HEALTH SERVICE INNOVATION GRANTS (HSIG)

Outcomes of Round 1 Funding 2007–08

December 2009

Penny Adams, Rama Machiraju, Sue Sinclair, Rob Sanson-Fisher

The NSW Government agency dedicated to the control and cure of cancer through prevention, detection, innovation, research and information.

cancer institute NSW

Cancer Institute NSW
Australian Technology Park
Biomedical Building
Suite 101
1 Central Avenue
Eveleigh NSW 2015
PO Box 41
Alexandria NSW 1435
Telephone (02) 8374 5600
Facsimile (02) 8374 5700
Email information@cancerinstitute.org.au
Website www.cancerinstitute.org.au/publications

TRIM reference number: E09/04761

Published by the Cancer Institute NSW, (December 2009).

TABLE OF CONTENTS

LIST OF TABLES

SECTION I

1.1 INTRODUCTION

Cancer Institute NSW projections indicate that within the next 10 years there will be approximately 380,000 new cases of cancer and 130,000 deaths due to cancer representing a 30 per cent increase compared to the previous decade. By 2016, there will be an estimated 45,000 cases of cancer in NSW per year.[1]

More cancer patients requiring treatment and support over the coming decade will need effectively delivered services within limited healthcare budgets. This requires the piloting, evaluation and translation of ideas and new service models to ensure that current service delivery is effective, efficient and sufficiently robust to cope with future demand.

Ideas for many service-based improvements in healthcare come from the service delivery coalface with many innovative projects currently being undertaken by both private and public cancer service providers within the NSW health system. Borrowing from the NHS Cancer Program in the UK which has actively involved cancer services in redesign initiatives through a collaborative approach, the Health Services Innovation Grants (HSIG) aim to harness innovation in cancer services in NSW and support project teams to pilot and develop these ideas.

The objectives of the HSIG are to:

- facilitate the strategic development of smarter models of care to produce better outcomes for cancer patients
- enable the redesign of clinical practice models to deliver high quality co-ordinated cancer care in a timely manner
- improve outcome measures for cost effective and efficient service delivery of cancer services
- provide the catalysts for future Cancer Institute NSW projects and funding initiatives
- implement financially sustainable programs beyond the conclusion of the project
- enable shared learning between cancer service providers across NSW through participation in a Health Services Forum at the conclusion of the program and various information dissemination strategies.

The HSIG has also aimed to provide project management and evaluation methodology support to each project team to build further skill capacity across the cancer services workforce.

The program has comprised two separate competitive grant rounds, Round 1 covering 2007–08 and Round 2 covering 2008–09, respectively. Both round submissions were evaluated on the basis of the following criteria:

- Confirmation that the project is indeed an innovation.
- Demonstrated potential for service delivery improvement.
- Potential to be sustained at the pilot site and translated to other settings.

Twenty-four pilot projects were funded under HSIG Round 1 under the following themes:

1. Workforce development.
2. Service redesign.
3. Improvements through information technology and related initiatives.

---

[1] *NSW Cancer Plan 2007-2010, Cancer Institute NSW 2006*

4. Complementary service arrangements.

The following report is a collation of project outcome summaries under HSIG Round 1 prepared by Health Management Advisors Pty Ltd, grouped into sections under the project themes. Each summary describes project design, methodology and outcomes for the individual projects and includes contact details for further information.

A similar report will be prepared at the conclusion of Round 2 of the program.

SECTION II

2.1 METHODOLOGY

Calls for expressions of interest for Round 1 of the HSIG were posted on the Cancer Institute NSW website in December 2006, with a closing date in February 2007. A total of 72 submissions were received from across NSW from both private and public cancer services.

All submissions were reviewed, with a preliminary evaluation conducted in March 2007, and a final review an April 2007 by the Cancer Institute NSW Clinical Grants Committee.

The final review included the following criteria to determine funding:

- Documentation of proposed benefits to outcomes for cancer patients.
- Confirmation that the project represented a service delivery innovation as opposed to workforce enhancement.
- Confirmation that the individual department is an established cancer service provider in NSW.
- Statement of project methodology including KPIs, measurement methods and project timelines.
- Identification of the services incorporated in the project.
- Identification of budgetary and resource requirements.
- Description of outcome measures with respect to theoretical long term sustainability, cost effectiveness, improved patient outcomes and potential translation to another site.
- Confirmation of a project sponsor.
- Confirmation that the project has support from the appropriate lead clinician.
- Confirmation that the project has approval from the Area Health Service (AHS) director of cancer services and the cancer services development manager.
- Confirmation that the project has support at the AHS / organisational CE/CEO level
- Receipt of application by close by date.

As a result of the review 24 submissions were selected for funding of which eight were from rural areas.

The projects were conducted from 1 June 2007 to 31 June 2008 and were individually supported by an external consultant Health Management Advisors Pty Ltd to assist with evaluation, reporting and project management.

Reporting timelines for all project teams during the duration of the grant were included as a funding requirement.

SECTION III

3.1 RESULTS

The results section of this report is divided into four categories, aligning with the major themes of the funded projects, namely:

1. Workforce development.
2. Service redesign.
3. Improvements through information technology and related initiatives.
4. Complementary service arrangements.

3.1.1 Workforce Development

Projects focussed on workforce development, listed in Table 1, presented innovative approaches to developing the cancer services workforce through role redesign rather than enhancements to current workforce or filling perceived cancer service gaps.

Table 1-HSIG Round 1 Projects - Workforce Development

Project		Location
3.1.1.1	Early intervention in Cancer Control	Riverina Division of GP, Wagga Wagga
3.1.1.2	Aboriginal Cancer Care	Aboriginal Health Service Newcastle
3.1.1.3	Expanding psycho-oncology support to rural areas	Calvary Mater Hosp Newcastle
3.1.1.4	Pilot program to implement the role of clinic radiation therapist	Port Macquarie
3.1.1.5	Physician assistant and treatment Coordinator in haematology	Royal North Shore
3.1.1.6	Patient navigator breast care	Sydney Adventist Hospital
3.1.1.7	Neuro-oncology Nurse Co-ordinator	Liverpool Cancer Therapy Centre
3.1.1.8	Implementation of an Acute Ambulatory Care Nursing Assessment Unit	Macarthur Cancer treatment Centre

3.1.1.1 EARLY INTERVENTION IN CANCER CONTROL

Riverina Division of General Practice & Primary Health, Wagga Wagga

The vision for the project was to implement a model of care that would augment the AHS cancer services by bridging the gap that exists between initial cancer diagnosis and ongoing treatment by improving communication and the provision of information between primary, secondary and tertiary health care providers to optimise patient health outcomes. The expectations were that the project would reduce stress and fear for the patient newly diagnosed with cancer and improve access to timely and appropriate support services.

Overview of approach

The primary objectives of the project were to:

- Ensure that patients diagnosed with cancer had access to an early intervention program enabling them to secure support and information relating to their cancer, to financial, social, psychological and allied health assistance if required.
- Encourage GPs, Specialists and cancer service providers to refer newly diagnosed patients to the project within the first month of cancer diagnosis.
- Improve working partnerships between the various health providers, government and non-government organisations to enhance integration of care for cancer patients and their families.

The key strategies of the project were to;

- engage the patients GP to play a key role in providing well coordinated care as part of the multidisciplinary team
- enhance the general practice utilisation of Commonwealth initiatives provided through the Medical Benefits Schedule
- activate the *Clinical Services Framework – Cancer (2003)* ensuring the patient and family receive information and support
- listen to concerns of the patient and family and provide appropriate support and referral
- apply NSW Health principles of quality to ensure access, safety, effectiveness, efficiency and staff competency in implementing the project (NSW Health 1999)
- apply the NSW Health Privacy Policy Directive in all aspects of patient care
- reduce the fragmentation of care between health care providers by improving coordination and information sharing
- initiate and ensure a smooth and seamless transition of care for the patient /family into cancer control therapies through collaboration between health care professionals.

The project targeted patients newly diagnosed with cancer within the division boundaries. Providing 'cancer control support' through a 'cancer intake officer' (CIO) position and providing resources specific to the patient assessment, prior to any treatment commencement, were the main strategies used. While collaborating with other health care professionals, the project officer's (PO) role was to initiate and ensure a smooth and seamless transition of care for the patient /family into cancer control therapies.

Project Methodology
The project comprised a series of activities:

(1) **Recruitment of a project officer.** This was achieved within six weeks of project commencement.

(2) **Establish a steering committee.** A Cancer Steering Committee was formed to monitor the project results and outcomes. Membership included:

- Discharge coordinators from the local public hospital and local private hospital
- a community representative
- two GP members
- Cancer Council regional programs coordinator
- division project officer, chief executive officer and program director
- Greater Southern Area Health Service (GSAHS) cancer care coordinator.

(3) **Develop MOUs with general practice.** In lieu of individual memorandum of understandings (MOUs) with each general practice, local specific general practice goals for the project were identified at an initial academic detailing session with each practice. These goals were used as the basis for the outcome evaluation undertaken with each general practice to ensure the project delivered what the general practice expected.

(4) **Policies sourced within the division.** The division's existing risk management policy for home visits was adopted to ensure that occupational health and safety issues were adhered to when the CIO (or others) were seeing clients in their home environment.

(5) **Identification and engagement of stakeholders.** The division had an existing service directory listing all the GPs, practice managers and practice nurses within the division. The PO telephoned each practice manager to arrange a practice visit with key members of the practice in a team environment. Ideally this would be the practice manager, a practice nurse and at least one GP. This initial visit would be the opportunity to undertake academic detailing for the project.

Similar meetings were arranged with multidisciplinary team members in the local hospitals of both the regional and rural centres, where an in-service opportunity was used to describe the project and its aims. Continuum of care meetings were also attended by the PO in small towns as this was identified as the best opportunity to engage other stakeholders such as outreach workers, providers of home care services and meals on wheels. Stakeholders were also identified through discussions with SC members and managers from the division whom have worked with many organisations and individuals over the past decade.

(6) **Ongoing media campaign.** Communication about the project was relayed through phone calls and meetings, as well as various types of printed media. These included use of the monthly divisional newsletter and the weekly email to GPs from the division. Flyers aimed at the general public were also developed, printed and placed in GP waiting rooms, specialist waiting rooms and hospital wards. A tally sheet was used to collect details relating to the amount of media and publicity created and distributed for the program.

(7) **Practice/specialist visits**. Academic detailing was implemented with both GPs and specialists in the area. GP/specialists were informed of the referral pathway, provided with a copy of the referral form and program information flyer and a demonstration was provided on how to download these forms from the division's website into medical director. The client resource *Roadmap to Cancer Care* was also presented allowing the opportunity to demonstrate the content of resources provided to the client.

(8) **Referral pathway developed**. A referral pathway was created to enable efficient and effective referral of cancer patients, post diagnosis, to the CIO by medical practitioners and other health professionals. The pathway was presented at practice visits to educate referral sources in how to use it. The referral form also included a section to indicate when a GP or specialist offered the support service to a client but that client declined to be involved in the project. GPs were encouraged to fax these responses monthly for evaluation purposes.

(9) **Assessment tool and client resource package developed.** After conducting a review of possible assessment tools, the Division decided to develop a client assessment tool based on the principles of the 'Partners in Health Scale' used in the Flinders Model of Chronic Disease Self Management. The assessment tool was used to measure five important themes:

- patients knowledge of their condition
- their emotional concerns relating to their diagnosis
- knowledge of support services available to them
- knowledge of health providers that could be involved in their care
- financial concerns they were facing relating to their diagnosis.

The tool was used at the initial assessment of the patient and again at the exit interview, and as a post evaluation tool to indicate whether the intervention was useful of not.

(10) **Client resource package.** A core package titled 'Road Map to Cancer Care' was an information package containing selected resources to support the five themes of measurement on the assessment tool. The information package was aimed to be a general information folder which all patients diagnosed with cancer could use. Resources/booklets inserted into the folder were obtained from the Cancer Council NSW.

(11) **Program information flyer.** An information flyer was developed and targeted toward the GP/specialist and other referral sources. It was used to explain the aims and expected outcomes of the project, the role of the CIO and how to make a referral.

(12) **Service directory.** A service directory was developed and provided to all practices. The directory detailed all cancer and support services available in each regional and rural community.

(13) **Client activity sheet.** The client activity sheet was designed to capture demographic and service delivery data for each client.

(14) **Practice visit report.** An ongoing running sheet was used to record the details of each practice visit, who was in attendance, progress and type of practice visit. The report also captured details of the availability of rooms at practices when seeing clients.

The project also ensured all reporting requirements for the grant were met (including the production of a detailed evaluation report).

Project results

In total, 20 patients were referred to the project. Four did not wish to participate in the project and six were not appropriate referrals which resulted in 10 patients receiving the intervention of the CIO and assessment/resources. 80 per cent of patients were female, with 20 per cent being male. The dominant diagnosis was both breast and bowel cancer, with 40 per cent breast and 40 per cent bowel; others included gastric cancer and ovarian cancer. Referral rates were lower than expected, with issues of practice engagement in short term projects identified as the major barrier.

The patient assessment form and resource package based on five key themes of:

- patients knowledge of their condition
- their emotional concerns relating to their diagnosis
- knowledge of support services available to them
- knowledge of health providers that could be involved in their care

- financial concerns they were facing relating to their diagnosis, were found to be very useful in supporting the patient, reducing the fear and anxiety of being newly diagnosed with cancer.

Analysis of the patient tally sheet indicated the average length of time on the project, per patient, was five weeks and that 80 per cent of referrals were received within the first month of diagnosis. 100 per cent of patients referred to the project received at least one face to face contact with 30 per cent receiving two visits and 10 per cent receiving three, dependent on their complex needs. These face-to-face meetings were always backed up with weekly telephone calls to map their progression.

Key findings were that:

(1) A successful candidate was offered the position PO and commenced duties in September 2007. The project officer was employed to work three days per week for the duration of the project.

(2) A steering committee was established to oversee the project. Sixty per cent indicated that the representation were well. Ten per cent suggested that representatives of the pre-admission clinic would be a good basis and trigger for referrals.

(3) Access to clients and engagement in the project relied heavily on GP and Specialist referrals. In all 38 practices were visited for detailing which involved 41 GPs (out of 96 total), four specialists (out of 20 total) and 16 nurses. When asked to measure the effectiveness of this method, on a scale of 1–10, with 1 being ineffectual and 10 being very effective, 50 per cent rated the method as effective with 50 per cent rating the method as ineffective. When asked how this could be improved, several comments were received:

- include academic detailing sessions with registrars on their training days
- Division could consider redesigning Tuesday Views to be more appealing
- keep being persistent with the practice to obtain GP attention.

(4) On initial assessment, 40 per cent of clients had some knowledge of their condition and 60 per cent had moderate or more knowledge. On discharge, 90 per cent of clients had more than moderate knowledge of their condition.

(5) On initial assessment, 60 per cent of patients indicated moderate to a lot of emotional concern. On discharge 60 per cent of patients still rated their emotional concern as moderate to a lot.

(6) On initial assessment, 70 per cent of patients had some awareness of support networks available to them. However, on discharge 80 per cent of patients were moderately to a lot more aware of support networks available to them in the community.

(7) On initial assessment, 40 per cent of patients had moderate or more knowledge of health care professionals that may be involved in their care. On discharge 100 per cent of patients had moderate or more knowledge.

Two of the three main objectives were achieved by ensuring that patients diagnosed with cancer had access to an early intervention program enabling them to secure support and information relating to their condition and treatment as well as that GPs, specialists and cancer service providers referred newly diagnosed patients to the project within the first month of cancer diagnosis. The third main objective-to improve working partnerships between the various health providers, government and non-government organisations to enhance integration of care for cancer patients and their families-was only partially achieved.

Future directions

The interventions were successful with those patients referred to the program, with evaluation results justifying the tools and resources developed and implemented.

The main disappointment from the implementation of the model was the low referral numbers. Whilst the division recognised this problem early in the project and initiated steps to overcome the identified problem, no increases in referral rates were received.
GPs and Specialists were difficult to engage in the project. The main barrier was the impact of a short term project only being available for some patients, whilst expecting practices to change their referral process/pathway.

Providing psychosocial cancer support through a 'cancer intake officer' position is unsustainable without ongoing funding. Elements of the model are sustainable; however, additional money is required to embed the strategies and intervention within the practice environment. A change in practice culture is required in order to receive referrals; hence, having a champion at a practice who could implement the patient assessment tool and resource package would be a more reasonable way to sustain cancer patient psychosocial support strategies.

Three of the resources developed through the implementation of the project were evaluated as being very successful to the practice, client and family. These included the referral pathway, patient assessment tool (also useful as a pre and post measure) and the patient resource package. Where another division would like to offer newly diagnosed cancer patients psychosocial support, these last two resources would be very useful.

Additional information
Additional information can be obtained from:

Riverina Division of General Practice & Primary Health

PO Box 5663
Wagga Wagga NSW 2650
Phone: (02) 6923 3100

3.1.1.2 ABORIGINAL CANCER CARE COORDINATOR

Calvary Mater Newcastle/Hunter New England Area Health Service

Mortality rates for some cancers are more than three times greater in Indigenous than in non-Indigenous people. The project sought to employ an Aboriginal cancer care coordinator (ACCC) to develop and evaluate a more coordinated approach to cancer care for Indigenous people in the Hunter New England Area (HNE).

Overview of approach

The objectives of the project were to:

1. Increase the number of Indigenous people being diagnosed at an earlier stage.
2. Improve adherence to cancer treatment regimens.
3. Improve the patient journey for Aboriginal patients and families with cancer.
4. Improve the quality of cancer treatment for Indigenous people.
5. Identify roles in education, promotion of screening and research.

The ACCC was based at the Calvary Mater Newcastle (CMN) with a view to integrating the role within the Hunter New England Health (HNEH) oncology tertiary referral service centre. It was assumed that locating the role at the Area's only radiation treatment centre and central chemotherapy treatment centre would provide Aboriginal people with the best support.

Project methodology

The ACCC was recruited and located at the CMN. The reason for this location was that the CMN provided the bulk of cancer radiation and chemotherapy treatments, and is designated as the Tertiary Referral Centre for oncology for HNE. It was expected that this was where Aboriginal people with cancer would be referred. The location was also close to the Aboriginal Health Unit so that support could be provided.

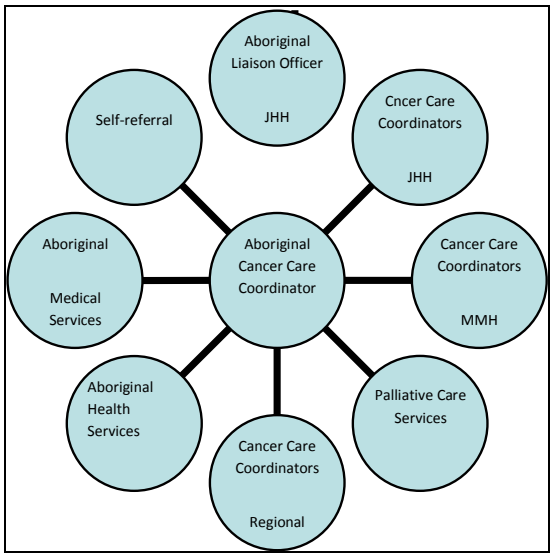
The person recruited had an Indigenous cultural heritage and an understanding of issues and challenges experienced by Indigenous people with regard to access to health care. The rationale for this was that an individual with an understanding of cancer care pathways and the challenges of cancer treatment regimens could work to improve the quality of cancer care services, and acceptability of these services, to Indigenous people. It was hoped that this would improve the effectiveness of services and mitigate disparities in cancer mortality and survival between Indigenous and non-Indigenous people. These proposed advantages of this model have not been confirmed as discussed in latter in this document.

The ACCC also supported the further development of a culturally aware cancer care team within the HNE Health Service and provided an integral link with Aboriginal Health Services.

Project results

The ACCC developed referral links with a number of sources as depicted below

Referral sources HNEH



Thirteen (13) clinical referrals were received Area-wide of which four referrals were generated at the CMN. The remaining nine referrals were received from outside of the CMN and these people had no active treatment or contact with the CMN. The referrals received were at various stages of the cancer journey, with the majority being referred directly to palliative care. Compliance with treatment was identified as a major issue. When initial treatments were recommended and patients for a variety of reasons did not follow that pathway, by the time they did decide to follow up on treatment is was often too late. Only three patients had a clinical intervention of surgery, radiation oncology, chemotherapy or a combination of these. It is also important to note that seven patients were referred directly to palliative care services, although not all patients availed themselves of this option. The remaining people participated in screening but again for various reasons did not follow up or it was deemed that there was no need for any intervention at this time and they were continued to be monitored.

Other outcomes included:

(1) **Cancer Council links.** These were made locally and a search of resources available Australia wide for culturally appropriate information/education materials. This material was found to be far more attractive to the Aboriginal Communities especially during promotional days.

(2) **Other links.** The ACCC forged links with various members of the cancer network, by attending MDT meetings, hospital in-services, cancer workshops CANNET workshops and information days. Extensive networking was also achieved with Aboriginal Medical/Health/Education workers and services. The ACCC has developed links with Aboriginal Medical Services. The work plan was to spend the initial six months concentrating on the Newcastle area and close ties were made with the Awabakal Medical Service. Biripi (Taree) Pius X (Moree) and Armijun (Inverell) have been visited and initial contact has been made but there is a need to further these ties. Close ties have been forged with the Aboriginal Health Unit at Wallsend in Newcastle. Initial contact has been made with Peel, Mehi, Lower Hunter, Tablelands, Lower Mid North Coast, McIntyre and Upper Hunter Units but there is a need to further these ties.

