

Liverpool
Cancer Therapy Centre
**Liverpool
Cancer Therapy Centre**

A Unit of the South Western Sydney Cancer Service



Annual Report

July 2001 – June 2002

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FOREWORD

As the Cancer Therapy Centre (CTC) enters its sixth year of operation it is appropriate to ask the question “what has the centre achieved to improve the outlook for cancer patients in South Western Sydney and how does the centre rate in terms of quality care and output compared to other centres?” This annual report attempts to answer these questions by asking the people in the various operational units within the CTC to report on their activities and achievements over the past year. These reports reflect the variety of contributions from the multiple groups of professionals and volunteers that are united in a complex organisation designed to achieve the best outcomes for our cancer patients.

From its inception in 1995, the CTC’s vision has been to provide leadership in the way cancer services are delivered and to ensure access to high quality care for all residents of our health region. The principles of building the cancer service have been based on multi-disciplinary sub-specialised teams, recruitment and retention of high calibre staff with expertise and skills, putting in place robust information systems, acquiring the best in technology and equipment and establishing research and sustainable educational programs.

With the support of the Area and its sectors, major expansion of infrastructure, access and capacity has been achieved through the building of the new cancer centre at Macarthur, funding of new electronic information systems and an area cancer registry. Website development and introduction of new technologies such as the radiotherapy computerised planning system and the BAT ultrasound equipment have enabled world class precision radiotherapy treatment for prostate cancer.

Organisational changes have seen the establishment of cancer site-specific tumour programs, development of a care coordination service designed to seamlessly link care providers from a patient’s perspective and increased regional cooperation as with the gynaecological oncology service. Palliative Care Services are now better integrated with the cancer service and consumers are actively involved in our strategic planning.

While clinical service remains the first priority for the CTC, there is a need to preserve time and resources for education and research that will allow the organisation to develop a culture of learning and improvement. The activities of the clinical trials unit, laboratory, translational and health services research groups reflect a growing enterprise within the CTC. Staff of the centre all contribute to education and professional development programs. The CTC executive have committed themselves to performance management principles for all staff and have individually commenced a 360° feedback in collaboration with the Area Human Resources Unit to enhance their management skills.

Post-graduate and under-graduate teaching is a major activity of CTC staff in collaboration with the universities and teaching schools. In recognition of the current under supply of graduates in radiation therapists, there is a commitment by CTC staff to support the universities’ programs by on-the-job training. The CTC is now considered a lead centre in NSW for the training of radiation oncologists.

As the organisation expands, the key challenge will be to ensure a sustainable structure that is able to respond to the changing needs of patients, staff and new technologies and to strive for continual improvement in quality of patient care.

The recent re-organisation of the area and sectors to emphasise clinical governance provides an opportunity for the CTC to make a major contribution to the way health services are provided in South Western Sydney. As always, the strength of the cancer service comes from the individual contributions of its staff, volunteers and consumers that in combination is greater than the sum of each. The achievements of the CTC have been significant and I look forward to my continuing involvement with my colleagues in building a better future for the health of the people of South Western Sydney.

Martin Berry
Director

ADMINISTRATION

The Administration Team provide a wide variety of support activities to Cancer Services. Summarised below are some measures of their input during the reporting period.

The Liverpool Cancer Therapy Centre has reception coverage from 8am to 5.30 pm. The reception staff take bookings in total of approximately 223 patients per week including registering on average 35 new patients a week. There were approximately 126 chemo bookings done each week in 01/02. There are 4 phone lines in Clinic and Front Reception with up to 500 calls recorded on one phone during a busy week.

Transcription is provided by up to 4 transcriptionists who transcribe over 15 000 Patient notes and letters for up to 19 different doctors during the year – these notes and letters can be up to 3 pages long and are on average 1.5 pages long.

There is Secretarial coverage from 8am to 5.30 each working day – there are 4 full time Secretaries covering all Radiation and Medical Oncologists. They provide a full range of secretarial duties including diary management for each clinician, coordinating up to 20 committees - taking minutes, distributing notes etc. Secretaries also each take between 75 and 150 phone calls a week from patients and referring doctors.

Filing Staff provide files for all the CTC needs and maintain the cancer therapy filing system that contains over 22,000 patient files. This is the only separate filing location for patient notes within Liverpool Health Service as all other files are held in the Clinical Information Department.

The 2 Billing Officers each year bill for over 21 000 Radiotherapy Treatments, more than 6500 Chemotherapy Treatments and approximately 10 000 consultations each year. The capture rate for referrals within Medical oncology is 98%.

Data management and Data Entry Staff coordinate data collection analysis and entry for over 20 000 patients within the CTC Database – this requires processing up to 4 individual forms per patient. They also provide support to the many projects within the centre. Data Management also provides all activity data information to the CTC Executive, DOHRS and ACHS and the Central Cancer Registry.

The Computer Support Officer logs approximately 16 new IT jobs each week and also addresses approximately 25 unscheduled IT requests each week. This position actions Web site updates and all computer hardware and software installations.

Cancer Admin also provides Financial Management to both Liverpool CTC and Macarthur CTC, input into planning, process review and service enhancement and cost containment.

CLINICAL TRIALS UNIT

Staff

Ms Denise Burns (Clinical Nurse Consultant – Clinical Trials)
Ms Seini Taufa (Full-Time Research Officer)
Mr Vu Nguyen (Full-Time Research Officer)
Ms Lyn Ounthoulay (Full-Time Research Assistant)
Ms Susanne Wright (Research Nurse)
Dr Stephen Della-Fiorentina (Chair- CTC Research Committee)

Overview of 2001/2002

This year has seen a continued rise in the number of patients recruited to Clinical Trials and the number of Ethics Applications for new clinical trial protocols. We welcome the addition of Susanne Wright to our staff. Susanne brings experience in radiation studies with her work at the TransTasman Radiation Oncology Group (TROG) to the Clinical Trials Department to continue the high standard of clinical trial work within the CTC.

The CTC has been awarded a \$35,000 a year grant for two years from the NSW Cancer Council Clinical Trials to enable enhanced recruitment to 15 clinical trials that have been endorsed by the NSW Cancer Council.

The CTC is increasingly a national leader in recruitment to medical clinical trials and the high quality of data management and case report form completion is commented upon by many of the collaborative groups supervising our trial work. The quality of submissions to the Ethics Committee has been favourably noted by the South Western Sydney Area Health Service Ethics Committee, and Denise Burns is seen as an excellent resource person for other units within Liverpool to seek out her knowledge and expertise in ethics submissions. This year has seen the development of Seini and Vu in completing the rigorous Ethics applications to the Ethics Committee.

Denise Burns, Seini Taufa and Vu Nguyen have all been recognised as Employee of the month at the Cancer Therapy Centre this year, reflecting their excellent work ethic and ability to work as a team.

Our place as a high quality Clinical Trials Centre is reflected in the number of clinical trials offered to investigators at the CTC, and the involvement of many of these investigators directly in protocol development. An increasing number of clinical trials and studies developed within the CTC is now occurring, and the ethos of clinical trial participation is becoming increasing evident within the Centre.

'Memorable Moments' during 2001/2002

Ms. Susanne Wright joined the staff in February 2002 as a Research Nurse.

Approval for a dedicated Clinical Trials Centre Pharmacist has been obtained.

Successful grant application to the NSW Cancer Council.

Incorporation of a Clinical Trials Unit in the new Macarthur CTC.

Improved enrolment of patients into clinical trials from the Wingecarribee sector of South West Sydney Area Health Service.

Publications from CTC Research.

Breast Cancer

Anastrozole alone or in combination with tamoxifen versus tamoxifen alone for adjuvant treatment of postmenopausal women with early breast cancer: first results of the ATAC randomised trial. *Lancet* 2002; 359: 2131-2139.

Effects on quality of life of combined Trastuzumab and chemotherapy in women with metastatic breast cancer. *J Clin Oncol* 20 (14) July 15 2002: 3106-3113.

Endocrine responsiveness and tailoring adjuvant therapy for postmenopausal lymph node-negative breast cancer: A randomised trial. *JNCI* 2002; 94: 1054-65.

Use of chemotherapy plus a monoclonal antibody against HER-2 for metastatic breast cancer that over expresses HER-2. *NEJM* 2001; 344: 783-92.

Colo-Rectal Cancer

Edrecolomab (17-1A Antibody) Alone or in Combination with 5-Fluorouracil and Leucovorin in the Adjuvant Treatment of Stage III Colon Cancer: Results of a Multinational Phase III Study. *Lancet* (in press).

Early toxicity from pre-operative radiotherapy with continuous infusion 5-fluorouracil for resectable adenocarcinoma of rectum. A phase 2 trial for the TROG. *Int J Rad Biol Phys.* 2001; 51: 156-163

Central Nervous System Lymphoma

Preliminary results of combined modality therapy for non-AIDS primary CNS lymphoma. Trans-Tasman Oncology Group (TROG). *Med J Aust* 165: 424-427, 1996

Phase 2 multicentre study of brief single-agent methotrexate followed by irradiation in primary CNS lymphoma. *J Clin Oncol* 18(3): 519-526, 2000.

Neuropathic Bone pain

Eligibility audits for the randomised neuropathic bone pain trial. TROG Study 96.05. *Australian Radiology*44: 303-307, 2000.

A role for radiotherapy in neuropathic pain: Preliminary response rates from a prospective trial (TROG 96.05). *Int J Rad Onc Biol Phys.* 46(4): 975-981,2000.

Lung Volume Study

Dosimetric intercomaprison for two Australasian clinical trials using anthropomorphic phantom. *Int J Rad Onc Biol Phys.* 2002; 52(2): 807-819.

CANCER RESEARCH LABORATORIES

Liverpool Hospital, University of New South Wales

Dr Eva Segelov
20 Aug 2002

The Cancer Research Laboratories were established in June 1999 from an “empty room”. Following a year of establishment and beginnings in 2000-2001, the past year has been one of expansion and great productivity.

Staff

The current staff are:

Dr Eva Segelov (MBBS (Hons 1), PhD, FRACP: Head of the Cancer Research Laboratories.

Dr Najah Nassif (BSc (Hons), PhD: Senior Scientist

Mr Glenn Lobo: (BSc (Hons)): PhD student.

Ms Sheri Nixdorf (BSc (Hons)): PhD student.

Ms Mary Azer: Colorectal Tumour Bank Coordinator (Research Assistant)

Mr Glenn Lobo entered the 2nd year of his PhD, making excellent progress on his project. Ms Sheri Nixdorf resigned from the position of Research Assistant to undertake full time study for a PhD in our laboratory. She is investigating the role of MXI-1 in sporadic colorectal cancer. She was awarded a Dean's Scholarship from the Faculty of Medicine, University of New South Wales. Ms Mary Azer was appointed to backfill her position and commenced work in Sept 2001. Mary has expressed interest in enrolling in a Honours degree in our laboratory.

Projects

The Cancer Research Laboratories expanded the scope of its major projects: the SWS Colorectal Tumour Bank and the translational work studying candidate genes in sporadic colorectal cancer. In particular, detailed analysis is being performed on the role of the PTEN gene. A new project has commenced, examining the role of a new gene, MXI-1, in sporadic colorectal cancer.

Colorectal Tumour Bank

Notification: The Tumour Bank is now an integral part of the management of patients with colorectal cancer in SWSAHS, with excellent cooperation between surgeons, histopathologists and oncologists. A tight network for notification of cases has been developed. In 2001-2 we were able to make use of the hospital courier services to bring specimens to SWAPS where timing was appropriate, allowing for more efficient use of time for the Tumour Bank Co-ordinator. Dr Matthew Morgan commenced a colorectal practice at Fairfield Hospital and is now contributing samples. Samples are being collected from Liverpool, Sydney South West Private, Bankstown, Campbelltown, and Fairfield Hospitals.

Samples: The current storage of the Tumour Bank consists of:

316 patients to 12/8/02, with informed consent. Slightly more males than females.
> 1200 tissue samples: including >460 samples of tumour tissue, 580 samples of normal bowel, 32 of involved lymph nodes, 69 of polyps concurrent with tumour, and 4 from liver metastases.
Of the tumour samples, 294 patients had only 1 tumour, 17 patients had 2 separate synchronous tumours and 5 patient had 3 separate synchronous tumours

Database: Our database continues to record data relating to all samples collected. In addition, the Tumour Bank Co-ordinator has been assigned to collect the family history datasheet for the Colorectal Tumour Group database, and forward the data to the CRTG data manager (Angela Berthelsen).

Full report: A separate report (to May 02) analysing contributing surgeons, hospitals etc is available as an appendix to this annual report.

Study of Candidate Genes in Sporadic Colorectal Cancer

This molecular and cellular biology project involves examination of Tumour Bank material for mutations in certain candidate genes. The *PTEN* gene project has yielded interesting results that are in the process of being published and further examined. International and local collaborations have been established to further aspects of work from this project. The *MXI-1* project is a new project commenced by Sheri Nixdorf to examine the role of this newly described gene in sporadic CRC. Both projects also involve assessing the microsatellite stability profile of the tumours.

The role of *PTEN* in sporadic colorectal cancer: Analysis of an initial 17 matched tumour, normal bowel and germline tissue revealed a 53% incidence of abnormality in the *PTEN* gene. Mutations were detected in 35% of cases, none of which had previously been described. Three cases had allele loss without mutation and 2 cases had mutation present as well as allele loss. Analysis of a further 20 samples is almost complete and confirms the findings in a larger data set.

Most of the mutations described are predicted to affect gene function and this is being tested in a number of ways:

Immunohistochemistry staining with a *PTEN*-antibody. This project is in collaboration with Dr Charis Eng, USA.

Real-time PCR to analyse *PTEN* expression.

Western analysis of *PTEN* protein in tumour samples.

Functional analysis of mutations in transfected cell lines- in collaboration with Dr H Rizos, Millenium Institute, Sydney.

Two identical germline mutations were identified in unrelated individuals, neither of whom had clinical features of a known *PTEN* germline syndrome such as Cowden

syndrome. Analysis of a further 125 germline DNA from Tumour Bank samples did not yield further evidence of this mutation, suggesting it is not a common polymorphism.

Micro-satellite instability was found in 12% of cases. One showed a frame shift mutation in PTEN, consistent with published findings in MSI+ cancers.

Trends to various clinicopathological features were found, but analysis requires a larger sample size and will be repeated on the larger series of 37 patients. The results of the larger series are being prepared for publication (see below). Important collaborations have been established, and a number of abstracts have also been presented on this work (below).

The role of *MXI-1* in sporadic colorectal cancer: This is a newly described gene which has not been examined in the context of colorectal cancer, yet is a good candidate gene. Initial results have demonstrated two novel germline mutations in *MXI-1* in our patient cohort. Further analysis of samples is proceeding. An abstract has been submitted on this work (see below) and a publication is expected later this year.

Role of *RAD54* in colon cancer: a marker of radiosensitivity?: This is a collaborative project with Associate Professor Michael McKay, Peter MacCallum Cancer Institute, Victoria.

