of radiation to surgically exposed tumor. While some patients have had an excellent response to this therapy, the majority of patients still however recur both locally or within the peritoneal cavity.
CHEMOTHERAPY FOR PANCREATIC CARCINOMA
By Robert F. Taylor, M.D.

Cancer of the pancreas is the fourth largest killer of adults in the United States. This disease will affect approximately 25,000 new cases each year in the United States, and it remains a difficult tumor to diagnose and treat early. The highest cure rates in cancer of the pancreas are in those patients who have truly localized disease. Unfortunately, only about 20% of patients have disease that is localized and even in those patients, when they are treated with surgical resection alone, cures occur in less that 5% of all patients. For small cancers in the head of the pancreas with no lymph node metastases and no extension beyond the capsule of the pancreas, survival rate approaches 20% but still remains a significant problem.

The reason for the rising incidence of pancreatic carcinoma in the United States is uncertain. Several environmental factors have been associated with an increased risk of pancreatic carcinoma but none have been identified as specifically causative. An association between alcohol consumption, cigarette smoking and coffee drinking have all been postulated, but none of these have been definitely identified as an independent risk factor.

Chemotherapy for pancreatic carcinoma has been available for some time, and a variety of agents have shown some activity in the disease. Perhaps the most widely studied agent is 5-Fluorouracil (5-FU). Single agent studies of 5-FU have shown response rates in metastatic disease between 5% and 20%, although few long-term survivors have been reported in the literature. Combination chemotherapy regimens have also been studied, adding agents such as Mitomycin-C, Streptozotocin, Ifosfamide and Adriamycin to 5-FU. However, a careful analysis with patients with metastatic disease, treated in this manner, suggests that the results of combination chemotherapy trials are probably no higher than those treated with 5-FU alone. Unfortunately, many of these studies suffer from the disadvantage of involving a relatively small number of patients, and a pathologically diverse group of subjects.

It appears that most pancreatic carcinomas express multi-drug resistance phenotypes, which makes them relatively insensitive to many chemotherapy agents. Anthracyclines, such as Adriamycin, can be effective in patients expressing a multi-drug resistant (MDR) positive tumor, and some of these are being investigated. A new agent, Gemcitabine, is being evaluated in pancreatic carcinoma for its abilities to exploit the MDR characteristics of this tumor.

Another area of interest in the development of chemotherapy agents involves the modulation of 5-FU. One popular agent in this regard is Leucovorin (Leucovorin Calcium). Addition of Leucovorin to 5-Fluorouracil is thought to intensify the inhibition of thymidylate synthase and potentiate the activity of 5-Fluorouracil. Unfortunately, clinically significant improvements with the addition of Leucovorin have not been conclusively demonstrated in series reported to date. Other agents felt to biochemically modulate 5-FU include Pala and Methotrexate. Unfortunately, none of these drug
combinations has demonstrated substantial improvement in survival or response rate over 5-Fluorouracil alone. Differences in dosing schedules and timing of chemotherapy may be beneficial in studies of this tumor, but as yet none of the available studies are conclusive.

Perhaps the most useful adjunct for chemotherapy, in patients with pancreatic carcinoma, is the use of chemotherapeutic agents, particularly 5-FU, in combination with radiation therapy. Several studies have suggested that 5-Fluorouracil acts as a radiation sensitizer for tumors of the gastrointestinal tract, and several investigators have evaluated the effects of 5-Fluorouracil when combined with radiation therapy for pancreas patients. The most promising data involves those patients who have undergone a complete surgical resection of their primary, but who remain at substantial risk because of the extensiveness of their tumor or the microscopic involvement of regional lymph nodes. In patients such as this, the addition of 5-Fluorouracil to local radiation therapy has been reported to improve both local control and long-term disease free survival in such patients.

This appears to be accomplished without substantial increase in morbidity or mortality. Whether the addition of other agents such as Adriamycin, Streptozotocin or Mitoxantrone to 5-FU add substantially to the effect of 5-FU on patients undergoing radiation therapy, has not yet been proven.