(3) **Community support.** Support was provided by the ACCC with facilitation of a workshop presented by the Australian Catholic College. The purpose of the workshop was to do a needs assessment regarding the Cancer Care component of the Certificate IV curriculum for Aboriginal health workers (AHW).

(4) **Cancer experience workshop.** This workshop pilot was held at the CMN in July 2008 and was designed to inform AHWs on the cancer journey to better enable them to meet the needs of their community members and to help dispel some of the mystique surrounding the treatment of cancer in mainstream services. There were eight (8) participants at the initial workshop. All of the participants indicated that the workshop was valuable and provided worthwhile information and networking opportunities. Participants found the information about cancers and treatments, tour of the treatment facilities and the links developed with presenters especially useful. Participants indicated that numbers for future workshops should be no more than ten (10) people to support the opportunity for discussion and visiting the various treatment areas.

(5) **Research.** The ACCC has supported two research projects focusing on Aboriginal people with cancer. The first research project was the 'Aboriginal Stories of Cancer Journeys' project. The Aboriginal Health & Medical Research Council of NSW in partnership with the Cancer Council NSW received a Cancer Australia Grant for this project and involvement of the ACCC is ongoing. Funding and ethics approval were obtained. It is envisaged that various resource materials will come out of this project that focus on positive stories of Aboriginal peoples on their cancer journey. The second research project supported by the ACCC is the Aboriginal Patterns of Cancer Care study. This is a five-year study being conducted by The Cancer Council NSW Epidemiology Research Unit in collaboration with The National Centre in HIV Social Research (NCHSR) through a grant provided by the NH&MRC. The aims of the APOCC study are to assess whether or not Aboriginal people are being diagnosed with cancer at later stages than non-Aboriginal people and, if so, to describe both the barriers to early diagnosis and access to cancer care experienced by Aboriginal people and the care that Aboriginal people with cancer are currently receiving; and to compare the level and type of care they receive with that received by non-Aboriginal people

.

Future directions

The following inform the direction for future options and come from the experiences of the ACCC, influenced by involvement in the cancer journey of Aboriginal people, and responses generated by communities in response to their needs:

(1) **Integration of cancer within the chronic diseases umbrella.** There are obvious health inequities and gaps in all services, which exist across all Health Care Streams. Initiatives in any of these streams that are having success should be coordinated across all streams. Cancer, as a chronic disease, should be integrated into the broader chronic care umbrella to make the best use of approaches to care and resources. This will maximise the opportunity for culturally appropriate screening, health promotion and education, early detection, assessment, case management, diagnosis and treatment for cancer among Aboriginal people and optimise the use of available resources, expertise and networks. This collaborative approach will enhance chronic disease service provision through addressing difficulties that are experiences throughout chronic diseases and ensure services are delivered in a culturally specific fashion.

(2) **Adapt the current ACCC role to that of Aboriginal project officer.** Like other chronic diseases, the provision of cancer education, support and network development needs to occur at the Aboriginal community level. To provide this effectively across the Area a non-clinical role would be required. Adapting the current ACCC role to that of a project officer will enhance the effectiveness of the role and support successful integration within chronic care.

(3) **Provide appropriate placement.** Locating the Aboriginal project officer within Aboriginal Chronic Care will ensure appropriate cultural support for the position and support fundamental links with Aboriginal chronic health. Funding considerations for the position will need to consider access to transport and accommodation to support an Area-wide role.

(4) **Training of generic Aboriginal health workers.** It is essential that AHWs have the training and network support to maximise access to cancer prevention, screening and care information. The Project Officer will provide an integral role in supporting HNE Health in implementing the training of generic AHWs. These workers can link their people with mainstream services and integrate differing models of health, thereby bridging the gaps. The training of AHWs will also enrich communities through employment and achievement. It is essential that life experience of is recognised in their training and employment.

Additional information

Additional information can be obtained from:

Calvary Mater Hospital, Newcastle
Corner Edith and Platt Streets
Waratah NSW 2298
Phone: (02) 4921 1211

3.1.1.3 EXPANDING PSYCHO-ONCOLOGY SUPPORT TO RURAL AREAS

Calvary Mater Newcastle

The project was based on a need to provide rurally-based cancer patients with ongoing psychological and psychosocial support beyond their treatment in regional centres. To enable this, psychologists practicing within Hunter/New England rural areas have been identified and offered training in psycho-oncology in line with their current level of knowledge, skills and abilities.

Overview of approach

The objectives of this project were to:

1) Develop and implement targeted training in psycho-oncology to both private and Hunter New England health psychologists practicing in regional areas in NSW such as Armidale and Taree. This was intended to 'up-skill' practicing psychologists to provide evidence-based intervention of psychological distress specific to the cancer population. Training also aimed to provide clinicians with treatment resources and intervention plans in order to demystify work associated with cancer and to enhance confidence and skills when dealing with issues pertinent to this clinical population.
2) Utilise this training environment to develop and maintain referral pathways for patients requiring psycho-oncology services in rural settings after they return home from treatment/consultation in their regional oncology centre such as Newcastle. This was expected to widen availability and significantly increase the service provision of psychological intervention to cancer patients and their families residing in rural communities.
3) Develop and maintain an ongoing network of peer consultation/supervision for psychologists practicing psycho-oncology in rural areas.

Project Methodology

The project comprised a series of activities:

(1) **Database.** The project was commenced in July 2007 through development of a database of rurally-based psychologists.

(2) **Needs assessment.** A knowledge education needs (KEN) assessment was then developed and sent to these psychologists. A return rate of 50 per cent was obtained. The results of the KEN assessment process was collated and formed the basis of the training package.

(3) **Project officer.** The project officer/clinical psychologist was appointed to collate and interpret the baseline data and develop the training package as well to jointly deliver the training in conjunction with the project supervisor (both psycho-oncology clinicians).

(4) **Education.** The training package was to be developed and rolled out. The referral pathway for patient identification was also to be confirmed at that time.

(5) **Patient identification.** Following the completion of the training phase of the project, integration with the QUICA-Touch project was to enable identification of rurally-based patients requiring psychological services.

(6) **Project refinement**. Occurred through feedback from weekly Sub Committee meetings and the quarterly Steering Committee meetings.

Project results

The training package was specifically developed to meet the needs identified by analysis of the KEN assessment and general preferences about training implementation. This package was completed by the psychologist/coordinator in February 2008. The training package is presently undergoing peer review by oncology clinicians and a revised version will be made available to the Cancer Institute NSW for further use if requested.

The workshop package included a 138-page manual containing chapters on the following topics:

- Cancer Biology
- Factors Associated with Psychological Distress in Cancer Patients
- Common Adverse Psychological Reactions during Phases of the Cancer Journey
- Coping and Cancer
- Difficulties Relating to Specific Cancers
- Psycho-Oncology Assessment Methods
- Psychological Interventions in Psycho-Oncology
- Maintaining Wellbeing as a Psycho-Oncology Clinician
- Practical Resources for Patients, Carers and Clinicians.

A comprehensive case study with treatment plans was also detailed in the manual. The Appendices of the manual contained a number of helpful patient handouts and clinical resources. The training package was also comprised of a 'show bag' containing resources distributed from the Cancer Institute NSW, the NSW Cancer Council and NBCC as follows:

- Cancer Institute Lanyard
- Cancer Council Magnet
- NBCC Clinical Practice Guidelines and Summary of Guidelines
- Cancer Council Booklet: Emotions and Cancer
- Cancer Council Booklet: Caring for Someone with Cancer
- Cancer Council Booklet: Sexuality for Women with Cancer
- Cancer Council Booklet: Sexuality for Men with Cancer
- Cancer Council Booklet: Living with Advanced Cancer
- Cancer Council Brochure: I've had cancer too
- Cancer Council Brochure: Telephone Support Groups
- Cancer Council Brochure: 10 Ways
- Cancer Council Brochure: After your Cancer Treatment
- Cancer Council Booklet: When a Parent has Cancer (How to talk to your kids)
- Exert from The Human Side of Cancer (Jimmie Holland): Tyranny of Positive Thinking.

Accreditation of the training was also obtained by the Australian Psychological Society (APS). Therefore, participants are able to obtain seven professional development points for their involvement in the training.

Follow-up at three months post-training was through re-distribution of the KEN assessment three months post-training, the following information was gleaned:

- A large proportion of rural psychologists enrolled in and had completed the training;
- overall, the psychologists found the training to be very useful, of high quality and relevant to their educational needs, with the majority reporting that they found their knowledge increased 'somewhat' or 'a lot'.
- The provision of clinician resources and treatment plans were well received and deemed to be useful for future therapeutic encounters.

Overall, this project has been successful in expanding a network of psychologists in rural areas who are adequately skilled and trained to deal with the complex psychological and psychosocial issues of cancer patients. The project has demonstrated that:

- the development of comprehensive yet brief training package in psycho-oncology for psychologists is possible
- implementation of this training package in rural centres in NSW is relatively simple
- training is effective in increasing knowledge about psycho-oncology interventions
- training is effective in increasing referrals to psychologists
- training has the potential to be rolled out across NSW
- training is able to generate a small income and may therefore be self funding
- the referral pathway is able to be integrated with QUICATOUCH once funding for programming is obtained.

Future directions

To enable future project success, the following were suggested:

(1) Link the clinician database/referral pathway with the QUICATOUCH screening project. This will enable identification of patients requiring psychological assessment and intervention, while providing the means to facilitate this through the clinician database.

(2) Provide training in psycho-oncology for rurally based GPs, enhancing their skills in recognising distress and responding to screening outputs.

(3) Distribute the clinician list to these GPs so they are aware of clinicians who have received training and thus have skills in the provision of psycho-oncology interventions.

(4) Continue open communication with cancer care coordinators and members of Allied Health in rural areas to remind them of psychological services and to troubleshoot any issues that arise with the referral process.

(5) More training workshops could be rolled out to other areas of NSW, thus widening the referral base and increasing geographical serviceability.

Additional information

Additional information can be obtained from:

Calvary Mater Hospital, Newcastle
Corner Edith and Platt Streets
Waratah NSW 2298
Phone: (02) 4921 1211

3.1.1.4 PILOT PROGRAM TO IMPLEMENT THE ROLE OF CLINICAL RADIATION THERAPIST

North Coast Cancer Institute, North Coast Area Health Service

The North Coast Cancer Institute (NCCI), in collaboration with Monash University, identified the need to develop and pilot an emerging new role for radiation therapists (RTs). The role of the 'Review and Information Radiation Therapist' was aimed at relieving the burden of service delivery on radiation oncologists (ROs) whereby an appropriately educated RT performs a variety of duties traditionally in the realm of the RO. An added benefit of this role was to promote the retention and satisfaction of RTs through innovative training models.

Overview of approach
Project objectives were to:

1) Relieve the burden of service provision on the NCCI ROs.
2) Provide efficient service delivery to patients undergoing radiation therapy.
3) Provide timely expert advice about radiotherapy to patients, the public and other health care professionals.
4) Improve the satisfaction of patients receiving radiotherapy.
5) Create a flexible health workforce.
6) Promote retention of radiation therapists and ensure supply through innovative training modules.
7) Create a model for the development of other expert practitioner roles in health.

Project methodology
The project involved two key interventions:

1) A radiation therapist was trained in the education of patients and in the management of side effects before, during and after a course of radiotherapy. This part of the project involved the review and information RT participating in a short course consisting of academic and workplace learning.
2) The radiation therapist provided support to the radiation oncologist in performing duties delegated by the RO outside the scope of the above training which incorporated administration and coordination of care of patients.

The project comprised a series of activities:

1) **Recruitment.** Recruitment to the radiation therapist position was undertaken during the early stages of the project and included development of a position description through the observation and evaluation of tasks undertaken by the RO and radiation oncologist during scheduled clinic appointments. The position description was also defined by evaluating the RT's existing skills and those skills targeted for development through the academic and clinical component of the proposed course.
2) **Support to existing radiation oncologist.** To facilitate an immediate impact on reducing the workload of the radiation oncologist the review RT during the training period was able to undertake administrative tasks and a coordination role.
3) **Establishment of curriculum for pilot program.** The curriculum development has occurred throughout all stages of the project as follows:
    - The project team has collaborated with Monash University (Victoria) to establish the curriculum for the pilot program. The course material and framework to support the Principles and Practice of Radiotherapy Review and Information Expert Practice have been developed; and

- The course comprises two elements. The academic component was designed to facilitate evidence based, self directed study of the underpinning principles related to review of patients undergoing radiotherapy. The clinical component was designed to provide a framework upon which to develop and demonstrate competence in the procedures involved in review of radiotherapy patients.

Project results

From a clinical perspective there was excellent progress and achievement with the creation of the certificate level course and the commencement of a practitioner in the role. The course content is continually being developed and tested. The module that was produced will eventually become part of a Masters level advanced practice course where participants will be able to choose to complete the review RT module only or progress further. The flexibility that this course allows is ideal for servicing the needs of the industry and the needs of the participants.

In contrast, evaluation of the full impact of the role is limited, although anecdotally patients who have had contact with the role in its infancy have responded positively and seem to appreciate the additional care and attention they receive.

Key findings were that:

1) Skills were shared with colleagues through staff meetings and daily interactions. The role is responsible for the induction and training of new staff in patient toxicity management.
2) The quality and quantity of protocols and procedures developed in toxicity management and patient information have increased as a result of the introduction of the role.
3) The project has demonstrated that there is potential for alternative career pathways for RTs through advanced practice opportunities.
4) There has been support to the workload of not only the radiation oncologists but the RTs and nurses.
5) Patients and carers are benefiting through the increase in information available and will further benefit in the future once the role is fully established by a more efficient service.
6) For the wider radiation therapy community a significant outcome of the project is the establishment of a course that will fill similar needs at other centres. There is already interest in enrolments from New Zealand and within Australia. The course that has been established as a result of this project is the only one of its type within Australasia and will provide a method for other centres to easily adopt to assist in meeting their own service delivery needs.

Future directions

A future challenge for the NCCI will be to maintain the support provided by this position and retain the skills developed by the review and information radiation therapist. The following approaches will be used to facilitate this.

1) Funding to support the position will be sought by preparing a brief to submit to the CEO of the NCAHS.
2) Based on the baseline survey of staff, further education and promotion is required to legitimise the role. The review RT has already attended a number of staff and patient forums to promote the role.
3) If further funding is not available to support the role in its current form the department will seek to retain the skill set within the department by absorbing the staff member into the current establishment as a staff RT.
4) Within the future expansion of radiotherapy services on the North Coast it would be desirable to incorporate the role as part of the staffing model for the department.

An important outcome for the profession is sustaining access to the structure and information developed through this pilot project. It is proposed to integrate the review RT module as a unit of study contributing to masters of advanced practice in medical radiations at Monash University.

Ongoing evaluation and refinement of the role will continue till mid 2009 and then broader evaluation and data analysis will take place.

Additional information
Additional information can be obtained from:

North Coast Cancer Institute
Port Macquarie Base Hospital
Wrights Rd
Port Macquarie NSW 2444
Phone: (02) 6580 1840

3.1.1.5 PHYSICIAN ASSISTANT AND TREATMENT COORDINATOR IN HAEMATOLOGY

Northern Sydney Central Coast Area Health Service

The aim of the project was to improve the efficiency of a cancer specialist through the appointment of the innovative role of 'physician assistant'. Many extraneous and administrative functions which are necessary but time-consuming reduce the quality patient-physician interaction time.

Overview of approach

The primary objectives of the project were to:

1) Improve the efficiency of the cancer specialist through the appointment of a 'physician assistant'.
2) Improve the quality of direct clinical patient-physician interaction through a more thorough assessment of patients' clinical problem, more time for patient-physician interaction and eduction of patient regarding their cancer diagnosis or treatment.
3) Increase patient satisfaction by fulfilling needs of patients in the areas of education and discussion of their diagnosis.
4) Complete treatment protocols optimally.
5) Reduce the stress of the cancer specialist with the help of 'physician assistant' support in coordinating the day-to-day requirements for patients.

This model sought to employ a skilled paramedical assistant called a 'physician assistant' whose main task was to assist the cancer specialist in their day to day activities with a special emphasis on coordinating complex treatment protocols. Preliminary identification of 'physician assistant' roles had been undertaken to initially take on the following functions:

- time and motion study of participating haematologists
- obtain patient history pre-consultation
- retrieve and check patients' diagnostic results, pre-consultation
- obtain phone authority prescriptions on behalf of haematologist
- write pathology and radiology request forms
- coordinate initiation of treatment based on the treatment protocol
- develop and implement the "personal health record and treatment programme" and enable patients to have their own personal health record
- support cancer specialist in the learning process of new software
- develop enhanced revenue generation strategies for ongoing sustainability of physician assistant program.

Project methodology

The project comprised a series of activities:

1) **Recruitment of the physician assistant.** This was achieved soon after project commencement.
2) **Identification of opportunities for task transfer.** This involved close liaison between the haematologists and the physician assistant.
3) **Review of procedures.** This sought to identify the areas where the physician assistant could provide direct support and document these activities.
4) **Evaluation position.** Evaluation was ongoing.

Project results

The project sought to ensure the development of a role that achieved the provision of a safe, cost effective primary care service. Key findings in relation to the position were that:

1) Establishment of regular communication time with each physician provided an important mechanism for transferring relevant tasks from the physician to the assistant.
2) The physician assistant was able to prepare the individual patient treatment plans.
3) Minor patient issues were handled by the physician assistant rather than the physician.
4) The evaluation considered the cost-benefit of the assistant position (based on time spent on tasks that would otherwise be dealt with by the physician) and found that cost recovery (of the physician assistant) was easily achieved and had enable the physician's time to be more appropriately used.
5) The physician assistant had improved the quality of direct patient care by personally navigating patients through complex treatment protocols with the assurity that safety and compliance had been adhered to.

Future directions

Whilst the one year timeframe means that the role is still evolving, it is anticipated that the future activities will include a survey of referring GPs to ascertain their needs in relation to the joint management of patients and a review of the discharge plans. The physician assistant is also likely to provide a focus for increased billing of private patients.

Additional Information

Additional Information can be obtained from:

Haematology Department
Royal North Shore Hospital
Pacific Highway
St Leonards NSW 2065
Phone: (02) 9926 7601

3.1.1.6 PATIENT NAVIGATOR BREAST CARE

Sydney Adventist Hospital (SAH)

The Sydney Adventist Hospital (SAH) undertook a pilot project involving the employment of a patient navigator (PN) for breast cancer patients. The purpose of the innovation through the employment of a breast cancer patient navigator was to improve the journey of patients with breast cancer at Sydney Adventist Hospital. The patient navigator was to assist breast cancer patients 'navigate' their treatment path through the various cancer tests, treatments and services (i.e. through the cancer care continuum) and to provide emotional support for these patients and their families. The PN was to be responsible for the management of the patient's journey from diagnosis through Sydney Adventist Hospital to cure or palliative care to ensure the most appropriate and beneficial clinical patient outcomes.

Overview of approach
The primary objectives of the project were to:

1) Appoint a 'patient navigator' whose goal was to co-ordinate and support all activities related to each patient's cancer journey, following diagnosis with suspected breast cancer.
2) Develop a comprehensive program, including education and support for patients and their families, commencing at the pre-admission clinic and continues through the subsequent elements within the patient care continuum, including radiation therapy, chemotherapy, inpatient palliative care and all other appropriate interventions.
3) Identify gaps in the cancer care pathway and implement appropriate interventions and changes to enable each patient to travel seamlessly, from one intervention to another in the most deliberate and uninterrupted way.
4) Develop a program that is evidence-based research with the patient navigator acting as a resource person to the multidisciplinary clinical team, including registered nurses and others as required.
5) Develop the PN role within the hospital's clinical governance framework, protocols, procedures, policies, and professional guidelines.

Project methodology
The concept for this project resulted from feedback provided by a patient focus group. These past patients identified a gap in our service and suggested a breast care nurse would provide added value to our management of breast cancer patients. The project comprised the following activities

1) **Role establishment.** A job description for the role was developed in conjunction with the Breast Cancer Care Multidisciplinary Team, discussed with the Human Resources Department and approved by the hospital executive.
2) **Project Steering Committee.** A committee was put in place to monitor the ongoing progress of the project.
3) **Appointment.** The patient navigator role was advertised, interviewed for, and the selection criteria met.
4) **Stakeholders.** Stakeholders were identified as the doctors involved in breast care, the nursing executive officer (project sponsor), the assistant director of medical services (to whom the role reports) and the director of patient flow services (who manages the case managers and who previously managed breast cancer patients).
5) **Transition.** Transition was managed between case management, social work and the patient navigator. The role of PN was new to the organisation and as such was

established with clear guidelines. Orientation of the PN to the role included working with the case management and social work team and also our cancer support department.

6) **Communication.** A letter to introduce the PN to the specialists was developed and sent, outlining the role and contact details. Key stakeholders were met with and introductions carried out. An email to the wider leadership group across the organisation introduced the role and the individual and how they may be contacted.

7) **Achievement and monitoring of the KPIs.** Key performance indicators were created and developed as result of the evaluation of the role within the hospital and in line with the requirements of the Hospital Executive Committee.

8) **Evaluation.** Provide an assessment of the pilot project and satisfy the requirements of the grant.