Scientific Presentations and Publications

Abstracts/ Posters: The following abstracts were submitted and/or posters were presented in the past year (July 2001-May 2002):

Lobo, G.P., Nassif, N.T., Henderson, C.J.A., Nixdorf, S. and Segelov, E. (2001). Role of PTEN in sporadic colorectal cancer: Identification and characterisation of novel germline and somatic mutations. Abstract : 4th Peter Mac Symposium. Molecular and Cell Biology of Cancer, Melbourne, Victoria, Australia.

Lobo, G.P., Nassif, N.T., Henderson, C.J.A., Nixdorf, S. and Segelov, E. (2001). PTEN is frequently altered in the germline and soma in sporadic colorectal cancer. Abstract : 4th Peter Mac Symposium. Molecular and Cell Biology of Cancer. Melbourne, Victoria, Australia

Lobo, G.P., Nassif, N.T., Henderson, C.J.A., and Segelov, E. (2002). Novel Germline and somatic PTEN gene mutations in sporadic colorectal cancer. Merck Sharp and Dohme (Aust) Research Student Poster Award, UNSW. Australia

(Abstracted submitted for presentation in 2002)

Lobo, G.P., Wu, Z.J., Nassif, N.T., Eng, C., Henderson, C.J.A and Segelov E (Aug 2002). *PTEN* gene expression in sporadic colorectal cancer. Abstract: Cancer Genetics & Tumour Suppressor Genes, Cold Spring Harbour Laboratory, New York, USA.

Nassif, N.T., Lobo, G.P., Rizos, R., Azer, M and Segelov E (Aug 2002). Genetic alterations of *PTEN* in microsatellite stable and unstable sporadic colorectal cancers., Abstract: Cancer Genetics & Tumour Suppressor Genes, Cold Spring Harbour Laboratory, New York, USA.

Nixdorf, S., Nassif, N.T., Lobo, G. P., Azer M and Segelov E (July 2002) Mutations of the *Mxi1* Gene in Sporadic Colorectal Cancer: Abstract: 4th Australian Cancer Gene Analysis and Mutation Detection Workshop, Barossa Valley, South Australia, Australia.

(Presented in 2001, prior to July):

Nassif, N.T., Lobo, G.L. and Segelov, E. (2001). Somatic mutation of the PTEN tumour suppressor gene in sporadic colorectal cancer. Abstract 105: Keystone Symposium. The Molecular Medicine of Colorectal Cancer. Taos, New Mexico, USA.

Lobo, G.P., Nassif, N.T., Henderson, C.J.A, Wu, X-J. and Segelov, E. (2001). Germline and somatic mutation of the PTEN tumour suppressor gene in sporadic colorectal cancer. Abstract 410: 13th Annual Lorne Cancer Conference. Lorne, Victoria, Australia

Papers

Lobo, G. P, Nassif, N.T., Henderson, C.J.A., Wu, X., Eng, C., and Segelov, E. “Biallelic inactivation of PTEN in sporadic colorectal cancer: report of novel germline and somatic mutations”. In preparation.

Lobo, G.P., Wu, X., Nassif, N., Eng, C., Henderson, C., and Segelov, E. “Altered Patterns of PTEN Gene Expression in Sporadic Colorectal Cancers”. In preparation.

Educational Seminars

Dr Najah Nassif: invited speaker to present at Cancer Research Seminar, Duke University, USA, Aug 02.

Dr E Segelov and Dr N Nassif; invited speakers to seminar for Department of Genetics, Royal Prince Alfred Hospital- April 2002.

Dr N Nassif: invited speaker to seminar at ANZAC Institute, Concord Hospital - July 2001.

Dr N Nassif: series of lectures on “Introduction to Molecular Biology” to FRACP candidates and Oncology trainees at Liverpool Hospital - February 2002
Medical Grand Rounds- Liverpool Hospital Oct 01.

Grants

Applications continued to be made for grant funding to various bodies (see table). Despite rapid progress, it remains difficult at this early stage of the development of the laboratory (ie 2 years at time of grant submission) to compete with long established laboratories that have had many years of track record. There remains no specific “start-up” grants.

Success was obtained in gaining a PhD scholarship for Ms Sheri Nixdorf, which commenced September 3rd 2001.

We are most grateful that Dr Najah Nassif was granted a third year of funding by the SWS Bowel Cancer Foundation and Colorectal Tumour Group, to end in January 03. A presentation was made in July 2001 and February 2002 to the Health Research Foundation Committee meeting, detailing progress of our work, in support of continued funding for Dr Nassif for 2003. Unfortunately, Dr Nassif’s application for a Health Research Foundation Fellowship for 2003 was unsuccessful. Support for her salary in 2003 is therefore gratefully acknowledged from the Cancer Research Trust Fund of the Cancer Therapy Centre, pending results of Cancer Council and NHMRC grants. Without this surety of ongoing funding, the laboratory in effect would need to close.

Grant Applications 2001-2002

NAME	GRANTING BODY	SUBMISSION	STATUS
Postgraduate scholarship- Ms S Nixdorf	Dean's scholarship, Faculty of Medicine (awarded to candidates narrowly missing out on APA scholarships)	2001	Successful
Postdoctoral Fellowship Dr N Nassif	SWS Health Research Foundation	2002	Unsuccessful
Project grant	NHMRC	2002	Submitted
The Gilbert Estate	NSW Cancer Council	2001 2002	Unsuccessful Submitted
Equipment Grant	Clive and Vera Ramaciotti Foundation	2000 2001	Unsuccessful Unsuccessful
Project Grant	Leo and Jenny Leukemia Foundation	2000 2001	Unsuccessful Unsuccessful
Equipment grant	Rebecca L Cooper Foundation	2001 2002	Unsuccessful Due in September
Research Support Programme	UNSW	2001 2002	Unsuccessful Due in October 02

Equipment purchases

Lack of funds again prevented the planned purchase of a GS2000 laser automated gel system, an item that is still very much needed to improve the efficiency of screening samples for mutations (cost \$50 000). More sequencing apparatus was purchased. Consumable costs have grown with the expansion of staff and students.

Committees

Dr Segelov and Dr Nassif are board members of the Colorectal Tumour Group and were involved in the formulation of the SWSAHS plan for colorectal services. Dr Segelov was a reviewer for grants for SWS Health Research Foundation and NHMRC.

Finances

Donations were gratefully received from:

St George Bank

Funding of the Senior Scientist from Jan 01-Jan 03 is very gratefully acknowledged from the SWS Bowel Cancer Foundation (now part of the Health Research Foundation) Colorectal Tumour Group.

Funding for the Tumour Bank Co-ordinator is gratefully acknowledged from the Department of Medical Oncology (Cancer Therapy Centre, Liverpool Hospital).

Funding for Dr Nassif's position and additional equipment for purchase in 2003 is acknowledged with much gratitude from the Cancer Research Trust Fund at the Cancer Therapy Centre.

SWS Colorectal Tumour Bank Report

Mary Azer, Tumour Bank Co-ordinator
3 June 2002

Current samples

292 individual patients have been collected to date, all with informed consent.
133 patients are female, 158 patients are male.
1118 tissue samples, including normal bowel, tumour tissue, lymph nodes, polyps, and liver metastases.

Normal bowel samples = 564

Tumour samples = 453
257 patients had only 1 tumour
17 patients had 2 separate synchronous tumours
5 patients had 3 separate synchronous tumours

Polyp samples = 69

Lymph node samples = 32.

Samples are being collected from Liverpool, South West Private, Bankstown, Campbelltown, and Fairfield Hospitals.

Hospital	No. specimens in total	% specimens in total*
Liverpool	96	33%
South West Private**	8	3%
Bankstown	109	37%
Campbelltown	58	20%
Fairfield	21	7%

*rounded off to nearest percent.

**collection just begun May 01

We have collected samples from surgery by 22 different surgeons.

Surgeon	Hospital	No. of specimens in total	% of specimens in total
Blomberg	Bankstown	40	13.7%
Campbell	Liverpool	1	0.3%
Deane	Liverpool	2	0.7%
Durmush	Fairfield	4	1.4%
French	South West Private	1	0.3%
Fulham	Liverpool, Campbelltown	63	21.6%
Gatenby	Campbelltown	38	13.0%
Greenberg	Bankstown	13	4.5%
Juergens	Liverpool	1	0.3%
Kourtesis	Bankstown	12	4.1%
Mendelsohn	Fairfield	9	3.1%
Merrett	Bankstown	3	1.0%
Moont	Liverpool	8	2.7%
Morgan	South West Private/Fairfield	16	5.5%
Perrett	Bankstown	1	0.3%
Pokorny	Liverpool	1	0.3%
Rae	Liverpool	24	8.2%
Stevenson	Bankstown	2	0.7%
Sugrue	Liverpool	3	1.0%
Turner/Gatenby	Campbelltown	1	0.3%
Wilson	Liverpool	10	3.4%
Wong	Bankstown	39	13.4%

% has been rounded off to 1 decimal place.

SWS CANCER SERVICE

Background

Publication by NSW Health report in 1999, "*Optimising Cancer Management*" challenged each of the 17 Area health services to develop, implement and evaluate a comprehensive approach to cancer control. In SWSAHS, Martin Berry as Director of Cancer Services developed a vision of high quality services for our community. The SWS Cancer Service team Robyn Shipley, David Kelly, Kate Tynan and Bill Kricker have been working with Dr Martin Berry to implement the recommendations of the Report. Val Poxon and Geoff Delaney have also worked closely with the SWS Cancer Service on the Area Clinical Cancer Registry, which is the first in NSW.

Cancer diagnosis and treatment nearly always involves many service providers located in both the public and private sectors with the patient navigating themselves to various appointments etc. In addition to the patient's immediate medical needs, there may be other needs for support precipitated by the patient's illness. The complexity of treatments for most people are daunting. They may not have access to optimum care for a variety of reasons, such as language barriers, lack of local knowledge as to where to get help, or variations in treatment and referral patterns.

As knowledge of cancer and its management rapidly proliferates there is an increasing need for clinicians to sub-specialise in order to keep pace with new developments. In many instances this has clearly been shown to have a positive effect on patient care. The trend to sub-specialisation however needs to be balanced by processes aimed at maintaining strong links with the various providers. Effective leadership and strategic management of multiple speciality services are therefore crucial to optimise patient outcomes.

The organisation has responsibility for resource, process and quality: therefore improvements in quality and patient outcomes will be driven through the management of cancer services. The underlying challenge for the SWS Cancer Service is to build a flexible and responsive organisational structure to support cancer service delivery.

The constituency of the SWS Cancer Service is the 2,300 patients each year diagnosed with cancer and approximately 10,000 people in SWS who have survived their illness or are living with cancer. In addition to the patient, there are families and carers who bear a significant burden of the anxiety and stress associated with cancer.

The SWS Cancer Service is being developed along tumour programmes. Each programme has a Leader and ten team members representing a broad spectrum of health workers. The Programmes and Leaders for 2002 are:

Dr Cyril Wong	Colorectal
Dr Lawrie Hayden	Genito-Urinary
A Prof Felix Chan	Gynae Oncology
Drs Michael Farrell and Allan Fowler	Head & Neck
Dr Anthony Aouad	Lung
Dr John Gallo	Haematology
Prof Chris Anderson	Skin
Prof Stephen Deane and Dr Neil Merrett	Upper GI
Dr Tom Bonar	Breast

Dr Simon McKechnie
Dr Martin Berry

Neuro
Other Cancers

Many people have given up their time to contribute to workshops and related activities, often after hours to improve cancer services. The Tumour Programme's Terms of Reference include development of patient-centred pathways of care, identifying best practice and advising on resource allocation. The collection of data for the Area Clinical Cancer Registry, monitoring and reporting of key performance indicators and outcomes are seen to be major functions of these groups.

The goal of the SWS Cancer Service is to:

“Deliver a comprehensive, integrated, patient centred cancer service to the population of South West Sydney, that is in accordance with good practice.”

The words comprehensive, integrated refer to the continuum of care from prevention, screening through to treatment, palliation, rehabilitation and support. Patient centred means that care is planned and delivered “through the patient’s eyes” and good practice specifically refers to demonstrable good practice.

There are three priority themes to improve cancer services:

Continuum of care. A population based approach to cancer service that spans primary and secondary prevention, diagnosis, treatment supportive care palliation and follow-up;
Clinical Governance to integrate clinical decision making in a management and organisational framework; and
‘A Cancer Pathway’ that begins when a patient seeks/is given a diagnosis and can be predicated for the majority as they progress through the required services.

Some of the year’s achievements include:

A workforce of advocates mobilised to lead site specific tumour teams in a voluntary capacity. In all there are 10 teams (Breast, CRC, Lung, Gynae-oncology, Haematology, Neuro, Skin, Genito urinary Head and Neck and Upper GI) with approximately 100 clinical and allied health volunteers involved in the process.

A workshop held in April 2002 to build the confidence of the teams and elicit and prioritise a comprehensive list of issues as might be perceived ‘through the patient’s eyes.’ This event was to kick off a one-year work plan. In contrast to usual ‘top down’ planning this was a ‘bottom up’ approach that reflects the reality of service delivery at the coalface.

A report has been completed detailing a priority ranking of issues arising from the workshop and defined a “ Master Issues List” Many issues are common to the majority of the tumour teams such as ‘Radiotherapy waiting times’ or ‘Gateway and referral into services’. These must be addressed by the SWS Cancer Service

A planning framework has been developed to build an organisation that can deliver cancer services consistent with patients perspective’s and values.

Implementation of stage one of an Area Clinical Cancer Registry

In NSW there is currently no registry system to collect clinically relevant staging, local treatment or outcome data and the lack of this information is major impediment to improving safety and quality. A pilot is planned with the Colorectal Tumour programme who have generously offered time and expertise.

