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Recent Developments in Cancer Nursing

OVERVIEW

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Over the past few decades, cancer nursing services have developed in response to major scientific and technological advances in the treatment and support for people with cancer. Cancer nursing services today are widely regarded as an essential component of a safe, quality cancer care system, with nurses making a vital contribution to the prevention and reduction of physical and psychological morbidity associated with a cancer diagnosis and the process of cancer treatment.

Like most health professions, the way in which nursing services contribute to improving the cancer experience and optimising the outcomes of cancer care is undergoing significant change. This change is being driven by many factors. In particular, the imperative to reform cancer services to create a system that is more person-centred is requiring that all health professions, including nurses, re-consider their practices and systems of care, as well as the nature of the relationships between the various cancer care professionals and with their patients, family members and community members. With its strong foundation in traditions of holistic person-centred care, its pivotal location in the system and the sheer size of its workforce, nursing services are set to play a critical role in the more responsive cancer care models of the future. There are, however, a number of challenges to realising the potential that exists for improving the experiences of people diagnosed with cancer.

The series of papers in this edition of Cancer Forum has been compiled with three objectives in mind: to provide examples of how a skilled nursing workforce can contribute to achieving a safe, high quality cancer care system that is centred around the needs of the person; to discuss some of the challenges and risks associated with realising the potential for nursing services in achieving such goals; and to consider possible solutions for addressing these challenges.

How do Cancer Nursing Services Contribute?

A growing body of evidence suggests that gaps exist in physical, psychological, social and practical support provided for people with cancer¹. This is despite the publication of evidence-based guidelines that provide clear guidance on practices such as providing information, discussing prognosis, facilitating choices, preparing patients for threatening procedures and for transitions in care, done with other forms of practical, emotional and social support². All health professionals have a role in supportive cancer care as such core concerns experienced by the person with cancer are complex and require responses drawn from a range of disciplines. The

medical profession, for example, is uniquely placed to provide information about disease and treatment options in ways that reduce uncertainty and promote patient and family well-being. Allied health professionals are uniquely placed to respond to the many functional, practical, psychological and social needs that fall within their scope of practice.

Similarly, nurses' contribution to the supportive care dimensions of the cancer care service has features that can be both unique and complementary to that of other health professionals. In collaboration with other health professionals, nursing services are concerned with understanding and responding to diverse patient and family experiences of cancer, for example, distress, fear, fatigue, nausea, mucositis or neutropaenia. What is especially unique about the nursing contribution to patient support, however, is that nursing care draws from a broad knowledge base from clinical, social and psychological sciences. Moreover, compared to other health professionals, the nurse often has longer and more frequent interactions with the patient during their experience of the cancer care system, at least during much of the treatment phase.

In this edition of Cancer Forum, Piggott and colleagues emphasise how these more unique features of nursing practice enable nurses to be a focal point for assessment of support needs and a linkage with other parts of the health system. Similarly, Kristjanson's paper highlights the scope of family caregiver needs and several important supportive interventions for addressing these needs. This pivotal role that nurses play in supportive care has been highlighted in the recent report of the National Breast Cancer Centre's Multidisciplinary Care Demonstration Project, where the presence of a breast care nurse in a multidisciplinary team was seen to be beneficial to both women and clinicians³. The scope of nursing practice and their location in the system means that nurses are integral to identifying an individual's supportive care needs and engaging an appropriate team response to address these needs.

Furthermore, the Optimising Cancer Care' report emphasised that there are many places for patients to get lost in our current health system. A core feature of service models of the future will therefore be a greater emphasis on coordination of care to overcome such gaps. As such, this edition of Cancer Forum includes a timely review paper highlighting some of the issues associated with designing and implementing Cancer Care Coordinators roles. A key message to be taken from this review is that achieving continuity of care from the patient's perspective will most likely require multifaceted system responses.

Gardner's paper also highlights the potential contribution that may be afforded by development of advanced practice models of nursing. Using the nurse practitioner model as her example, Gardner argues that nurses working with a scope of practice that incorporates extended practice activities that can include both medical and nursing activities can be very effective when the nurse practitioner's service fills a gap in access, efficiency or quality of service for the patient population in a specific field

of health care. Such advanced practice roles, clearly situated within a team approach to health service delivery, present some important opportunities for cancer care. Recent UK studies⁴ of nurse-led clinics in cancer care demonstrate that such models achieve good patient outcomes.

What are the Challenges for Cancer Nursing?

While the papers in this edition of Cancer Forum highlight some important ways in which cancer nursing is responding to the pressure for system reform, Barrett's paper reminds us of some of the challenges that exist in achieving significant gains. Barrett's article presents quite sobering data that illustrate the workforce challenges nursing faces. Indeed, these workforce challenges are not unique to nursing. The National Health Workforce Strategic Framework⁵ published recently by the Australian Health Minister's Council notes that in Australia today, the health workforce grows at an annual rate of around 170,000 per year. However, in the year 2020, this number is predicted to be just 12,500 per year. The health system overall is facing increasing and unprecedented pressure as a result of such workforce challenges. Barrett's article is a timely reminder of the scope of the problem for cancer nursing in Australia and more importantly highlights the many factors contributing to the problem so that potential solutions can be identified.

What are some Potential Solutions?

The National Health Workforce Strategic Framework⁵ provides a vision for the health workforce over the next decade, and sets out a blueprint for action to achieve a sustainable health workforce. Two major government reports published in the last two years The Patient Profession⁶ and National Review of Nursing Education in Australia⁷ clearly place the spotlight on nursing as a key component of the health system that requires attention if Australia is to maintain its high quality health service. The National Nursing and Education Taskforce has subsequently been established to implement recommendations from the National Review of Nursing Educations and a number of projects are already underway looking at workforce planning, undergraduate and postgraduate education and nursing research and research training. At the same time, the establishment of the Cancer Nurses Society of Australia in 1998 has seen the professional organisation of cancer nurses in Australia develop rapidly, providing increased opportunities for developing and disseminating resources for cancer nursing

Developments in Supportive Care: Implications for Nursing

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practice, facilitating research and education in cancer nursing, promoting cancer nurses' contribution to national cancer control activities and for professional networking. The success of these types of policy initiatives and professional support programs will be critical for continued improvements to be made to cancer care services in this country.

Conclusion

The Commonwealth Government national review of nursing education report concludes that Australian nurses should be proud of the contribution they have made, often with limited acknowledgement other than the community's trust⁷. The report notes that many of the current problems experienced by nurses are brought about by the fragmentation of different policy and funding responsibilities. The report also concludes that considering the size of the nursing profession, it has received relatively little attention, being largely invisible in the policy debate and research priority agendas. We have a growing body of evidence about what patients need and want from our cancer system and about the models of care that might best address these needs. Such evidence continues to suggest that nurses will be integral to achieving a more patient-centred service. Realising this potential for service improvement through the contribution of nursing will, however, present some unprecedented challenges.