Project results

Results from the evaluation process are promising and the PN role is highly valued by patients who reflect in their responses a strong need for the continuation of this role and for a more proactive approach to patient navigation on admission to the hospital. Specific findings based on each of these evaluation areas were as follows:

1) **Patient focus group.** The major objective of focus groups is to research patients' opinions and feedback on their experience at Sydney Adventist Hospital. Participants were asked what they found beneficial about meeting the patient navigator either in pre-admission clinic (PAC) or on the ward following surgery. Many women said that the breadth of knowledge the patient navigator was able to share with them in numerous areas, apart from the amount of printed information they were given, was greatly appreciated. All of the participants agreed that the Patient Navigator role was a great addition to the services provided at SAH, and their main suggestion for improvement was to increase the service.
2) **Supportive needs survey.** A questionnaire, named the 'supportive care needs' was developed was developed and women newly diagnosed with breast cancer were asked to complete. Analysis showed that 54.7 per cent of respondents found that, across the multidisciplinary team, the PN had provided the most useful information and/or support since they had been diagnosed.
3) **Staff and multidisciplinary survey.** A short survey was developed to determine the value of the breast cancer patient navigator role as perceived by MDT members and staff. Overall the feedback from MDT members and staff was positive. From a staff perspective the PN has been of some support and value to staff, as a resource for some members of the team and in providing information about breast cancer services, communicating patient information and needs to other members of the team, ensuring that care standards are maintained and patients receive the appropriate care.

Some responses suggested some confusion about the role and how it differs from that of a breast care nurse. There also seems to be some concerns about the role delineation between other services. These issues were raised early in the project and were managed from a case management perspective prior to the role commencing, however the impact of the role on the social work department was not as clearly identified and clarification was needed throughout the project and these results may be evidence of that situation. If the role is to continue it is clear from this feedback that better clarity around the role needs to occur.

Further comments indicate that, although the role is considered of value, that the approach taken could have been improved. It may be that as a project the PN needed to "hit the ground running" due to the shortness of the project and the amount of work needed to be achieved. It may also have indicated relationship or communication issues amongst team members

Future directions

The indications from both this study and internationally are that the role of the patient navigator for cancer services is a role that patients need and value. At SAH the hospital executive have recognised the results of this project and the benefits our patients are experiencing. Bringing together other important considerations for not for profit private hospital perspective such as length of stay management and discharge planning form part of this service.

It has been proposed that a further enhancement to breast care services and also a possible funding opportunity for this role would be to utilise and extend the services of SAH's Hospital in the Home (HITH) service, providing a SAH package of care for breast cancer patients through to the patient's home and beyond.

It has been proposed that a model be developed to trial to transfer of breast cancer patients who are clinically safe to HITH one day prior to discharge. It is expected that this may recognise some cost benefits for the organisation. The patients remain under the inpatient care of the hospital with access to medical and nursing services as often as required and telephone access to services 24/7. The development of an outpatient breast cancer service would also be provided. An improvement of patient flow through the hospital beds is expected to increase revenue which could be used towards funding the PN role with the added benefits to patients of an early transfer home and improved breast cancer services, both as an inpatient and outpatient. A pilot study of this service has been approved by the hospital executive with a report due in six months time.

Further, the PN role is a role which could certainly be transferable across other tumour streams. The feedback from the evaluation and the literature supports this role from a breast cancer perspective.

Additional information

Additional information can be obtained from:

Sydney Adventist Hospital
185 Fox Valley Road Wahroonga NSW 2076
Phone: (02) 9487 9111

3.1.1.7 NEURO-ONCOLOGY NURSE CO-ORDINATOR

Sydney South West Area Health Service

The project intervention involved the employment of a Neuro-Oncology Care Coordinator (NOCC) for the neuro-oncology unit at the Western Zone (WZ) of SSWAHS (specifically Liverpool Hospital) and assessing the impact of such an intervention.

Overview of approach
The overall aim of the project was to establish and assess the impact of the introduction to SSWAHS (WZ) of a care coordinator to facilitate a more formalised approach to care coordination on brain tumour patient care and outcomes.
The hypothesis for the project was that brain tumour patients and families will benefit from having a liaison person and that the NOCC would:

(1) support them throughout their cancer journey; and

(2) allow increased efficiency in the delivery of clinical care and services.

Project Methodology
For Project Hypothesis 1 *(supporting methods/measures)* activities included:

- documentation of existing care pathway for brain tumour patients and how this was altered to strategically incorporate the NOCC role; and
- pre and post (at 9 months) NOCC impact surveys (utilising existing CINSW patient and purpose-designed health professional surveys) to determine patient satisfaction with services, and help define NOCC role priorities as viewed by relevant health professionals

For Project Hypothesis 2 *(supporting methods/measures)* activities included:

- development and documentation of NOCC-specific KPIs including:
    - needs assessment and psychosocial distress screening; and
    - number / timeliness of referrals to allied health, hospital and community services;
- documentation of NOCC workload via electronic data management system incorporating measures for case complexity and clinical interactions; and
- documentation of neuro-oncology patient outpatient clinic turn-over time, inpatient bed-days and unplanned admissions both pre and post commencement of NOCC role

Project Results
This project was significantly delayed due to employment constraints within the Area Health Service. The Coordinator commenced on 22 February 2010 and CI NSW endorsed an extension for the project to January 2011. Key results were as follows:

(1) *Health professional surveys*: The baseline survey identified the top priorities of the role as including: informing relevant healthcare members when a patient has problems, facilitating timely referrals to other healthcare providers, providing tailored information packages, patient advocacy, and identifying triggers for referral to palliative care. Post NOCC impact survey results have further refined these priorities and documented any shifts in workload for multi-disciplinary team members that could be attributed to the NOCC commencement and role.

(2) *Patient surveys:* Those not exposed to a formal NOCC role reported a high baseline level of satisfaction (> 90%) with current clinical services, thus it remains difficult to conclude the specific impact of the NOCC role on patient satisfaction. Qualitative

comments from patients and carers strongly endorsed the importance and functions of the NOCC role.

(3) *NOCC-specific KPIs:* The project demonstrated that within an adapted SSWAHS care pathway, the feasibility of extremely timely referrals of the vast majority of all newly diagnosed primary brain tumour patients to the NOCC for assessment (on average, between 0-4 days). A systematic approach to NOCC patient assessment and psychosocial distress screening led to both an increased number and more timely referrals to both inpatient and outpatient allied health services, as well as other hospital and community (government and non-government services.

(4) *Documentation of NOCC workload:* was undertaken via a data management system embedded within the existing electronic oncology health record. Use of the UK-developed and published Macmillan level interventions was a successful means of objectively documenting both the number and case complexity of clinical interactions with patients and importantly their carers.

(5) The NOCC played a significant role in the *provision of information, education and support* at all points along the patient's care trajectory, from initial diagnosis to the post-bereavement phase for carers.

Other findings have included the development of local, state and national networks amongst both neuro-oncology and other cancer site nurse coordinators for collegial support, advocacy, improved communication and cross-referrals.

In summary, the project has underscored the highly complex journey and care of brain tumour patients and their carers. Results have shown the NOCC can have:

(1) A very positive impact on improving the level and optimising timing and delivery of support throughout the care pathway; and

(2) Allow increased efficiency, better coordination in the delivery of a range of clinical care and services both in hospital and community-based systems.

We believe that several aspects of this project could serve as a foundation for other centres and health services seeking to develop or refine similar models of care, including aspects of the patient care pathway and integration of the NOCC within it, team roles, timing of referrals to NOCC, systematic assessment and psychosocial screening, documentation of role KPIs and case complexity.

Future Directions

Opportunities for moving forward include:

- establishing permanent funding for this and similar roles nationally via lobbying of stakeholders at local Area Health Service, state (CI NSW, NSWOG Neuro-Oncology) and national (COSA) levels and consumer advocacy groups;
- further refinement of local care pathway to better serve more regionally based and/or NESB patients;
- advocating to urgently address service and other support/information gaps identified from this project (eg. placement of young glioma patients in institutionalised care);
- work with state and national groups in consensus regarding standardisation of CC KPIs, both across neuro-oncology and other tumour streams;
- contribute to state efforts (CI NSW) including education modules for up-skilling of existing workforce in neuro-oncology nursing practice; and
- further research such as the development of screening measures for carer psychosocial distress

Additional Information
Additional Information can be obtained from:

Liverpool Cancer Therapy Centre
Bigge/Campbell Streets
Liverpool NSW 2170
Phone: (02) 9828 5180

3.1.1.8 IMPLEMENTATION OF AN ACUTE AMBULATORY CARE NURSING ASSESSMENT UNIT

Macarthur Cancer Therapy Centre (MCTC)

The project aimed to create an assessment area for toxicity management within the Macarthur Cancer Therapy Centre (MCTC) to create a culture and a capacity for acute care management outside of the traditional ED presentations of these patients. It was expected that this would also improve clinical competencies of oncology RN's may allow opportunities for career development in roles of educators, clinical nurse consultants or nurse practitioners.

Overview of approach
The primary objectives of the project were to:

(1) Assess and treat toxicity in oncology patients by staff best trained to assess toxicity and identify complications.

(2) Improve the process and speed of assessment and delivery of treatment.

(3) Create clinical pathways for the Assessment Unit and to give to ED to use outside of the hours of the Assessment Unit.

(4) Minimise inpatient admissions and to reduce the workload on ED.

(5) Consider broadening the project to include symptom control for community palliative care patients.

(6) Broaden outpatient cancer service delivery to incorporate 'drop-in' service.

(7) Reduce oncology patient presentations to ED.

(8) Create clinical pathways with set protocols for assessment, investigation and management for specific clinical presentations.

(9) Redesign clinical services.

Project methodology
The Service was established to operate in the MCTC on a Monday–Friday basis (excluding public holidays) from 0830 to 1700. Specific activities and the model for the project were as follows:

(1) **Development of clinical protocols/project infrastructure.** Clinical protocols and a database for collection of patient details were created. The clinical protocols used have been sourced from published clinical guidelines from the British Columbia Cancer Agency and the National Cancer Institute USA.

(2) **Unit establishment.** An area within the MCTC was identified as the acute assessment area. It is situated next to clinic rooms for ease of accessibility to medical staff. It has wall oxygen, suction, alert call buzzer, vital sign monitor, glucometer, ECG machine, urine analyser, volumetric pump, X-Ray viewing screen, emergency equipment, telephone and computer. A cardiac monitor and a Medicraft Surgery and Recovery Trolley have also been purchased for the Assessment Unit.

(3) **Initial telephone or clinical assessment.** This is performed and if symptoms described meet Medical Emergency Team (MET) criteria, the patient is instructed to present to the nearest Emergency Department. A Patient Alert Card has been created and provides contact details of the assessment nurse/unit. This is given to the patient at the commencement of treatment. Patients are instructed to contact the assessment

nurse if they are concerned about symptoms experienced during or after treatment. Patients can also be referred to the assessment nurse by doctors or other staff.

(4) The specific process of patient presentation and assessment is as follows:

- upon presentation to the Acute Assessment Unit a review of symptoms and vital signs is performed by the assessment nurse and if the MET criteria are met a MET call is registered
- the assessment nurse follows clinical pathways for nausea / vomiting, mouth ulcers, fever with possible infection, diarrhoea, constipation and oesophagitis
- the clinical pathways guide the assessment nurse into undertaking focused appropriate clinical assessment of the history, physical examination, pathology and X-Ray investigation and these are subsequently undertaken
- treatment specified in the clinical pathway such as protocol antibiotics, intravenous fluids or analgesia are commenced
- medical staff are notified; confirm the patient assessment by the assessment nurse and decide on a discharge plan – either hospital admission, review again in the Assessment Nurse Unit in the next days or routine follow-up in clinic
- the assessment nurse and doctor conduct a clinical handover if admission to hospital is required. Liaison with the bed manager is undertaken early if admission is felt necessary
- a discharge summary is provided for the patient's general practitioner if the patient is not admitted. Documentation in the clinical record is performed.

Project results

Evaluation was undertaken by comparing the outcomes of those patients presenting to the Assessment Unit with the group who presented to the ED. During the period March–August 2008 there were 314 referrals to the MCTC Assessment Unit and for July–September 2008 there were 61 presentations to ED (39 out of hours and 22 during the Mon–Fri period when the Assessment Unit was operating).

Of the 314 referrals to the MCTC Assessment Unit, 147 were through telephone and the remaining 167 presented at the unit. Of the 167 who presented at the unit, 122 were discharged home, 30 (18%) were admitted and 15 were transferred to the ED.

The table below summarises a range of performance indicators derived for the project

KPI	Measurement	Assessment Unit	ED
Time to assessment	Triage less arrival time	6 minutes	10 minutes
Time to Initiation of Treatment	Treatment commenced less arrival time	54 minutes	300 minutes
Time to ward bed	Transfer less arrival time	3 hours	19.4 hours
Admission to presentation ratio		30/167 = 18%	48/61 = 79%
Effectiveness	Adherence to clinical pathways	100%	N/A

Key observations were that:

- Within the ED there was no difference in time to treatment initiation if patients presented to the ED during Mon–Fri normal hours compared to after hours.
- Length of stay in the ED was 22 hours for weekend presentations compared to 18 hours for weekday presentations reflecting lack of weekend discharges within the hospital.
- The difference in numbers of presentations, 167 in the assessment unit as against 61 to the ED, may represent a lower acuity of presentations to the assessment unit and increased utilisation by the patients. The lower number of ED presentations in normal

working hours (22) does indicate a willingness for patients to use the assessment service and has led to a reduction in workload for the ED staff.
- The higher admission rate for the ED presentations may be due to an unwillingness for ED staff to discharge patients home after hours, or where a definite discharge follow-up plan has not be arranged, which can be better managed within the assessment unit.

Feedback received from patients/carers, clinicians and other stakeholders have been extremely positive and encouraging and it is felt that the project has been successfully developed, implemented and evaluated.

Future directions

Future directions for the initiative include:

- continuation of the assessment unit beyond the life of the Cancer Institute NSW grant with a plan for all RN's rotating through the position
- consideration for extending operational hours as a reasonable number of patients still present to emergency department (ED) after normal working hours and 77 per cent of presentations are admitted. We feel that many of these admissions could be avoided if the assessment unit was able to function until 21:00 or if the model could be adopted in ED without the category 3 and 4 being used, which slows time to assessment considerably
- additional nursing staff will be required as services expand to cover palliation of symptoms rather than only covering treatment toxicity. 55 per cent of all medical oncology admissions are for symptoms control and some of these admissions may be avoided using the assessment unit clinical pathway model
- additional skills obtained by the RN's may lead to personal career development to nurse educator, clinical nurse consultant or nurse practitioner positions
- the model is transferable and may be developed and implemented at other oncology sites
- the model may be developed and implemented for other clinical services such as a chest pain assessment unit, dyspnoea unit.

Additional information

Additional information can be obtained from:

Macarthur Cancer Therapy Centre
Therry Road
Campbelltown NSW 2560
Phone: (02) 4634 4300

3.1.2 Service Redesign

Projects focussed on service redesign, listed in Table 2, demonstrated innovative approaches to redesigning current service delivery such as network development, shared care models and care pathways. In addition to their value at the pilot sites, these submissions were able to demonstrate the potential for translation to other sites.

Table 2 HSIG Round 1 Projects – Service Redesign

Project		Location
3.1.2.1	Collaboration between Cooma & Monaro Oncology Services-A Shared Care Model of Service	Wagga CHS
3.1.2.2	Clinical networks for Cancer and Palliative Care Services	Greater West AHS, Orange
3.1.2.3	Radiation therapist led treatment reviews	Royal North Shore
3.1.2.4	Pilot program to evaluate Weight Loss prognostic indicators	RPA
3.1.2.5	End of Life Care project	Braeside Hospital SSWAHS

3.1.2.1 SHARED CARE MODEL OF CARE BETWEEEN COOMA & MONARO ONCOLOGY SERVICES

Greater Southern Area Health Service

Greater Southern Area Health Service (GSAHS) and the Monaro Committee for Cancer Research sought to establish a pilot 'shared care' oncology service in Cooma, NSW. The aim of the project was to establish and evaluate a new model of oncology service delivery through partnerships between metropolitan oncologists, local rural GPs and nursing staff. The model was designed differently from other rural oncology services in that there were to be no visiting oncologists to the site. The pilot program also provided an opportunity to assess sustainability from financial, resource and skilled workforce perspectives.

Overview of approach
The expected objectives of the project were to:

(1) Develop a shared care model of service that could be implemented in other rural Areas across NSW.

(2) Increase access for rural patients to a local treatment service that assists in supporting patients throughout their cancer journey.

(3) Develop a model of service that addresses community need, allows patients to access services closer to home, meets chemotherapy administration standards and ensures optimal patient outcomes.

(4) Develop a model that is sustainable from both a financial, resource and skilled workforce perspective.

(5) Reduce the burden of isolation from family who stay overnight for treatment (Canberra) and the financial hardship for rural patients and carers having to access services in a metropolitan or regional location.

(6) Review the hardships of travel for patients including such issues as feeling unwell from the effects of chemotherapy, family disruption and loss of work time and income.

(7) Design, implement and evaluate a shared care model of service that has community input and support and will assist with future demands on oncology services.

(8) Develop a partnership arrangement of 'shared care' between metropolitan medical oncologists and local rural GPs.

(9) Increase trained local staff accredited to administer certain oncology treatments locally.

The focus of the pilot was to develop a 'shared care model' with GPs, oncologists and nursing staff as opposed to the models working in other units with shared care between the oncologist and the nursing staff. The challenge for this pilot was to determine how the GP would be involved beyond the contributions already being made by them within the Hospital.

Project methodology
The GSAHS employed a collaborative approach to the development of the model through consultation with ACT Health, local health professionals, representatives of the Cooma community, the Cooma Monaro Cancer Research Committee and the local AHS. The AHS's approach was to use the buy-in of key stakeholders and the experience of the clinicians to build on the existing framework of Oncology services in the Southern Cancer Network.

A 'shared care' approach involved the training of local nursing staff in order to provide a local oncology treatment service that meets the needs of the community and is safe and consistent with the skill level of providers. It was essential that the project optimise the limited available

time of the clinicians to be involved and this was achieved by their limited direct involvement with treatment procedures but their ongoing backup support being provided at all times. This project facilitated effective communication and collaboration between the oncology specialists, the local GPs and the local oncology nurses and obtained their support and feedback in the model.

The oncology specialists developed criteria for chemotherapy treatments appropriate to be administered locally under a shared care arrangement and with appropriate training of local staff. They also were responsible for assessing the patient, establishing and prescribing the treatment plan. Once the treatment plan was determined, the oncology specialist communicated with the oncology nurses about the delivery of that treatment plan. Any proposed deviation from the prescribed treatment plan was further assessed by the oncology specialist through communication with the oncology nurses and local GPs.

There was appropriate training of nursing staff, including a 6 week placement at The Canberra Hospital in the ACT. Training and ongoing mentoring and support were provided to the oncology staff by the Area cancer nurse coordinator (CNC) in addition to their enrolling in further tertiary cancer care studies.

To administer intravenous chemotherapy safely, initially two RNs were identified and chemotherapy oncology trained. In addition, two additional staff members were then recruited, trained and became available to cover for leave. Continuity of care was required around the organisational aspects of chemotherapy administration (i.e. booking of appointments and treatments, referral to other health care providers, organising pathology tests, medical imaging, outpatient scripts, ordering of chemotherapy, supportive drugs, etc). There were also numerous administrative duties and organisational aspects that were undertaken during the beginning of the Unit's operations.

Project results

The development of the Oncology Unit came about primarily through community support for the project. By being developed through an identified funding opportunity to support the development of the Unit, it presented several challenges. Preparation time to get the program running was limited. There were also few change management processes undertaken and with no project manager appointed, the setting up of the service resulted in additional workloads for some management and staff causing additional stress and anxiety. Once the Unit was operating, however, most staff were satisfied with the outcomes and daily running of operations.

Expressions of interest for staffing of the new unit were at times rushed as was the intensive short term training required. The new oncology staff appointed also had to learn the 'clerical' duties required as well as put into practice their new clinical skills.

The number of patients that the unit would cater for was relatively difficult to predict but advice received by oncologists and from the establishment of other units was that the Unit would start slowly for the first 12 months. The slower development of the Unit also allowed staff to gain confidence and experience, patients to feel reassured about the services and standard of care, and the oncologist to be comfortable in referring according to the level of criteria. The referral processes from the oncologists from Canberra was initially mixed with many referrals coming directly from requests from the patients who informed the oncologists of the Comma Oncology Unit, and asked if they could receive treatment there. The referral process, however, was well defined with the oncologists being involved in the development of the criteria. The complexity of treatment would increase as the skill level of the nurses increased.

Key findings were that:

(1) A total 271 Occasions of Service were provided within the Oncology Unit from September of 2007 to September 2008. The predominant tumour streams were colorectal cancer and breast cancer. These two groups accounted for 97 and 35

occasions of service. Urology and haematology accounted for 11 and nine occasions of service. Non-oncology treatments accounted for seven occasions of service.

(2) Overall, the Cooma Oncology Unit Pilot Project delivered in its main objectives to develop a model of service that addresses community need, allows patients to access services closer to home, meets chemotherapy administration standards and ensures optimal patient outcomes. The development of a shared care model was largely successful from with the Cooma oncology nursing staff having close communication links with the Canberra oncologists. Although this Pilot Project intended that the Cooma GPs would be key partners, in practice their role has been one of providing backup support for emergencies and keeping informed of patient outcomes. Local staff were appropriately trained to administer oncology treatments from Cooma and have continued to receive ongoing training programs.