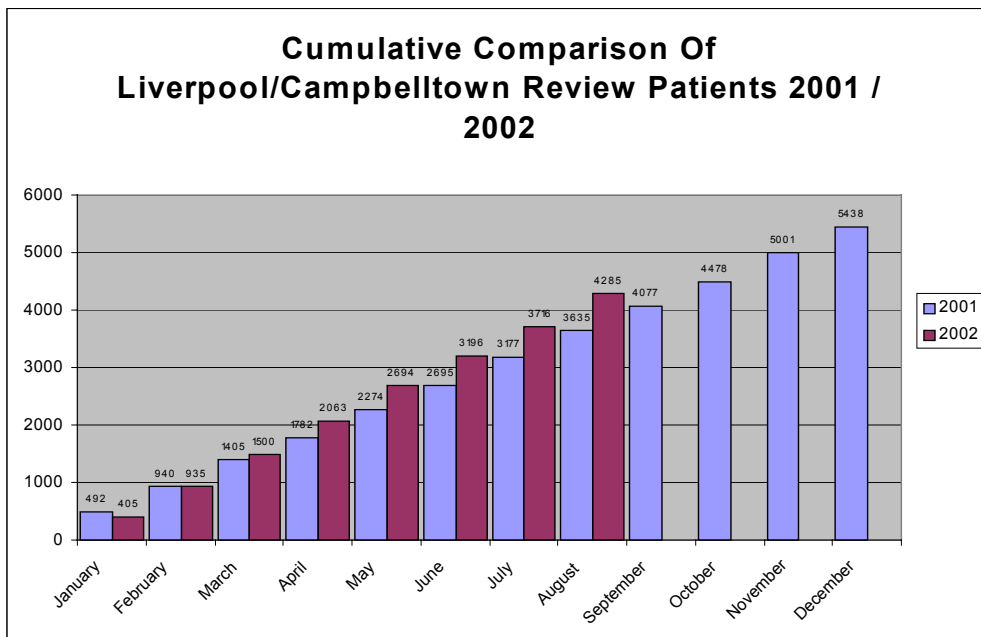
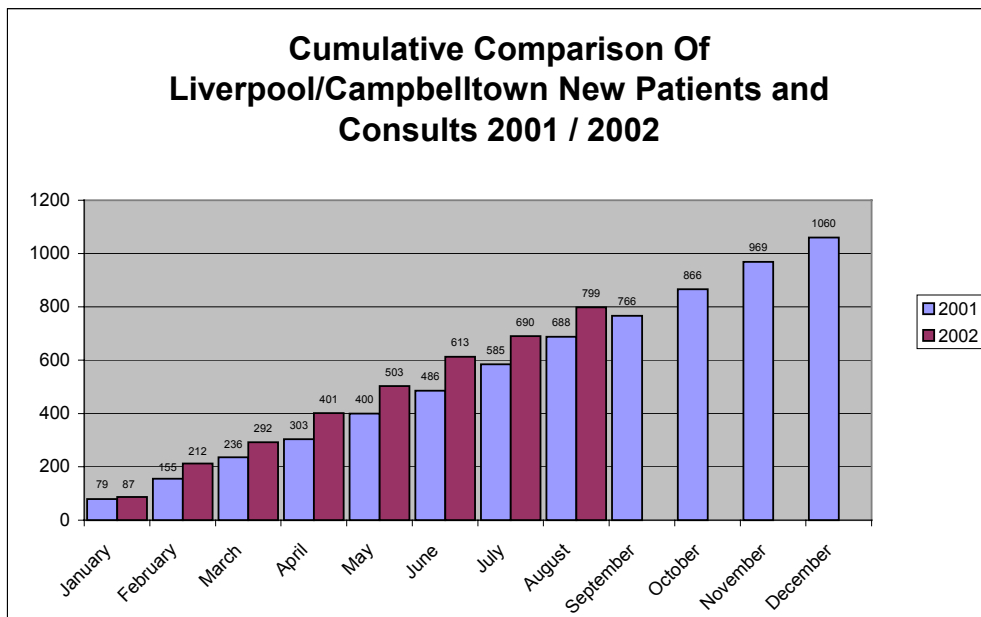
Website and provider Directory

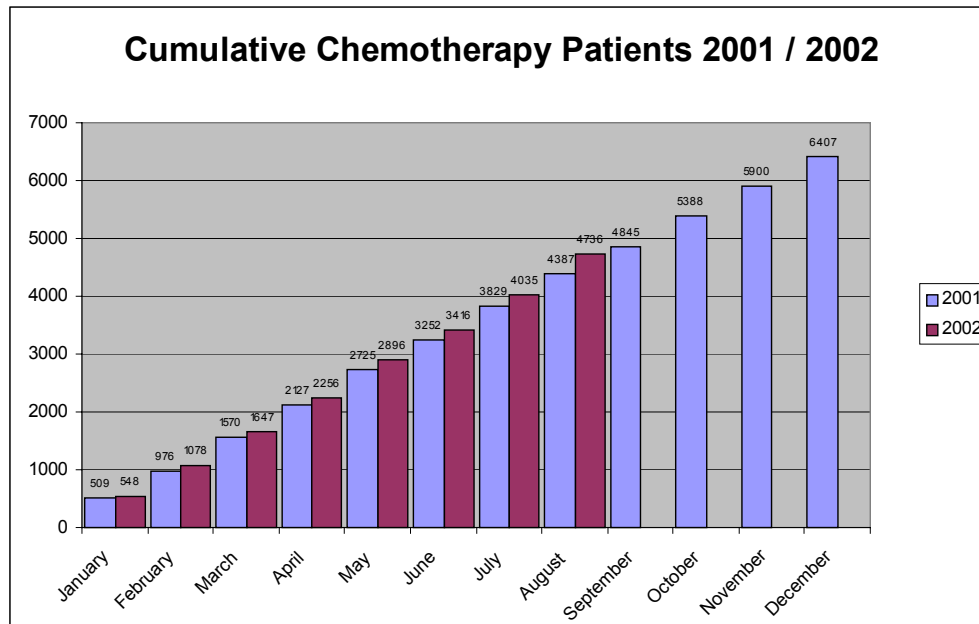
One of the key issues raised at the April workshop was “gateway and referral issues”. How do GP’s and other service providers have knowledge of or access to the cancer services in SWSAHS? The website and provider directory will clearly identify local expertise and contact details. It will also contain information for professionals and patients.

MEDICAL ONCOLOGY & PALLIATIVE CARE

General

The 2001/2002 year has been another year of service growth in the Medical Oncology Department. Over the six (6) months, January to June 2002, there has been a 20% growth in the new patient referrals, at 15.6% increase in follow-up consultations and a 4.8% growth in attendances in the Day Centre for chemotherapy and other treatments (see attached graphical representations – 2001 compared with 2002 calendar years).





In terms of staffing, the following appointees have provided patient care and contributions to teaching and research over the past 12 months.

Registrars

Dr. David Thomas (January – December 2001)

Dr. Tony Chan (January – June 2002)

Consultant Staff

Dr. Eugene Moylan (Director) 1.0 FTE

Dr. Amanda Goldrick 0.5 FTE

Dr. Stephen Della-Fiorentina 0.9 FTE

Dr. Eva Segelov 0.2 FTE

Dr. Elizabeth Hovey (commenced 23 July 2001) 0.6 FTE

There has been a steady move towards sub-specialisation within Medical Oncology facilitated by increasing staff numbers. This has enabled the formation of an increasing number of Multi-disciplinary Clinics/Meetings which focus on individual organ/system/tumour subtypes.

Current Medical Oncology sub-specialisation is as follows:-

Breast: Eugene Moylan, Stephen Della-Fiorentina, Amanda Goldrick

Lung: Eugene Moylan, Stephen Della-Fiorentina

Head & Neck: Amanda Goldrick

Gynae: Amanda Goldrick

Upper Gastrointestinal: Eugene Moylan, Eva Segelov

Colorectal: Eugene Moylan, Eva Segelov

Genito-Urinary: Eugene Moylan, Elizabeth Hovey

Neuro: Elizabeth Hovey

Dr. Goldrick continues to provide a 0.5 FTE Palliative Care consultative service. However, following the appointment of a 1.0 FTE Palliative Care Physician in July 2002, it is anticipated that Dr. Goldrick will reduce her Palliative Care commitment over the latter six (6) months of 2002 and begin a full-time clinical role in Medical Oncology from January 2003.

In October 2001, Dr. Eva Segelov was appointed as the Director of Medical Student Education in the SWS Clinical School. This appointment underscores the significant contribution which all members of the Medical Oncology Department make to medical student education/training for the University of NSW SWS Clinical School.

A significant challenge facing the Medical Oncology Department will be to provide a comprehensive service to the Macarthur Cancer Therapy Centre following its anticipated opening in February 2003. Recruitment of another Medical Oncologist will occur in late 2002 to assist with provision of this networked service within the SWSAHS.

Clinical Trials / Research

It is evident from the reports of the Cancer Research Laboratories and Clinical Trials Unit that the Department of Medical Oncology is highly committed to discovering and defining optimal cancer treatment for cancer sufferers. A highlight of 2001/2002 was the release of information from the ATAC Study (Adjuvant Tamoxifen Alone or in Combination) a trial in post-menopausal women with early breast cancer to which Liverpool was a significant contributant. As researchers we would like to express our gratitude to the patients who generously participate in the research studies open to recruitment in SWS (approved by the SWSAHS Ethics Committee).

Publications

Posters

“Does Stage At Diagnosis Differ Between Anglo-Celtic and Other Ethnic Patients With Breast Cancer? Moylan E.J., Sim D., Mohsin M., Sullivan E., Berry M.P.B., Matthews C. – COSA, November 2001.

“Chemotherapy Basic Treatment Equivalent (CBTE): A Model Of Chemotherapy Throughput.” Delaney G., Jalaludin B., Gildea B., Moylan E.J., Barton M.B. – European Cancer Conference (ECCO), Portugal, 19-25 October 2001.

Verbal Presentations

Delaney, G., Jalaludin, B., Gildea, B., Moylan, E.J., Barton, M.B. Chemotherapy Basic Treatment Equivalent (CBTE): A Model Of Chemotherapy Throughput.” – MOGA / AGITG Meeting, Twin Waters QLD, 9-12 August 2001

Articles Submitted

Punt, C.J.A., Nagy, A., Moylan, E.J. “Edrecolomab Alone Or In Combination With Fluorouracil And Folinic Acid In The Adjuvant Treatment Of Stage III Colon Cancer: A Randomised Study.” et al. – The Lancet.

Lin, P., Chu, J., Kneebone, A., Moylan, E.J., Jalaludin, B., Pocock, N., Kiat, H., Rosenfeld, D. “F18 FDG Imaging With A Co-Incidence Dual-Head Camera (FDG Co-PET) In Staging Of Lymphoma: A Comparison With Gallium-67 Scans.” – ANZ Journal of Medicine.

Delaney, G., Jalaludin, B., Moylan, E.J., Barton, M.B. “The Development Of A Model Of Outpatient Chemotherapy Delivery – Chemotherapy Basic Treatment Equivalent (CBTE).” – Clinical Oncology

Conferences Attended and Sponsorship Acknowledgments

The members of the Medical Oncology Department attended the following conferences/meetings over the past year and acknowledge the sponsorship of such meetings:-

Date	Conference	Sponsor	Location	Attendee
8-12 August 2001	MOGA / AGITG Meeting	Pharmacia Australia Pty. Limited	Twin Waters, QLD	EJM
15-16 August 2001	2 nd National Prostate Cancer Symposium	-	Sydney, NSW	EH
7-9 September 2002	Weekend Oncology Workshop	Astra Zeneca Pty. Limited	Sydney, NSW	SDF / EJM / ES
12-15 September 2001	Temodal Global Investigator Meeting	Schering Plough Pty. Limited	Prague, Czech Republic	AG
9-11 November 2001	ANZ Head & Neck Society Annual Scientific Meeting	-	Melbourne, Vic	David Thomas
28-30 November 2001	Clinical Oncological Society of Australia (COSA)	-	Brisbane, QLD	EH
Date	Conference	Sponsor	Location	Attendee
6 December 2001	Surviving Survival: An Interactive Seminar For	-	Sydney, NSW	EH

	Professionals			
10-13 December 2001	24 th Annual San Antonio Breast Cancer Symposium	Novartis Pharmaceuticals Australia Pty. Limited	San Antonio, Texas USA	EJM
March 2002	European Breast Cancer Conference	Astra Zeneca Pty. Limited	Barcelona, Spain	SDF
5-7 April 2002	Endocrine Society Of Australia / Neuroendocrine Tumours	-	Hobart, Tas	EJM
19-20 April 2002	ANZGOG Meeting	-	Adelaide, SA	AG
18-21 May 2002	ASCO Annual Meeting	Pharmacia Australia Pty. Limited	Orlando, Florida USA	AG
18-21 May 2002	ASCO Annual Meeting	Astra Zeneca Pty. Limited	Orlando, Florida USA	EH

The following sponsors of the weekly CTC Oncology Educational Seminar are also gratefully acknowledged:-

Abbott Australasia Pty. Limited
 AMGEN Australia Pty. Limited
 ASTA Medica Australasia Pty. Limited
 Aventis Pharma Pty. Limited
 CSL Limited
 Eli Lilly Australia Pty. Limited
 Pharmacia & Upjohn Pty. Limited
 Amersham Health Pty. Limited
 GlaxoSmithKline
 Janssen-Cilag Pty. Limited
 Bristol-Myers Squibb Australia Pty. Limited
 Mundipharma Pty. Limited
 Novartis Pharmaceuticals Australia. Pty. Limited
 Pharmacia Australia Pty. Limited
 Roche Products Pty. Limited
 Sanofi-Synthelabo Australia Pty. Limited
 Schering Pty. Limited
 Schering-Plough Pty. Limited
 Wyeth Australia Pty. Limited
 Servier Laboratories (Aust) Pty. Limited
 Merck Sharp & Dome

MEDICAL PHYSICS

Review

The dominant issue for the Cancer Therapy Centre during the previous year was the large number of clinical developmental projects implemented. Most of these projects required a substantial amount of physics time throughout the year.

Routine physics support activities were fairly constant throughout the year. This included activities such as treatment planning support, treatment plan checking, TLD dosimetry and patient specific correction factor measurements. The medical physics group also responded to the pressures by undertaking a number of development initiatives that were designed to reduce the time taken to create treatment plans and deliver treatment. Other development initiatives aimed at improving quality of care in treatment planning and delivery.

Planning for the Macarthur centre continued throughout the year, with input being provided into building design and service planning.

The maintenance of the Siemens equipment complement continued to be contracted out to Medtech Solutions Ltd, an arrangement that serves the department well. Equipment performance was, on the whole, good whilst expenditure was relatively modest.

We were fortunate to have the addition of a number of new staff members to the medical physics team. In spite of the large number of projects under way, hard work by everyone ensured that the more important projects were completed, with resulting improvements in radiation oncology practice. A special note of the achievement of Matthew Williams who was awarded the 2001 ADAC Curie Prize for his postgraduate research work titled “Collimator Setting Optimization in Intensity Modulated Radiotherapy” and Lois Holloway who was awarded the 2001 Varian Prize for her presentation “Beam position optimisation for IMRT”.

Highlights

Equipment Management

- The main project for the year was the purchase, commissioning and clinical implementation of CMS Focus radiotherapy treatment planning system. This required significant resources by the medical physics group to ensure the planning system was setup in accordance with accepted published protocols (AAPM, ACPSEM)
- The upgrade of Siemens linear accelerator M1 (KD2 2462) with multileaf collimator (MLC) to improve productivity and quality of care, and to reduce OH&S risks. The significant change in machine function required extensive re-commissioning of the linear accelerator. The MLC Upgrade purchase included an upgrade of Siemens linear accelerator M2 (MX2787) to enable Intensity Modulated Radiation Therapy (IMRT) treatment delivery functionality (SIMTEC).
- Liverpool CTC was an international test site for pilot treatment machine interface software (PRIMEVIEW) enabling IMRT treatment record and verification functionality.
- Purchase and installation of the BAT ultrasound system
- Development of the IMRT system within the department

- Commissioning of daily dose constancy checkers that are used on the linear accelerators. The use of daily dose checkers is recommended by various professional bodies as part of the comprehensive QC program of radiotherapy equipment.