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Introduction

A diagnosis of cancer has a profound impact on individuals and family members and is usually accompanied by a range of psychological reactions ranging from shock and disbelief to occasionally more serious psychiatric presentations. Most cancer patients describe anxiety and fear associated with an uncomfortable, yet inevitable sense of their own mortality, irrespective of prognosis. For example Kissane et al¹ found in their research on breast cancer patients that 45% (135/303) had a psychiatric disorder and 42% had depression or anxiety, or both, and referrals were not made for review of these needs. Cancer has far reaching effects on individuals and families including sickness, long-term disability or functional loss, financial impacts, alterations in family relationships and existential and psychological challenges faced by individuals and families. The burden of cancer on the individual and the

community is therefore high and the need for supportive care as well as biological management of disease is well documented.

Fitch² defines supportive care in the context of cancer care as including the provision of physical, psychological, social, information and spiritual needs during the diagnostic, treatment and follow-up phases. Supportive care embraces the full range of issues that emerge for an individual and family as the impact of cancer and treatments are felt and they try to manage the situation². Numerous research studies have demonstrated the benefits of supportive care interventions³.

Supportive care in the oncology setting is essential to improving patient outcomes. Research suggest benefits include improvements in quality of life⁴. There is also a growing consumer demand regarding expectations for assistance and support throughout the cancer experience². The term supportive care is frequently used to describe various support programs, however few organisations have shown how to implement supportive care in routine clinical practice⁵.

Aim

This paper describes an innovative approach to the provision of supportive care services and programs in a tertiary cancer centre and its implications for nurses. The aim of the supportive care project was to deliver best-practice, integrated supportive care in a systematic, timely and routine way across the care continuum of cancer patients, by ensuring that all patients and their families:

- n Were assessed in relation to their supportive care needs;
- n Understood supportive care to be a usual and expected aspect of receiving cancer services;
- n Had access to a range of multidisciplinary support services, groups and therapies designed to assist them to live with cancer and its treatment.

Method

An organisational change process was required to meet the aim of the supportive care project, which involved a number of interrelated changes occurring concurrently. The changes

involved:

- (a) A change in the organisational approach that led to an increased awareness and understanding of the value of supportive care programs to the overall well-being of patients.
- (b) A review of the management and provision of supportive care programs to ensure they were evidence-based and targeted effectively to efficiently meet the needs of the patients.
- (c) A review of the core functions of the multidisciplinary team to promote hospital-wide understanding of disciplines and the need for effective use of appropriately skilled staff.
- (d) The development and implementation of a routine systematic screening and referral process for the identification and addressing of supportive care needs of patients and carers.

Organisational changes are still in progress, as effective change requires ongoing review. The change cycle being used is assess-plan-do-review-reassess cycle, which is a mnemonic for testing changes in real work settings.

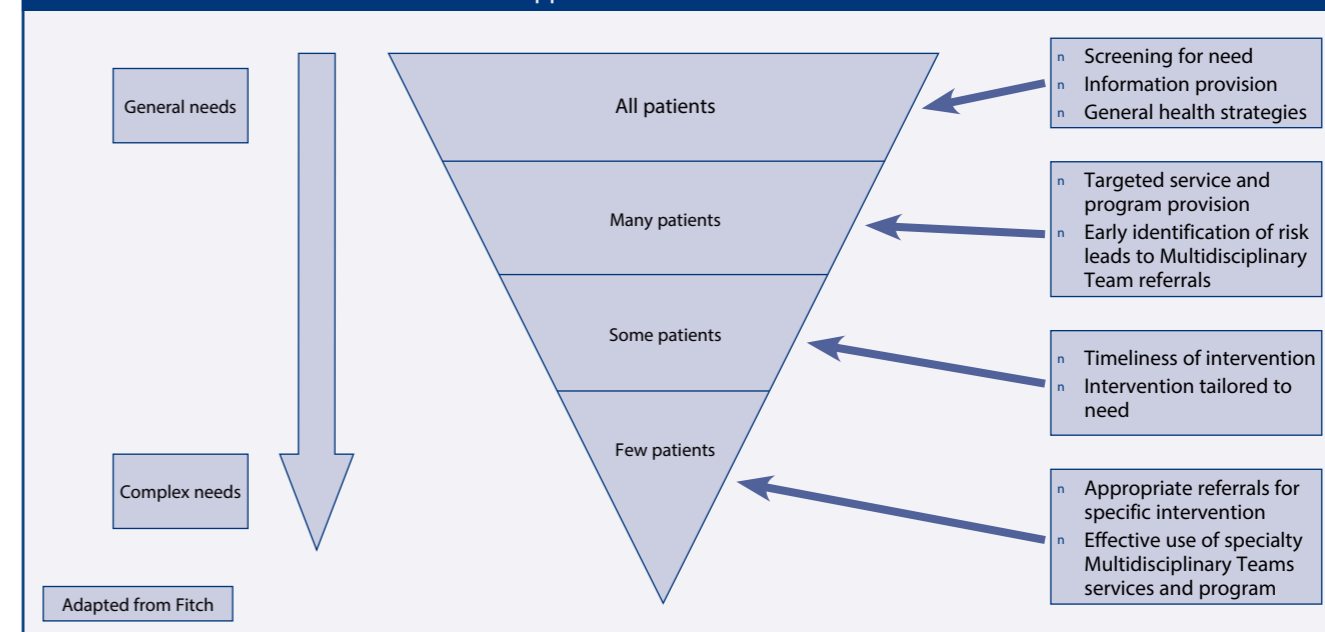
Discussion

A Change in the Organisational Approach

Organisational recognition of the integral value of supportive care in cancer care services provision is essential. Recognition was provided by the formation of a committee structure to oversee supportive care service provision. Executive sponsorship and multidisciplinary representation, including nurses, in the Supportive Care Steering Committee were required to facilitate staff "buy-in" of the organisational change process. An organisational statement was developed and standards of care were adopted. These were accepted by the hospital executive committee and ensured organisation-wide recognition of supportive care services as a core function of the hospital's cancer services.

A supportive care model (fig 1) was adopted to provide a framework for the targeting of programs to meet patient needs. The model proposes that supportive care programs should take

Figure 1:
Peter MacCallum Cancer Centre Model of Supportive Care



into account differing levels of need across the population, distinguishing the needs of all patients from the needs of a few patients across the entire spectrum of supportive care issues. For example, from the model it can be assumed that all partners of women with breast cancer would require some level of written information but significantly fewer would need or wish to attend a support program. In reviewing the provision of supportive care services and programs the model provided a framework to more efficiently target services at patient/family needs.

A Review of the Supportive Care Program Organisation and Provision

To facilitate efficient provision of evidence-based supportive care interventions and programs in a structured and integrated way throughout the hospital, the Supportive Care Steering Committee identified a series of sub-committees that would oversee all supportive care services and programs. The chairs of each program sub-committee were asked to invite relevant multidisciplinary representatives throughout the hospital to become members. Nurses were chairing or members of the sub-committees. Evidence-based programs were then prioritised according to the needs of the patient population using the conceptual model of supportive care (fig 1) to guide service provision. The organisational recognition for supportive care services and the need for a structure to provide evidence-based targeted services and programs are essential steps in providing improved integrated supportive care services. Nurses need to have a role in the organisational structure by participating in these committees at their formation and on an ongoing basis.