(3) Initially, the staff and management indicated that establishing the unit in such a short time frame created some stress and frustration amongst the Cooma staff. A longer lead time to accommodate a more planned approach with appropriate time frames and a full change management process before the introduction of any service would have probably reduced the identified staff stress. Adding to these difficulties was a delay in recruiting oncology nursing staff and, despite available funding, a designated project manager to oversee and direct the introduction of the new service was never appointed. Many of these tasks had to be undertaken by the local manager, cancer program manager and Area CNC adding to their existing workloads.

Future directions

The Cooma Oncology Unit demonstrated its ability to provide a quality and safe rural oncology service for its local community. It therefore could remain as a viable operational Unit if it continually addresses the sustainability issues, being:

- ongoing staffing issues including training and succession planning
- financial and staff resources
- patient numbers and Occasions of Service justifying the continuation of the service.

This Pilot Project and aspects of this model could be transferred to other rural sites within NSW. If the Cancer Institute NSW is interested in developing other rural models of care, the Cooma model should be carefully considered for its strengths and weaknesses and how it could be included at other rural sites.

Additional information

Additional information can be obtained from:

Greater Southern Area Health Service
34 Lowe Street
Queanbeyan NSW 2620
Phone: (02) 6128 9777

3.1.2.2 CLINICAL NETWORKS FOR CANCER AND PALLIATIVE CARE SERVICES

Greater Western Area Health Service

The project sought to implement a functional Cancer and Palliative Care Clinical Network, providing a means of efficiently using scarce specialist expertise, standardising and improving access to care, and reducing "distance-decay" caused by centralisation of specialist services. The expectation was that the project would guide the strategic directions for services to people with cancer and other advanced life limiting illnesses in the Greater Western Area Health Service (GWAHS).

Overview of approach

The primary objective of the project was the implementation of a functional Cancer and Palliative Care Clinical Network within GWAHS to guide the strategic directions for these services to people with cancer and other advanced life limiting illnesses.

During the project period, GWAHS revised the plans for Clinical Networks and determined that Cancer and Palliative Care services would be better positioned as a clinical stream of the Medicine and Continuing Care Clinical Network. This change provided strong support in the development of a functional Cancer and Palliative Care Clinical Stream.

Project methodology

Implementation of the Cancer and Palliative Care Clinical Services Network within GWAHS was planned to occur in three stages. Difficulties were encountered due to the inability to successfully recruit to the project manager position. The activities of the project were completed primarily by reference group members and with the assistance of an external consultant:

(1) **Stage 1: Project initiation.** The project was commenced with the establishment of a Cancer and Palliative Care Clinical Network 'Project Reference Group' and attempts to recruit a Project Manager. Due to the timeframe of the project the reference group decided to cease recruitment activities following three unsuccessful attempts. During this period, confirmation of the project implementation schedule incorporating change management strategies was finalised utilising existing GWAHS resources where available. During this stage, GWAHS revised the plans for Clinical Networks and determined that cancer and palliative care services would be better positioned as a clinical stream of the Medicine and Continuing Care Clinical Network.

(2) **Stage 2: Project planning activities and implementation.** Appointment of a network director was made and clinical leaders were identified to lead change across the Area. A start-up workshop in Dubbo with key stakeholders was undertaken following extensive consultation to identify appropriate membership of the Clinical Stream Management Committee. This workshop assisted the process of change by providing information on the nature and purpose of the proposed clinical stream thereby engaging clinicians and ensuring congruence with Area and State strategic directions for cancer and palliative care services. Preparation of a DRAFT Strategic Plan and a separate DRAFT Service Plan for cancer and palliative care services was progressed with the assistance of an external consultant. The Service Plan includes a workforce plan. The planning activities involved in this process included:

- review of current services, including levels of service, location across the Area and alignment with state and Commonwealth policy directions
- establishing complementary roles in the provision of cancer care in hospitals and services within the GWAHS

- formalising of hub, spoke and node service delivery systems for specialist cancer care and palliative care
- consulting with consumer groups and involve them in the planning of the network and the Strategic and Service Plans
- reviewing current documentation in use in the specialist services and determining Area wide documentation, standards of practice and clinical guidelines which require development
- determining key performance indicators (KPIs) for reporting
- reporting to GWAHS Executive and management.

(3) **Stage 3: Review.** The Cancer and Palliative Care Clinical Stream Management Committee was established and met monthly to focus on progressing the development and revision of the Stream's DRAFT Strategic Plan and DRAFT Service Plan.

Project results

The project implementation schedule was reviewed a number of times within the project period due to the inability to recruit a project manager. Flexibility was required with the sequence of many tasks however this did not appear to compromise the outcomes of the project. Change management strategies and a plan to communicate information relating to the implementation of the Clinical Stream were key components.

Senior staff roles within the GWAHS Area cancer and palliative care services were reviewed and redescribed to align them with the requirements of a clinical service network. Clinical leaders and co-manager were identified and updated position descriptions were implemented. A staff physician was appointed to the director's position. The director and co-manager have been involved in the setting up of the Medicine and Continuing Care Clinical Network and are on the Management Committee of that Network.

A Start-Up Workshop with key stakeholders was convened, to formalise the Stream. This workshop provided information on the Stream and the Network to which it belongs and aimed to engage clinicians and other stakeholders. Those attending the workshop identified barriers and potential strategies to address them which offered a 'wide angle' view cancer and palliative care needs within the Area.

The inaugural Cancer and Palliative Care Clinical Stream Management Committee meeting was convened and it was determined at this time that this committee will meet monthly until the end of the year in an effort to develop a solid foundation. Commencing in 2009, the committee will meet on a quarterly basis.

Ensuring congruence with Area and state strategic directions for cancer and palliative care services was an important element in the development of the DRAFT Strategic and Service Plans for cancer and palliative care services. There are several strategic plans and policy directions that have an influence over how services for people with cancer and other advanced life limiting illness are currently provided in the GWAHS and how they will be provided in the future.

A review of strategic directions and policies in place at a national, state and Area level was undertaken to inform the composition and structure within which the GWAHS will continue to provide its services into the future.

Major planning activities relating to the development of the DRAFT Strategic Plan and DRAFT Service Plan were undertaken. These included analysis of the population within GWAHS in relation to cancer incidence and changes in the models of care which are underway across NSW as a result of the clinical redesign processes being implemented. This has assisted in the development of an enhanced understanding of the complementary roles of cancer care provided by the generalist clinicians in hospitals and services within the GWAHS.

Formal mapping of the services provided for people with cancer and other advanced life limiting illnesses was undertaken to develop a formal understanding of the flows within and external to the Area. The hub, spoke and node service delivery systems utilised within the cancer and palliative care services were analysed for both strengths and weaknesses in their ability to allow timely access to primary, secondary and tertiary services. In the absence of locally-based specialist medical providers in the disciplines of oncology and palliative care these links remain fundamental to ensuring functional formalise links between peripheral, referral and metropolitan cancer and palliative care providers.

Gathering information for analysis relating to the Cancer and Palliative Care workforce has been undertaken for the development of a workforce plan within the DRAFT Service Plan. This identifies a requirement to ensure clinicians have access to opportunities for the development and maintenance of clinical skills and knowledge and provides a direction on workforce planning within these specialist services.
Consultation with consumers and staff was undertaken in Bathurst, Orange, Dubbo and Broken Hill with varying levels of engagement. Promotion within local media and key contacts was undertaken in each site. Attendance numbers were modest however the information gleaned whilst specific to the location had congruence across the Area.

Responding to issues identified in the consultation process has included the development of further Standards of Practice (SOP) which provide guidelines for clinical care whilst ensuring efficiency, effectiveness and safety. SOPs currently under development include Complementary Therapies in the Care of People with Cancer and Referral to Area Cancer Services. This draft SOP requires clinicians across the Area to identify patients with a cancer diagnosis and refer them to the rural cancer nurse coordinator in Orange, Dubbo or Broken Hill for assessment of care needs. It is anticipated that this will reduce the number of people who 'slip through' the health system without receiving appropriate levels of care coordination and support from the psycho-oncology counsellors located in Orange, Dubbo or Broken Hill. All SOPs now require the endorsement of a Clinical Stream or Clinical Network prior to formal approval at Area level which ensures appropriate consultation.

Stage 3 involved the implementation of the Stream's systems and processes to ensure good communication and monitoring systems. During the development of the DRAFT Strategic Plan for Cancer and Palliative Care Services, a series of meetings were held with community representatives and staff to inform the process. The key factors repeatedly identified by community members as to what constituted a satisfactory experience during the diagnosis of their illness and subsequent treatment included:

(1) The relationship with the health service provider, usually the Rural Cancer Nurse Coordinator, largely determined the perception of the quality of the care received.

(2) The amount of information provided and at what stages to the person and their family and carers to ensure they are fully informed about the various components and complexities of the disease process and the services being provided.

(3) The importance of the linkages between the various components of the service to ensure that people do not 'fall between the gaps' especially as they move between the rural and urban components of the service. An important factor was also the need for standardisation across service components to ensure familiarity and confidence in the services.

(4) There is a need for a directory of available associated services. It is recognised that there is a wide range of agencies that can be accessed for support of all kinds to reduce the impact of the illness if people are aware of them.

(5) Information on the cost of services (up front) and the sources of financial assistance available. Some NGO and community services advise that their highest service demand is for this type of advice. Increasing evidence is emerging about people in rural

and remote areas refusing treatment or picking a treatment with reduced survival potentials due to the anticipated cost and other perceived adverse impacts on themselves and their families.

(6) Problems with IPTAAS which prevent people from making a claim or precludes people-in-need from making a claim.

(7) Lack of adequate public or community transport for accessing services especially those of a periodic nature such as a course of chemotherapy.

(8) Lack of resources to ensure psychosocial support (a highly regarded service) for people with cancer and also those receiving palliative care.

(9) Need to ensure General Practitioners (the first point of contact) are kept informed and supported to ensure their effective integration into the cancer care network.

(10) Supported accommodation for people who have to spend time in a larger centre or a capital city. The adverse and isolating impact on people and their families of having to live for prolonged periods of time away from home cannot be over emphasised especially when receiving treatment for cancer.

(11) Services provided at home, when they are adequately resourced, can reduce the devastating effect of illness and death on the family.

(12) The desire that GWAHS recognise the contribution that community cancer interest groups can make to supporting others in the community with cancer (especially through social and financial support) and see them as a service partner.

Future Directions

The Cancer and Palliative Care Clinical Stream and its Management Committee, while established and functional, are in their infancy. Each will require a continued investment of resources to ensure ongoing success. This will include significant input into demonstrating to clinicians within the Cancer and Palliative Care Services the value of this newly formed Stream for people with cancer and other advanced life limiting illnesses.

The GWAHS model for Clinical Networks and their Clinical Streams is dependant on current clinicians and managers taking on new roles which focus on the service development and monitoring on an Area basis. Ongoing marketing of the benefits of engaging at this level will be necessary. For many this is a new way of approaching issues as they arise and will require support and fostering.

With the development of radiotherapy services as part of the redevelopment of the Orange Base Hospital, the Clinical Stream will be a particularly useful vehicle for planning and implementing the changes to services which will be required. The Management Committee will be well positioned to consider the range of options available to the Area during this development phase.

Additional Information

Additional Information can be obtained from:

Greater Western Area Health Service
PO Box 4061
Dubbo NSW 2830
Phone: (02) 6841 2222

3.1.2.3 RADIATION THERAPIST LED TREATMENT REVIEWS

Northern Sydney Cancer Centre (NSCC), Royal North Shore Hospital

Radiotherapy treatment review (TR) is a widely accepted practice for patients undergoing radiation therapy. The radiotherapy TR is usually undertaken on a weekly basis to assess the patient's treatment related side effects as well as any other psycho-social issues relating to the treatment. In Australia this is usually performed by the patient's primary radiation oncologist (RO) or their radiation oncology registrar.

More recently with advancements in radiotherapy practice the pressure placed on an ROs time is much greater than in previous years through the implementation of advanced imaging, treatment technology and the effects of 'historical' clinical practices. Due to the increased demand on RO time, it is necessary to implement new practices to allow ROs more time to concentrate on planning new patients as well as new patient consultations to ensure access to radiotherapy treatment is available to as many people as possible. One approach was to assess whether radiation therapists (RT) were able to perform weekly treatment review clinics.

Overview of approach

The primary objective of the project was to:

(1) Optimise quality of care of patients during radiation therapy by implementation of an innovative workflow model utilising radiation therapist staff rather than clinicians to lead weekly treatment reviews to thus:

- allow streamlined care pathways for patients with standard treatment indications
- formally direct specialised medical care to those patients at greatest need
- improve manpower efficiencies and cost-effectiveness within radiation therapy units.

Secondary aims of the project were to:

(1) Utilise the skills of radiation therapists and promote role expansion within this oncology trained health professional team.

(2) Divert commitments of radiation oncologists to tasks requiring more specialised interventions

Project methodology

The project comprised a series of activities:

(1) **Recruitment of a radiation therapist.** A radiation therapist was appointed to the role of radiation therapist research – treatment review in July 2007.

(2) **Observation of treatment reviews.** The radiation therapist attended TRs to observe and record events according to disease, treatment previously provided and nature of incidence.

(3) **Participation in an internal education program.** This covered more technical aspects of the treatment review and correct documentation including the use of the Common Terminology Criteria (CTC) v3.0. The CTC is a universally used tool to evaluate radiation therapy induced side effects and can therefore be used at anytime retrospectively to evaluate effectiveness as well as the morbidities associated with any particular treatment technique used at NSCC. This program also involved internal accreditation involving examination of knowledge as well as practical observation of the radiation therapist conducting treatment reviews.

(4) **Extension of the review RT training.** This served as a bridging period between RT education and full implementation of RT led TR. This involved all patients from one treatment machine undergoing RT led TR on a Thursday while at the same time still being reviewed as normal by their RO or their registrar on Mondays. This period allowed for the review RT to gain further knowledge and experience in TR while still having the 'safety-net' of the patients still being seen weekly by their RO as wells as by the review RT.

Project results

The treatment review audit was carried out over a twelve week period. In this time 237 TRs were attended including 212 radical TRs and 27 palliative TRs. The audit was completed solely by the TR RT and involved the observation of six ROs and three registrars. In order to collate the results the Treatment Review Events Checklist was created. The checklist aimed to identify individual aspects of TR in to two categories:

- non-medical treatment assessment - tasks that an RT could currently perform
- medical interventions - tasks requiring medical staff to perform or initiate

The data confirmed the findings of other studies, that weekly treatment reviews have a low medical intervention rate. Of specific interest were particular low levels of medical interaction (MI). By recording the types of MI it was possible to identify common MI and produce a protocol including this intervention for all patients to further reduce the medical intervention rate. For example, prostate patients all receive the same prescription at approximately the same time throughout their treatment. If this prescription were to be protocolised, the baseline data suggests the intervention rate for prostate TR could drop by up to 20 per cent.

Stage 3 of the project ran for a 13 week period from April–July 2008. This involved the TR RT reviewing all patients on one treatment machine weekly while they still underwent their normal RO led TR cycle. This was achieved by having the patients reviewed by their RO or registrar on Mondays while the TR RT reviewed these same patients on Thursdays. Four KPIs were set in order to evaluate the success of the pilot program with all four of these KPI goals achieved as summarised below

Key Performance Indicator	Goal	Actual
Patient attendance at treatment review	≥ 95%	95% Attendance
CTC Completeness	>90%	99% Completed
Interval Consultation due to medical events	<15%	2.5% Clinician Referral
Patient Satisfaction	>80%	90% Satisfaction

All clinicians and the majority of RTs have expressed very positive views towards RT led TR. These views have been gathered through both informal feedbacks sessions as well as well as through staff survey. Many treatment machine staff commented on the improved communication between the TR RT and themselves as opposed to the RO or Registrar conducting TR. RT staff reported the process to be "extremely efficient" and neither Clinicians nor RTs experienced any problems or concerns with RT led TR. Many RT staff also reported a high satisfaction level from patients. Despite the largely positive feedback for the role, many staff commented that they feel the most important aspect of RT led TR is the level of training of the RT conducting TR in order to help avoid any problems that may arise during TR. It is not clear from the comments whether staff felt that the current level of education undertaken by the current TR RT was below the level they felt was appropriate or if it was just a case that staff felt RTs needed to ensure they successfully completed the education available at NSCC before beginning any such role.

Another issue that RTs found to be of importance is the formal recognition of the role and remuneration of RTs performing TR. Many RT staff felt the role should be considered a specialised one therefore requiring the RT to be remunerated at a higher level if performing

this role. This would allow RT led TR to become another career pathway for RTs, who, particularly in the past, have only had management style promotions available to them and no means of career advancement for staff who's interest are primarily clinically based rather than management based.

The TR RT also expressed very positive feedback on their experience of RT led TR. The TR RT felt patients responded very positively to the experience and reported that patients often felt they had more time to discuss the treatment processes and any concerns they were having with the TR RT particularly because patients perceived the TR RT to have more time to discuss any concerns regardless of how trivial the patients themselves felt there questions were at times.

Future directions

It is envisaged that full implementation of RT led TR be undertaken with the TR RT replacing the RO for certain weekly reviews where MI rates are at the lowest therefore reducing the need for a clinician to lead these particular reviews. In order for this to proceed, a threshold must be decided upon at which the data collected will decide if a patient attends RT-led TR or RO-led TR on a particular week.

It would also be desirable to continue to develop the education package in order to continually improve the skills and knowledge of the TR RT as well as any other RT who intends to assume such a position. It is also envisaged that a more detailed analysis of the cost savings achieved by relieving ROs of TR be undertaken.

An interactive workshop is also planned at NSCC to equip RTs at both NSCC as well as from other radiotherapy departments throughout NSW to implement a similar program in their own departments. This will therefore increase the quality of care for patients, increase RT job satisfaction and possibly improve the cost effectiveness of radiotherapy departments throughout NSW.

Additional Information

Additional Information can be obtained from:

Radiation Oncology
Northern Sydney Cancer Centre
Royal North Shore Hospital

Pacific Highway
St Leonards NSW 2065

Phone: (02) 9926 5010

3.1.2.4 PILOT PROGRAM TO EVALUATE WEIGHT LOSS PROGNOSTIC INDICATORS

Sydney Cancer Centre, Royal Prince Alfred Hospital

The project sought to establish a Cancer Nutrition Rehabilitation program (CNRP). This service was established for patients with advanced cancer who were attending the cancer ambulatory cancer clinics in Gloucester House (Level 5) of the Sydney Cancer Centre (SCC). The CNRP is an innovative multidisciplinary approach to the treatment of weight loss and decreased functional status which is commonly observed in advanced cancer patients as a result of the anorexia cachexia syndrome (ACS). The CNRP clinic structure was based on a similar multidisciplinary team (MDT) program which is offered at McGill University in Montreal, Canada and includes a part time physician, dietitian and physiotherapist.

Overview of approach

The primary objectives of the project were to:

(1) Obtain funding for enhancement of dietetics and physiotherapy staffing so as to provide a regular and better-coordinated multidisciplinary cancer nutrition rehabilitation service.

(2) Undertake an evaluation of this innovative multidisciplinary approach to service delivery which addresses the common clinical problems of weight loss and functional decline in advanced cancer.

(3) Assess the long-term sustainability of such a program.

Project methodology

The ambulatory cancer clinics on Gloucester House, Level 5 at the SCC, Royal Prince Alfred Hospital were identified as the best place to initiate the project. The CNRP clinic operated twice weekly throughout the duration of the project with referrals assessed by clinic physician, dietitian and physiotherapist. Key components of the project were:

(1) **Program operations.** Resources that enabled the clinic to operate were organised. This included clinic space, equipment, various clinic forms including a referral flowchart and information resources. As the CNRP was the first of its kind in Australia, guidelines and protocols were developed to allow evaluation of the implementation of the program operation.

(2) **Recruitment of patients.** Promotion of the clinic was conducted to ensure appropriate referrals were received, and patients were recruited into the CNRP by either one of two pathways:

- direct referral from the medical oncology and palliative care teams; or
- nutritional screening for evidence of reduced appetite and unintentional weight loss and/or systemic inflammation, using a validated nutritional screening tool, the Malnutrition Screening Tool (MST) and serum C reactive protein (CRP) levels respectively for all new patients presenting with advanced lung, colorectal and upper gastro-intestinal tract cancers. Patients with an MST score of >=2 and/or CRP>=10 were offered the CNRP. Patients who scored an MST<2 were re-screened once after two months.

(3) **Assessment Procedure.** Patients agreeing to participate in the CNRP were formally assessed with the following:

- medical assessment - symptom management, fitness for physiotherapy and Karnofsky Performance Scale (KPS);
- dietary assessment - Patient-generated subjective global assessment tool (PGSGA), weight history, body composition, anthropometrics;
- symptom assessment – particularly those interfering with eating or activity;
- physiotherapy assessment (six minute walk test, handgrip strength, one repetition maximum (RM) on various resistance equipment if relevant);
- Edmonton Symptom Assessment Score (ESAS) questionnaire; and
- blood tests - albumin, CRP

(4) **Patient Interventions.** Patients were then offered the following, in an integrated way:

- medical and nursing management of nutrition impact symptoms;
- dietary advice and appropriate oral nutrition support; and
- individualised exercise program either gym based (twice weekly for two months) or a home exercise program depending on the patient's preference.