Clearly, pancreatic carcinoma remains a difficult tumor to treat, and new approaches and new drugs will be necessary. Many studies investigating the exploitation of multi-agent resistance gene therapy are underway (not only in this tumor but in others) and, if fruitful, they may prove to be quite useful if not curative in this difficult disease. Obviously, early detection remains a major stumbling block in the effective use of chemotherapy, radiation therapy or surgery in this disease and, despite the advent of newer radiographic and endoscopic techniques, early detection of this tumor remains elusive. Further investigations of environmental carcinogens and other risk factors may prove useful in reducing the incidence of this cancer and may ultimately prove to be the most useful therapeutic intervention of all.
**purposes of the studies**

These studies of pancreatic cancer were conducted to document the current methods of diagnosis, staging, and treatment. Each participating hospital can compare its data to the aggregate data of all the other participating hospitals. The information from these studies may lead to higher quality of patient care.

**eligibility of cases**

Cases entered into the studies must have a histologically confirmed primary cancer of the pancreas. If biopsy of the pancreas was not obtainable, patients that have been diagnosed with histologically proven metastasis, having clinical evidence of a primary tumor of the pancreas have been included.

**types of cases entered**

Patients admitted for all or part of their first course of therapy were entered in the studies. This includes patients diagnosed at our facility who refused therapy and patients who were untreatable for any reason. If part of the first course of therapy was administered in another hospital, this hospital must have administered the most definitive part of the first course of therapy. The patient may or may not have been diagnosed at this facility. The 1985 study contains 13 cases that met the eligibility criteria. The 1990 study contains 6 cases.

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**pancreatic cancer**

**primary site**

*overlapping lesions are tumors which extend over 2 or more subsites and it is not possible to tell where the tumor originated*
Primary Site

The subsite of the pancreas where the tumor started could not be determined with large tumors (overlapping lesions) because definitive surgery was not performed. In some cases a needle aspirate of the pancreas or metastatic site was the only invasive diagnostic procedure.

Risk Factor

Smoking is a risk factor for pancreatic cancer.

According to the American Cancer Society incidence is more than twice as high for smokers as nonsmokers. In the graphs above, WAMH appeared to have over 20 percent more smokers in the 1985 study than the rest of the hospitals in the study. The 1990 study showed both groups with about one-half of the patients with a smoking history. Of note are the sizable unknown portions of the national group for both study years. This probably means WAMH had better documentation of smoking history.
PANCREATIC CANCER
PATIENT AGE

1985 STUDY-WAMH
1985 STUDY-NATIONAL

1990 STUDY-WAMH
1990 STUDY-NATIONAL
**Incidence**

There were an estimated 27,700 new cases of pancreatic cancer in the United States in 1993. According to the American Cancer Society, the risk of cancer of the pancreas increases after the age of 50, with the most cases occurring between the ages of 65 and 79. This fact was confirmed in the studies, as noted in the graphs on the opposite page.

**Symptoms at Diagnosis**

The predominant initial symptoms are abdominal pain, indigestion, jaundice, and weight loss over 10 pounds. Unfortunately, cancer of the pancreas is a "silent" disease, one that occurs without symptoms until it is in advanced stages.
PANCREATIC CANCER STUDIES
DIAGNOSTIC WORK-UP PERFORMED