A Review of the Core Functions of the Multidisciplinary Team

Efficient use of the skills of the multidisciplinary team requires understanding by clinicians of when to refer and to which services, as well as the availability of suitably qualified staff to meet the needs of the patients and carers. A study of the breast care nurse specialists in Victoria in 2001 found that there were low rates of referral to other health professionals with specific skills, such as counsellors, psychologists and psychiatrists⁵. If the clinician is not aware of the role of other disciplines and therefore does not make referrals, access is more difficult for the patient and family. Hopwood⁶ suggests awareness of the role of the other disciplines can facilitate collaboration and appropriate referrals.

The success of the organisational change to supportive care services was reliant on a high level of interdisciplinary cooperation. To improve the access of supportive care services and programs to patients and carers a high level of interdisciplinary cooperation and recognition of specific skill sets available within the team were required. Breaking down the barriers and eliminating the "turf wars" that are sometimes found in organisations are the most important tasks toward adopting a multidisciplinary approach⁷. A multidisciplinary team seeks to share responsibility for patients by working collaboratively. "Early in the life of the team, this usually leads to turf battles, as each team member realises that his or her skills overlap, often substantially, with the skills of other team members"⁸. A role mapping exercise and the supportive care model (fig 1) were used to clarify core functions of each discipline and identified the need to match specific skill sets to patient needs. Increased understanding of where skills may overlap and clarification of when to refer to others within the team has improved the flow of patients through the system. Collaboration between the multidisciplinary team members was enhanced effective and efficient use of multidisciplinary skills within the team resulting in quality patient outcomes.

The Development and Implementation of a Routine Systematic Screening and Referral Process

An important step in the provision of supportive care services is the identification of the patient and family's needs. A needs assessment helps identify patient perceptions of needs for optimal health and quality of life outcomes⁹. The identification of gaps through a needs assessment "provides an indication of the relative magnitude of need for help in different domains, allowing for better targeting of support services"¹⁰.

A system for routine identification of needs and a process for planning intervention was introduced. The review of literature suggested a self-completed tool has advantages over a clinician-completed tool in that they are inexpensive to produce, require minimal time and energy input from staff and yield quantifiable responses¹¹. The Supportive Needs Screening Tool, a patient self-completed questionnaire, was developed with input from the multidisciplinary team including nurses and medical staff.

The screening tool is a questionnaire completed by the patient, which is then followed up by a nurse who conducts a focused interview and plans appropriate interventions. Five domains of care are considered in the screening tool: physical; information; social; psychological; and spiritual needs. Between Aug 2003 and July 2004, 236 patients new to the hospital in the breast, lung and gastrointestinal streams completed the Supportive Needs Screening Tool. From these screenings a total of 631 referrals, an average of 2.7 referrals per patient, were made. For example, the physical need, fatigue was identified on the screening tool by 44% (105/236 patients). Following their interview with the nurse 15% required and agreed to referrals to occupational therapists for fatigue interventions, 5% were referred to physiotherapy and 3% agreed to ongoing monitoring or education by nurses.

Psychological needs were also identified with the aid of the screening tool. Forty per cent patients indicated they were unhappy or depressed over the last two weeks and 43% indicated that there was something causing them distress. Following the interview with the nurse, 13% agreed to see a social worker for support and monitoring of their anxiety or depression, 6% agreed to monitoring of their anxiety by the nurse, 5% agreed to referral to the occupational therapist for relaxation techniques to reduce stress, 3% agreed to a psychology referral, 1% agreed to referral to a psychiatrist for management of depression and 1% patients agreed to see a social worker to help with their coping and adjustment to illness. This sample of results indicates that the screening tool is identifying needs that require further assessment and intervention by the multidisciplinary team. The role of the nurse provides the link for the patient, between the identified need and the required supportive care intervention. Without the focused interview with the nurse, the screening tool would provide information to a clinician, but the required intervention might not be instigated. Patients are more likely to accept an intervention if they have an understanding of what is involved and it is this critical information that the nurse can provide about the various supportive services available.

Conclusion

Research indicates that the diagnosis of cancer has an impact on all aspects of a person's life, the physical, psychological, social and spiritual domains. To provide best practice oncology care is to include evidence-based supportive care services as part of the core service provision.

This paper describes an organisational change to facilitate the integration of supportive care services and programs into

everyday clinical practice in a tertiary oncology setting. Nurses were key players in the changes at both the organisational level, as well as in leading systematic change to help routinely identify patient need and facilitate a process that enhances access by the patient to supportive care services and programs. Using a systematic approach to care provision, nurses can intervene more effectively and efficiently by targeting services to differing levels of need in a timely manner across the care continuum.

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CARING FOR FAMILIES OF PEOPLE WITH CANCER: EVIDENCE AND INTERVENTIONS

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Each year approximately 495,000 Australians are diagnosed with cancer¹. If each of those individuals has two or three family members, the number of Australians facing the challenges of cancer care is notable. Given the fact that cancer is, for the most part a disease of the older person, it is anticipated that the number of people with cancer will continue to increase as the proportion of the population in the older aged groups expands. The needs of families who support these people are therefore expected to burgeon.

When an individual is diagnosed with cancer, the impact reverberates through the family, touching all members. Family members confront uncertainties about the meaning of the diagnosis, the prognosis of the patient and the patient's needs for care and support. Family members are often required to manage physical care changes and arrangements and practical difficulties with daily living, while they handle their own emotional distress about the patient's care and concerns about the future^{2,4}.

Families bring with them diverse histories and different approaches to coping. Some may experience the cancer illness as a prompt for greater closeness in relationships, a time for reflection about goals and values and enhanced family interactions. Others may bend under the burden of the illness and communication difficulties and dysfunctional family patterns may emerge. Memories about the cancer illness linger during the bereavement period, sometimes complicating their grief reactions and leaving them with feelings of regret⁴. A family's perceptions of the care experience may also affect their health and family functioning⁵. This article provides a synthesis of empirical work that offers direction about how to provide support to families of people with cancer.

Defining the Family

A discussion about caring for families requires clarification about what is meant by the term, "family". Care of the family

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of a person with cancer is best served by an open and inclusive definition. Families are comprised of different individuals who may or may not be related through blood or legal ties. A family may be one couple, or may be made up of a large network of relatives, close friends and neighbours. Individuals within families will have various needs, commitments, personal histories and personal resources.

Failure to recognise the distinct characteristics or membership of families may exclude some family members who may be in need of support⁴. This error may be more common when families do not fit a traditional definition of family. Individuals who are in homosexual relationships, blended families, families who live geographically apart and those without apparent formal ties may be neglected in the family care approach if their relationship to the patient is not understood and respected⁶⁻⁸. Therefore, supportive care to families begins with a careful consideration of who constitutes the family.

A useful definition of the term, family, is "those closest to the patient in knowledge, care and affection. This includes the biological family, the family of acquisition (related by marriage/contract) and the family of choice and friends (not related biologically, by marriage/contract)"⁹.

From a clinical perspective, the most functional approach to defining and knowing the family who is affected by an illness such as cancer, is to allow the patient and his/her family members to self-define the family, so that the unique structure and dynamics of the family can be acknowledged.