Clinical Physics

Several major development initiatives were undertaken during the year, with the emphasis being quality of care improvements and streamlining of processes in treatment planning. These included:

- Purchase and installation of BAT ultrasound system or localisation of the prostate during treatment
- Implementation of compensators for Head and Neck treatment
- Phase 1 clinical release of Focus treatment planning system
- Commissioning of Multi Leaf Collimator Upgrade to Siemens Linear Accelerator

Staff

Clinical Physicists

Michael Bailey

Gwi Cho

Oona Collins

Gary Goozée, Director (from July, 2002)

Lynne Greig, Chief Physicist (resigned April 2002)

Robin Hill

Mark West

May Whitaker

Research and Project

Lois Holloway, Research Physicist

Matthew Williams, p/t Project Physicist and PhD student

Movements

- Gary Goozée was appointed to commence work in July 2002, having worked previously in 3 other Sydney centres.
- Michael Bailey commenced work in February 2002 having worked at two centres within Victoria.
- Gwi Cho arrived in September 2001, previously having worked in Dunedin, NZ.
- Oona Collins arrived in October 2001, direct from completing her BSc at UTS, Sydney

The various staff movements meant that there were several clinical physicist vacancies throughout the year that did cause some pressure. The clinical staff profile is also weighted with medical physicists who are not yet accredited in radiation oncology, and this generated a large training workload for the senior (accredited) physicists which is not always handled successfully. A preferred staff profile would have at least equal numbers of senior and medical physicists.

Education Activities

Medical Physics staff participated in a number of educational activities, as outlined below.

Teaching and Lecturing

- Participation in workshops on IMRT and radiotherapy imaging
- Orientation program for new medical physics recruits
- Practical and theoretical training for medical physics trainees
- Tutorials for radiation oncology registrars undertaking part 1 physics exams
- Supervision of PhD student and honours student
- Presentations at internal physics seminars, radiotherapy and CTC combined education meetings, and therapist in-services
- Extensive staff training sessions for new systems such as Focus, CT Sim
- Lectures for Basic Sciences of Oncology course
- Lecture to Sydney University MRS 3rd year students
- Radiation safety in-services
- Preparation of training modules for IAEA support registrar training scheme
- Participation in the NSW pilot of the new ACPSEM accreditation

Invited presentations

Holloway, L. The use of Nuclear Medicine techniques in radiotherapy: The development of IMRT, invited presentation Nuclear Medicine department RPAH 14th August 2001.

Holloway, L. Possibilities for the use of radionuclide imaging in radiotherapy, invited presentation Australian and New Zealand Society for Nuclear Medicine Physics workshop 10th December 2001, St George hospital.

Holloway, L. The Commissioning of Intensity Modulated Radiotherapy at Liverpool invited presentation CMS Users Meeting Christchurch, New Zealand.

Conferences and workshops

- Matthew Williams attend EPSEM 2001; and chaired session of the ACPSEM branch workshop on IMRT Sydney 2001
- Lois Holloway was Chair of the organising committee for the ACPSEM branch workshop on IMRT Sydney 2001; attended EPSM Perth 2001; attended ASTRO San Francisco 2001; attended Australia and New Zealand society of nuclear medicine, physics workshop 2001; attended International workshop on Micro and Mini-dosimetry and its applications Sydney 2001; and attended CMS Users meeting, Christchurch 2002
- Michael Bailey attended the CMS Focus Users meeting - April 02, Christchurch NZ
- Robin Hill and Mark West attended the CMS Focus Training Course - October/November 01, St Louis, Missouri, USA.
- Gwi Cho attended the Siemens "Service Engineering for Physicists" course - May 2002, Concord, California, USA.

Publications

Holloway, L. C., Hoban, P. W. and Metcalfe, P. E. 2002 Radiobiological parameters that consider volume: A review *Australasian Physical Sciences and Engineering in Medicine* **25** 47-57.

Jones, L. and Hoban, P. 2002a A method for physically based radiotherapy optimization with intelligent tissue weight determination *Med Phys* **29** 26-37.

Jones, L., Hoban, P. and Metcalfe, P. 2001 The use of the linear quadratic model in radiotherapy: a review *Australas Phys Eng Sci Med* **24** 132-46.

Jones, L. C. and Hoban, P. W. 2002b A comparison of physically and radiobiologically-based optimisation for IMRT *Med Phys* **29** 1447-1455.

Presentations

Bailey, M. The Application of TG53 to the commissioning of CMS FOCUS, CMS Focus Users Meeting.

Holloway, L. 2001 The use of Radiobiological factors in Intensity Modulated Radiotherapy (IMRT) In *International workshop on Micro and Mini-dosimetry and its Applications* Sydney, Australia.

Holloway, L. C. and Hoban, P. 2001a Beam position optimisation for IMRT In *EPSM* Perth, Australia.

Holloway, L. C. and Hoban, P. 2001b Combining a physically based optimisation method with a biologically based tissue importance weight changing method In *ASTRO*, Vol. 51, Supp 1 San Francisco, USA, pp. 72.

Williams, M. Collimator Setting Optimization in Intensity Modulated Radiotherapy, EPSEM 2001.

Conclusion

It was again a busy year due to the large number of development initiatives under way. Key staff absences and recruitment gaps meant the remaining members of the team had to work very hard during this period and they should be congratulated on maintaining the quality of the physics service while still progressing the many projects.

The next year will be even more full. Key objectives include:

- continued commissioning of the Focus treatment planning system and decommissioning of Cadplan,
- re-initiation of comprehensive in-house training of less experienced physics staff,
- implementation of Argus QA management software,
- development of IMRT treatment techniques,
- installation and commissioning of new multi-slice CT scanner,
- clinical commissioning of the use of BAT ultrasound localisation for prostate radiation therapy,
- incorporation of PET images for treatment planning,
- commissioning of accelerators and commencement of staff and treatments at the MacArthur Cancer Therapy Centre.

3 Action Plan for Year 2002/03

	Action	Owner	Priority
Equipment	Primeview upgrade on M1 and M2 Implement use of profiler dosimeter for linac QA Treatment couch verification Replacement of CT scanner RT Equipment purchase for Macarthur Cancer Centre Tender document Implementation of ARGUS QA software Review QA programs for RFA-300 Orthovoltage Accelerators (annual tests) Simulator (Annual tests) CMS FOCUS CMS FOCAL products		

NURSING

The past twelve months has seen considerable movement within nursing. Paul Grimmond returned to St. Vincent's Hospital as the Deputy Director at the Sacred Heart Institute. A number of registered nurses took their skills to other hospitals and we recruited talented registered staff to replace them. We would like to welcome Justin Hussien, Susanne Larkin and Doris Dadic in CTC and Joan Lososo, RN in Grimson Ground East.

Congratulations go to Margaret Chalker on her appointment to the position of Breast Care CNC, with responsibilities throughout SWSAHS. Her role is to provide support services for patients with breast cancer, specialising in wound care, counselling, community referrals, prosthesis advice and treatment education. As part of her role, Margaret has been active with the Living with Cancer education group and with the Caring for You volunteers who fit women for prostheses and bras. Margaret is also out there drumming up support from community groups and has successfully lobbied for a blanket warmer and wig library for the Campbelltown Cancer Therapy Centre.

The Breast Care CNC position is part of the Cancer Care Coordination Service that is being developed by the South Western Sydney Cancer Service. There are plans for six coordinators attached to different tumour programmes, that will assist the patient through the treatment process and coordinate clinical and community services to enhance the effectiveness of cancer care delivery. This is a great opportunity for nursing to play a pivotal role in cancer care delivery and for the ongoing evolution of advanced clinical nursing positions.

Cancer Services welcomes Dr Louise Elliot to Liverpool Hospital as the Palliative Care Staff Specialist. Louise provides both inpatient and outpatient services as well as domiciliary visits within the Liverpool sector. The Palliative Care consultative service continued to expand with the addition of a third Registered Nurse position. A large part of the nursing service's energies were directed to the support and education of the ward nurses. Education regarding symptom management, pain control and discharge planning were provided on a regular basis throughout the hospital. Bronwyn Heron CNS, was seconded to Area Palliative Care as the project officer for the 'Palliative Care Proof of Concept' data base. This SWSAHS initiative, involved the development and trial of an electronic clinical record, throughout Area Palliative Care.

Alex Grimson Ground East was very busy over the past 12 months, particularly over the winter period as part of the Winter Bed Strategy. Thank you to all the staff who have worked so hard. Your efforts have made a difference. A number of staff attended the Winter Congress held in Canberra by the COSA Cancer Nurses Group. The conference invigorated all attendees with renewed energy for oncology nursing.

We welcome the appointment of Tania Luxford as CNE for Cancer Services. Her enthusiasm for education is catchy and we know she has many plans to support new

staff and stimulate learning throughout the Service. Tania has been busy assisting nursing staff to complete their chemotherapy skills packages, reviewing clinical techniques and organising a programme for the 3rd year nursing students.

As the new Senior Nurse Manager I would like to thank all members of the Cancer Services team for their warm welcome. I would particularly like to thank Leanne Hollis and Kaye Brown for their work as Acting NUM and Acting Senior Nurse Manager. I look forward to working with you all as we bring the Liverpool Cancer Service to the forefront of cancer care provision.

Catherine Murray
Senior Nurse Manager

RADIATION ONCOLOGY

General Remarks

The year 2001/2002 was a period of relative stability in regard to medical staffing of the radiation oncology department. Andrew Hui was the only person to leave when he moved from his position as fellow to join the Peter MacCallum Cancer Institute in Melbourne as staff specialist.

As in the previous year, long waiting times for treatment persisted because of inability to recruit sufficient numbers of radiation therapists to fully operate the treatment machines. This was compounded by the world wide shortage of radiation therapists. Strategies have been put in place to increase recruitment that will gradually alleviate the situation over the coming years.

Plans for expansion of services and replacement of older equipment and technology were implemented with the acquisition of a new computerised planning system and state of the art ultrasound machine to enable world class treatment for prostate cancer. Other plans in various stages of implementation included the purchase of a high resolution spiral CT scanner, the opening of the new treatment centre in Macarthur in February 2003 and rollout of the long awaited computerised information management system as a lead site in N.S.W. With the successful bid to acquire the second N.S.W. PET scanning facility at Liverpool, our centre will now have local access to the best technology for cancer care.

The radiation oncologists are all actively involved in the multidisciplinary tumour groups, education, research and administration. Major educational initiatives were instigated by the radiation oncologists as national workshops that included new technologies (Michael Barton, Geoff Delaney), radiation treatment for prostate cancer (Martin Berry, Andrew Kneebone) and waiting times for radiation treatment (Michael Barton, Geoff Delaney). A major component of the research output of the department is undertaken through the Collaboration for Cancer Outcomes, Research and Evaluation (CCORE) and is published as a separate report.

Staffing

The responsibilities of each staff specialist are listed below:

Michael Barton: Central Nervous System, Lymphoma, Director of CCORE and Chairman of the UNSW Undergraduate Education Committee.

Geoff Delaney: Breast, Lung and Upper Gastro-intestinal Cancer, Deputy Director of Radiation Oncology and Chairman, Information Management and Technology Committee.

Andrew Kneebone: Colorectal and Genito-urinary Cancer, Bankstown clinic and Supervisor of Training in Radiation Oncology.

Allan Fowler: Gynae-oncology, Head and Neck and Skin Cancer, Bowral clinic, Chairman, Head and Neck Cancer Programme and Chairman, CTC Quality Improvement Committee.

Shalini Vinod: Breast and Lung Cancer, Campbelltown clinic, Secretary of SWSAHS Lung Cancer Multidisciplinary Group.

Martin Berry: Genito-urinary and Paediatric Cancer, Director of CTC, Radiation Oncology and South Western Sydney Cancer Service.

Registrars and Fellows:

As mentioned above, Andrew Hui left the CTC and his position as fellow to join the Peter MacCallum Cancer Institute as a staff specialist. Minjae Lah, Karen Lim, Upendra Parvathaneni, and Marketa Skala continued in their registrar positions. Market Skala was successful at her first attempt at the Part I fellowship examinations. All registrars are involved in research projects at the CTC (listed at the end of this report). Upendra Parvathaneni completed the College specified statistics assignment with honours. He is principal investigator for the CTC breast cancer audit (with Geoff Delaney).

Teaching and Education

Geoff Delaney was awarded an MD for his thesis titled “The development of a new measure of linear accelerator throughput in radiation oncology treatment delivery – The Basic Treatment Equivalent” April, 2002.

All members of the department are involved in the educational programmes at the CTC. Andrew Kneebone has continued his involvement with the State Education Coordinating Committee as secretary. The CTC at Liverpool is now considered to have one of the best registrar training programs in Australia. Martin Berry is a senior examiner for the Faculty of Radiation Oncology.

The Basic Sciences of Oncology Course has provided a much needed instructional program for post graduate oncology trainees in their early years and Michael Barton has provided the leadership required to refine the course. He also is nearing completion of the initial phase of a distance learning program in oncology under a contract to the International Atomic Energy Agency. Michael has coordinated the development of a teaching CD-ROM that is now being used for undergraduate medical students at the University of N.S.W.

Research and Scholarly Activities

The following is a summary of the various activities of the medical staff in the radiation oncology department. Their output is a testimony to the wide ranging activities of all staff and their commitment to building a world class radiation oncology service.

Publications

Kenny, L., Peters, L., Rodger, A., Barton, M., Turner, S. Modern radiotherapy for modern surgeons: an update on radiation oncology. ANZ J Surg. 2002 Feb;72(2):131-6.

Posters and Presentations

Kneebone, A. Prostate Cancer Imaging. Imaging in Radiation Therapy Planning Interdisciplinary Seminar held at Liverpool Hospital 16th February 2002.

Kneebone, A. Australian and New Zealand Consensus Guidelines For 3D Conformal Radiation Therapy in Prostate Cancer. Invited speaker to National conference in Melbourne in May 2002 aimed at developing national guidelines for development of consensus guidelines for 3d conformal radiotherapy.

Barton, M.B. Graduation ceremony Occasional Address, Faculty of Health Sciences, University of Sydney, 2002.

Berry, M.P. Service coordination for urological oncology. USA annual scientific meeting, Perth, W.A. April, 2002.

Works in Progress

Kneebone, A., Turner, S., Berry, M., Cakir, B., GebSKI, V. ICRO 2001. Submitted for publication Australasian Radiology 2002

Kneebone, A., Hogendorn, N., Tramontana, D., Gapes, L., Turner S., GebSKI V., Randomised Trial of complete Immobilization for Pelvic Irradiation. Accepted for publication - International Journal Radiation Oncology Biology Physics 2002

Vinod, S.K., MacLeod, C.A., Fowler, A., Delaney, G., Barton, M.B., and Jalaludin. B. "A basic treatment equivalent for gynaecological brachytherapy: a pilot study" Clinical Oncology (in press).