<table>
<thead>
<tr>
<th>Diagnostic Procedure</th>
<th>1985 - WAMH</th>
<th>1990 - WAMH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABD. ULTRASOUND</td>
<td>77%</td>
<td>100%</td>
</tr>
<tr>
<td>ANGIOGRAPHY</td>
<td>8%</td>
<td>0%</td>
</tr>
<tr>
<td>BONE SCAN</td>
<td>8%</td>
<td>17%</td>
</tr>
<tr>
<td>BRAIN SCAN</td>
<td>0%</td>
<td>15%</td>
</tr>
<tr>
<td>CEA (PREOPERATIVE)</td>
<td>54%</td>
<td>0%</td>
</tr>
<tr>
<td>CT SCAN OF ABDOMEN</td>
<td>92%</td>
<td>100%</td>
</tr>
<tr>
<td>CHEST X-RAY</td>
<td>67%</td>
<td>85%</td>
</tr>
<tr>
<td>ERCP*</td>
<td>33%</td>
<td>54%</td>
</tr>
<tr>
<td>LIVER SCAN</td>
<td>23%</td>
<td>17%</td>
</tr>
<tr>
<td>PTC**</td>
<td>8%</td>
<td>0%</td>
</tr>
<tr>
<td>UGI, BARIUM</td>
<td>33%</td>
<td>77%</td>
</tr>
<tr>
<td>OTHER</td>
<td>8%</td>
<td>33%</td>
</tr>
</tbody>
</table>

* Endoscopic Retrograde Cholangiopancreatography
** Percutaneous Transhepatic Cholangiography

29
PANCREATIC CANCER STUDIES
FIRST COURSE OF TREATMENT - SURGERY

Diagnostic Work-up
Abdominal ultrasound and CT scan of the abdomen were used for all the diagnostic work-ups in the 1990 study at WAMH. These procedures and the endoscopic cannulation of the pancreatic duct (ERCP) were the most useful diagnostic procedures. CT scans suggested cancer in about 70% of the cases, ultrasound studies in about 50% of the cases, and ERCP in about 30% of the cases at WAMH.

Surgical Treatment
Partial pancreatectomy was the most common cancer-directed operation (15%) followed by pancreaticoduodenectomy (8%) in the 1985 study. There was no definitive surgery performed in the 1990 study, only bypass surgery. The most frequent procedures were diagnostic biopsies. This was due to the fact that, at the time of diagnosis, there was advanced stage inoperable cancer.
Radiation Therapy

Radiation therapy was given in approximately 50 percent of the cases in both the 1985 and 1990 studies. This was higher than the national study figures as they averaged around 25 percent for both study years. WAMH figures may be inflated because of the small number of cases in the studies.

Chemotherapy

Chemotherapy use doubled in 1990, when compared to 1985. This is probably due, in part, to the higher percentage of stage IV cases in 1990, plus the fact that no definitive surgery was performed for that group.
PANCREATIC CANCER STUDIES

### AJCC CLINICAL STAGE

<table>
<thead>
<tr>
<th>STAGE GROUP</th>
<th>1985 STUDY WAMH</th>
<th>1985 STUDY NATIONAL</th>
<th>1990 STUDY WAMH</th>
<th>1990 STUDY NATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAGE I</td>
<td>23.1%</td>
<td>11.6%</td>
<td>16.7%</td>
<td>14.4%</td>
</tr>
<tr>
<td>STAGE II</td>
<td>23.7%</td>
<td>7.3%</td>
<td>16.7%</td>
<td>7.1%</td>
</tr>
<tr>
<td>STAGE III</td>
<td>7.7%</td>
<td>9.6%</td>
<td>0.0%</td>
<td>9.8%</td>
</tr>
<tr>
<td>STAGE IV</td>
<td>46.2%</td>
<td>48.0%</td>
<td>66.7%</td>
<td>44.4%</td>
</tr>
<tr>
<td>UNSTAGEABLE</td>
<td>0.0%</td>
<td>23.4%</td>
<td>0.0%</td>
<td>24.2%</td>
</tr>
</tbody>
</table>

### AJCC PATHOLOGICAL STAGE

<table>
<thead>
<tr>
<th>STAGE GROUP</th>
<th>1985 STUDY WAMH</th>
<th>1985 STUDY NATIONAL</th>
<th>1990 STUDY WAMH</th>
<th>1990 STUDY NATIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAGE I</td>
<td>7.7%</td>
<td>4.9%</td>
<td>0.0%</td>
<td>5.6%</td>
</tr>
<tr>
<td>STAGE II</td>
<td>7.7%</td>
<td>1.5%</td>
<td>0.0%</td>
<td>1.5%</td>
</tr>
<tr>
<td>STAGE III</td>
<td>0.0%</td>
<td>4.8%</td>
<td>0.0%</td>
<td>6.5%</td>
</tr>
<tr>
<td>STAGE IV</td>
<td>0.0%</td>
<td>9.2%</td>
<td>0.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td>UNSTAGEABLE</td>
<td>84.6%</td>
<td>79.5%</td>
<td>100.0%</td>
<td>78.2%</td>
</tr>
</tbody>
</table>