Impact on the Health of Family Members

Families of cancer patients experience a number of health changes both during the patient's illness and in the bereavement period^{10,11}. Family members may experience exacerbations of chronic illnesses (eg. hypertension). There is also evidence to indicate that children may experience more illnesses and accidents during a terminal illness of a family member¹². Kristjanson and colleagues¹⁰ revealed that family members experienced deterioration in health during the patient's illness and in the bereavement period. The health status of these individuals was much poorer when compared to a 'normal healthy' population. Health deterioration was most evident in the form of mental health changes (eg.

difficulty concentrating, depressed mood, anxiety states). The extent to which these changes were indicators or precursors of more serious clinical depression or anxiety disorders was not determined. However, findings suggested that referral of these family members for further assessment was warranted. Family members who experienced deterioration in health in the palliative care phase also reported similar deterioration in the bereavement period three months following the death of the patient. Other researchers have also described these types of mental health changes^{13,14}. Health changes most frequently present in the form of psychological health difficulties (eg. depression, sleep disorders) and cognitive changes (eg. difficulty concentrating)^{15,16}. Therefore, attention must be paid to the health needs of family members.

Impact on Family Functioning

The health of the family as a unit may also be affected by the cancer illness experience. Changes in family structure, roles, relationships, communication and conflict may be evident. Central to the health of the family as a unit is the ability of family members to communicate with each other, the patient and health professionals. It has been documented that poor communication causes more suffering to cancer patients and their families than any other problems, with the exception of unrelieved pain¹⁷.

Communication is essential to healthy family functioning and families who have limited communication skills are less able to manage stressful situations¹⁸. The family's previous patterns of communication determine to a large extent the degree of communication that occurs within the family at the time of the cancer illness. Some family members may be open and clear in their exchanges about the illness, treatment decisions, fears and doubts. Others may be reserved in their expressions of feelings, holding back worries, regrets, and uncertainties.

Relationship strains may occur as both the patient and family members endeavour to protect each other from worries and concerns about the illness. Patients may serve as a type of gatekeeper of information, as it is usually the patient who has primary contact with the health care team. This is particularly common when parents have cancer and are cautious about sharing information about their illness with their children^{19,20}. Family members often rely on the patient to convey important information about the illness to help them know how to cope with the treatment or subsequent phases of the disease and may feel uncertain or frustrated if they lack information. These protective approaches to communication can contribute to conflict, anxiety and poor communication within the family^{1,8}.

Care Interventions to Support the Family

Family members provide support to the patient and have needs for support from health professionals. Family members whose own needs for support and assistance are not met are less able to maintain their supportive roles and are more likely to experience mental and physical health problems themselves^{21,22}.

In a review of cancer care literature specific to family interventions, Pasacreta and McCorkle²³ reported limited research on evidence based interventions aimed at family caregivers. They point out that identifying caregivers who are at risk for problems and tailoring interventions to their special needs seems to be an important direction for future research. This more recent review confirms that most of the research on families' experiences of cancer care has been descriptive. However, a number of recently reported care interventions directed toward the family have potential to be therapeutic. The

results of these studies can be classified into four categories: information giving, practical assistance with physical care requirements, emotional support and family communication, and assistance to manage the financial burdens associated with treatment and care.

Information Giving

The literature consistently documents difficulties that family members of cancer patients report regarding access to information²⁴⁻²⁶. Family members describe difficulties obtaining specific, straightforward information in a way that they can understand. Use of medical jargon is frequently mentioned as a barrier to adequate communication about the plan of care²⁷. Language barriers may also be a problem if patients and family members do not share the same language and cultural background as the health care professional²⁸. As well, differences in educational levels between health professionals and patients/families can create problems with exchange of content²⁹.

Health professionals may overload family members with large amounts of information or may provide information in small amounts in an effort to not overwhelm them with too much detail³⁰. This can create difficulties as family members vary in the extent to which they may be able to assimilate and integrate the shared information³¹.

Family members report a hesitancy to bother busy health professionals with questions about care because they believe that the health care providers are primarily responsible to the patient and that their needs and concerns are tangential⁴. The perceived unimportance of communication with the family is partly represented by the lack of time and space created or allotted for this communication exchange. The apparent lack of space for discussion about care plans and goals conveys a message that this interchange is not too important. It is not unusual for patients and families to report communication about treatment and care in the hallways of busy hospitals, over the phone or in small clinic rooms with little privacy or time for discussion³². Health professionals may also limit their information sharing with patients and families because of the pace of their busy work schedules, an assumption that the patient/family has understood the information conveyed and a discomfort in knowing how to communicate difficult/bad news^{33,34}.

Attention to these factors that limit effective communication exchanges between family members and health care providers may assist families to fill this information vacuum and feel more confident about coping with the patient's illness. Families who are well informed are better able to function in a supportive role and experience less illness-related anxiety⁷.

One of the most effective ways of assisting families is to empower them to provide care by giving them liberal amounts of well timed, simple information that helps them cope with the care challenges they face³⁵. Families will require information about how to provide comfort care, how to communicate within the family, how to pace their own energies and when to call for assistance. The desire for open and honest information from health care professionals is consistently reported^{28,36,37}.

Home care nurses are reported to be a valuable source of information^{38,39} and families value 24-hour access to information³⁷. In rural communities, the role of the nurse has also been found to be particularly important to families, as this health professional is often the most accessible and specific in providing information regarding how to provide care and support⁴⁰. Use of a family conference has also been reported by family members to be especially helpful in allowing them access to information and an opportunity to clarify questions³⁷.

Families need to be made aware of the typical demands associated with supporting a relative who may progress to a terminal phase of illness so they can prepare themselves⁴¹⁻⁴⁴. Families should be informed that they have a choice with regard to the amount and type of care they offer their relative⁴⁵. Family members should be advised not only about the resources and services available, but also about how to access them^{45,46}.

Provision of practical information that will help families anticipate the next steps of the patient's illness is especially helpful³⁵. This allows family members to "stay in front" of symptoms, know what to expect and not be caught in a moment of crisis, unprepared for deterioration in the patient's condition. Several authors have promoted the importance of advising family members about the common signs that death may be approaching^{24,47}. Families value this information because it helps them to prepare psychologically for the patient's death and have time to call family members who may wish to be present³⁵.

A recent study by Kirk, Kirk and Kristjanson⁴⁸ involved interviews with 38 palliative cancer patients and 36 family members to ascertain their experiences of the information disclosure process and their satisfaction with information sharing during the duration of the cancer illness. The results indicated that the process of information sharing was as important as the content. The timing, management and delivery of information by health care providers need to be carefully considered. The most important content areas were information about prognosis and hope. All patients in the study, regardless of ethnic/cultural background, wanted information about their illness and almost all were willing to share this fully with their families. All family members thought it important that the patient be aware of the diagnosis. As the illness progressed both patients and family members reported that information needs changed and there was greater divergence between patient and family needs. At the palliative phase of an illness many patients reported not wanting as much detail as they had asked for initially and some requested that their family member speak with health care professionals on their own.

Findings from this study provide a useful framework for understanding the process of communication between health professionals and patients and families in the context of a cancer illness. The way in which messages are conveyed is extremely important and is mediated by the six attributes that patients and families identified as critical to good communication: playing it straight; staying the course; giving time; showing you care; making it clear; and pacing information⁴⁸. These attributes point to the importance of the quality of the relationship between health professionals and patients and families and the need for sensitive and individualised information exchange.