Hruby, G., Carroll, S., Nasser, L., Stevens, G., Miles, S., and Barton, M.B. Sites of Local recurrence following surgery, with or without chemotherapy for Rectal Cancer - Implications for Radiotherapy Field Design Int. J Radiat. Biol. (in press).

Delaney, G.P., Jalaludin, B., Moylan, E., Barton, M.B. The development of a model of outpatient chemotherapy delivery – Chemotherapy basic treatment equivalent. *Journal of Clinical Oncology* (in press).

Vinod, S.K., Delaney, G.P., Jalaludin, B.B., MacLeod, C.A., Fowler, A.R., & Barton, M.B. A Basic Treatment Equivalent for High-Dose Rate Gynaecological brachytherapy - A Pilot Study (*In press Clinical Oncology*).

Vinod, S.K., Jalaludin, B.B., Rodger, A., Turner, S., Kelly, L., Thornton, D., & Clark, C. Part-time consultants in Radiation Oncology. (*In press Australasian Radiology*).

Vinod, S.K., Pendlebury, S.C., Rodger, A., Ahern, V., Delaney, G.P., on behalf of Radiation Oncology Expert Advisory Group of the National Breast Cancer Centre and the Faculty of Radiation Oncology, Royal Australian and New Zealand College of Radiologists. The management of isolated supraclavicular fossa recurrences in breast cancer. *Submitted to ANZ Journal of Surgery Aug 2002*.

Kneebone, A; Mameghan, H; Berry, M; Kearsley, J; Turner, S; Bolin, T; Fisher R;Graham P.; Delaney, G. A Phase III Randomised Trial to Assess the Effect of Oral Sulcrafate on the Late Rectal Reactions Associated with Prostate Radiotherapy. (To submit for publication late 2002)

Kneebone, A., Mameghan, H., Berry, M., Kearsley, J., Turner, S., Bolin, T., Fisher, R., Graham, P., Delaney, G. The natural history of rectal complications including sigmoidoscopic evaluation on a cohort of 300 patients receiving prostate irradiation. (To submit for publication late 2002)

Turner, S., Kneebone, A., Drummond, M., Cachia, A. The Incidence and Significance of Postive Biopsies Following Definitive Irradiation for Carcinoma of the Prostate. Submitted for publication 2002

Kneebone, A., Do, V., Tramontana, D., McDonald, E., Turner, S., Gebski, V. Randomised trial of Ankle stocks for Pelvic Irradiation with the use of a belly board. (Currently being analysed)

Kneebone, A., Turner, S., Berry, M., Cakir, B., Gebski, V. Prospective Review of Outcome Following Radical Irradiation for Clinically Localised Prostate Cancer.

Wirth, A., Grigg, A., Wolf, M., Davis, S., Herzberg, M., Johnstone, C., Joseph, D., Goldstein, D., Horvath, N., Pratt, G., Kneebone, A., Mathews, J. Limited chemotherapy and involved field radiotherapy in stage I-II Hodgkin's disease. A Combined ALLG/TROG study.

Lin, P., Chu, J., Kneebone, A., Pocock, N., Kiat, H., Rosenfeld, D., Moylan, E. FDG CO-PET is Superior to Gallium Scanning in the Staging of Lymphoma. (To be submitted for publication 2002).

Chong, C.C.W., Kneebone, A., Kirsh, G. First case report of recurrent synovial chondromatosis treated with adjuvant radiotherapy. Submitted to Clinical Orthopaedics and Related Research for publication.

Austen, L., Chong, C.C.W., Kneebone, A., Berry, M., Lalak, A., Moylan, E. Changing patterns of practice in the care of prostate cancer: survey of 850 radiation oncologists, medical oncologists and urologists in Australia and New Zealand. Final draft being prepared.

Berry, M.P., Barton, M.B., Jacob, S., Kneebone, A., Fowler, A., and Delaney, G. A study of computer touchscreen technology in assessing radiation treatment toxicity. A CCORE project.

Berry, M.P., in collaboration with Gattellari, M., and Ward, J., Division of Population Health, SWSAHS. Evaluation of GP education for PSA screening.

Bydder, S., Spry, N., Christie, D., Roos, D., Burmeister, B., Krawitz, H., Davis, S., Joseph, D., Poulsen, M. and Berry, M. A prospective trial of short fractionation radiotherapy for the palliation of liver metastases.

Skala, M., Tai, K.H., Berry, M.P., Turner, S., Duchesne, G., and Gogna, K. Consensus on best practice for EBRT for prostate cancer.

Berry, M.P. A phase 3 study on radiotherapy vs. chemoradiotherapy for bladder cancer: A TROG study.

Berry, M.P. Care and outcomes for prostate cancer. A prospective study in collaboration with the NSW cancer registry (co-investigator).

Poxon, V., Krickler, W., Berry, M.P., Tynan, K., Delaney, G., and the SWSAHS tumour programme. Development of an Area based cancer registry.

Reports

Kneebone, A. Talking About Sexuality, Body Image and Cancer: A Teaching Resource for Health Professionals. Programme distributed by NSW Cancer Council April 2002

Barton, M.B., and Delaney, G. A comparison of the evidence based utilisation of radiotherapy with current clinical practice. CCORE. April 2002.

Research and Infrastructure Grants

Barton, M., Delaney, G., Frommer, M., Roder, D., Jalaludin, B., Jacob, S. Department of Health and Aged Care, Australian National Government - \$215 050 for "The optimal radiotherapy utilization rate for Australia".

Delaney, G., Barton, M. NSW Health. Research grant \$70 000 for “A further assessment of Basic Treatment Equivalent and the impact of recent technology.”

Poxon, V., Tynan, K., Krickler, W., Berry, M.P., Delaney, G. Development of an Area based cancer registry in SWSAHS. Phase 2 \$73k .

RADIATION THERAPY

Introduction

The past year has been busy and eventful. There is never a dull moment! The radiation therapists are continually faced with the challenge of introducing new technology into the department while always striving to maintain high standards of patient care with the limited staffing resources. The chronic national Radiation Therapist shortage has been a recurring theme over past reports and this year has not brought relief. While the flow of Radiation Therapists leaving our shores to attractive positions overseas has slowed, the high number of vacancies in all departments has seen much movement between centres especially as people seek positions closer to home.

New technology that has been implemented since June last year include:
the capability of sequencing fields on M2 in July,
the collimator head on M1 upgraded to include MLC in August,
milled compensators for head and neck patients in November,
FOCUS planning system in April,
BAT Prostate localisation System in June.

All these have required a high level of commitment from physics in the commissioning and testing phases and Radiation Therapists have collaborated with them to ensure a smooth introduction into the department.

Staffing

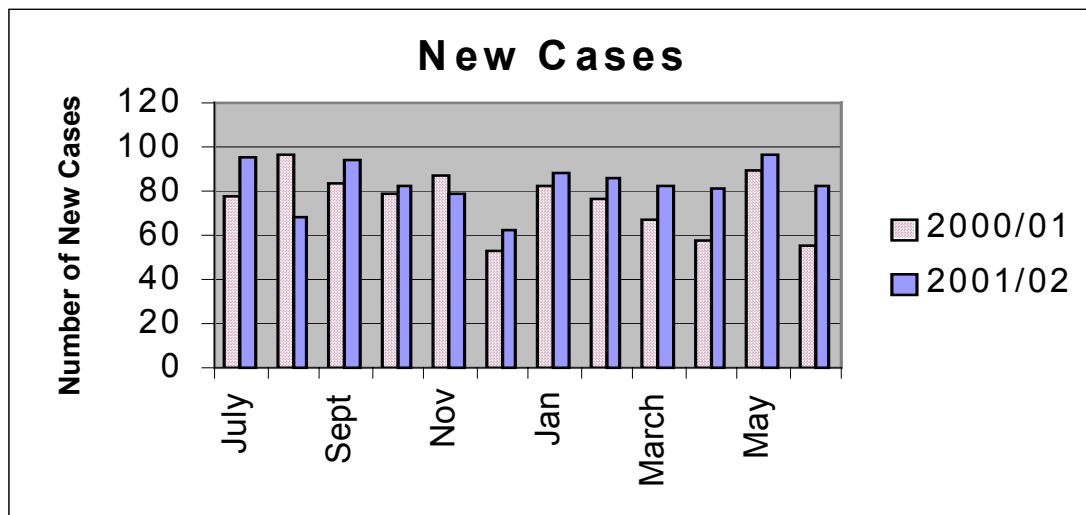
The department was fortunate to gain 3 new graduates at the beginning of 2002. All 4 graduates from 2001 have successfully completed their professional development year (PDY) and are now fully qualified and valuable members of the department. In June we welcomed back two staff members who returned from a year working in Radiation Therapy centres in Canada. One staff member that returned from maternity leave is now once again on maternity leave and two others have resigned without returning from maternity leave. One staff member has reduced their commitment to 1 day a week as they have returned to university to retrain in an unrelated field.

It is pleasing that in the past year, 3 staff have gained personal upgrades that recognises their advanced technical ability in various aspects of radiation therapy. Unfortunately we have lost 2 of these staff to departments closer to their home.

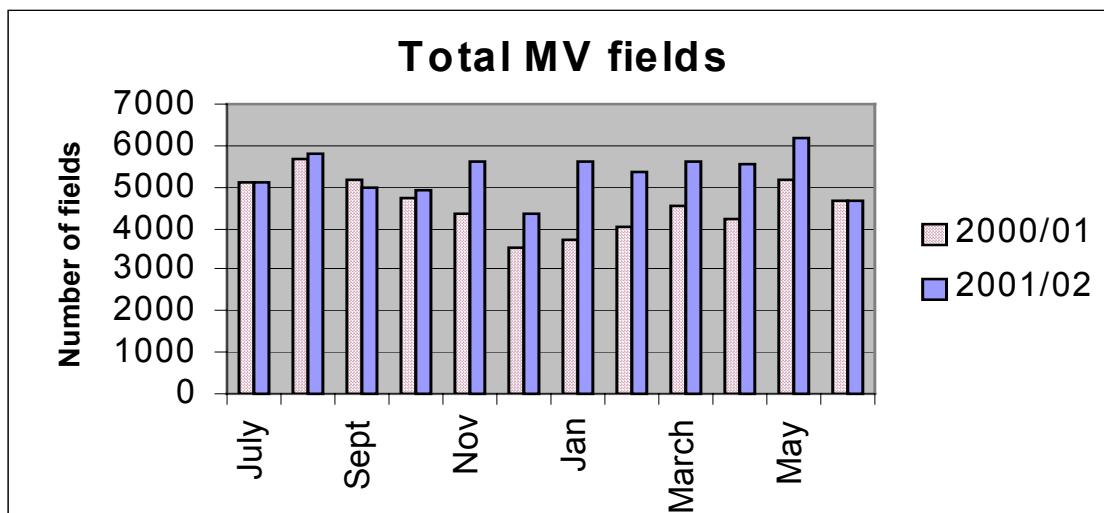
On a happier note, Radiation Therapists in NSW successfully negotiated a new award that included a pay increase which was effective from January 2001. This brings us in line with Victorian Radiation Therapists and will hopefully attract back some people currently working overseas.

Statistical Data

The Radiation Therapy department has operated 2 linear accelerators for the past year. The third linear accelerator was run for half a day only from late February to June this year to try and relieve some of the pressure of the waiting list. It is now once again closed as further losses to staff have made it impossible to staff for even half a day.



The number of new patients treated on the linear accelerators this year was 995 compared to 906 last year. This represents almost a 10% increase although the waiting list continues to be around 5-6 weeks. There was a drop in the number of new patients starting in August as this was when the collimator of M1 was upgraded over a couple of weeks to include MLC. As shown in the table below, the Total MVT Fields treated is consistently higher than last year. Much of this increase could be attributed to the installation of a sequencing of fields module on M2. This means the fields on all 6 field prostates, breast tangents and many other treatments that have MLC can be sequenced together so the machine momentarily suspends radiation output and automatically rotates the gantry from one position to the next. This has led to an increase in the number of fields per hour treated on M2 by 13.5%.



Throughout the past year, the department has maintained figures for treatment slightly higher than those the year before. The average number of fields per attendance was 3.2 in 2001/2002 and 2.9 in 2000/2001. While the average number of fields treated per course was 64 in 2001/2002 and 61.8 in 2000/2001.

For brachytherapy there were 25 patients who had a total of 77 treatments, and on orthovoltage there were 30 patients attending for treatment a total of 574 times. These figures are slightly less than the previous year. There is no staff allowance made for these later forms of treatment so their delivery is additional workload to that of treatment planning and the operation of the linear accelerators.

CT scans were performed on 695 patients as part of the planning process. This demonstrates that nearly 70% of patients receiving radiation therapy treatment had a CT scan for planning. This figure is consistent with 2000/2001. The average number of slices taken on the CT scan per patient has increased from 32.5 in 2000/2001 to 36.4 in 2001/2002. This may be due to the introduction of the new planning system that can accommodate smaller slice thickness without slowing the system down too much. The use of contrast in lung CT has increased from 1 last year to 33 this year.

Year	Simulator		Shielding		impression	shells	MLC check
	attend	films	blocks	trays			
2000/2001	1167	1604	1959	915	194	156	1019
2001/2002	1121	1818	332	202	214	155	2212

During the year the treatment planning staff undertook 1121 treatment simulations which involved taking 1818 films. The staff in planning fabricated 332 shielding blocks and mounted 202 personalized shielding trays. Such a dramatic decrease in the number of shielding blocks and trays compared to last year is due to the MLC being fitted on M1. This has been of great benefit to all Radiation Therapists. The planners no longer have to fabricate blocks and mount trays which leads to an enormous amount of time saved and a decrease in exposure to potentially harmful substances. The treatment staff no longer

have to lift heavy trays. The number of MLC checks has more than doubled, however the time to do these is minimal in comparison.

There were 214 impressions taken during the year and 155 immobilization shells were made and fitted. The other impressions would be used to make lead shielding either for orthovoltage treatment or electron treatments.

Year	Portal Films	Electronic Portal Imaging
2000/2001	3226	817
2001/2002	3878	525

On the treatment machines the staff took 3878 treatment portal films and 525 electronic portal images (EPI). These films and EPIs then need to be processed and viewed by the Radiation Therapy staff and the Radiation Oncologist.

Teaching/Education

The past couple of years have seen an increase in enrolment in the undergraduate degree at both the University of Sydney and the University of Newcastle. This is in response to the national shortage of Radiation Therapists. The universities requested departments accept more students for clinical placements.

Most of the year this department has placed up to 6 students at a time. Our clinical supervisors do an excellent job organising these students and ensuring they achieve their expectations. They are assisted by 'buddies' on each machine and in planning, so the students receive personal attention and enjoy the time they are here. Being so short staffed, it has been a huge effort for all involved to have so many students for so much of the year. It is hoped this extra effort by staff may ultimately pay off with a number of the students wishing to work in the Area.