**Clinical Stages**

Most of the patients in both studies were clinically staged. Those unstageable cases were most likely advanced stage cases and a staging work-up was refused. The majority of the cases were stage IV in both the WAMH and national categories.

**Pathological Stages**

The majority of the cases in both studies were unstageable because definitive surgery was not performed. This is because the patients were not surgical candidates because of the advanced stages of their tumors.
PANCREATIC CANCER STUDIES
FIRST RECURRENCE

RECURRENT TYPE

LOCAL

REGIONAL

DISTANT

NEVER DISEASE FREE

NO RECURRENCE

OTHER

PERCENT

1985 STUDY - WAMH
1980 STUDY - WAMH
1985 STUDY - NATIONAL
1990 STUDY - NATIONAL
The majority of the patients (76.9% - 100%) in both studies were never disease free. A small percentage of the patients had a recurrence. Even though WAMH had a small number of patients in these studies, these statistics are comparable to the national percentages.

**First Recurrence**

The five year survival results for WAMH are very favorable when compared to the national survival rates. The survival rate for WAMH patients is well above the national study rate, particularly for the first two years.

**Five Year Survival**

<table>
<thead>
<tr>
<th>STUDY 1985 - WAMH</th>
<th>100</th>
<th>46</th>
<th>23</th>
<th>8</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>STUDY 1985 - NATIONAL</td>
<td>100</td>
<td>17</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

## GLOSSARY

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessioned</td>
<td>Entered into the Tumor Registry data base</td>
</tr>
<tr>
<td>ACOS</td>
<td>American College of Surgeons - In 1932 the American Cancer Society urged the American College of Surgeons to take the lead in setting guidelines for cancer care. Approval of hospital-based cancer programs has been the foundation for improving the quality of care of patients with cancer.</td>
</tr>
<tr>
<td>ACS</td>
<td>American Cancer Society</td>
</tr>
<tr>
<td>AJCC</td>
<td>American Joint Committee on Cancer - organized for cancer staging and end results reporting</td>
</tr>
<tr>
<td>First Course of Therapy</td>
<td>First course of therapy is treatment planned and/or administered within the first four months following cancer diagnosis in order to modify, control, remove or destroy proliferating cancer tissue.</td>
</tr>
<tr>
<td>Hormonal Treatment</td>
<td>Includes administration of hormones, steroids and endocrine surgery to control cancer</td>
</tr>
<tr>
<td>NCI</td>
<td>National Cancer Institute</td>
</tr>
<tr>
<td>PCE’s</td>
<td>Patient care evaluation studies - Evaluation of cancer patient care through the process of problem identification, problem analysis, action planning and follow-up monitoring</td>
</tr>
<tr>
<td>SEER</td>
<td>Surveillance, Epidemiology and End Results program of National Cancer Institute</td>
</tr>
<tr>
<td>Stage of Disease</td>
<td>The extent of disease determined at the time of initial work-up for the first course of treatment</td>
</tr>
<tr>
<td>Subsequent Therapy</td>
<td>Change in treatment due to apparent failure of the original, planned or administered treatment or because of progression of disease, such treatment is excluded from the first course of therapy and considered as part of a second or subsequent course of therapy.</td>
</tr>
</tbody>
</table>
| TNM Staging           | AJCC classification to determine the extent of disease at the time of diagnostic work-up for the first course of treatment  
T - Size of Tumor  
N - Lymph node involvement  
M - Metastasis at distant sites |
REFERENCES


American Cancer Society, *Cancer Facts and Figures - 1993*

American College of Surgeons, *Data Acquisition Manual*