(5) **Patient Reassessment and Outcome Measurements.** The CNRP clinicians reviewed the patients regularly, according to patient individual need. Patients were formally reassessed by the clinicians of the MDT at 1, 2, 3, 4, 5 and 6 months using the abovementioned assessment procedures, as well as a patient satisfaction questionnaire and as assessment of compliance and dropout rates.

These outcome measurements contributed to the basis for evaluating the success of the MDT. At the start of the project, the nurse co-coordinator assisted with the coordination of the program and support to patients and carers. However this did not continue as temporary funding for the position was exhausted. Patients with specific psychosocial issues, were also referred to psycho-oncological services as required

Project results

A total of 53 patients (36 males, 17 females, with mean age 62 years old) were referred to the CNRP mainly from oncology and palliative care teams. Of the 53 patients in the sample, patients were referred by palliative care (37 patients), oncology (nine patients), MST screening (three patients), nursing staff (two patients), allied health staff (three patients). Most had a stage III or stage IV lung or gastrointestinal cancer diagnosis, with 42 (79%) receiving anti-cancer therapy concomitantly.

At baseline, 41 (78%) were moderately or severely malnourished based on the Subjective Global Assessment score (SGA) with median and interquartile range (IQR) values for PG-SGA being 13 (8-18) and median weight loss 10.2 per cent (5.3-20%) over the preceding six months. Median baseline KPS scores were 70 (60-80), six minute walk test distance was 442 (382-521) metres (m) and hand grip strength was 69 per cent (left) and 74 per cent (right) of predicted values.

Drop-out rates from the CNRP were high with only 16/36 (44%) patients attending their 3 month follow up appointment and only 2/12 (10%) patients attending their 6 month follow up appointment at the time of project reporting. This reflects the poor nutritional and functional status of our sample at baseline. As such the patients that have remained in the CNRP so far may have been representative of a group of patients with a better overall prognosis, rather than any effect of the program, and a randomised trial would be required to address this issue.

Amongst those remaining in the program after three months in the CNRP, patients experienced a stabilisation in weight (losing no more than 0.1 kilograms (kgs)) with improvements in their nutritional status as evidenced by a decrease in PG-SGA score to 9 (4-13) (30%). Patients were also observed to increase their 6MWT by 147m (33%) to 589 (585-

600) m, and HGS increased to 82 per cent (left) and 85 per cent (right) of predicted values. KPS scores remained stable while ESAS scores decreased over time.

90 per cent of patients reported that the advice provided by each clinician was helpful and that the recommendations provided were not too overwhelming. All patients found that the team approach to address their nutritional and functional needs was important to them.

Difficulties encountered with the CNRP project included problems with the implementation of the second referral pathway, nutrition screening. Nutritional screening using the MST is important to identify those at nutritional risk. This was a difficult process to implement in an existing busy clinic, with patients failing to receive, complete or return the completed MST questionnaire. This would have biased and affected the overall baseline nutritional status of our sample as referrals were often made when the patient has significantly declined in nutritional status. Despite this, patients who remained in the CNRP demonstrated improvements in nutritional status with weight stabilisation, improved endurance and strength with reported decreased symptoms.

This project illustrated that a coordinated multidisciplinary team approach is important in providing supportive care for cancer patients with the anorexia cachexia syndrome. The CNRP project demonstrated that this is a much needed service and that it can operate effectively within the existing oncology ambulatory care clinical setting.

Future Directions

Future directions for the CNRP initiative include:

- early identification and intervention of patients to maximise therapeutic benefits; and
- an evaluation of the long-term sustainability and funding sources for the CNRP to continue to provide ongoing supportive care for cancer patients.

Randomised controlled trials are needed to evaluate the clinical effectiveness of the CNRP and to identify those patients who are most likely to respond to the program.

Additional Information

Additional Information can be obtained from:

Department of Nutrition and Dietetics
Royal Prince Alfred Hospital
Missenden Road
Camperdown NSW 2050
Phone: (02) 6923 3100

3.1.2.5 END OF LIFE CARE PROJECT

Area Palliative Care Service, SSWAHS (Western Zone)

The End-of-Life Care Project (EOLP) was a project that aimed to improve the care of dying patients and their families in an acute setting in Liverpool Hospital (LH), New South Wales. A previous phase revealed a number of barriers to the delivery of end-of-life care including poor communication skills, a lack of staff knowledge and confidence in caring for dying patients and poor symptom control. The result of strategies implemented, including the implementation of an end of life care clinical pathway, resulted in an increase in documentation of the domains of interest reflecting best practice for dying patients and positive change in the level of confidence and in the understanding of EOLC issues from ward staff. This project sought to extend this activity.

Overview of approach
The primary objectives of the project were to:

1) Provide coordination of high quality cost effective end of life care, across four care locations in Liverpool hospital including the renal, cardiac, oncology/haematology wards, and the Intensive Care Unit (ICU) including the development of a second clinical pathway document.

2) Continue to develop a financially sustainable model of delivery of end of life care by shared learning, education and support for the health professionals working in acute care hospital settings in end of life care, and development of a training module for educators and leaders, to champion and direct the programme in their settings.
3) Continue to provide multidisciplinary end of life care, to cover physical, psychosocial, spiritual and bereavement needs of patients and their families.

4) Continue to provide consumer focused end of life care that facilitates the needs and choices of patients with life limiting illnesses and their families.

5) Continue to facilitate evidence based practice in end of life care, to improve outcomes for cancer and palliative care patients and their families.

Project Methodology
With the recruitment of the second part time EOLCP co-coordinator, the project management structures were established. It was also decided by the EOLCP Steering Committee that methodological design of the EOLCP would reflect the main elements of the project (i.e. that there would be a pre-audit and post audit of 20 patients' clinical notes, that the project officers would facilitate focus groups, that the project officers would arrange and facilitate delivery of the education sessions to health care staff with support of the Hospital Specialist Palliative Care Team, that the bereavement package be retained, and that the newsletter "The Pathfinder" would continue to be used as notification of the project's progress. A further planned outcome for EOLCP was the production of a training manual prototype for use by ward clinical educators.

The EOLCP involved health professionals from Liverpool Hospital in collaboration with the SSWAHS (WZ) Palliative Care Service. The project has involved psychosocial, medical, nursing, allied health and chaplaincy services as dictated by the needs of the patient and family.

The EOLCP was also fortunate in the first instance to have a written endorsement of it expressed in a letter written by the Liverpool Hospital General Manager as part of an application for registration of the EOLCP with the Marie Curie Palliative Care Institute

Liverpool United Kingdom (MCPCIL UK). Support from MCPCIL included assistance with analysis and presentation of audit data

Project Results

The EOLCP wards were selected where staff expressed interest in being involved in the project and where the greatest numbers of chronically ill and dying patients were cared for. While ICU was included as one of the initial project sites, implementation of the pathway there became beyond the scope of EOLCP due to its unique needs and the need to develop an ICU specific pathway localised to Liverpool Hospital, NSW.

The EOLCP clinical pathway was revised taking account of both the feedback from EOLCP and MCPCIL. Following revision, it was rated as being 100 per cent compliant with version 11 of the Liverpool Care Protocol.

In the period April 2008 until July 2008, fifteen patients were cared for with the aid of the clinical pathway, evidencing an increase in the number of patients supported by the end of life care clinical pathway in Liverpool Hospital. From April 2008 until July 2008, eight cancer patients were cared for with the assistance of the EOLC pathway, evidencing an increase in the number of patients with cancer diagnosis who die in Liverpool Hospital being supported by the Pathway.

The nature of an acute hospital is its daily "busyness" and the uncertainty of fluctuations in clinical demand including emergencies. Issues that faced the project included:

- the need for clinical staff to prioritise their clinical work which meant that attendance at education sessions and focus groups was sporadic in some cases. This was addressed by offering repeat sessions in response to the needs of individual wards;
- the transient nature of hospital staffing was also a barrier to project goals. For example, one of the wards had no clinical educator throughout the project. Another of the three wards has had a change of senior level nursing staff during the project. Furthermore, there is a continual influx of junior nursing staff;
- staffing levels in the clinical information department meant it was difficult to access clinical notes for auditing purposes in a timely manner and to enable revisions to the clinical pathway;
- the extrapolation of EOLC related issues from Incident Information Management System proved unsuccessful due to difficulty in isolating EOLC specific data;
- the number of dying patients cared for with the assistance of the pathway document over the duration of the project was outside our control and as such the post implementation audit was not completed at the time of reporting; and
- negotiating with hospital departments in the context of organisational bureaucracy created further challenges in meeting project milestones.

Focus groups following implementation highlighted that many staff found the clinical pathway beneficial in supporting them to care for dying patients and their families by providing a structure, guidelines, and prompts to providing care and communicating with the patient and family. Suggestions to improve the document and how it is used were raised. For example; untimely commencement of the pathway, hesitation with use of the variance section and time taken to complete the pathway.

There was an overwhelmingly positive response to the education and openness to discussing death and dying amongst all the medical teams. The outcomes of implementing an end of life care pathway and the process of implementation itself were viewed positively overall. Post implementation audit data is incomplete and will be reported on when the data becomes available.

Future Directions

The challenges for Liverpool Hospital are to continue to identify the barriers and the motivators that both constrain and/or encourage best practice, as well as taking on a mantle of leadership in paving the way forward to ensure that its dying patients and grieving relatives are supported and given the best possible EOLC. The intention is to achieve:

(1) Rollout of the End Of Life Care Pathway Hospital wide, including:

- a permanent End Of Life Care working party is established; and
- the current end of life care pathway document is updated according to feedback and a regular review process is established.

(2) Establishment of a permanent EOLC facilitator position:

With a role that includes facilitation of the roll out of the end of life care pathway and consolidation of its use on EOLCP wards and that supports end of life care provision hospital wide.

(3) Clinical Governance structure and process is established to include the following:

Regular formal audits of end of life care delivery in the organisation. Ideally this should incorporate:

- the views of informal carers;
- review of completed pathways including scrutiny of goals. This should include those not completed and examination of trends in variance;
- monitoring of IIMS and complaints for issues pertaining to end of life care; and
- Quality of End of Life Care is reflected on in Morbidity and Mortality meetings.

(4) A sustainability strategy is implemented:

- appropriate ongoing training for all health care staff caring for dying patients and their carers is available;
- education is incorporated into orientation and ongoing education for all staff with Communication skills training a key element;
- the prototype training manual is regularly reviewed; and
- a “link” nurse programme is established to promote sustained use of the clinical pathway in the wards, whereby designated key ward nurses and/or clinical educators are supported and facilitated to take on a resource role to encourage empowerment, knowledge and ownership to sustain the end of life care pathway within the clinical environment. The link nurse would take a lead role in care of the dying and those with palliative care needs in their own ward. Their skills would be enhanced through regular study days, communication skills course, meeting with other link nurses and spending dedicated time with the Hospital Specialist Palliative Care Team.

Additional Information

Additional Information can be obtained from:

Area Palliative Care Service, SSWAHS (Western Zone)
Braeside Hospital
Locked Bag 82
Wetherill Park NSW 2164
Phone: (02) 9616 8600

3.1.3 Information Technology

As cancer care is multidisciplinary, effective data / information management is a key component of a well coordinated journey for cancer patients. Effective information management also contributes to reliable data collection for research and service planning. Projects focussed on Information Technology, listed in table 3, presented innovative ideas for creating or building on existing data / information management systems.

Table 3-HSIG Round 1 Projects - Information Technology

Project		Location
3.1.3.1	Redesigning Psycho-Social Care: Routine screening with QUICA_TOUCH	Calvary Mater Hosp Newcastle
3.1.3.2	Implementation of GP Tele-colposcopists in rural centres	Tamworth CHS
3.1.3.3	Development, implementation and co-ordination of a web based electronic shared diary for rural cancer patients	Riverina Cancer Care centre
3.1.3.4	Improving palliative care clinical information management by enhancing PCS	St Vincent's Darlinghurst
3.1.3.5	Development of integrated Electronic Learning Management System in a cancer Hospital Network	St George Hospital Kogarah
3.1.3.6	Integrated electronic patient reported outcomes measurement tool	Liverpool Hospital Sydney
3.1.3.7	Enhancement of Palliative Care information management System	Braeside Hospital SSWAHS

3.1.3.1 REDESIGNING PSYCHO-SOCIAL CARE: ROUTINE SCREENING WITH QUICA_TOUCH

Calvary Mater Hospital, Newcastle

The Psycho-Oncology Department at Calvary Mater Hospital developed and implemented an innovative, streamlined model of screening for pain, psychosocial distress and physical symptoms among oncology outpatients. The: "QUICA-TOUCH" (Quick, Individually Customised Assessment using Touch-screens) is a computer-based program used at the time of outpatient visits.

Overview of approach
The QUICA-TOUCH program aimed to improve patient quality of life through improved recognition and management by clinicians of pain, psychosocial distress and common psychopathology by:

- maximising exposure to and uptake of screening by oncology outpatients;
- referring screened patients to the psycho-oncology department or allied health services, as appropriate;
- facilitating access to counselling by referred patients;
- allowing electronic viewing by Cancer Care Coordinators of their patients' screening results;
- providing for aggregated reporting to Cancer Care Coordinators, by email;
- screens carers for quality of life and service satisfaction;
- facilitating carer access to support and services, according to needs identified by the screening process; and
- collating and analyse detailed information on screening implementation in order to monitor project implementation and assist other services wishing to introduce routine screening.

Project Methodology
The key components of the project were the:

(1) Appointment of two part-time (one full time equivalent) administrative assistants, who commenced work in the oncology outpatients department in late September, 2007. These staff were responsible for assisting patients to complete screening and ensuring that a Clinician Alert was included with the medical record for the consultation. Nurses and volunteers were also involved in assisting patients with screening.

(2) Development of a module was developed to screen carers on quality of life and satisfaction with services. This built on local (published) research which found that carers had lower quality of life than the general community in the physical, psychological and environmental domains.

(3) Development of a module to ensure screening results are available to Cancer Care Coordinators allowing them to "register" their patients within the screening system. This provides for access to screening results electronically and also to receive an aggregate report for their patients via email.

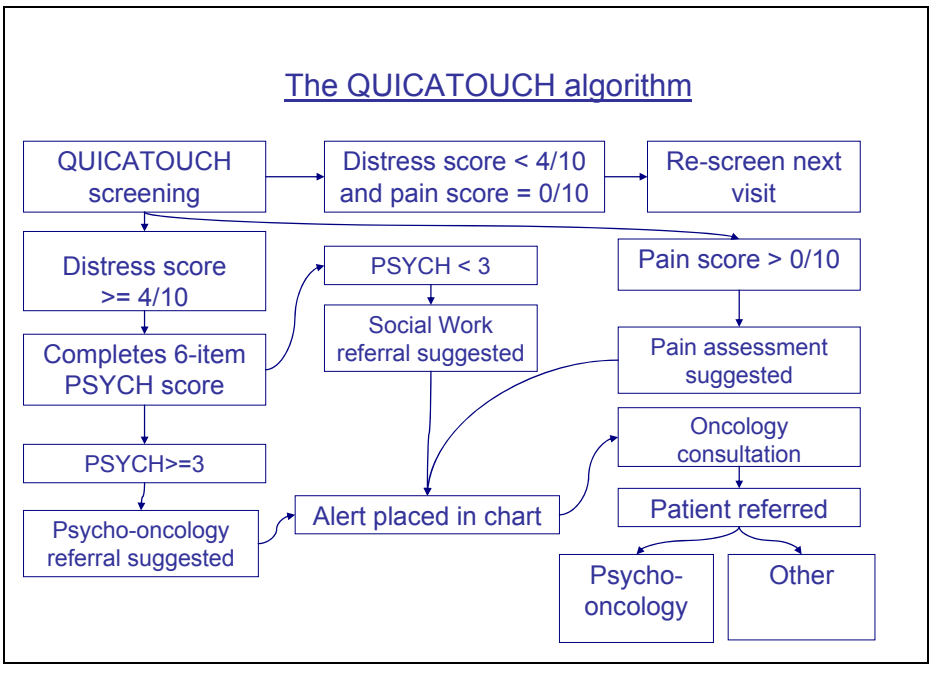
(4) Monitored project implementation to determine how well screening had been implemented and identify areas for improvement if required.

Project Results
QUICA-TOUCH provided routine screening of oncology outpatients using web-based software to deliver validated screening for pain, distress and common psychopathology via a computer-linked touch-screen. The QUICA-TOUCH model was designed to include a number

of features that recognised the reality of clinical implementation of routine screening, including:

- short completion time (1-5 minutes);
- inclusion of the pain thermometer as a universal item;
- minimised burden on patients by using the smallest number of questions considered practicable to reliably detect common psychopathology. This incorporates early ruling out of patients with no pain and low distress;
- minimised burden on staff by
  - providing a one page "at a glance" written report;
  - only generating the report when screening shows that action is required;
  - suggested action based on a research based algorithm;
  - a streamlined process for ordering referrals to support services; and
  - only identifying problems that can be addressed within the clinical setting.

Haematology and oncology patients were approached on arrival at outpatient clinics and invited to undergo screening on the touch-screens located near the clinic waiting area. QUICA-TOUCH screened patients using pain and distress thermometers, followed, for patients who scored above threshold for distress, by the PSYCH-6 subscale of the SPHERE 12 questionnaire, in order to identify common psychopathology. At the completion of screening, a clinician alert was printed for those patients who scored above threshold for pain and/or distress. Possible recommendations on the alert included pain assessment for patients who reported pain, and/or consideration of referral to Social Work for patients who scored above threshold for distress but below threshold for common psychopathology or to Psycho-Oncology for patients who scored above threshold for both distress and common psychopathology. The screening algorithm is depicted below.



From 1 October 2007 to 31 July 2008, QUICA-TOUCH screened 3,352 patients, for a total of 4,796 occasions of screening, with 924 patients being screened more than once. This generated 1,821 alerts recommending pain assessment and/or referral to social work or

referral to psycho-oncology. However, it did not result in a substantial change in the demand for psycho-oncology services.

Obstacles encountered in the development of this model included the need to identify a validated method for measuring carer distress, the need to develop an accurate process for identifying carers within the screening software and the need to develop a protocol for the storage of carer screening alerts, taking into account ethical issues surrounding carer privacy. Attention to these issues has produced an effective, accurate and responsive model for screening of carers.
Other key observations were that:

(1) Patients' were generally positive, with comments including, "I wish this had been available when I was first diagnosed." Some patients have also reported enhanced interaction with their clinicians, as a result of screening. This good patient response has been reflected in high compliance with screening. Although the refusal rate increased from 7 per cent to 13 per cent from October to July, this occurred because many patients who had been screened previously felt that re-screening was not necessary, as they had experienced no change in pain or distress since they were previously screened. Only 3.4 per cent of patients refused screening because they were "not interested".

(2) Initially mixed clinician responses to QUICA-TOUCH improved, with some clinicians who had been opposed to QUICA-TOUCH later requesting screening of their clinics. Some clinicians specifically reported using the QUICA-TOUCH alerts as a guide for discussion of the patient's wellbeing and specific problems identified by QUICA-TOUCH screening. However, other clinicians continued to regard screening as non-essential; one clinician stated that she routinely discussed pain, distress and well-being with her patients, irrespective of screening reports.

(3) QUICA-TOUCH screening did not result in a substantial increase in the number of patients attending psycho-oncology. The causes of this were unclear, although one possible explanation is that, once clinicians are alerted to a problem, they may be able to allay patients' fears, address their problems and reduce the level of distress, within the context of the consultation and without referral to psycho-oncology.

Future Directions
QUICA-TOUCH has received funding through Round 2 of the Cancer Institute NSW's HSIG Program. Using this funding, it is intended to:

(1) **Continue patient screening.** It is anticipated that QUICA-TOUCH will provide more than 8,000 occasions of screening from October 2007 to August 2009.

(2) **Commence carer screening**, using the model detailed earlier in this document. Carer screening will be focused on addressing carer needs, as identified by the carer, rather than on routine or mass screening. In other words, carers will be provided with information on screening, and invited to seek screening when they think it may assist them.

(3) **Refine screening processes** in order to enhance screening quality while minimising costs. Aspects of screening that are currently under review include details of the screening algorithm, the layout of the clinician alert and the presentation of the patient screening interface.

(4) **Trial volunteer assistance**, in order to determine whether the ratio of patients screened to paid screener hours can be increased, resulting in an increase in the proportion of patients screened.

(5) **Improve accessibility and utility of QUICA-TOUCH** for Cancer Care Coordinators, specifically by encouraging Cancer Care Coordinators to screen their patients using the web-based version of QUICA-TOUCH.

(6) **Examine outcomes** resulting from the production of screening alerts.

(7) **Provide web-based support** for other sites (public and private) interested in introducing QUICA-TOUCH.

Additional Information

Additional Information can be obtained from:

Calvary Mater Hospital, Newcastle
Corner Edith and Platt Streets
Waratah NSW 2298
Phone: (02) 4921 1211

3.1.3.2 IMPLEMENTATION OF GP TELE-COLPOSCOPY SERVICES

Hunter New England Area Health Service

The Telecolposcopy Project aimed to establish telecolposcopy clinics in outlying centres within Hunter New England (HNE) Health with the clinics being conducted by trained GP Telecolposcopists. The objective of telecolposcopy was to assist in the early detection and treatment of cervical disease and to reduce / avoid women having to travel long distances in rural and remote communities for initial assessment after an abnormal Pap test.