Practical Assistance with Physical Care Requirements

The physical care demands of the patient can create specific needs for the family and the practical needs of families may be underestimated^{49,50}. For example, Buehler⁵¹ undertook a longitudinal study of the caregiving role of families in rural communities. This work revealed a lack of available resources for rural families caring for advanced cancer patients. This lack of support may occur, in part, because family caregivers are viewed as resources rather than as recipients of care themselves⁹.

In instances when the family caregiver is elderly and has health problems of his/her own, the demands of caregiving can be extremely taxing^{52,53}. Therefore, involvement of family members as carers must take into account the finite resources of these individuals, which they may be stretching beyond their usual limits because of a sense of duty to care for the patient. The additive effect of these burdens and strains may be notable⁹.

The outcome of this type of over-functioning may be caregiver fatigue⁵⁴. However, signs of caregiver fatigue may be missed or underestimated by health care providers, who observe family members briefly and intermittently⁴.

The assumptions of caregiving roles is usually gradual and the family member's feelings of responsibility for care of the ill person may prevent him/her from seeing alternative ways of receiving help with care. Families may require help to problem solve the demands created by the illness, which often begin with an acknowledgment that the health of family members must also be maintained. Instances of deterioration of the family caregiver's health while caring for an ill member are not uncommon⁷.

Caregiver fatigue may also occur because caregivers are unaware of the availability of resources that could be called upon to decrease the strain on the family. Others may experience fatigue because there is an underlying feeling of duty or guilt that is satisfied through an endless devotion to caring⁴.

Caregiver fatigue is not limited to small isolated families. Family caregivers that are members of large families can experience this fatigue as well because one person may be singled out as the primary caregiver. As well, an uncertain time trajectory for the illness may make the demands more difficult, as family members are unsure of how long they may be required to undertake the additional physical tasks, limiting their abilities to pace and metre their energies⁷.

If the illness progresses to a palliative stage, most patients identify home as their preferred place of death^{55,56}. For many families, practical assistance is essential for them to maintain home-based care. Although the level and type of practical assistance may vary according to need and available resources, there are several common services that should be offered to families³⁶. Oldham and Kristjanson³⁷ have developed and tested a pain education program for families of cancer patients. This simple intervention has demonstrated promising results in improving family members' attitudes toward pain management, knowledge of pain assessment and management and capacity to improve the comfort of their ill relative. This type of practical education may provide a useful model for other types of educational assistance that families of cancer patients require and warrants further research.

Respite services can be helpful to families in sustaining their caregiving energies. Respite might take the form of external (hospital/hospice based) services whereby the patient may be admitted if they have intractable symptoms, they are imminently dying and home is not the desired place of death and/or to allow the family to rest³⁵. In other instances, provision of home respite may allow families time to be relieved of caregiving duties for a short period of time.

Bramwell et al⁵⁸ conducted a survey to assess the caregivers' appraisal of the need for overnight respite. They found that 73% of caregivers received less than four hours of sleep and as a result were more vulnerable to exhaustion. Further, 70% of all caregivers in the sample indicated that they would use an overnight respite service. These findings point to a need for health care providers to monitor the primary family caregiver for hours of sleep, disturbances in sleep patterns and fatigue and then plan with the caregiver for respite. The researchers recommended further investigation of the relationship between carer exhaustion and early hospital admission and whether or not overnight respite would prevent hospital admission.

A more recent study to evaluate a community-based night respite service for terminally ill cancer patients reported

encouraging findings⁵⁹. An assessment tool to determine those patients and families most likely in need of night respite support was developed and tested. Results indicated that the assessment tool was reliable and feasible for use in practice. Care aides were then specifically trained to provide night respite support and 53 patients received this support over an 11-month time period. Results from this study demonstrated the benefits to patients and carers of a community palliative night respite service. Families who indicated moderate to severe levels of carer fatigue were identified as urgent candidates for night respite support⁵⁹.

Almost 70% of patients who died were able to die at home, compared with baseline data that showed that only 50% of patients die at home without this service. Family carers reported appreciation for the service and acknowledged that this assistance helped them to manage the patient at home. The costs associated with home deaths and the night respite service were much less than was the case for patients admitted to an in-patient facility for end-stage care⁵⁹.

The practical, physical challenges associated with providing care and support have notable effects on the physical, mental and social wellbeing of family caregivers^{60,61}. Without adequate family interventions and targeted support, the burden placed on family caregivers may limit their abilities to provide good quality care to the patient²³.

Facilitating Emotional Support and Family Communication

Families' abilities to provide support to the patient and manage home care depend to a large extent on the amount and quality of social and health professional support they themselves receive⁵⁰. Therefore, attention to the emotional needs of the family as a whole and as individual family members is essential to ensure that their caring efforts are sustainable. Emotional needs of family members include a need for support to help them cope with issues of loss, uncertainty about the patient's illness, the possible death of their relative, communication issues within the family and their own psychological distress⁶².

Provision of emotional support to families involves identifying ways they can manage the illness and the uncertainties they may face. Research to delineate the coping strategies found most helpful to families revealed that the strategy labelled, "taking one day at a time", was used to manage uncertainty⁶³. Acceptance, rationalisation and social support were also identified as useful coping strategies that family members used to cope with changes in the patient's condition⁶³. Offering families some of these approaches can be helpful in reminding them of how to cope, how to reach out for assistance and how to compartmentalise the stresses they face into more manageable pieces³⁵.

Families should be advised of the importance of accepting their own emotional needs as legitimate and valid. Furthermore, family members may not want to seek or access support because they believe that health care workers operate in a system where resources are limited and a health professional's time is constrained^{64,65}. Therefore, family members need to be advised that the health team considers the family's needs to be important. This approach may encourage family members to mention their emotional issues and seek support³⁵.

Communication is essential to healthy family functioning and families who have limited communication skills are less able to manage stressful situations¹⁸. The family's previous patterns of communication determine to a large extent the degree of communication that occurs within the family at the time of the cancer illness. Some family members may be open and clear in their exchanges about the illness, treatment decisions, fears and

doubts. Others may be reserved in their expressions of feelings, holding back worries, regrets and uncertainties.

Helping families to communicate among themselves is a particular challenge and one that may require specific focus. Families who communicated effectively prior to the illness have been found to cope more effectively during the illness than those with histories of less functional communication⁶⁶. Questions to explore early with the family about how they communicate may allow the health professional to be alert to difficulties and help the family to talk through how they are going to share information, as well as discuss concerns in a way that may avoid conflict and communication mistakes.

Family members who experience a traumatic illness or death may be at risk of a more complicated bereavement reaction^{67,68}. Therefore, caring for the family during the palliative phase of a cancer illness is a preventive health strategy that may place them in a better position to cope with this crisis and integrate the loss in a way that maintains their own health⁶⁹. Family members who have experienced a difficult death or witnessed unrelieved suffering of the patient may be in particular need of help to cope with the memories and regret associated with these experiences⁴.

Assistance with the Financial Burdens of Care

Given and colleagues⁷⁰ have documented the financial concerns that family members experience when a member has cancer. Children in the family, spouses and other dependent members may share these worries. Costs of care may be an issue. For example, family members may worry about the ongoing costs of medications and treatment. Indirect costs associated with providing care, or taking time from work to attend appointments, or providing assistance to the patient may also be a source of concern⁷⁰. Family members may be reluctant to disclose these concerns, or feel guilty about having worries about financial matters when the patient is ill and may be suffering. Family members who are preoccupied with financial concerns may be distracted and less attentive to the patient's care needs⁷¹.