In the future, it is hoped that there would be a full-time Radiation Therapy Tutor. This would take an enormous amount of workload off the shoulders of already busy Radiation Therapists.

A PDY program was initiated this year where all the PDY's in the state gather once a month at a different hospital each time to continue their learning and expose them to ideas and practices they might not come across in their respective departments. Liverpool held the first one of these days and feedback was very positive.

Inservice programs have continued where possible with the staffing numbers. Radiation Therapists are regular attendees and presenters at the Monday lunchtime Radiation Oncology meetings. A number of staff also attend the Cancer Therapy Centre Oncology meetings on Wednesday mornings. From time to time the radiation therapists present at this meeting.

Patient education continues to be supplemented via the patient information video that has been well received by patients. Detailed Prostate and Rectum booklets have been written and are being distributed to patients at their initial consultation with the oncologist.

During the year staff members have been fortunate enough to attend conferences and seminars related to Radiation Oncology. Many of these are accredited by the Australian Institute of Radiography and points earned from attending and participating in them can go towards fulfilling the Institute's Continuing Professional Development Program. All staff are encouraged to join this program and several have already taken up the challenge.

Somkit Rattanavong, Christine Tawfik and David Sampson attended the Queensland Radiation Therapy Weekend, Townsville, August, 2001.

Jillian Hawes attended ASTRO in San Francisco and also visited a department using BAT while in the USA, November 2001.

An Imaging Seminar held on a Saturday in February at the Thomas and Rachel Moore Education Centre was attended by most Radiation Therapists in this department.

Teresa Barker and David Sampson attended a CT course in Brisbane in February 2002.

Marcia Fleet, Leanne Elich, Matthew Fuller, Joanne Veneran, James Latimer, Teresa Barker, Stephanie Munday, Megan Tattersall and Annie Lau attended the 20th Radiation Therapy Symposium in Coffs Harbour in March 2002.

Marcia Fleet and Leanne Elich attended FOCUS Users Group Meeting, Christchurch NZ, April 2002.

Joanne Veneran attended the FOCUS Users Symposium in St Louis, USA, April 2002.

Matthew Fuller attended the Prostate Users Group in Melbourne, May 2002.

James Latimer attended AAMD in Michigan, and also an IMRT course in Orlando, USA, May/June 2002.

Research

The Radiation Therapists have continued to involve themselves in research where possible. This has had to be fairly limited because of the staffing situation.

Several Radiation Therapists are involved in an IMRT committee run by the physics research fellow. The committee is working towards setting IMRT up in this centre and has identified sites which would benefit from this type of treatment. A breast planning study has begun to further research IMRT in this site.

It is hoped the coming year will allow Radiation Therapists to again increase their time for research as the staffing numbers hopefully improve. There are a number of projects that could be started.

General Comments

Late last year the department decided to replace our planning system. The current programme had served us well over the past seven years however there were other programmes on the market that had eclipsed it in areas such as the 3D planning algorithm and 3D visualisation of contours and dose. CMS FOCUS was the chosen system and it arrived in July 2001. Two senior Radiation Therapists travelled to the CMS site in St Louis, USA in October/November for training. On their return they used their knowledge to rewrite all our planning protocols. The staff in planning received 2 days training in March 2002 and FOCUS was released for clinical use in April. As expected, there were a few teething problems in the first couple of months but as a better understanding of the system was gained, we are becoming more aware of its capabilities.

The first BAT machine in Australia arrived in June. The machine utilizes ultrasound to locate the prostate each day as its position can change with the filling of the bladder and rectum. Once again the Radiation Therapists have expanded their role and ventured into the world of ultrasound. It is early days yet and while patients are being imaged daily, clinical moves are not being made until all testing is complete.

Radiation Therapists are enthusiastic to be involved in research and development, especially when it will improve the efficiency of the department and the effectiveness of the treatment. However due to lack of staff it is difficult to find time.

The department in conjunction with the Area Health Service have initiated several strategies over the last year to try and increase staffing levels in the long term. Six 3rd year students were employed in their last semester of university, one day a week on their day off from lectures. They were involved primarily in mould room work but also helped out in many other areas. This gave them the opportunity to be part of the department without the pressures of clinical placement. The staff were extremely grateful for all their help and it is pleasing to note that 3 of these students are now employed as PDY's. It is hoped to repeat this successful venture in the last semester of 2002.

Scholarships have been offered to five 3rd year students in an effort to attract them to the centre for their PDY year. This includes funding over their final year at university and clinical placements in this centre. The final payment is made only at the completion of their professional development year in this department in 2003. The success of this initiative will be evaluated in 2003.

Staff have also participated in a number of careers expo's which gave the profession exposure to thousands of high school students in Western Sydney. Time will tell how successful our efforts are in attracting more staff to our department but we must continue to utilise all avenues in our hope to relieve the situation.

Presentations at Conferences

20th Radiation Therapy Symposium of Australian Institute of Radiography

Fleet, M. Why Upgrade Your Linear Accelerator? Is it worth it?

Fuller, M. Radiotherapy of the Lung: Does the Use of Intravenous Contrast Affect Dosimetry?

Munday, S. What to do when given the finger!

Barker, T and Latimer, J. An investigation on the use of Multi-leaf Collimation For Photon/Electron Junctions,

Conclusions

While so much has been achieved in 2001/2002, there is no time to rest. The upcoming year holds more challenges for the Radiation Therapist. Already there are plans underway for installing a new CT, the long awaited Computer Data Management System (CDMS) and the opening of a satellite centre in Campbelltown.

The new CT is a helical 4 slice scanner that will dramatically decrease the time it taken to scan a patient. This in conjunction with the FOCUS programme FOCAL Sim, will allow us to move towards virtual simulation. An implementation committee has been set up to explore the issues surrounding this exciting new area.

The clinical data management system hopefully isn't too far away with training for super users coming up in the next couple of months. We look forward to throwing away our hand written appointment diaries in favour of scheduling all appointments electronically.

The Campbelltown department is due to open in February 2003. Several staff have made site visits and seen it in various stages of completion. The department will operate with one linear accelerator, a CT scanner and the CMS FOCUS planning system. A simulator has not been included and it is envisaged that all patients will be planned with virtual simulation. There will be a rotational system for those staff currently at Liverpool who wish to work at Campbelltown. The opening of this centre will prove to be a huge challenge for all involved, and will also be highly beneficial for the people of the Macarthur region.

At the core of our profession remains patient care. On the whole, patients (although not satisfied with our waiting list) are more than happy with the care given to them during their planning and treatment. This is evident from many comments made to staff by patients during their treatment. It is of enormous satisfaction to the Radiation Therapists that they have helped patients through, what they see as, a very difficult time in their lives.

ALLIED HEALTH

Project highlights for the year 2001/2002

- Quality Project submission on Patient and Family Cancer Education Programs at CTC was a finalist in SWSAHS Quality Awards
- Development of Lymphodema support program by the Physiotherapy and Occupational Therapy staff
- Weekly Allied Health Head and Neck Clinic with Speech Pathology and Nutrition staff
- Social Work and Clinical Psychology staff conducted an initial Multicultural education group program (in Vietnamese) with the NSW Cancer Council and planning for a second language group (in Arabic) underway.
- Contribution to the planning process of cancer service in Macarthur.

Speech Pathology Services

Overview of Past Activities, including staff changes

CTC/Oncology/Head & Neck is normally serviced by 1.5 FTE Speech Pathologists. Until her resignation in July 2002, Nicola Belcastro held a personal Senior Grade II, with Meredith Porter and Kathleen Glenday alternatively filling the rotational 0.5 FTE Grade I position. Regrading of, and recruitment against a positional Grade II is underway. Meredith Porter and Angela Baker currently cover the caseload, with Meredith covering the senior responsibilities of the caseload. Speech Pathology services continue to both inpatients and CTC outpatients.

Activities

- Provision of services to cancer patients who require assessment and management of their communication and/or eating and drinking skills.
- Utilisation of joint Speech Pathology and Dietetics clinic in assessing and managing CTC Head and Neck patients. Liaison with other CTC staff occurs as needed. Use of clinic booking system allows greater access to medical records. Identification of new radiotherapy referrals continues to be problematic, with many patients not identified until well into their treatment course.
- Attendance at the multidisciplinary Head and Neck clinic.
- Provision of Endoscopic Swallowing Clinic offering patients multidisciplinary visual swallowing assessment. CTC, Oncology and Head & Neck patients benefit from this service.
- Provision of training of Laryngectomees as hospital visitors
- Members of the Area Cancer Control network, H&N and GI Tumour group

- Patronage of The Southern Districts Laryngectomy support group in its 6th year of operation
- In the year 2001/2002:

Clinical Area	Number of referrals	OOS
Head & Neck	113	436
Other Oncology	64	154
Total	177	590

- Figures show combined inpatient and outpatient data
- Monthly analysis reveals December/January as most quiet for H&N OOS (reflecting theatre closures)
- OOS were also impacted by staff changes/leave, as well periods of short staffing
- Outpatients seen for voice therapy secondary to surgical and/or radiation treatment of cancer are not included in the above figures

Education

- Presentations to CTC and GGE nursing staff, and participation in the LHS Tracheostomy Care Workshop.
- Enquiries about the Ambulance Officers' Education program were received, with education and advice provided to other health services, allowing them to develop local programs
 - Attendance at Mealtime Decision Making workshop examining ethical issues surrounding dysphagia
 - Nicola Belcastro completed a Masters of Public Health at Sydney University in December 2001.

Directions for 2002/2003:

- Regrading of position from personal to Positional Grade 2- **Underway**
- Streamline referral procedures to improve patient capture, through use of referral forms, and eventually Lantis system - **Underway**
- Receive training to maximise benefit from Lantis system
- Develop information pamphlets outlining the Joint Speech Pathology/Dietetics clinic, and basic strategies for managing H&N radiotherapy, and translate into two predominant community languages.
- Voicecraft training for Grade I, with application to voice (including CTC) outpatients (September 2002)- **Achieved**
- Continue training in EBP, view to developing clinical questions for examination- **Underway**

Prepared by Meredith Porter

Clinical Psychology

- Number of referrals for clinical psychology services has increased by 32%.
- Total number of occasions of service has risen by 35%.
- The service has been stretched to its limits and hence there was a slow-down in staff education and in activities of the Psycho-Oncology Group.
- Completed evaluation of the 'Dealing with Cancer' Education Programme with three-years-worth of data which revealed that the programme has been consistently meeting the needs and interests of the local cancer population at a high level.
- Joint venture with CTC Social Work and NSW Cancer Council to develop cancer education programmes for NESB patients and families in south-western Sydney. The first on off the mark was a group education programme for Vietnamese cancer patients, one of the biggest ethnic groups in this area. The programme has been conducted successfully with the help of local Vietnamese organizations and resources. The team continued to work towards producing a reference manual for facilitators in conducting similar programmes for this community.
- The team has also started to formulate a group education programme for the area's Arabic community.
- Presented on 'Psychosocial issues confronted by gynaecological cancer patients' in the Integrated Management of Gynaecology Service Forum.
- Plan to keep the level of activities up in staff education on psycho-social issues in cancer care and in the Psycho-Oncology Group in the coming year.

Prepared by Gerald Au

Physiotherapy

The Physiotherapy Service for the Cancer Therapy Centre (Josephine Tamara and Anna Chow) has been concentrating over the past twelve months on continuity of care and maximising quality of life for oncology patients.

Physiotherapy Service included:

- Lymphoedema Assessment Clinic on every Tuesday afternoon and Friday morning.
- Lymphoedema in-patient and outpatient management.
- Education to post-mastectomy and lymphoedema clients.

- Exercise prescription for post-mastectomy and outpatient follow-up.
- Management of musculoskeletal condition for oncology clients.
- Home visit services for oncology/lymphoedema clients who were unable to attend physiotherapy for initial assessment.

Prepared by Anna Chaow

Dietetics Service

The role of the Dietitian in the Cancer Therapy Cancer is to provide nutrition support for patients before, during and following their radiotherapy and chemotherapy treatment. The Dietitian also provides nutrition education for patients seeking advice about long term healthy eating following treatment.

New Initiatives In 2001/ 2002

- Nutrition supplements and enteral feeds are no longer sold to patients from the CTC. This was taking a lot of Dietitian time and it was considered that this time would be better used in providing clinical services to patient. Hence, the Equipment Pool Office has taken up the role of providing nutrition supplements and enteral feeds to CTC patients at cost.

Other Activities

- Provision of services to CTC Head and Neck patients through the joint Speech Pathology and Dietetics clinic. The clinic has addressed the problem of late referrals however some patients were still not identified until well into their treatment.
- Development of CTC Dietetics Policy and Procedure manual
- Participation in the Head and Neck Tumour group

Staffing

One FTE dietitian covers the CTC out-patient and Oncology/Haematology inpatient workload. Movement of staff in the Dietetics Department during the year has resulted in changes to the Dietitian allocated to work in CTC during the year. Rotations in the Department are generally one year in length however this cannot always be achieved due to unforeseen circumstances. It is recognised that short rotations are not desirable in the CTC. The position is currently base grade. If the position is graded at a higher level the position would not be rotated. A source of funding to support a regrade would need to be identified for this to occur.

Teaching/Education

Patients and Carers

Dietitians have been involved in several patient/carer education programs including “Living with Breast Cancer”, “Living with Cancer” and Haematology Support Group.

Staff and Student

Participation in the Dietitians Association of Australia Oncology Interest Group (IG) has provided CTC Dietitians several continuing education activities during the year. The IG also provided a forum for networking with other oncology dietitians. The Dietitian attended the “Eat and Run – The First Australasian Nutrition, Physical Activity and Cancer Conference” held by the joint effort of the Australian and the New Zealand Cancer Councils.

Dietetic students from Sydney, Newcastle and Wollongong Universities have worked in the Centre as part of their clinical placement.

Statistics

INPATIENTS (Haem/Oncology ward)	OUTPATIENTS (CTC)
Occasions of Service	Occasions of Service
1027	707

Goals For 2002-2003

- Update all Dietetic Policies and Procedures in the CTC
- Improve access to enteral feeding equipment (e.g. IV stands) for patients on enteral feeding at home
- Receive Lantis training
- To improve patient referral process through the use of referral form until Lantis system is in place
- Translation of culturally specific education resources into community language
- Develop information pamphlets outlining the joint Speech Pathology/Dietetics clinic

Prepared by Rebecca Lai

Social Work

Staffing

Teresa Simpson, Heather Aldis and Alison Pryor remain the social workers involved in cancer services. During the year Annette Polizois assisted in CTC for 3 months while Alison was undertaking a project in Community Health. There are other social workers

involved with cancer patients in other areas of the hospital particularly– Joanne Dean in the Surgical wards, Kerrie Douglass in Gynaecology and Judy Sajn in neurosurgery.

New Initiatives In 2001/ 2002

The group programs continue to be an important part of social work at CTC and there have been some developments in the past year.