Overview of approach

The telecolposcopy project's overall aims were to:

(1) Increase access to colposcopy services for women in rural and remote HNE Health with the aim of achieving reduction in morbidity and mortality from cervical cancer.

(2) Reduce travel for rural women. Women will only travel to a specialist in a major centre when treatment has been recommended following colposcopy.

(3) Colposcopy close to home aims to impact positively on:
- travel costs for the woman;
- family impact (eg childcare arrangements);
- cultural sensitivities (eg reduced colposcopy procedural anxieties and stress for vulnerable women;
- increased compliance with specialist referrals for cervical abnormalities /reduced failure to attend rates; and
- decreases in the incidence/morbidity/and mortality from cervical cancer for women residing in rural and remote HNE Health.

Project Methodology

The project was preceded by a pilot that was completed in 2004 and validated Telecolposcopy technology. The original Steering Committee Members were keen to progress the project further and the team investigated the feasibility of general practitioners in rural HNE being trained to undertake telecolposcopy clinics.

Exploratory phone calls to general practitioners resulted in interest in the concept and the HSIG grant provided funding for the period 1st July 07 to 30th June 08. The Project Officer position was based at the John Hunter Hospital (JHH) due to the geographic location of the successful applicant, and was line managed by the Service Manager/Nursing Director Division of Obstetrics & Gynaecology. By being based at the John Hunter the Project Officer had ready access to the JHH colposcopy clinic and colposcopy specialists.

The project aims were reassessed to the following:

- seek funding for clinic equipment, IT software, hardware and staff wages;
- work towards financial sustainability by the creation of new Medicare item numbers for national Telecolposcopy services;
- maintain and build relationships with all appropriate stakeholders for project progression and implementation;
- oversee administrative duties related to project documents including documentation and distribution of committee correspondence;
- submit the Telecolposcopy training package for accreditation from the Australian College of Rural & Remote Medicine (ACCRM) and the Royal Australian and New Zealand College Obstetricians and Gynaecologists (RANZCOG); and
- document the Telecolposcopy clinical policies and procedures and facilitate training of GPs by relevant clinical staff.

Project Results

A number of activities were undertaken:

(1) **IT Investigations.** The project sought the most suitable digital image capture and transfer program that could interface with HNE systems. A number of alternatives were reviewed and the Telecolposcopy Steering Committee elected to trial the MediScan unit within the HNE. Funding was not available for a trial with MediScan linked into the HNEH Network but Polartechnics lent a unit to the JHH Colposcopy Clinic for a month so clinicians could familiarise themselves with the system. Unfortunately problems were encountered when the system was unable to provide remote access through Citrix.

(2) **Medical services funding.** Ongoing difficulties exist in regard to Medicare and telehealth service provision. Telehealth by its nature had the ability to have more than one doctor involved in the provision of the same service to the same client. Medicare only allows for one doctor to receive the Medicare payment. This was certainly a problem with telecolposcopy if the specialist VMO and the general practitioner required Medicare payment. Discussions were held with Medicare Australia who advised that a submission would be required to be submitted to the National Medicare Services Advisory Committee. The following was achieved:

- detailed discussion of Telecolposcopy Project and various models. (Defined options of a combination of implementation models such as pubic, private and a combination of public and private and the need to not define one model due to meeting the needs of various rural and remote regions within Australia);
- detailed discussion of Medical Specialist Outreach Assistance Program (MSOAP) and contact details to follow up further information (which was found to be unsuitable); and
- detailed discussion of Council of Australian Governments (COAG) initiative on Medicare 19(2) Exemptions and contact details to follow up further information.

(3) **Training Package.** The Steering Committee recognised the need for an accredited course for use in the training of GP Telecolposcopists as it was noted that that the DRANZCOG Advanced Diploma for GP's does not cover colposcopy. The process required completion of the ACRRM accreditation application form and submission of the course outline including content and topic headings and topic content and learning outcomes for each topic. The course outline with topics and learning outcomes was compiled and submitted to ACRRM for assessment and accreditation was received.

(4) **Service Provision Models.** The Telecolposcopy Steering committee considered various models for conducting tele-colposcopy. The models considered how the project could be implemented with Area Health Service involvement within various rural and remote communities at the state and national level. Business grade broadband is essential for the implementation of Telecolposcopy clinics. Ultimately it was agreed the most suitable approach was to utilise GPs trained in colposcopy services.

(5) **Research proposals.** During the project a number of funding and research applications were prepared that sought to, interalia, achieve acquisition of the equipment necessary to implement the telecolposcopy service. At the time of preparation of this report funding had not been secured.

Future Directions

The project has successfully provided the foundations for delivering a telecolposcopy service to rural women. The necessary links with specialists have been established, a pool of enthusiastic GPs has been identified and the necessary training framework endorsed by the relevant Colleges. The primary future activities will be focussed on obtaining the necessary funding to acquire the equipment necessary and for the (medical) service delivery.

Additional Information

Additional Information can be obtained from:

Tamworth Base Hospital
Dean Street
Tamworth NSW 2340
Phone: (02) 6767 7700

3.1.3.3 DEVELOPMENT, IMPLEMENTATION AND CO-ORDINATION OF A WEB BASED ELECTRONIC SHARED DIARY FOR RURAL CANCER PATIENTS

Riverina Cancer Care Centre, Wagga Wagga

The project sought to enable the radiation oncologist to provide the patient, whom they are consulting with, the complete list of dates for all appointments throughout their treatment pathway. This would include dates for radiation therapy, chemotherapy as well as accommodation, allied health and multidisciplinary meeting referrals.

Overview of approach
It was identified that the efficiencies of cancer treatment service delivery at the Riverina Cancer Care Centre (RCCC) could be better achieved using a web-based appointment platform embedded in the RCCC Lantis radiotherapy information system (RMIS). Objectives for the project were therefore to:

(1) Enable the individual cancer patient journey to be known early and ensure it is non-fragmented. A precise start and likely end-date of RT or chemotherapy can be instantly calculated and communicated thereby increasing patient and carer satisfaction.

(2) Better manage RCCC's workforce (i.e. clerical, nursing, and radiation therapy, transportation, etc). Probable efficiency gains by staff roster improvements and productivity gains by managing patient caseloads and facility assets thereby reducing input costs;

(3) Achieve better management of accommodation and other infrastructure by enabling a better understanding of future patient demand and available RCCC treatment capacity; and

(4) Increase RCCC staff satisfaction by improving process flows.

Project Methodology
As an information technology development project resources were focussed on:

- developing a brief for the development based on input from local IT providers and service providers in Wagga Wagga;
- obtaining a formal quotation of works including schematic project outline;
- developing and testing the functionality;
- two month trialling and readjustment of code as needed to ensure smooth functionality;
- obtaining stakeholder feedback; and
- development and implementation of operational policies and procedures.

Project Results
The project resulted in the development of the OncoSmart Diary (OSD) which is a web-based portal embedded within the RCCC RMIS. After registration of patient demographics (this is automated for existing, pre-registered patients or repeat treatment events) the OSD drop-down menus provide ICD diagnostic codes and AJCC/UICC staging (6th Ed 2002). Additional menus are divided into sections for:

(1) **Radiation therapy management:** Next available slot on simulator and Linac or preferred calendar date. Other variables are then chosen including treatment site, intent (radical vs palliative), total delivered dose, fraction size, photon/electron energies, and schedule. Pre-loaded evidence-based best practice time-dose-fractionation schedules exist for most radical site-specific or palliative treatment programmes. These can be over-ridden by the radiation oncologist.

(2) **Chemotherapy management:** Radiation appointment for start date resets automatically to next medical oncology review and best-fit OSD scheduling allows the option for synchronous combined modality protocols.

(3) **MDT review appointments:** Menus allow notification of MDT co-ordinator and flags individual patient information "gaps" (egg pathology review, missing or awaited diagnostic imaging such as PET).

(4) **Allied health requirements/requests:** These are email flags to cancer nurse co-ordinator, dietetics, physiotherapy, psychology, social work, etc

(5) **Patient and relative accommodation:** Also email flag to Lillier Lodge house services with proposed arrival date and individual patient requests (egg number of guests, special needs, etc).

Through a series a keypad strokes a cancer patient "journey" is mapped via a series of inter-operable (compatible) electronic schedules stored on the Lantis RMIS. This process was designed to enhance integration of care a remote (outreach) contact point via "in-system" information sharing. The final pathway is studied by the patient and the care map is given to him via a choice of paper or electronic mechanisms:

- hardcopy at point-of-contact;
- email to personal computer;
- short message service (SMS) to a 3G mobile phone; and/or
- screen facsimile to home fax.

The project followed the plan-do-study-act (PDSA) principle of health care process innovation. This allowed step-wise qualitative feedback of the OSD processes but added time pressures to finalising the OSD test period and end-reporting. The integration of the in-system information sharing software took longer to achieve than set out in the initial project time-line and full functionally of the appointment and email flag applications did not occur until end-November 2008. Particular difficulty occurred when non-Lantis based appointment diaries (egg accommodation) were accessed.

The OSD outcome measures occurred at both the organisational (care coordination) and patient perception (care continuity) levels. A total of 30 new and re-treat patients from two outreach (remote site) clinics were studied.

From a care coordination perspective this was measured by the inverse proportion of any expected or "mapped" patient OSD event which actually eventuated (were observed). These were individually calculated for:

- radiation therapy events: 967 were observed out of 1037 expected (93.2%);
- chemotherapy management: six were observed out of six 6 expected (100%);
- MDT review appointments: 26 were observed out of 30 expected (86.6%);
- allied health requirements: 50 were observed out of 55 expected (91%); and
- patient/relative accommodation: 23 were observed out of 23 expected (100%).

Thus the vast majority of pre-planned appointments were attended.

From a care continuity perspective the proportion of patients who perceived that their care was by "their doctor" and was seamless was studied. Patients were asked to answer yes or no to these questions:

- "Did you feel that you knew who your main cancer doctor was? (28/30, 93.3% answered yes)

- "Did you feel that he really looked after you during your time at the RCCC?" (26/30, 87% answered yes).

As a patient management tool the OSD had good functionality. The key process stakeholders (planning radiation therapists, nurse co-ordinator, allied health, etc) reported satisfaction with on-line scheduling. The radiation oncologist performing the care maps noted increased efficiency with the elimination of multiple telephone calls, fax messaging to accommodation, and proforma completion tasks for MDT registration. Care co-ordination at the RCCC organisational level reduced task duplication and error rates with an average of 94.2 per cent of expected tasks being actually performed. Patient involvement in care process mapping at point-of-contact resulted in fewer patient-initiated cancellations or changes in the appointments created. Patient perception of care continuity and overall satisfaction was thus measured to be high (averaged 90.2 per cent across the two key questions). The development of the OSD allowed the RCCC organisation to drill-down on potential appointment bottle-necks, freed key radiation therapist and nursing staff from interruptions to their normal working day, and increased the capacity of the practice manager to roster medical and technical staff based on projected patient activity levels in simulation, planning, and cancer treatment (i.e. Linac and chemotherapy suite staffing). Overall the OSD project enabled a "top-down" analysis and understanding of our core "business" of treating cancer patients and their families in a timely and competent fashion.

Future Directions

Electronic diaries are an essential tool in managing complex multidisciplinary cancer patient events. Our OSD requires further development and independent site testing. Reliability and interoperability on non-Lantis RMIS has also to be determined.

Additional Information

Additional Information can be obtained from:

Riverina Cancer Care Centre
31 Meurant Avenue
Wagga Wagga NSW 2650
Phone: (02) 6925 4141

3.1.3.4 IMPROVING PALLIATIVE CARE CLINICAL INFORMATION MANAGEMENT BY ENHANCING PCS

South East Sydney & Illawarra Area Health Service (SESIAHS)

South East Sydney & Illawarra Area Health Service (SESIAHS) was successful in obtaining funds to enhance the current Palliative Care Systems (PCS) already in use in SESIAHS, and to implement an enhanced PCS into SESIAHS.

Overview of approach

Palliative Care Services in South Eastern Sydney, (specifically Prince of Wales Hospital (POWH), Royal Hospital for Women (RHW), Sydney Children's Hospital (SCH), St Vincent's Hospital (SVH), Sacred Heart (SHC) and their associated community services & St Georges Hospital (StGH)) have been using PCS since August 2002. PCS is used to bridge the difficulty of electronic connectivity between POWH/RHW/SCH and SVH/SHC to ensure the flow of palliative care clinical information between the networked services. The two Information Technology (IT) networks are on different operating systems (POWH has Microsoft, SVH uses Novell), and have active firewalls in place between the networks. The primary objectives of the project were to:

(1) Improve the workflow of palliative care staff by streamlining, sharing and reduction of administrative tasks.

(2) Reduce storage, transportation and duplication of paper records.

(3) Reduce time for data entry.

(4) Achieve more accurate and timely information, data and activity collection.

(5) Reduce clerical effort in exchanging information manually and improve the ease of flow of patient information between Palliative Care Services.

(6) Achieve more efficient sharing of limited resources across services.

(7) Improve ability for services to benchmark their services and for the purposes of quality improvement.

(8) Collect Palliative Care activity data for individual institutions and services, Area Health Services and the NSW Department of Health.

(9) Allow activity information to be available for policy and planning at an Area, State and Commonwealth level.

Project Methodology

The project comprised a series of activities:

(1) **Enhancement of PCS.** This component included describing the:

- development of an interface capability to input demographic information from PAS systems into PCS;
- centralisation of progress notes to the front page of each patient record, away from episode base progress records;
- enhancement of the medical legal aspects of progress notes by making progress notes undeletable. Like CHIME, inaccurate or misplaced progress notes can be struck through;
- changes to referral information from being serviced based to episode based; and
- improvements to allied health recording of activity information.

(2) **Implementation of enhanced PCS into SESIAHS.** This component included the development of an Implementation Planning Study and Business Case and subsequent activities that:

- documented the change requests, scope of change and finalisation of costs of change;
- completed programming of changes;
- tested the changes;
- included user testing of changes; and
- managed implementation and installation of Enhanced PCS into SESIAHS, including installation of PCS on existing servers.

Project Results

A survey of PCS users was conducted in March 2008. There was general acceptance from users that the changes implemented improved the recording and accessibility of the Clinical Data. The survey was conducted across administration and clinical staff and this is reflected in the result received. This project developed clear objectives to improve the recording and accessibility of clinical data by palliative care administrative and clinical staff. These have been implemented and were found to assist their business/clinical practice.

In total 52 registered PCS users were contacted by email and requested to participate in the survey. All users were advised of the nature of the survey and informed that all responses would be anonymous. A similar email was sent approximately seven days later in an attempt to increase the overall response rate. There were a high number of respondents indicating 'Not Applicable' for several of the questions. This was deemed acceptable due to the specific area of PCS which the survey addressed. In most cases the 'Not Applicable' response reflected a feature of PCS which was not used by the respondent.

It was concluded that the survey response rate was a relatively true reflect of the number of users who would be considered primary PCS application users and would utilise PCS on a daily basis. When considering the results with the 'Not Applicable' category removed we would conclude that the vast majority of respondents reflected positively to the PCS enhancements and that overall project objectives should be considered as having been met.

Future Directions

As this was a one off project, only maintenance will be required in the future

Additional Information

Additional Information can be obtained from:

Area Director Palliative Care, Eastern Sydney
South Eastern Sydney & Illawarra Area Health Service
Phone: (02) 8382 1111

3.1.3.5 DEVELOPMENT AND IMPLEMENTATION OF AN INTEGRATED ELECTRONIC LEARNING MANAGEMENT SYSTEM IN A CANCER HOSPITAL NETWORK

South East Sydney & Illawarra Area Health Service (SESIAHS)

The overall aim of this project was to develop an adaptable, exportable web based learning management system (LMS) for providing and managing education and training across professions in a Comprehensive Cancer Centre environment. By the completion of the project, Cancer Solutions™ was to become the LMS for Cancer Services, Central Hospital Network, and SESIAHS. The LMS has been built using an open source course management system known as Moodle.

Overview of approach

The primary objectives of the project were to:

(1) Develop an adaptable, exportable web based system for coordinating education and training across disciplines in a comprehensive cancer centre environment.

(2) Establish an efficient governance framework for implementing the system and assuring its quality, including the development of the position of EPO within a comprehensive cancer centre environment.

(3) Develop content within the framework of objectives (1) and (2).

(4) Evaluate the costs and benefits of such a system.

Secondary objectives were to:

(1) Develop specific training programs for individual stakeholders within SESIAHS (CN) that may include junior medical officers (JMO), nursing, trainees in medical, haematological and radiation oncology, and palliative care, staff specialists, clinical research staff.

(2) Develop specific educational resources to complement current Quality Improvement Activities (eg implementation of interventions as part of our medical record audit program).

(3) Develop resources to complement other Cancer Institute supported programs, eg multi-disciplinary teams, CI-SCAT, psychosocial oncology team and Basic Sciences of Oncology Course.

(4) Establish partnerships relevant to the program including University of New South Wales (undergraduate training), Royal Australian College of Physicians (RACP) and the Medical Oncology Group of Australia (MOGA) (implementation of medical oncology curriculum), CIPHER and regional and rural site involvement (online education for distant Cancer Centres).

The project was undertaken within a Comprehensive Cancer Service based within the SESIAHS Central Network. This service encompasses the Cancer Care Centre, St George Hospital, Kogarah, and the Oncology Unit, The Sutherland Hospital, Caringbah. The project aimed to provide education services to all stakeholders within the Central Network including Medical and Radiation Oncology, Palliative Care, Haematology, Nursing and Allied Health and the trainees of each of these parties.

Access is via a desktop icon located on all computers within Cancer Services, Central Network. This included computers located in the clinical areas as well as those allocated to individual staff such as administration staff, managers and senior clinicians. As the program is hosted externally, any person with access to the internet can log onto the site.

Project Methodology
The project comprised five components:

(1) **Governance.** The governance structure consisted of an Education Project Executive (EPE) that operated in liaison with the Education Project Officer (EPO). The governance committee structure created for the project integrated with existing governance structures at the CHN Cancer Services. Cross representation existed on the Cancer Solutions™ EPE, CHN Cancer Services Senior Executive and CHN Cancer Services Quality Committee facilitating regular updates and two-way communication between all governing bodies. The EPE oversaw the project implementation as well as address issues related to clinical and corporate governance including leadership, measurement and reporting, approval of content, monitoring and facilitation, education and training elements in line with the NSW Health Quality Framework.

(2) **Appointment of EPO.** The EPO was a position funded through the Cancer Institute NSW Health Innovations Project Grant and responsible for coordination of the development, implementation and evaluation of the Cancer Solutions™ platform during the 12 month period from July 2007 - July 2008. The EPO supported the development of the Cancer Solutions™ IT platform for the facilitation of resource and educational activities across the network.

(3) **Project Management.** Quality improvement processes were integrated within all stages of the Cancer Solutions™ project to ensure program improvements were a routine activity. The development of courses was based on evaluation of staff learning and development requirements. Feedback from the Cancer Services Quality Committee, content experts and senior clinicians/managers as well as from staff new to Cancer Services was collected and reviewed by the EPE. Courses and learning objects were then prioritised for development and commenced accordingly as documented in EPE minutes.

(4) **Developing the System.** At the commencement of this project the SESIAHS Information Services Division was not in a position to host or support a learning management system such as Moodle. This necessitated hosting the platform externally. Hosting externally has permitted access to Cancer Solutions™ from outside the SESIHS. For the duration of this project there have been no modifications made to the basic Moodle software (version 1.8.4) downloaded under GPL. Moodle had proven to be a robust and versatile LMS offering a wide range of functionality to enable development of a variety of instructional designs in Cancer Solutions™. To date resources using web pages and wikis have been developed along with gradable learning objects using quizzes, lessons, workshops.

(5) **Course Development.** The selection of learning objects for development and use in this project was undertaken by the EPE following consultation with external and internal partners. External Consultation was undertaken with the Cancer Institute NSW as well as Cancer Australia in order to align our local priorities with state and national strategic directions wherever possible. Internal consultation occurred with senior medical and nursing clinicians. Initially this was via introductory workshops (medical oncology, haematology, radiation oncology and cancer nursing) that were conducted at the commencement of this project. As Cancer Solutions™ is a clinically focussed learning program, the content experts' contribution to the development of this platform was essential. Without their input and support the learning objects would have lacked generic and context specific substance and credibility, rendering the platform without any value for staff. The original intention was to train content experts to edit and develop their content within the Cancer Solutions™ platform. However, due their time constraints and clinical workload, the majority of content experts preferred to work one of one with an EPE member or EPO when developing the content in Cancer Solutions.

The other manner in which content experts contributed to Cancer Solutions was to email their content to the EPO or EPE member to insert into Cancer Solutions.

Project Results

At the completion of the one year project, Cancer Services has a functional learning management system and an organisational culture that is now more focussed on learning and education as being central to improving patient care and outcomes. Organisationally, there is a coordinated strategy for setting education activities as well as better coordination of education and staff development activities. The feedback process regarding quality of education and learning outcomes has been formalised and integrated within the network's Quality Committee.