The role of family carer may also impose additional financial burdens. Schofield and colleagues⁷² have reported that family caregiving commitments mean that some family caregivers are unable to work or have to work fewer hours, or work in a lower paid job with negative financial consequences. Children in the family, spouses and other dependent members may share these worries¹⁹.

With a shift in care towards home-based community care, the home is a more frequent care setting for the person with cancer. Addington-Hall and colleagues⁷³ studied 118 family carers who were providing care in the terminal phases of the patient's cancer illness. They found that half of the caregivers they studied reported having to take time off work to care for the patient at home. Another study revealed that the cost of family labour and family out-of-pocket expenditures for a three-month period for women with breast cancer was significantly less for families in which the patient was still alive, compared with families of patients who had died⁷⁰. Total cost for families with recently deceased patients was more than twice that of families where the patient survived. These results suggest that the financial demands on families may be significant and may be a serious, additional source of family stress.

A simple question about how families might be coping with the financial changes or pressures as a consequence of the illness may elicit these fears and allow health professionals to make appropriate referrals or help family members identify resources to help them to manage. The opportunity to discuss

these concerns may also ease the strain for family members who may be reluctant to discuss these matters with the patient or others⁴.

Conclusion

Notwithstanding the demands of caregiving, family caregivers report benefits and rewards from the caring role⁷⁴. There is also evidence that family caregivers may feel a strong sense of duty to provide good quality care to a loved one. A recent survey revealed that the most common reasons for being a family caregiver were a feeling of responsibility, believing that the family could provide better care than would otherwise be available, a sense of emotional obligation and an absence of other family or friends⁷⁵. Helping family members to assume the caregiving role in a way that is sustainable and fulfilling should be the aim³⁵.

To date, the role of health professionals in supporting families of people facing a cancer illness has been underdeveloped and poorly researched. The psychological distress of families during the patient's illness and in the bereavement period is clearly reported. However, the extent to which these families have access to supportive health services, are receptive to receiving these services during the patient's illness and might benefit from this input warrants further empirical investigation. Of particular concern are family members who may be particularly vulnerable to deteriorations in their own health or families with histories of poor functioning, who may cope poorly under the additional strains imposed by the cancer illness. If we do not care for these families during the illness, they may well become our patients later.

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achieve the improvements being sought for the Australian cancer care system.

What is Care Coordination?

A variety of terms are used in the health care literature to reflect efforts to improve the patient journey, including continuum of care, coordination of care, discharge planning, case management, integration of services and seamless care⁵. In the context of managing a chronic disease such as cancer, continuity of care has been defined as the delivery of services by different providers in a coherent, logical and timely fashion, consistent with the patient's medical needs and personal context⁶. A service system that facilitates continuity of care is characterised as one where all services needed (comprehensiveness) are delivered over time (longitudinally) by service providers who establish secure and dependable relationships (relationships) and when appropriate care is available (accessibility) and flexible enough (responsiveness) to meet patient needs⁶.

These definitions emphasise that care coordination is an integral component of continuity of care. Care coordination ensures that someone manages the care process, including the development and communication of the care plan and ensures that all of the care needed is arranged and delivered⁶. Various models for care coordination have been described to reflect the needs of the population being served. Case management is one such example that evolved from efforts to decrease fragmentation of services for patients whose care was complicated, being seen as a cost-effective way to provide quality care to high-risk patient groups and improve selected patient outcomes⁷. While no agreed definition is evident in the literature, nurse case management roles are generally seen to encompass a very broad range of responsibilities which may include assessment and screening of needs and goals, education, bridging gaps, promoting self efficacy, enhancing self-care capabilities, coordinating care across settings, brokering and developing networks of services, advocating for patients and providing hands on care^{8,9}. The development of standardised care protocols, such as care maps, pathways and guidelines have also been identified as an important mechanism for achieving coordinated and continuous care⁶.

While coordination of care, case management and care pathways are processes designed to promote continuity, on their own, they do not necessarily ensure that a patient experiences a system that is connected and coherent⁵. Studies suggest that patients and their families experience continuity when they perceive that providers know what has happened before, that different providers agree on a management plan, and that a provider who knows them will care for them in the future⁶. Such studies emphasise that what is likely to be highly valued by patients is not simply a managed care process, but rather, a relationship with a clinician that is characterised by understanding, trust and mutual respect¹⁰.

Care coordination may therefore be most effective when it achieves continuity across several interrelated dimensions of the patient's cancer experience, including:

- Informational continuity, or the efficient transfer of information about the patient's disease as well as their preferences, values and context in order to bridge separate care events and ensure a responsive service⁵;
- Management continuity, or the delivery of services in a complementary and timely manner that are consistent and flexible⁵;
- Relational/interpersonal continuity, or the linkage that is made between past to current and future experiences^{5,11};

and

- Team continuity, or the extent to which care is delivered within a shared management plan^{5,11}.

These dimensions emphasise that the experience of a connected and coherent service is intricately linked to organisational, interpersonal and relational aspects of the health system.

What is the Evidence for Care Coordination?

Two major reviews of evidence regarding coordination of cancer care were published in 2003. The National Institute of Clinical Excellence in the UK undertook a systematic review of literature published between 1966 and March 2003 to determine the current state of evidence on interventions to improve service configurations for supportive and palliative care for those affected by cancer¹². In the area of coordination of care, 13 individual studies were identified which had evaluated interventions including appointment of nurse coordinators, multidisciplinary team interventions, introduction of standardised guidelines and protocols and implementation of methods for improving communication, such as patient held records. The reviewers concluded that the evidence shows good coordination enables services to complement each other and provide better quality supportive care services. Of particular note, however, is that 11 of the 13 studies identified in this review involved coordination of services for patients receiving palliative care.

The Clinical Practice Guidelines for Psychosocial Care for Adults with Cancer¹ published in Australia similarly discusses evidence around four main types of interventions designed to promote continuity of care: identification of a care coordinator; the role of specialist oncology nurses; multidisciplinary care; and patient held records. The review concluded that Level 2 evidence exists to support the following interventions:

- n Specialist breast nurses improve understanding and provide continuity of care throughout the treatment process for women with breast cancer; and
- n Patient held records improve continuity of care.

While care coordination is not the sole focus of the Specialist Breast Nurses' practice, the establishment of such positions in Australia has represented an important development in efforts to improve coordination and support for women with breast cancer. The National Breast Cancer Centre (NBCC) Specialist Breast Nurse Project identified that the presence of a specialist breast nurse contributed to a range of improvements including: improved team functioning and appropriate utilisation of each professional's skills and resources; care being delivered more smoothly, including referrals; other health professionals having improved information about patients and breast cancer issues; and women being prepared for each treatment stage¹³. The recent report on the NBCC Multidisciplinary Care Demonstration projects reinforced this important role that specialist oncology nurses play as a coordinator of care and facilitator of effective communication amongst the team and with patients¹⁴.