Vietnamese ‘Living with Cancer Program’ – a collaborative project with Western Sydney office of the NSW Cancer Council. Several participants of the program continue to meet monthly as a support group at the Cabramatta community health centre.

Increase sessions of the Living with Breast Cancer Program – with the appointment of a permanent breast support nurse – this 8 week program has been run twice in the past year and given the number interested we are looking at the possibility at 3 groups in the coming year

Tele-group counselling - Heather Aldis has been co-facilitating the Tele-group program – this is an exciting new support program being conducted by NSW Cancer Council – running a 8 week support group via the telephone with cancer patients who might be isolated for a variety of reasons – in rural location, housebound etc. Heather undertook the training last year.

Other initiatives in the past year

Grief counselling sessions. Teresa Simpson has been interested in grief and loss issues working with palliative care clients and now has extended this to a number of family members returning to CTC for outpatient bereavement counselling. Late last year Teresa completed of her Master of Counselling degree

Tumour groups

Teresa and Heather have become involved with the Neuro and Haematology tumour groups respectively. With the addition of social work at Macarthur social work will look at realigning social work caseloads in relation to the tumour group programs in cancer services.

Cancer Profile & fundraising events

Social work along with the volunteers in CTC coordinated a number of cancer related charity events such as Daffodil day, Bandanna day, breast cancer day and biggest morning tea events

Occupational Therapy Services

Overview of past activities, including staffing changes

CTC/Oncology is normally serviced by 1 FTE Occupational Therapist Grade 1. Until December of last year, when approval of regrading of the position to a grade 2 took effect and a Grade 2 Occupational Therapy position was recruited. The Grade 2 Occupational Therapist commenced on the 17th of December 2001. Historically, a grade 1 rotational position serviced oncology. Difficulties existed due to the specialised components of this caseload, eg Lymphoedema management, and the time spent to train staff constantly. It effected the service development, and skill consolidation.

Therefore, with the new Grade 2 position on board, the focus of this year has been on consolidating and refining services to meet the needs of the CTC clients. Also, to further develop the services offered by Occupational Therapy. Currently Occupational therapy services to CTC include:

Provision of Occupational Therapy Intervention in Cancer Services

- Continued development of the lymphoedema service, in collaboration with CTC Physiotherapist.
- Continued efforts with CTC Allied Health team and Breast Liaison nurse to develop reliable referral procedures and streamline referrals.
- Participation in dealing with Cancer and Life after Breast Cancer patient/career Education Programs.
- Attendance of CTC departmental meetings, and case conferences.
- Currently CTC Allied Health OH&S representative.
- Development of the Lymphoedema support group.
- In liaison with Breast Care nurse to promote early intervention for lymphoedema management.

Education Provided & Received

Personations to GGE nursing staff, and participation in Life after Breast cancer, and Dealing with Cancer education groups.

Education to patients in the Lymphoedema support group.

Attendance at the National Lymphology Association Conference in Adelaide.

Attendance at the Advanced Lymphoedema Course.

Attendance at the OH&S risk management for managers and supervisors course.

Regular attendance of the Occupational Therapy oncology focus group

Regular attendance to the Greater Western Sydney lymphoedema practitioners group.

Directions for 2002/2003

Continuing to monitor referral procedures, and streamline referral procedures to improve patient capture. Also utilise the Lantis system.

Receive training to maximise benefits from the Lantis System

Develop translated Occupational Therapy educational handouts in common languages of CTC patient population, to improve patients understanding, and the effectiveness of education given. Will focus to start with on Vietnamese and Arabic, as they are two of the main language groups of CTC patient population.

Continuing training and development in EBP.

Contribute to the development and cohesiveness of the CTC Allied Health team

Continuing to monitor outpatient lymphoedema management programs and percentage reductions achieved in collaboration with physiotherapy.

To further develop and promote the Lymphoedema support group.

Prepared by Georgette Yacoub

Appendix

Cancer Therapy Centre Top Five Priorities 2001/2002

1. Restructure the CTC to afford best patient care
2. Formalise the provision of an area wide cancer service
3. Attract and Retain Staff
4. Develop Information Technology and Information Management Systems to support patient care and administrative management
5. Develop a quality assurance environment within the CTC/S

	Action/Strategy	Progress
<p><i>Priority: 1</i></p> <p><u>Restructure the CTC to afford best patient care</u></p>	<p>Identify clinicians area of interest Form clinician alliances and partnerships Introduce clinic structure that reflects emphasis on tumour streams. Maintain flexibility to run general clinics. Involve all stakeholders (PC, nursing, RT allied health) Coordinate education in clinical stream Introduction of quality initiatives Introduce pathways for appropriate patient referral to specialty clinics Incorporate clinical streams into AREA model Advertise changes to referral base</p> <p>4.0 Informal committees to address various interests groups across range of tumor streams. Liase with all stakeholders 5.0 Introduce clinical meetings 6.0 Develop treatment protocols, clinical pathways and monitor outcomes 7.0 Develop regional and national opinion leaders</p>	<p>Area of interest identified, Clinicians allocated to tumour streams</p> <p>Regular meetings held of clinical staff enhancing partnerships</p> <p>Clinics restructured to reflect Tumour Streams Ongoing improvement in involving all disciplines and Stakeholders Education programs being developed Quality initiative coordinated through QA Committee Patients referral started to follow correct pathways Clinical Streams developed into Area Model Blue Book being developed</p> <p>Committees running Clinical Meeting being conducted Treatment Protocols being developed Regional and National opinion leaders within staff, research and clinical, teaching activities encouraged to promote opinion leaders</p>

<p><i>New Priority: 2</i></p> <p><u>Formalise the provision of an area wide cancer service</u></p>	<p>Action/Strategy</p> <p>Appoint Director of Ca Services and Project Officer</p> <p>Review organizational structure and develop detailed service plan based upon the Cancer Network Document.. Written report</p> <p>Planning meeting CAC to formalise plan with priorities and agreed time frames</p> <p>Implementation of service plan with detailed projects</p> <p>IM&T Resource and Budget (identify sources of funding) Palliative Care Priority cancer sites with business plans, KRA's resources</p>	<p>Progress</p> <p>Appointment made</p> <p>Draft service plan completed</p> <p>Workshop held and report prepared</p> <p>Service plans developed and endorsed</p>
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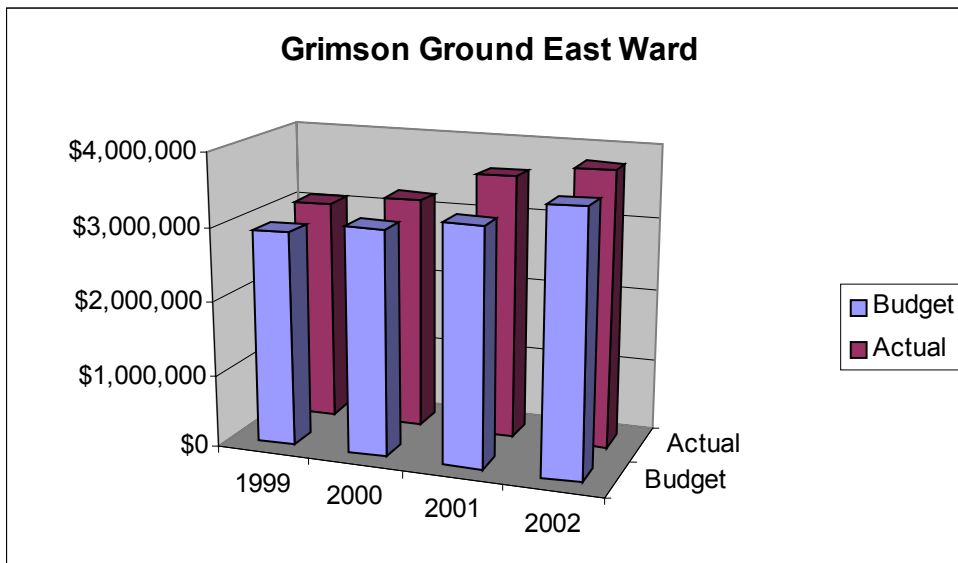
<p><i>New Priority: 3</i></p> <p><u>Attract and Retain Staff</u></p>	<p>Action/Strategy</p> <ol style="list-style-type: none"> 1. Develop Centre wide orientation package incorporating feedback to evaluate effectiveness. 2. Provide training for staff to constructively apply conflict resolution principles. 3. Implement performance review with the emphasis on goal setting, identifying training needs and positive reinforcement for achievements and communication of the Centres vision and values. 4. Formalised staff management training Define skills and attributes of senior managers Set standards for executive membership i.e. completion of Competency Based Management course or equivalent. Performance appraisal of standing Committees and the Executive 5. Web site – updated and kept current to advertise the Centre to take advantage of web site in recruitment. Monitor staff turnover and institute exit interviews 7. Develop employee mentoring system. Evaluate staff support for Employee Assistance Programme. 9. Institute strategies to promote recruitment to training in professional programmes, (open days, careers information in schools, advanced standing for allied training and prior learning) 10. Explore part-time and compensation tradeoffs for difficult to recruit professions such as RT's Discussion paper on the impact of clinic specialization on the professional groups <p>Explore job share, education and training opportunities, flexible hours, daily or blocks</p>	<p>Progress</p> <p>Package developed and used for new staff</p> <p>Training provided at all levels, discussed at Executive and addressed day to day</p> <p>Performance reviews ongoing</p> <p>Options determined for Management training Including commencing 360 degree program Competency based training commenced for managers.</p> <p>Web site up and running</p> <p>Staff turnover figures being collated, exit interviews conducted Options determined for mentoring system EAP support evaluated and priorities addressed Plan developed to promote recruitment to professional programs</p> <p>Discussion paper written exploring the following: Incentives for staff impact of clinic specialization on the professional groups job flexibility, CTC Job Package</p>
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<p><i>New Priority: 4</i></p> <p><u>Develop Information Technology and Information Management Systems to support patient care and administrative management</u></p>	<p>Action/Strategy</p> <p>1. Develop ISSP for CTC consultatively with SWSAHS which addresses: Needs analysis User requirements Technology infrastructure Education Both short and long term strategies</p> <p>2. Acquire IT system for CTC to cover RT management CT management Scheduling Billing Resource management Research Clinical trials Lab requests/results Patient registration Connection to hospital system</p> <p>3. Review and refine web site 4. Education Identify what skills are necessary Identify deficit in skills Develop program to reduce gap and implement</p>	<p>Progress</p> <p>Completed</p> <p>Completed, acquired and being implemented</p> <p>Web site reviewed and updated 3 monthly</p> <p>Individual Managers review education needs of department and keep a portfolio of staff education</p>
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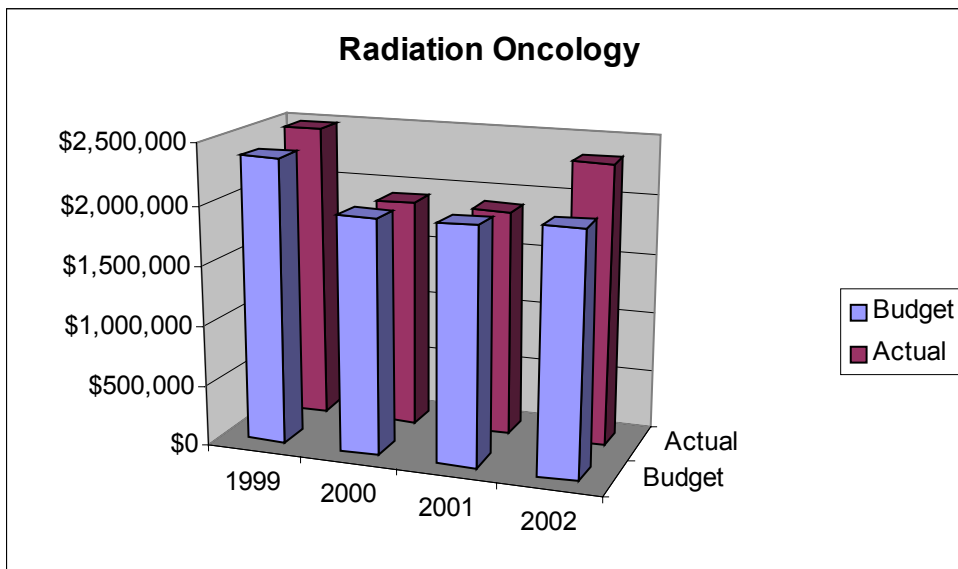
<p><i>New Priority: 5</i></p> <p><u>Develop a quality assurance environment within the CTC/S</u></p>	<p>Action/Strategy</p> <p>1. Define and improve processes: Specialisation of clinics Clinical indicators</p> <p>CTC records Disease profiles Filing and transcription</p> <p>Policy and procedures</p> <p>Equip</p> <p>Education in quality tools and concepts</p> <p>Management to commit to QI</p>	<p>Progress</p> <p>Establishment of 3 new patient orientated multi disciplinary clinic completed.</p> <p>Submission of quarterly clinical indicator data to ACHS ongoing</p> <p>Reduction in CTC records errors. Reduction of both Filing and Transcription queues.</p> <p>Up to date policy and procedures manuals available</p> <p>Participated in EQUIP training, implementation and accreditation with successful result</p> <p>Exploring activities to improve Quality 360 Degree implemented</p>
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Cancer Therapy Centre Financial & Activity Summary

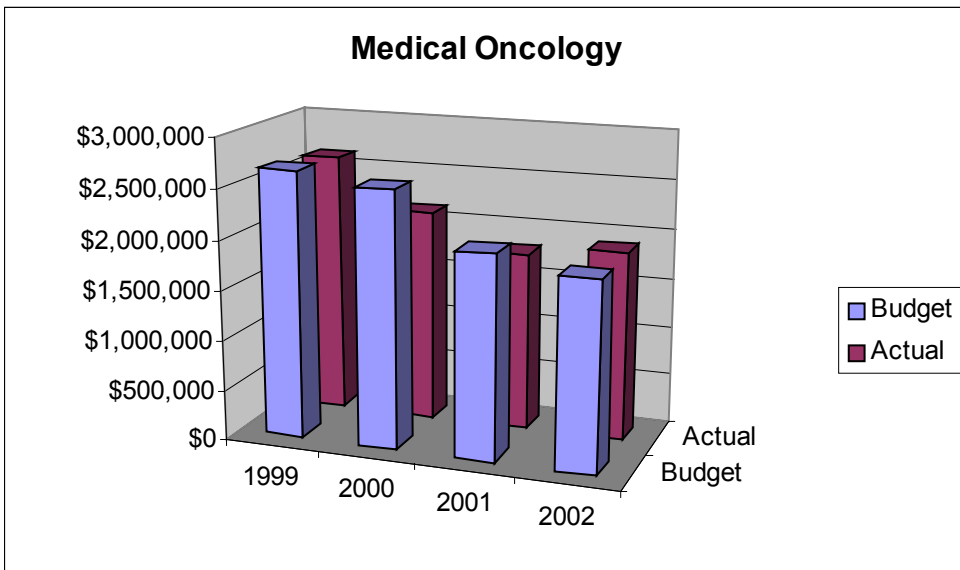
Performance to Budget 4 – years retrospective for 5 major departments of CTC