Cancer Solutions is now routinely used for orientation of all medical officers and nursing staff within Cancer Services CHN. Since January 2008 a total of:

(1) 33 medical officers have completed their Orientation Program. This breaks down to 7 Interns, Seven Resident Medical Officers, 13 Basic Physician Trainees and 6 Advanced Trainees. The medical orientation program includes a combination of gradable mandatory online activities as well as blended learning modules and spans a two week period.

(2) Seven nurses have completed the Nursing Inpatient Haematology/Oncology Orientation Program. This program includes a combination of gradable mandatory online activities as well as blended learning modules spanning a four month time frame.

(3) 14 nurses have completed the annual re-accreditation for chemotherapy administration (blended learning program) as well as the online Intrathecal Chemotherapy quiz.

(4) There are currently six Medical Oncology Advanced Trainees from St. George Hospital and Prince of Wales Hospital participating in the one year development program which is focussing on medical oncology pharmacology projects. This is being run through Cancer Solutions.

The following learning objects have been developed, approved and utilised within various programs and resources:

- 3 resources wikis;
- 22 web page resources;
- 10 quizzes;
- 11 lessons;
- 1 workshop
- 2 databases;
- 1 functioning forum; and
- 4 blended learning modules with theoretical and clinical competence requirements

The Cancer Solutions™ project has focused on governance systems for the project as well as the development and delivery of content in six major areas:

(1) **A Resource Repository for Cancer Services Staff.** The Cancer Services Manual is a 320 web page (wiki) resource that has been developed to assist medical officers and other clinical staff access context relevant information to assist with their patient management activities.

(2) **Electronic Medical Training.** Familiarisation and training with CHN Cancer Services electronic outpatient management system (VARiS) is essential for all clinical staff. A suite of online training modules have been developed to familiarise staff with these IT systems.

(3) **Medical Orientation.** The program is for medical officers (Medical Orientation Program for Interns, Resident Medical Officers, Basic Physician Trainees and Medical Oncology Advanced Trainees) commencing their four month term in CHN Cancer Services. The program acts as a guide for medical staff consisting of a series of assessable and non-

assessable e-learning activities integrated with face to face tutorials as well and simulations.

(4) **Medical Oncology Advanced Trainee Program.** Advanced trainees in Medical Oncology from across the SESIAHS are participating in a one year long program coordinated by Associate Professor Matthew Links which uses the workshop and forum functionality within Cancer Solutions.

(5) **Nursing Orientation.** The Nursing Orientation Program has been specifically designed for nurses commencing in CHN Cancer Services. The program acts as a guide consisting of a series of assessable and non-assessable e-learning activities integrated with clinically supported 'blended' learning activities. Currently there exists:

- Nursing Inpatient Haematology/Oncology Orientation Program – a 16 week program involving theoretical and blended learning modules
- Nursing Outpatient Haematology/Oncology Orientation Program – a 16 week program involving theoretical and blended learning modules

(6) **Standards of Practice (SOPs).** Several SOPs have been developed to facilitate standardisation of future development, approval and implementation of Cancer Solutions™ modules and learning objects. This will assist with the transportability of the program to other sites.

Feedback from clinicians who have completed program surveys as well as face to face discussions with both content experts and clinicians have been positive. With regard to improvements medical staff completing the orientation program have requested a better search function in the Cancer Services manual wiki and more dedicated orientation time to complete their activities. From an organisation perspective, at the completion of this one year project Cancer Services has a functional learning management system and an organisational culture that is now more focussed on learning and education as being central to improving patient care and outcomes. Organisationally there is a coordinated strategy for setting education activities as well as better coordination of education and staff development activities. The feedback process regarding quality of education and learning outcomes has been formalised and integrated within the network's Quality Committee.

Future Directions

Growth of the platform is essential for sustainability of Cancer Solutions™. A larger pool of contributors is required and potential collaborative ventures with other hospitals are being investigated. It is imperative for the continuation of Cancer Solutions™ that it is further developed and continues to grow as a multi-site program. Goals for the next 12 months to facilitate expansion include the following:

- transfer to a dedicated Moodle web host service and upgraded software,
- improve search bar function for Cancer Services Manual;
- restructure course content to improve grading of participants;
- improve built in evaluation processes;
- further incorporate development into workflow;
- finalise CHN Cancer Services Knowledge Management Policy and re-structure online knowledge management accordingly;
- expand pool of contributors including trialling at other sites;
- improve links and integration with other state and national cancer programs such as Cancer Learning Ongoing quality improvement to the platform needs to continue to be integral to the project; and
- provide a research focus (eg masters of medical education).

With regard to further integration of the website's development and usage into everyday practice, the following strategies are currently being trialled:

- Grand Round meetings for doctors;

- Nursing in-services;
- Journal Clubs;
- ongoing development of orientation and continuing education programs;
- adding content for Allied Health;
- incorporating the development for Cancer Solutions™ content into staff learning programs eg this is being trialled with the medical oncology Advanced Trainees course; and
- improving connection with other programs such as Cancer Learning.

Additional Information

Additional Information can be obtained from:

Cancer Services, Central Hospital Network
South Eastern Sydney & Illawarra Area Health Service

Phone: (02) 9331 1111

3.1.3.6 ELECTRONIC PATIENT REPORTED OUTCOMES MEASUREMENT TOOL

Liverpool Cancer Therapy Centre (LCTC)

The project provided for the implementation of the Patient Reported Outcomes Quality of Life tool (PROQOL) for routine assessments in outpatient clinics, training of personnel, and evaluation of acceptability and satisfaction by patients and staff. This followed on from Phase I, where the PROQOL tool was developed to collect self-reported quality of life data based on the validated European Organisation of Research and Treatment of Cancer (EORTC) Quality of Life questionnaire (the QLQ-C30) via touchscreen, and to display summaries of outcomes graphically in real-time.

Overview of approach
The primary objectives of the project were to:

(1) Train all English speaking and mobile patients attending the LCTC to complete a touchscreen questionnaire (PROQOL) on each clinic visit.

(2) Train and encourage all clinical staff to review the graphical display of their patients' QOL data. Ensure

The aims were to have ongoing, real-time, measurable quality assurance, and provide the benefits of communication tool, patient prompting tool, as well as an alert system to highlight and address psychosocial and toxicity distresses. Improvement in the quality and structure of consultations and increased insight by health care workers into the needs and expectations of patients are expected to improve service delivery in a cost effective way. Our objectives are to implement a system of routine collection of PRO and display the data graphically in real-time to health care providers.

Project Methodology
The project involved the recruitment of a project officer to support the implementation. The PROQOL tool consists of three components: input (touchscreen), database (network server), and output (physician screen). The flow process for PROQOL was as follows:

(1) Patients were informed on the procedure during their initial introduction to PROQOL. A patient information sheet is provided.
(2) On every visit to clinic, patients are requested to complete the EORTC QLQ-C30 questionnaires on a touchscreen computer.
(3) Questions are presented in an easily recognised font and size, with five questions on each page (single view).
(4) The Global QOL as well as five functional scores and nine symptom scores were calculated upon completion of this, and stored in an Access database.
(5) The database is linked to the patient number and date of questionnaire.
(6) Immediate access to PRO data was available to health care providers through the output screen on their desktop computers.
(7) The output was in graphical format, expressing both previous and current scores (time-trend).
(8) Colour codes identify dates of previous data, which are represented on the graph within scale ranges. This enables comparison and the recognition of relative changes in the status of the current functional and symptom-related aspects of quality of life.

Previous experience from working with this electronic PROQOL tool in South Africa have shown improvement in the quality of communication between patients and health care providers, optimising of time utilisation, and early recognition of symptom changes.

Staff training consisted of a series of in-services directed to their appropriate functional interaction with the project. The training consisted of background information, the PROQOL functionality, and details of specific interactions on a service-oriented basis.

Administration staffs were trained to use a prompting algorithm. Upon presentation to the reception desk, patients were assessed for their participation on the PROQOL, and encouraged to complete the touchscreen questionnaire prior to their consultation/treatment. The voluntary participation was encouraged as far as possible. These prompting algorithms were installed on clerical and reception desks as a reminder for the administration staff.

Medical staff and allied health professionals were trained to access the QOL data and also to interpret the graphical real-time display. Planned training sessions and in-service presentations were conducted at the start of the project and at six months.

Project Results

In the period from June 2007 to May 2008, 779 patients were trained to use the PROQOL tool with 1,886 questionnaires completed. An additional 783 patients were considered for training, but could not be enrolled in the project due to various reasons. Of note was that a high proportion of patients (59%) were excluded for linguistic reasons. Breast cancer patients (27%) were the group with the highest completion rate followed by patients with prostate (11%), lung (11%) and colorectal (10%) cancers. The median age for all participating patients was 63 year (range 20-98 years) and the proportion of females was at slightly higher rates than males (53% vs 47%).

The majority of the patients (89-95%) agreed that the touchscreen questionnaire was easy to use and was easily understandable (96-100%). Nearly three-quarters (65-73%) of patients would like to continue using touchscreen on a regular basis and would recommend the program to other patients. More than half of them (50-69%) agreed that the touchscreen program improved communication with their doctors and helped them to remember symptoms during their visits.

In the staff satisfaction survey, about 60 per cent of the staff involved were satisfied with the overall progress of the project. Up to 58 per cent of the staff was satisfied with various issues of the PROQOL project including training on touchscreen use, patient recruitment, personal workload for involvement in the project, support from the QOL committee, administration and other staff, use of QOL data, and communication with the patient. The highest satisfaction rate (58%) was expressed on ‘training on use of touchscreen’ and the highest dissatisfaction rate (5%) was on the issue of ‘Support from centre administration’.

When the staff responses were compared with that of the baseline survey, the overall staff awareness on the use of PROQOL had improved significantly (24% to 53%) and all the specialists returning the survey mentioned using the tool for their patient assessment on a regular basis. A moderate proportion in the follow-up survey (32-58%) still did not express any opinion (‘neutral’ response) on various touchscreen related issues for reasons not specified that was similar to the baseline survey responses (40-60%).

A number of barriers were encountered during the project period due to changes in the geographical, staff and IT environment. The major ones were relocation of the Department of Medical Oncology to a different building, changes to the electronic medical record system (EMR) and lack of staff access to computers that were able to run the PROQOL tool.

Despite the barriers experienced, the implementation of an electronic ‘Patient Reported Outcomes (PRO)’ measurement tool in our cancer therapy centre was feasible. The project

was formally launched in November 2007, and since then significant patient and staff participation are continuing. Staff feedback helped to organise and improved the usability of the PROQOL tool. The main challenges faced now are to increase the use of the PROQOL tool by clinicians and to develop strategies (such as 'trigger alarms' and 'automatic referrals') that can address early recognition of changes in patients' emotional, physical, cognitive or social functioning. The planned extension of the PROQOL tool to include other languages will allow greater applicability and identification of health-related quality of life issues in non-English speaking cancer patients'.

Future Directions

The main issue now is encouraging the clinicians to incorporate the routine use of QOL data into their daily clinical practice. The process needed constant fine-tuning, redevelopment and crises management, but there is a belief that it is worthwhile continuing this project. Our aim for the next six months is to introduce and retrain medical staff to the interpretation of the PROQOL graphical display, to improve understanding and utilisation of the tool.

There is a future plan to include expansion of PROQOL tool to the NESB population through additional questionnaires in three languages as well as the addition of more specific psycho-oncology assessment questionnaires. Another possible upgrade is the development of computer adaptive testing called the Patient Reported Outcomes Measurement Information System (PROMIS), in collaboration with United States National Institute of Health.

Additional Information

Additional Information can be obtained from:

Liverpool Cancer Therapy Centre
PO Box 103
LIVERPOOL NSW 2170
Phone: (02) 9828 5180

3.1.3.7 ENHANCEMENT OF PALLIATIVE CARE INFORMATION MANAGEMENT SYSTEM

Palliative Care Service, Sydney South West Area Health Service

The project sought to develop the Palliative Care Electronic Medical Record (EMR) as a module integrated with the overall CERNER Millennium EMR solution. It was being designed and built to improve the efficiency of work practice and information management of the Palliative Care Service (PCS) of SSWAHS. Its user-specified interfaces will be accessible by utilising the PowerChart program, the general and centred clinical information system (CCIS) currently being used within SSWAHS.

Overview of approach
The primary objectives of the project were to develop and implement a clinical information and user-specific system accessible to all palliative care clinicians to "improve cancer service delivery" for "both public and private facilities across the NSW Health system" to deliver the following benefits:

(1) Time and Effort Efficiencies:

- reduction in the time and effort required to comply with NSW Health and other reporting requirements:
  - Australian – National Sub Acute and Non Acute Patient (AN-SNAP);
  - Palliative Care Outcomes Collaboration (PCOC);
  - Key Performance Indicators (KPIs); and
- reduction in duplication of data collection and other tasks.

(2) Improved Quality of Information and Processes:

- increased access to and improved transfer of clinical information across SSWAHS PCS in real time. This includes access for clinical staff outside normal business hours;
- improved identification of patients and their needs across the continuum of care;
- provision of timely, accurate, complete and up-to-date information to other clinicians including General Practitioners; and
- improved data collection to improve forecasting of future PCS trends and needs at a local and strategic level.

Project Methodology
The project comprised a series of activities:

(1) **Project Initiation**, including:

- formed the Steering Committee;
- appointed the Project Officer;
- preliminary discussions with external stakeholders:
  - Area IM&TD (SSWAHS);
  - Hope Healthcare Limited (HHL) Management. HHL is a third schedule health care provider of inpatient and outpatient services in SSWAHS with its own Board and Governance Structure;
  - Eastern Zone Palliative Care Services (SSWAHS); and
  - Community Health Facilities (SSWAHS).

(2) **Project Design**, including:

- assessed the NSW Health Privacy Guidelines at www.health.nsw.gov.au;

- developed Baseline Evaluation forms;
- considered the CINSW initial Phases 1&2 reports about standardisation of palliative care information management; and
- reviewed of PCOC and AN-SNAP reporting requirements-review palliative care information systems used in other services (NSCCAHS and SSEIAHS).

(3) **Initial Implementation**, including:

- obtained network shared drive to host CERNER Palliative Care EMR split Access database for multiple (concurrent) users;
- defined CERNER Palliative Care EMR users and access privileges;
- considered data security and integrity issues;
- conducted baseline evaluation;
- developed minimum palliative care data sets; and
- reviewed and updated business process flows.

(4) Project Development, including:

- Project Design and Construction Phase which is being designed as an additional built-in module of the CERNER Millennium application suite that supports the existing information systems utilised within the SSWAHS.
- received user feedbacks;
- planned EMR rollout strategy;
- enhanced and ongoing reviewing EMR business change requests;
- user tracking; and
- broadened user groups – Accident and Emergency, Cancer Services.

(5) Project Conclusion, including:

- Final evaluation.
- Documented Final Reporting.

Project Results
Significant milestones achieved to date included:

- review of Privacy Guidelines from the NSW Health Department and Cancer Institute of NSW (CINSW) completed in October 2005 and September 2006, respectively;
- the existing clinical information systems in use within SESIAHS' web-based PCS and of Central Coast's CERNER PCS were evaluated in November 2006. Medical Oncology EMR in use at SSWAHS was also evaluated. The Palliative Care EMR will be similar to that of Medical Oncology EMR;
- network shared drive for PCS became operational with defined users' access privileges in April 2007.
- no loss of key staff, although the Project Clinical Leader changed;
- a Steering Committee was formed in September 2007 and members have been meeting monthly;
- the Project Officer for Palliative Care EMR was employed and commenced work on the project in October 2007;
- Business Process Review (BPR) with stakeholders was reviewed and completed;
- all PCS staff (end-users of the Palliative Care Management Information System Access database) were sent information about computer skills courses provided by the Centre for Education and Workforce Development (CEWD) department in November 2007;
- IM&TD agreed to accept responsibility for maintenance of data integrity and security;
- a monthly area-wide Palliative Care EMR newsletter has been distributed from March 2008, to all stakeholders;

- the Allied Health BPR and data set had been defined and reviewed in Allied Health Focus Group in May 2008;
- all the clinical forms and tools had been collected and were being reviewed to standardise what will be included in the proposed system; and
- the Systems Design and Construction Phase of the EMR commenced in July 2008. A System Prototyping Focus Group was convened and commenced work on 1st September 2008.

At the time of project reporting the system design had not been completed but is expected by early 2009.

Future Directions

Although the EMR has not been designed and built as quickly as anticipated, the CINSW HSIG project has continued to build on existing work and will continue to be developed due to commitment of Information Management and Technology Divisions (IM&TD). IM&TD and the clinical staff are engaged with the project and IM&TD have a proven track record, having already developed a similar EMR for Medical Oncology EZ based on the CERNER platform.

The development of an EMR is a complex process that requires considerable planning before commencement. Even after the EMR has been deployed an iterative process of user feedback, refinement, roll out to other stakeholders, business process review and organisational change ought to occur. The EMR should also generate data that informs structural change and service planning within a business unit. The project team anticipates that these processes will be ongoing.

The PCS EMR may form the basis of a state based build across all AHS based on the CERNER platform. Even if AHSs shift to another platform, adaptation of the EMR for the new platform should not prove as onerous as starting from scratch. The most time-consuming aspects of the project have proven to be planning, the engagement of stakeholders, business process reviews and incorporating work redesign in the design planning and build.

We will be piloting a wireless technology solution for community site/s in the future.

Additional Information

Additional Information can be obtained from:

Sydney South West Palliative Care Services
340 Prairie Vale Road
PRAIRIEWOOD, NSW 2176
Phone (02) 9616 8656

3.1.4 Complementary Service Arrangements

Effective multidisciplinary care for cancer patients involves a series of coordinated processes. Projects focussed on complementary service arrangements, listed in table 4, presented innovative ideas to improve components of service delivery that support cancer care, such as pharmacy, pathology and systems to better coordinate transport for cancer patients.

Table 4-HSIG Round 1 Project - Complementary Service Arrangements

Project		Location
3.1.4.1	Integrated regional cancer transport services	Royal North Shore
3.1.4.2	Drug Project	Westmead Hosp
3.1.4.3	Pathology Ordering Project	Westmead Hosp
3.1.4.4	Improving medication access & management for Palliative Care patients	Westmead Hospital

3.1.4.1 INTEGRATED REGIONAL CANCER TRANSPORT SERVICES

Northern Sydney Central Coast Area Health Services

The overall aim for the project was to define and develop a streamlined process for patients and their carers to access the most appropriate and effective transport service to meet their clinical needs.

Overview of approach
The Area Heath Service project team decided that the first stage of developing solutions would be to better understand the nature and scope of the problem – the mapping phase. Key objectives for the **first phase** of the project (around 6 months to end October 2008) were to:

(1) Map the current pathways that patients use to access transport to support their treatment.
(2) Map demand and decision making processes and assess how they could be better informed.

In the **second phase** of the project (post October 2008) the project sought to refine and commence development of alternative patient transport pathways. These could involve new partnerships with existing transport providers and the use of computer software to improve booking and scheduling. The exact scope of the refinements were determined after completion of the mapping in phase one.

The new models of delivery formulated in the second phase addressed:
- current operational policies and their applicability / suitability in the proposed new operating environment;
- the appropriate geographic unit for managing services – should this be the Central Coast as a whole or should Gosford or Wyong be managed independently?;
- who should manage scheduling – a provider (eg community provider), the ambulance service, the AHS or another party?;
- how should patients access the scheduling? Should this be done by themselves / carer, the AHS, or a community care provider?;
- the implications of these new service delivery models for resources – are more required or can better outcomes be achieved with the same level of resources through better coordination?;
- should the service delivery arrangements be changed as a result of this new model / models?; and

The **third phase of the project** (post April 2009) sought to **implement** the changes formulated in Phase 2.

Project Methodology
The project comprised a series of activities:

(1) **Project management.** The objective of this stage was to initiate the project, confirm the approach to be applied, and ensure a common understanding between the project manager and the steering committee.

(2) **Survey Design.** The objective of this stage was to design the survey instruments to collect information on demand and supply of cancer treatment service transport.

(3) **Perform Data Collection.** The objective of this stage was to collect data on the demand for and supply of transport to patients receiving cancer treatment on the

Central Coast. This included the patient survey, interviews of transport suppliers and with service providers.

(4) **Analyse Survey Findings.** In this stage, the project manager was to prepare an analysis of the data collected and to develop an estimate of the difference between demand for community transport (number of weekly carries sought) and actual supply (weekly carries at present). A simple demand and supply model, based on material collected in previous stages was prepared.

(5) **Identification of Preliminary Redevelopment Options**. The objective of this stage was to develop a preliminary specification of patient transport redevelopment options falling into demand side and supply side responses. The project manager prepared a discussion paper on these options and other options that were identified through the mapping and scoping process.

(6) **Implementation**. In this stage the project manager (post February 2009) refined and commenced implementation of alternative patient transport pathways. These involved new partnerships with existing transport providers and the utilisation of additional transport resources.

Project Results

The initial survey of consumers, service providers and transport service providers found that:

- Between 15 per cent-20 per cent of cancer patients surveyed reported needing assistance with transport to oncology treatment facilities as well as better information regarding the availability or transport options. Similarly 45 per cent of cancer patients surveyed reported that they required an escort for support and 54 per cent of cancer patients surveyed stated that they needed a family member or friend to transport them.

- Transport service providers were inappropriately funded and/or not funded to transport cancer patients, did not have sufficient vehicles, drivers or administrative support to provide transport for cancer patients and need to alter either and/or both - their existing transport protocols or their service arrangements in order to be able to transport cancer patients.