Further evidence to support the role of nurse coordinators in improving outcomes for people with cancer has emerged since the publication of these evidence reviews. A US based study by Goodwin et al¹⁵ evaluated a nurse case management intervention in a randomised controlled trial involving 335 women over 65 years of age newly diagnosed with breast cancer. Findings demonstrated that women who received the support of a nurse case manager were more likely to be seen by a radiation oncologist and receive radiotherapy after

Cancer Care Coordinators: Realising the Potential for Improving the Patient Journey

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A person diagnosed with cancer can receive multiple treatments in a variety of different health care settings over extended periods of time¹. During this time, they come into contact with multiple health care providers. For example, one recent UK study reported that cancer patients with a diagnosis of less than one year had met 28 doctors on average since their diagnosis². Add to this the many other health professionals with whom the patient will come into contact during their illness and the complex maze that can characterise the patient's cancer journey is obvious.

The Optimising Cancer Care in Australia report³ published in 2003 by the peak cancer organisations in Australia concluded that there are many places for the person with cancer to get lost in the system, causing unnecessary morbidity and undue distress. The lack of an integrated care system for people with cancer was identified as a major failing of today's health system³.

A number of states in Australia have moved to appoint cancer care coordinators as a strategy to address such problems. In Queensland, cancer coordination positions have been established in a number of Health Service Districts in the Southern and Central Zone of the State, initially to scope patterns of care, referral pathways and to define a cancer coordination model for their regions that is consistent across the state, but able to meet the local needs of the population. To support its Cancer Clinical Service Framework, the NSW Health Department plans to recruit up to 50 cancer nurse coordinators. Cancer nurse coordinators in NSW will work through Lead Clinicians and Directors of Area Cancer Services to support oncology team meetings, develop care pathways and protocols, and provide a direct source of contact for patients and primary care physicians accessing cancer services⁴. In Victoria, a number of program coordinators and regional nurse coordinators have been introduced as part of the breast services enhancement program. Individual institutions have also established nurse coordinator roles for specific tumour streams.

The cancer care coordinator role is a rapidly emerging one with a mandate to achieve some potentially far-reaching reforms to systems of care. To ensure these developments realise their potential, it is timely to consider the most effective ways to design and implement models of care coordination that

breast conserving surgery and that they were more likely to have normal arm functioning in the recovery period than women who did not receive case management support. Similarly, a three-year demonstration project in the US involving patients with advanced lung cancer found that where nurse case managers were employed, higher rates of advance care planning and referral to hospice programs and improved symptom management was achieved¹⁶.

The available evidence thus suggests that the appointment of someone to coordinate care may have many benefits for patients and the team. The actual processes of care that contribute to improved patient outcomes are, however, not always clearly described. That is, exactly what is it that nurse case managers or care coordinators do that makes a difference? Findings from a qualitative study involving those women with cancer who received a nurse case management intervention identified that patients felt they had been helped through practices including managing co-existing problems, providing informational and emotional support, providing education about procedures and self-care, and assisting with activities of daily living¹⁷. Navigating the health system was also a key part of the case management intervention that was seen by women as being especially helpful and this included making appointments, explaining procedures, reinforcing information from other health care providers and ensuring comprehensive recording of patient information in health records¹⁷. Families of patients in this study reported the nurse case managers helped by providing advocacy, support, education and monitoring of their relative's progress¹⁷.

Similarly, findings from a qualitative study of the practices of nurse case managers working in a state-wide program in California for uninsured men with prostate or bladder cancer identified that nurse case manager's scope of practice was extremely broad and required 'skilful tailoring and execution' of a range of interventions including:

- assessment and collection of data from a variety of sources to identify patient needs;
- synthesis of this assessment data with their own clinical expertise and understanding of the clinical, social and emotional context for the individual patient;
- use of facilitation strategies to promote successful self-action and expedite movement within the health care system;
- advocacy strategies including obtaining records or information that patients needed and representing patient needs and preferences;
- coordination strategies to link agencies, care providers and patients, such as coordinating appointments, obtaining records, completing paper work, making referrals and arranging supplies;
- teaching to fill gaps in information or understanding;
- support through reassuring, listening and supporting decisions; and
- collaborative problem solving through active listening, purposeful questioning, elicitation of preferences, identifying actions and reinforcing capabilities⁴.

What Issues Should be Considered in Implementing Care Coordination Roles?

Published studies concerning care coordination interventions have typically involved evaluation of quite structured programs of nurse intervention, with participating nurses being well supported and educated to perform in their roles. In reality, however, coordination roles are more likely to be implemented

in diverse contexts with varying levels of structure, guidance and support. As such, outcomes for patients and for the system have the potential to be far more varied than evidence from the more controlled evaluation studies might suggest. For example, a comprehensive descriptive study of the practices of 153 breast care nurses in Victoria found that the breast care nurse role in working with and involving other health professionals in women's care was varied, that joint consultations with other health professionals were not always a routine part of practice and that referral rates by all breast care nurses to some professional groups was limited¹⁸. Indeed, despite a belief that continuity of care interventions are inherently good, some studies of coordination interventions outside of the cancer context (mostly in primary care settings) have reported conflicting conclusions as to their value¹⁹.

There are likely to be many reasons for such variations in practice and outcomes, including inadequate preparation of care coordinators and other members of the team, poorly designed interventions, or simply lack of access to appropriate services and systems of support to enable collaborative practices to occur. The findings from the Victorian Breast Nurse Workforce study are an important reminder that while care coordinator roles may have enormous potential, careful consideration needs to be given to how such roles are designed and implemented. The brief review presented in this paper raises some important questions for further consideration.

What is the Scope of Practice and Associated Competency Requirements for a Cancer Care Coordinator?

Qualitative studies describing the practices which contribute to patient's experience of a coordinated system identify an enormous array of administrative, counselling, educational, advocacy and clinical functions that may be performed by nurses in care coordination roles. There is, however, no consistent definition of the scope of practice, or clear description of the capabilities and competencies required to be an effective cancer care coordinator. For example, to what extent should such roles focus on management and coordination of the various parts of the service system (eg. a type of case management or systems navigator role), more direct care provision in terms of meeting individual patient supportive care needs (eg. counselling and education, such as provided by the Specialist Breast Care Nurse), or a combination of these functions? Inherent in this is the question of how the care coordinator's role differs to or complements the role of other cancer specialists such as that of breast care nurses. A prescriptive model of care coordination is, of course, unlikely to meet the diverse needs of people with cancer. Nevertheless, addressing key questions about role definition will be crucial for developing evidence-based models of care coordination that are appropriate for the populations being served. Such clarity will also assist consumers and other health professionals to better understand their relationship with care coordinators, as well as minimise role confusion and the perception that care coordinators can be 'all things to all people'.

When is Care Coordination Required, To Whom and Under What Circumstances?

In the cancer context, the specific patient circumstances that will benefit most from support provided by care coordinators are yet to be clearly identified. Studies that have evaluated case management interventions have tended to involve patients with complex health or social needs^{15,16,20}. In the primary care context, studies similarly suggest that continuity of care interventions are associated with more positive outcomes for more vulnerable patients²¹. Furthermore, while studies

demonstrate the potential benefits of care coordination interventions in both the treatment phase¹⁵ as well as palliative phase of illness¹⁶, the best timing and length for care coordination interventions is not well defined. Few studies have reported on coordination activities in post-treatment or follow up stages of the patient's journey.