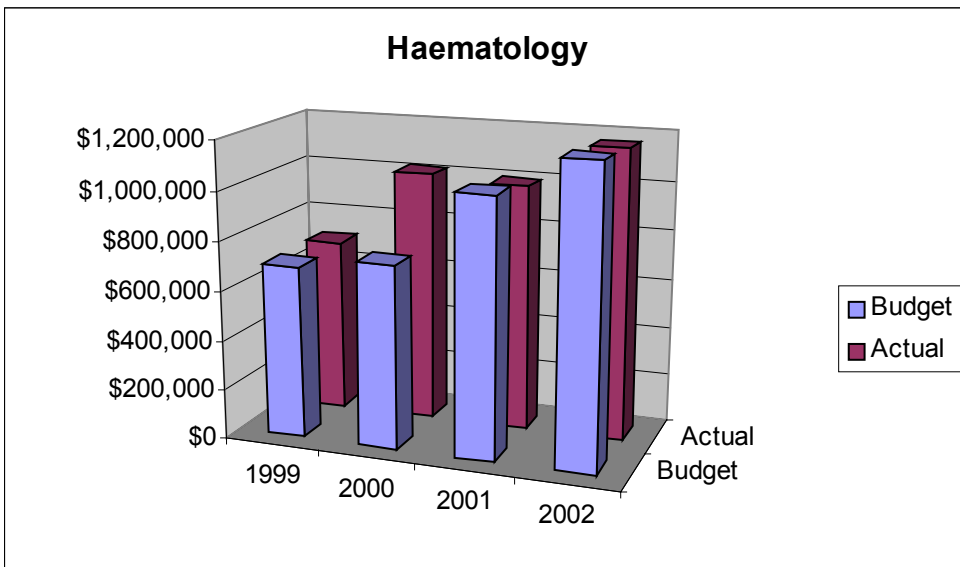
	Variance	Budget	Actual
1999	-\$120,776	\$2,929,999	\$3,050,775
2000	-\$128,647	\$3,065,858	\$3,194,505
2001	-\$389,329	\$3,218,199	\$3,607,528
2002	-\$217,042	\$3,557,375	\$3,774,417



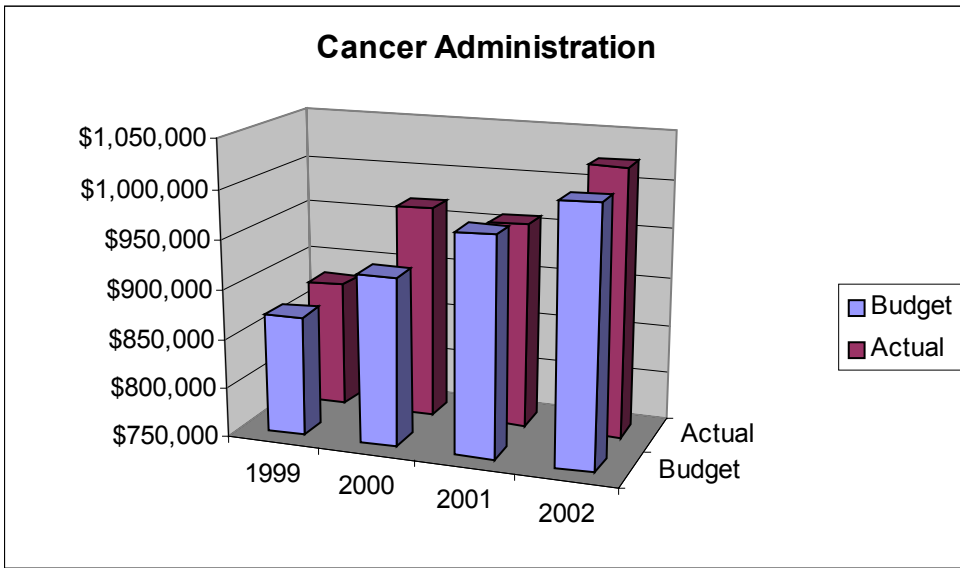
	Variance	Budget	Actual
1999	-\$108,556	\$2,379,492	\$2,488,048
2000	\$40,146	\$1,953,253	\$1,913,107
2001	\$63,060	\$1,961,014	\$1,897,954
2002	-\$341,828	\$2,001,894	\$2,343,722



	Variance	Budget	Actual
1999	\$53,763	\$2,683,351	\$2,629,588
2000	\$425,571	\$2,563,528	\$2,137,957
2001	\$244,746	\$2,037,975	\$1,793,229
2002	-\$19,936	\$1,882,034	\$1,901,970



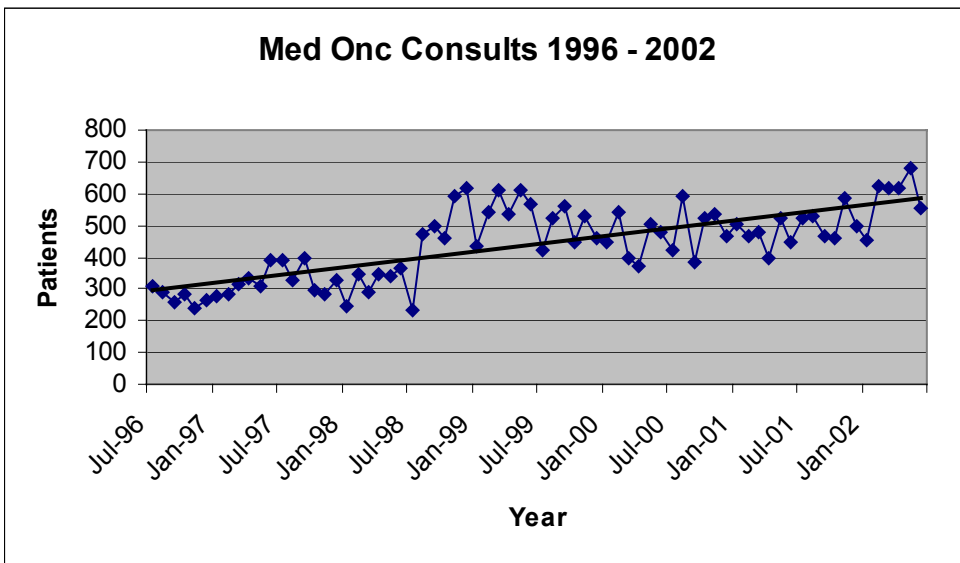
	Variance	Budget	Actual
1999	-\$6,084	\$698,544	\$704,628
2000	-\$277,192	\$741,145	\$1,018,337
2001	\$44,490	\$1,038,975	\$994,485
2002	\$22,348	\$1,190,188	\$1,167,840



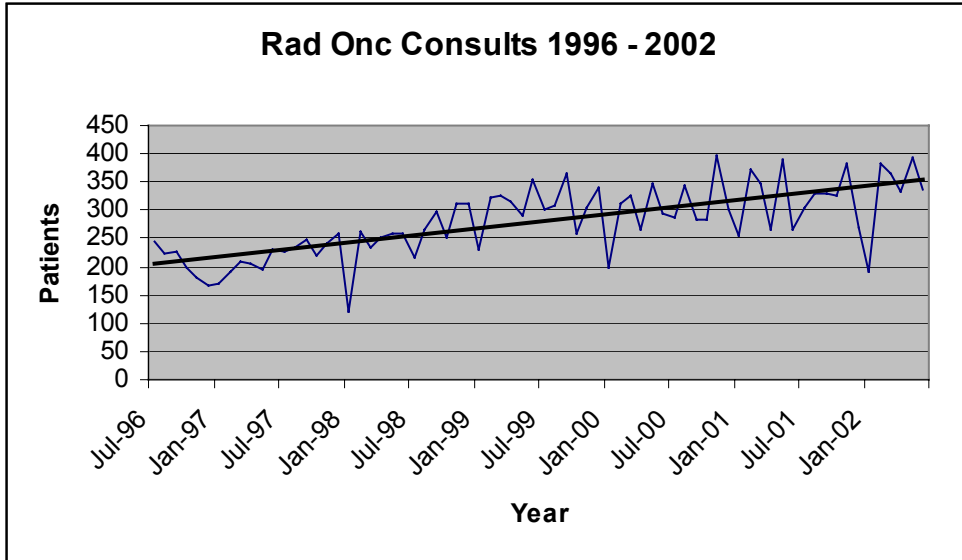
	Variance	Budget	Actual
1999	-\$7,618	\$871,954	\$879,572
2000	-\$47,041	\$921,214	\$968,255
2001	\$12,302	\$971,281	\$958,979
2002	-\$14,606	\$1,008,323	\$1,022,929

Activity Trend from 1996 – 2002

As can be seen in the graph below there has been a doubling of consultations for new and follow up patients from 1996 to 2002. Budgets and staff numbers have not kept step with these activity increases.

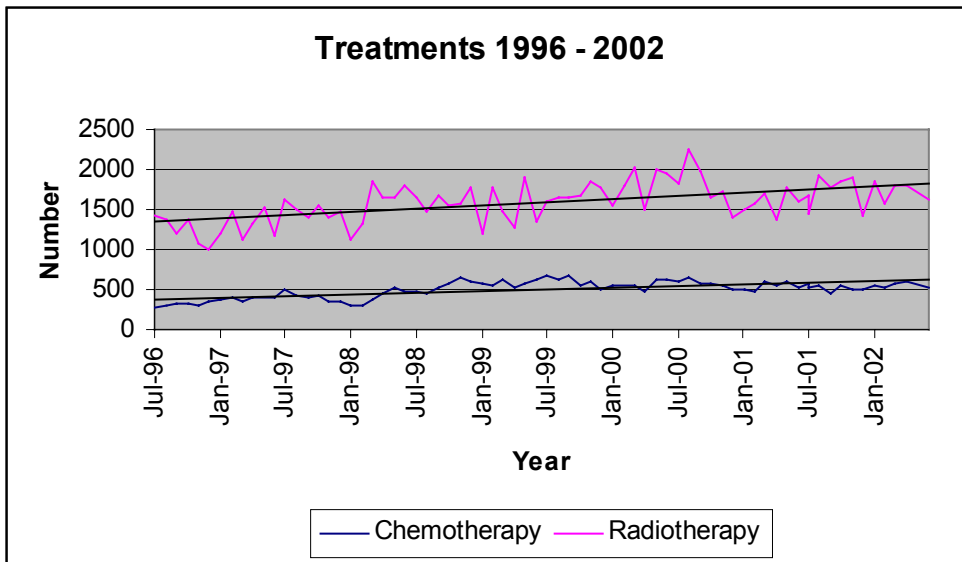


Radiation Oncology has seen a 75% increase in consultations from 1996 to 2002



Treatments have increased from 1273 per month to 1761 per month; an increase of 38%.

Chemotherapy treatments have increased in numbers over this time from 349 per month to 547 per month; an increase of 57%.



STAFF LIST

Medical Staff

Michael Barton
Martin Berry
Geoff Delaney
Stephen Della-Fiorentina
Allan Fowler
Amanda Goldrick
Andrew Kneebone
Eugene Moylan
Eva Segelov
Shalini Vinod

Clinical Research Fellow

Registrars

Karen Lim
Upendra Parvantheneni
Marketa Skala
Minjae Lah
Mark Lee
Vanessa Estall

Medical Physics/Technical

Lynne Greig (resigned)
Robin Hill
Mark West
May Whitaker
Matthew Williams
Mike Bailey
Gwi-Ae Cho
Oona Collins

Physics Research Fellow

Lois Holloway

Pharmacy

Jan Lewis
Maria Lambell
Gayle Cave

Radiation Therapy

Marcia Fleet
Debra Vincent
Vincent Towell
Nicole Cusack
Leanne Elich
Joanne Veneran
James Latimer
Christine Tawfik
Teresa Barker (resigned May 2002)
Kirrily Banister
Somakit Rattanaovong
Megan Tattersall
Jillian Hawes (resigned March 2002)
David Sampson
Sonia Lee
Matthew Fuller
Stephen Jones
Alyson O'Leary
Candy Wong
Annie Lau
Nasreen Kaadan (maternity leave)
Stephanie Munday
Sally Hudson
Maysa Bassel
Trinh Nguyen
Alex Yarsteve
Susan Foot

Administrative and Clerical Staff

Gail Adams
Rose Atkin
Narelle Barnett
Holanda Bentacor
Ashti Bibani
Suzanne Campbell
Vicki Gill
Grace Gilmore
Tammy Halls
Natasha Jones (resigned)
David Kelly
Lisa Miller
Kriston Nicholls

Heather Patchett
Franca Serafin
Robyn Shipley
Susan Slater
Laura Smith

Data Management

Inas Hanna
Fatgieya Sallie
Theresa Stephenson

Computer Support

Richard Bryson

Nursing – CTC

Bronwyn Heron
Colleen Carter
Fiona Tait
Rhonda Elke
Dawn Gaston
Edith Hawker
Betty Silaphet
Justin Hussein
Justine Kemsley
Doris Dadic
Sally Meighan
Sheila Almeida
Aura Serrano
Anne Slater
Rachel Seargent
Rebecca Evans

Nursing – Alex Grimson Ground East

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K Baker
L Luxford
M Valdez
E Macey
J McEacharn
B Newman

M Rouse
A Warner
K Wilkinson
S Loudoun
G Rees
G Farnham
R Gameldien
A Hill
H La
D Walsh
K Bourke
W Crowley
A Gossuch
M Parsons
D Rowlinson
C Knowles
R Ramsay
S Passa
K Brown
T Hecimovic
M Lees
D Hosking
L Towlinson
P Nowroy (resigned)

Clinical Trials

Denise Burns
Seini Taufa
Vu Nguyen
Lyn Ounthoulay
Suzzane Wright

CCORE

Michael Barton
Sharon Miles
Susannah Jacob
Michaëlle Howard
Liz Hovey
Gabriel Sam Gabriel
Richard Thode

SWS Cancer Service

Martin Berry

Kate Tynan
Val Poxon

Allied Health

Dietetics

Robyn Macdonald
Rebecca Lai

Social Work

Alison Pryor
Teresa Simpson
Heather Aldis

Clinical Psychology

Gerald Au

Speech Pathology

Nicola Belcastro
Meredith Porter
Kathleen Glenday

Physiotherapy

Josephine Tamara
Anna Chow

Occupational Therapy

Tahnee Conn
Georgette Yacoub

Support Services

Nick Arena
Joe Attard
Allan Hutchinson
Monika Tibbles

Volunteer Services

Pink Ladies

Barbara Wright
Val Spruce
Dutch Day

Joy Maloney
Carol Keogh
Anna Muscatella
Vicky McCarthy
Appii Tangi

Wig Library

Victoria Nasso
Fiona Gould

Look Good Feel Better

Joanne Meehan
Neta Holyoake
Vicki Dargan
Joanne Drinnan
Diane Haynes
Jan McPherson
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Wendy Saxton
Michelle Gunn