- Oncology social workers & CNC's reiterated lack of access to appropriate and affordable transport for cancer patients as well as frustration expressed at the difficulty in coordinating patient appointment times with limited transport services.

In late 2007 the Cancer Transport Action Group (C-TAG), through its fund raising activities, secured a personal donation from a Gosford resident to purchase a 14 seater commuter mini-bus to enhance the existing cancer transport capacity then available on the central coast. The service (Shirley Shuttle) was commenced in March 2008 and operated for a twelve month period. Key features of the project were that

(1) Community transport providers from Gosford and Wyong:
- altered their transport protocols to allow for the transport of cancer patients
- 're-aligned their service delivery strategies' to absorb the administration costs associated with overseeing a new transport service
- conducted 'oncology patient transport service pilot programs' in order to assist in assessing the actual community need, viability & sustainability of such a service

The pilot program was key to providing the transport data required in assessing which type of transport vehicle (e.g. Sedan, commuter bus) should be purchased to better meet the transport needs of patients/carers.

(2) Enhancement of existing oncology community transport infrastructure through the project included:

- sustainable partnerships with key oncology stakeholders and cancer organisations (e.g. NSWCC, CINSW, RAN, NSCCAH, MOT);
- health and community fundraising;
- strategic placement of new cancer transport services; and
- Advocacy through NSWCC, Cancer Voices, Local media.

(3) Volunteer drivers were a feature of the project and strategies to involve them included:

- promotion of need for volunteer drivers through local media;
- NSWCC oversaw both the advertising and training requirements for this aspect of the service model; and
- Shirley Shuttle was able to identify 5-10 trained volunteer drivers.

(4) Streamlining & improved communication between local transport providers was achieved through;

- direct contact between treatment clinics and cancer transport service regarding scheduling of patient appointments; and
- direct contact with cancer transport service providers regarding service availability.

Future Directions

The outcomes of this project included:

- the revision of Community Transport Provider (CTP) current operational policies;
- the appropriate geographic unit for managing services to be concentrated at Gosford CTP and Wyong CTP respectively;
- community provider managed scheduling;
  - patients have access to the transport service through a number of avenues such as; self-referral or carer -referral, the AHS, or a community care provider;
  - larger CTPs were more able to absorb administrative costs of a new transport service.
- new service delivery models that should achieve better outcomes through both the:
  - better coordination of services with existing levels of resourcing and
  - enhanced resourcing of transport providers;
- the need for existing service delivery arrangements to be changed as a result of this new model / models;
- the development of service agreements to clearly describe organisational responsibility and sustainability for the new transport service/s.

The project will continue to direct the work of the C-TAG taking account of the following project recommendations:

(1) Increase NSW Health funding to non-emergency patient/carer transport services to bridge the gap between Community Transport Provider supply and community need for Community Transport Provider cancer transport.

(2) Community transport providers should be better supported to administer regular data collection of unmet patient/carer transport needs.

(3) The Cancer Transport Action Group continues to collect and review cancer transport data. Priority should be given to review data relating to cancer patient transport demand on the NSW ambulance service

(4) Cancer Transport Action Group initiate planning to explore scope and address the significant cancer transport inadequacies associated with transporting outpatients to Sydney and Newcastle for public radiotherapy treatment.

(5) The Northern Sydney Central Coast Area Health continues to provide in kind support to allow Cancer Transport Action Group to redevelop cancer transport services in the Central Coast Region.

Additional Information
Additional Information can be obtained from:

Northern Sydney Central Coast Area Health Service
C/- Royal North Shore Hospital

Pacific Highway
St Leonards NSW 2065
Phone: (02) 9926 7496

3.1.4.2 UNDERSTANDING DRUG UTILISATION IN THE SYDNEY WEST CANCER NETWORK PROJECT

Sydney West Cancer Network (SWCN)

The project sought to understand the SWCN drug use and expenditure, then actively manage it. This project's primary focus was on refining data to ensure accurate and timely access to drug use and expense across the network.

Overview of approach

The primary objectives of the project were to:

(1) Better understand the "Cost to Unit" of drugs.

(2) Achieve a high reduction of drug expenditure.

Project Methodology
The project was primarily a data analysis task. The Oncology Pharmacist provided raw data from STOCCA, a pharmaceutical dispensing program, to build up a database of drug prescriptions. This information was tabulated under patient name, prescribing clinician, specialty as well as date and location of prescription. Data was collated for two years.

Project Results
An important finding from the analysis was that the top 10 drug costs had changed. Initially, the major costs were in antifungal drugs. A review of protocols was undertaken and a new evidence based protocol developed for managing prophylaxis and treatment of invasive fungal infections. This made a significant impact on expenditure. Following this development, Liposomal Amphotericin and Caspofungin expenditure of $1,129,295) did not appear on our list of top 10 drugs.

With that success, Medical Oncology was targeted. On a monthly basis, pharmacy data was tabled at department meetings. Consultants reviewed the pattern and nature of prescribing and gained a better understanding of how costs were attributed and funding resourced.

With these data, Consultants have been able to reduce costs by:

- reviewing protocols and ensuring that all staff are using evidence based guidelines to determine treatment regimens (which in general also correspond to protocols and treatment recommendations that are under PBS);
- using expanded access schemes as needed (eg Lapatinib);
- endeavouring to ensure that appropriate patients are offered access to clinical trials; and
- provided patients with the opportunity to be treated at a private hospital if they were covered in a private fund.

Drug wastage has also been looked at and steps taken to reduce this by:

- ensuring that patients are reviewed between cycles and fax communication is used between units to ensure relevant notifications are made to alter dosages or other changes in treatment prior to drugs being made up; and
- weekly communal write up, means that all clinicians communicate directly with pharmacy and nursing staff about the treatment to be provided. Also provides a multi step checking mechanism to avoid errors.

Other findings were that:

- reporting to department meetings on a monthly basis is now part of core business across the network;
- from 2003-2008 we have increased use of PBS/S100 from $0.8 million to $4.5 million; and
- from 2004-2008 we have reduced costs to the SWCN from $4.25 million to $2.3 million.

Future Directions
The project did not identify future directions.

Additional Information
Additional Information can be obtained from:

Westmead Cancer Care Centre
Westmead Hospital
PO Box 533
Wentworthville NSW 2145
Phone: (02) 9845 7015

3.1.4.3 PATHOLOGY ORDERING PROJECT

Sydney West Cancer Network

The project sought to understand the SWCN pathology ordering and expenditure, then actively manage it. This project's primary focus was on refining data to ensure accurate and timely access to drug use and expense across the network.

Overview of approach
The primary objectives of the project were to:

(1) Eliminate orders for tests, which are ordered excessively, with no direct impact on patient outcomes.

(2) Reduce the cost of pathology testing to the Sydney West Cancer Network.

Project Methodology

The pathology ordering project had already undergone a trial on the Medical Oncology ward at Westmead hospital. Focusing on six medical oncologists and a set of frequent tests, Coags, LFT, EUC, Ca Mg P04, FBC and Tumour Markers, the trial involved education of the ward medical registrars by the advanced trainee and creation of a credit card sized information card noting the frequency of repeating tests once "normal". That trial was carried out by a small team of dedicated staff who spent much of their own time working on the project. This project sought to enable the Sydney West Cancer Network (SWCN) to expand the trial to other wards within Westmead Hospital.

The project looked at pathology sets and their suitability for our patient base. After looking at the different configuration of sets it was agreed that it was not possible to create sets specific for the population based on disease. This was due to conflicting and additional co-morbidities and changes related to stage of disease. Instead the project looked at how the hospital could better rationalise pathology tests. Instead of focusing on disease the project focused on baseline pathology and what was within acceptable limits. It then looked at the result range that would be used as being within range and decided that if a patients results fell into that range then the hospital would NOT repeat tests unless the patient's condition deteriorated.

With this in mind the project designed and agreed a rationale for the ordering of tests for all medical oncology patients. The project was able to demonstrate a reduction in the number of tests ordered when trialled at Westmead Medical Oncology.

Project Results
The hospital has now rolled the approach out to Nepean and Blacktown Medical Oncology units and has now become part of the core business in these areas. It required:

- education of medical staff with all change of terms;
- reinforcement by Senior staff on rounds; and
- placement of a reminder cheat sheet in every patients file.

The final evaluation report described a reduction in the volume (and therefore the cost of pathology tests) but these results were not discussed in detail.

Future Directions
The primary future activity was the need to modify the pathology ordering system to include an alert module that incorporates the agreed ordering protocols.

Additional Information

Additional Information can be obtained from:

Westmead Cancer Care Centre
Westmead Hospital
PO Box 533
Wentworthville NSW 2145
Phone: (02) 9845 7015

4.1.4.4 IMPROVING MEDICATION ACCESS & MANAGEMENT FOR PALLIATIVE CARE PATIENTS

Sydney West Cancer Network (SWCN)

Medication access and management issues were identified as key barriers to successful transition of care of palliative care patients following a 2006 review by the SWCN into 'Optimising Palliative Care Transition'. This project therefore sought to introduce clinical pharmacy services into the discharge planning process for palliative care patients to achieve symptom control and continuity in medication management.

Overview of approach
The primary objectives of the project were to:

(1) Introduce Clinical Pharmacy services into the discharge planning process for palliative care patients to achieve continuity in medication management.

(2) Review the safety, cost and feasibility of adopting the above measures into standard practice.

(3) Enhance links with community pharmacists able to meet the needs of palliative care patients (eg willingness to stock specific medications, extended hours services, home medication review services, Webster pack facilities).

Project Methodology

The project team consisted of two pharmacists, a palliative care specialist physician, a community palliative care nurse and a member of the finance team of the Sydney West Cancer Network. The following activities were undertaken:

(1) A steering committee was set up that commenced in late May 2007 and meetings were held monthly.

(2) The project sought to recruit a minimum of 50 patients, identified by the Palliative Care team and screened by the project pharmacist for eligibility. Informed consent was required from all recruited patients and carers.

(3) Pre-study baseline data on palliative care patient admissions that were possibly related to medication access needs (symptom management or terminal care) were reviewed and were subject to discussions with the project statistician.

(4) The project clinical pharmacist would conduct a formal medication interview with recruited patients and carers. Prescribed and OTC medications were reviewed and education on medication provided. The project pharmacist would develop a medication action plan in collaboration with the medical team.

(5) The discharge medication process was to be coordinated by the project pharmacist and discharge medication counselling provided to the patient/carer including the provision of a medication list. Medication discharge information was also conveyed by the project pharmacist to the patient's community health providers (GP, community pharmacist, community nurse).

(6) The project pharmacist would also coordinate the provision of an Emergency Medication Pack of symptom control medications for selected patients. The usage of these packs was at the discretion of the community nurse looking after each individual patient.

Project Results

Recruitment commenced in May 2008 and concluded in September 2008. Twenty-six patients were recruited from a screened population of 239 patients.

A primary outcome measure was the percentage of recruited patients readmitted due to medication access or information issues. There were no unplanned readmissions directly related to medication access or information issues.

Evaluation findings suggest positive patient impact from the expanded clinical pharmacist role. The majority of recruited patients and carers recalled obtaining medication information from the hospital pharmacist post-intervention. Improvements in the understanding of instructions for utilising medication in an emergency and the medication management assistance and training received achieved statistical significance.

Primary healthcare providers were satisfied with the medication discharge information provided by the palliative care clinical pharmacist.

One emergency medication pack was dispensed during this pilot project. The small sample size prevented a full exploration of the potential clinical impacts of the availability of an emergency medication pack at the patient's bedside, and further studies are recommended.

Efficiency measures were incorporated into the dispensing of the emergency medication pack. Additionally, the project stimulated a review of existing procedures for the provision of after-hours care for palliative care patients in the community.
The project identified timely and cost-efficient medication access issues experienced by the patients in the community for both PBS listed and non-PBS listed medications. These included under-use of PBS authorities to ensure sufficient quantities of medications, prescribing for non-PBS indications, financial difficulties in meeting co-payment costs, and difficulties in obtaining supply from the local pharmacy.

The project reviewed the 'cost-to-hospital' for continued supply of non-PBS listed and 'off-label' medications to community palliative care patients. Although the development of alternative pathways for the supply of non-PBS listed, 'off-label' and non-sponsored medication utilised in palliative care was beyond the scope of this project, a guidance framework has been suggested for improving medication access.

Future Directions
Further modification of the medication list to improve usability, patient compliance and facilitate regular updating by health professionals is recommended for consideration, with greater patient and carer input and stakeholder input. The clinical pharmacy tools developed have the potential to be utilised by pharmacists practicing in other clinical specialties. These tools include:

- medication interview form;
- medication action plan;
- discharge checklist; and
- medication discharge summary.

Inclusion of prompts for obtaining medication authority for the administration of parenteral drug in the community will facilitate the smooth transition from the hospital to the community.

The provision of the medication discharge summary and medication list to primary healthcare providers was generally well received. Further suggestions for improvement of the discharge medication summary include:

- additional information regarding the use of over-the-counter medications and herbal preparation where known;

- the provision of information on patient's diagnosis to community pharmacists;
- suggested quantities needed for one month's supply of the parenteral medication(s) assuming dosage on discharge is unchanged and instructions for calculations to assist GPs prescribing of PBS/RPBS authorities; and
- further information about the rational behind the current medication selections, and information regarding medications that was trialled without success for the patient.

In addition, there is the potential to integrate the medication discharge summary and a covering letter with the current Microsoft Access database for the medication list to streamline the preparation of this information. Future development and use of electronic submission pathways for such information is recommended.

The provision of more comprehensive medication information on discharge is a step forward in improving patient care. However, there are still potential gaps in the information provided to enhance patient care. It may be more appropriate if the medical team looking after the patient was to provide the information regarding the patient's clinical condition and medical history via the discharge summary. Medical officers may also be in a better position to answer queries by the GPs regarding the patient. Information regarding the discharge medication completed by the pharmacist may be included to complement the discharge summary by the medical officer. Avenues to ensure timely communication of this vital information should be explored, and may include using facsimile or electronic mail with a verbal handover by the liaison person, allowing one to gauge the confidence of the GP in the provision of primary palliative care prior to discharge.

Further refinement for the medication evaluation tools could accommodate reasons for delays in accessing medication, satisfaction with medication lists provided and questions to obtain more information about problems faced while accessing and managing medications. In addition, the original proposal was written with the assumption that all patients would have carers involved in their medication management. Ten patients recruited stated that they did not have a carer involved in their medication management. This consideration is vital when designing future questionnaires and protocols.

Further studies are recommended to evaluate and quantify the potential impact of the anticipatory provision of the emergency medication pack on access of medication for symptom management. These studies need to evaluate the appropriate medications which inclusion will have the potential to impact on patient care. A tailored emergency medication pack within a selected 'formulary' may be preferable to a standardised pack for all patients. Future studies could have wider inclusion criteria, and adopt a multi-centre approach using a collaborative model. Independent evaluation of the information leaflets and drug monographs is recommended to ensure readability, appropriateness and usefulness, including multilingual translation.
Concordance of local procedure to the 'Medication Handling in Community-Based Health Services/Residential Facilities in NSW – Guidelines' for the provision of after-hours service will ensure ongoing and prompt after-hours care for palliative care patients in the community that adheres to the legislative requirements and promotes patient safety.

Initiatives to improve medication access for palliative care patients in the community are recommended. These may include the promotion of the Palliative Care Section in the Schedule of Pharmaceutical Benefits to GPs. It is recommended that the barriers to obtaining authority prescriptions by GPs be addressed. An authority streamlining process has recently been introduced for other chronic medications, which could be adopted for the Palliative Care Section. Avenues to reduce the cost of medications should be explored to ensure fair and equitable access to medications for all palliative care patients.

Lastly, the completion of the project has not been the end of implementation of these innovations, but rather the stepping-stone for future improvement, providing the basis to

evaluate practices in medication access and management for palliative care patients and offering challenges to further impact the quality of patient care in the future.

Additional Information
Additional Information can be obtained from:

Department of Pharmacy
Westmead Hospital
PO Box 533
Wentworthville NSW 2145
Phone: (02) 9845 7015

SECTION IV

4.1: CONCLUSIONS

Round 1 of the Health Services Innovation Grants was successful in identifying and supporting 24 innovative projects in cancer services in NSW. The innovations aligned under four major themes; workforce development, service redesign, information technology and complementary service arrangements. The key outcomes for the projects in each of these themes were as follows:

Table 5-Outcomes from HSIG Round 1 Projects - Workforce Development

Project Name	Key Outcomes from the Projects
Early Intervention in Cancer Control	Development of transferrable tools (to other Divisions) including a local referral pathway and a patient assessment tool (for pre and post assessment) .
Aboriginal Cancer Care Coordinator	Strengthened community support with facilitation of workshops. Established links to research projects with a focus on Aboriginal people with cancer.
Expanding psycho-oncology support to rural areas	Training package was developed to meet the needs identified by analysis of the KEN assessment
Establishment of a clinical Radiation Therapist	Project demonstrated the potential for alternate career pathways for Radiation Therapists (RT's) and nurses
Physician Assistant and Treatment Coordinator in Haematology	Demonstration of improved quality of direct patient care by personally navigating the patients through complex treatment protocols.
Patient Navigator Breast Care Nurse	Enhanced communication to maintain standards of care through the appointment of Patient navigator Breast care Nurse
Neuro-Oncology Nurse Coordinator	**Project outcomes available by mid 2009. Project delayed.**
Implement an acute ambulatory nursing assessment unit	Oncology patients were assessed and treated for toxicity by staff who were best trained to assess toxicity and identify complications.

Table 6-Outcomes from HSIG Round 1 Projects - Service Redesign

Project Name	Key Outcomes from the Projects
Collaboration between Cooma & Monaro Oncology Services	Strengthened communication links and partnerships between nursing staff and Canberra specialists
Clinical networks for Cancer and Palliative Care Services	Change management strategies and a plan to communicate information relating to the implementation of the Clinical Stream were key components of this project
Radiation Therapist led treatment reviews	Demonstrated improvements as a result of the project by optimising quality of care of patients during radiation therapy by implementation of an innovative workflow model.
Establishment of a pilot program to evaluate Weight loss prognostic indicators	Confirmed that a multidisciplinary approach is vital in providing supportive care for cancer patients with the anorexia cachexia syndrome
End of Life Care project	Evidence of an increased number of patients supported by the end of life care clinical pathway

Table 7-Outcomes from HSIG Round 1 Projects - Information Technology

Project Name	Key Outcomes from the Projects
Redesigning Psycho-Social Care: Routine screening with QUICA_TOUCH	QUICA-TOUCH model facilitated clinical implementation of routine screening and streamlined the process for ordering referrals to support services
Implementation of GP Tele-colposcopists in rural centres	The Telecolposcopy Steering committee considered various models for conducting telecolposcopy. Trained GP's was considered to be the most suitable approach. The project sought the most suitable digital image capture and transfer program that could interface with HNE systems.
Development, implementation and coordination of a web based electronic shared diary for rural cancer patients	The project resulted in the development of the OncoSmart Dairy (OSD) which is a web-based portal embedded within RCCC RMIS.
Proposal for improving Palliative care Clinical information Management by enhancing PCS	Development of an interface capability which ensured the flow of palliative care information between the networked services.
Development and implementation of an integrated Electronic Learning Management System in a comprehensive cancer Hospital Network (Cancer Solutions Project)	Enhanced organisational culture with functional management systems which focussed on improved patient care.
Integrated electronic patient reported outcomes measurement tool	A touch screen questionnaire Patient Reported Outcomes Quality of Life tool (PROQOL) helped patients remember symptoms during their visits and improved staff satisfaction.
Enhancement of Palliative Care information management System	Evaluation of clinical information systems in use within SESAIHS. Collection and review of clinical forms and tools to standardise the process. Completion of Business Process Review (BPR) with stakeholders.

Table 8-Outcomes from HSIG Round 1 Projects - Complementary Service Arrangements

Project Name	Key Outcomes from the Projects
Integrated regional cancer transport service model	Streamlined & improved communication between local transport providers was achieved through direct contact between treatment clinics and cancer transport service regarding scheduling of patient appointments; and direct contact with cancer transport service providers regarding service availability.
Drug project	Review of protocols which enabled development of new evidence based protocols making a significant impact on expenditure
Pathology Ordering project	Data was refined to ensure accurate and appropriate pathology ordering across the network.
Improving medication access & management for Palliative Care patients	Identified timely and cost-efficient medication access issues experienced by the patients in the community for both PBS listed and non-PBS listed medications. Reviewed the 'cost-to-hospital' for continued supply of non-PBS listed and 'off-label' medications to community palliative care patients.

These project outcomes were presented at the Innovation and Ingenuity in Cancer Services Symposium on 21-22 August 2008 at the Australian Technology Park, Redfern. This event successfully showcased the achievements of the HSIG Round 1 funding as well as providing attendees with useful models and methodologies for the development and implementation of innovative ideas

At least 50 per cent of the HSIG Round 1 projects have already been either sustained at their home sites, and / or replicated in other cancer services, a percentage which should further increase with continuing dissemination of the HSIG outcomes through Cancer Institute NSW and NSW Health information channels.

A second round of funding was provided under the Health Services Innovation grant program for the 2008/09 financial year, supporting a further 12 projects. As for Round 1, this phase aimed to support “on the ground “ cancer services to trial and evaluate new service models. A Summary Report will be prepared once the final project reports are submitted.