A host of questions arise when considering issues regarding delivery and timing of coordination interventions. For example: Do all patients require services provided by a care coordinator? What is an appropriate casemix and caseload for care coordinators? Should the cancer nurse coordinator work within one institution, a primary care setting, or work between several organisations? It is likely that the multitude of pathways that a person with cancer may follow, combined with the unique features of Australia's geography and population distribution, will mean that there is no one answer to these questions. Nevertheless, ensuring equity of access and appropriate use of resources will remain critical policy considerations.

Who Can Best Fulfil the Role of Cancer Care Coordinator?

The majority of evidence relating to the coordination of cancer care has involved the use of nurses as case managers or in structured support roles, such as that of the specialist breast nurse. The Clinical Practice Guidelines for Psychosocial Care for people with cancer identified that specialist oncology nurses, in both inpatient and outpatient settings, play a major role in ensuring continuity of care by coordinating the patient's path through treatment, liaising with different members of the team, and monitoring the person with cancer¹. The guidelines also suggest that GPs can be useful in ensuring continuity of care as they have knowledge of patient's social and medical background, especially in relation to follow up and management of co-morbid conditions¹. There are, however, few studies in the cancer context to assess the interest, abilities or capacity of GPs to perform these roles. Other health professionals, such as social workers may also play an important role in care coordination²².

It is possible that different disciplines will have different coordination roles at different times of the patient journey and moreover, that all health professionals have some role in ensuring continuity of care. Indeed, the Psychosocial Clinical Practice Guidelines recommends that the patient should be given a choice as to whom they wish to be the coordinator of their care. At the very least, the key question that should drive decisions about who is best placed to act as a care coordinator is: What are the support and coordination needs of patients in this context?

How Does the Care Coordinator's Practice Interface with that of Other Health Professionals?

Perhaps the most challenging feature of care coordination interventions is the interface between the functions of an appointed care coordinator and those of other members of the health team. A review of the type of activities that are suggested to be within the scope of practice for care coordinators highlights the potential for role overlap, role conflict, and duplicated and fragmented efforts. Despite these concerns, the NBCC Specialist Breast Nurse Project found that while some practitioners initially expressed concern that the specialist breast nurse role may corrode other professional's role, or provide confusing or conflicting information, such concerns were unfounded and where role overlap did occur, this was resolved or used to advantage¹³. For care coordination roles to be effective and efficient, high quality communication and considerable flexibility will need to be practised as various members of the health team negotiate blurred and changing practice boundaries. The relationships between care

coordinators and other specialist cancer nurses will require especially careful negotiation in day-to-day practice.

Conclusions

The high priority currently being given to developing a more coordinated care system represents an important shift towards a person-centred approach to cancer care. The strategies required for achieving such improvements are multifaceted and are likely to involve developments in multidisciplinary care, improved communication systems and, as this review suggests, the identification of personnel whose core business it is to facilitate as smooth a journey as possible for patients. The available evidence suggests that the appointment of care coordinators has the potential for improving the patient's cancer experience. Importantly, however, the success of care coordination roles will depend on further development of appropriate systems of support and interdisciplinary approaches to care. The development of evidence-based frameworks that clarify scope of practice, competency standards and related training requirements for care coordinators also remains a priority.

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ISSUES IN NURSE PRACTITIONER DEVELOPMENTS IN AUSTRALIA

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Introduction

The nurse practitioner level of health care is one of the most important developments in nursing in the past 30 years and marks the opportunity for significant reform in the Australian health care industry. Nurse practitioners, whilst well established in North America, the United Kingdom and parts of Europe, are a relatively recent development in Australia. The introduction of the nurse practitioner level of service is a function of state rather than national government and consequently the implementation throughout Australia has been gradual, with title protection and practice privileges now legislated in five states over a 15-year period.

Despite this rather long lead-in time, there remains confusion and uncertainty relating to the role and function of the nurse practitioner within nursing, other health disciplines and most importantly, the community of health care consumers. The aim of this paper therefore, is to reduce the confusion and uncertainty and provide information for nurses, medical and allied health professionals about this innovative level of health care.

The preparation and introduction of a new level of health care into existing systems is a complex and multifaceted undertaking. In this paper I focus on four issues that are currently influencing the progress of the nurse practitioner in Australia. These are definitional issues, the research base, Australian state and national development and role development.

Defining Nurse Practitioner

There is general agreement that the introduction of the nurse practitioner as a new level of health care has been complicated by the existing nomenclature relating to advanced practice roles in nursing. Titles such as advanced specialist, clinical nurse consultant, clinical nurse specialist and advanced practice nurse are used interchangeably and at times unproblematically in the literature^{1,2}. Contributing to this confusion is the lack of consensus internationally in the use of these terms³. While the clarification of titles is complex and may continue to be debated for some time, the consensus gradually emerging is that the nurse practitioner role is evolving and developing globally as the most significant of the advanced practice roles².

Each state in Australia has developed and operates from a different definition for the nurse practitioner. A recent Australian study⁴ collated and examined these definitions and identified elements that were common to all. Following is the definition that was developed including all common elements:

A nurse practitioner is a registered nurse educated to function autonomously and collaboratively in

an advanced and extended clinical role. The nurse practitioner role includes assessment and management of clients using nursing knowledge and skills and may include, but is not limited to the direct referral of patients to other health-care professionals, prescribing medications and ordering diagnostic investigations. The nurse practitioner role is grounded in the nursing profession's values, knowledge, theories and practice and provides innovative and flexible health care delivery that complements other health care providers. The scope of practice of the nurse practitioner is determined by the context in which the nurse practitioner is authorised to practise.

There are three points in this definition that are central to understanding the nature of the nurse practitioner role.

- i) Extended practice: The element that differentiates the nurse practitioner from other advanced practice roles is that the scope of practice of the nurse practitioner is subject to different practice privileges that are protected by legislation. Extended practice therefore is defined by those elements of nursing activity that call upon a legislative structure that is outside the scope of practice for the registered nurse. With a scope of practice that incorporates these extended practice activities, the nurse practitioner functions in that grey area that incorporates both medical and nursing activities.
- ii) Autonomous practice The nurse practitioner engages in clinical practice with significant clinical autonomy and accountability, which incorporates responsibility for the complete episode of care. This means accepting the need to act autonomously in decision making and the follow-through in patient care. This autonomy is situated within a team approach to health service whereby the nurse practitioner works in a multidisciplinary team in a clinical partnership role to optimise patient outcomes.
- iii) Nursing model: This practice is firmly located within a nursing model. That is, nurse practitioner practice is about clinical flexibility in the delivery of nursing care.

Researching Nurse Practitioner Service

There is now an extensive body of literature relating to the nurse practitioner role and practice. However, large scale quantitative research into nurse practitioner practice is not yet feasible because the number in practice remain relatively small. There is none-the-less an emerging research-based body of knowledge to inform ongoing developments in the introduction of the nurse practitioner level of service.

Nurse practitioners have been shown to offer a beneficial service and fill a gap in health care provision, both in the primary health care and in the acute care sectors. National and international experience demonstrates that they provide

a specific service that is highly regarded^{5,6,7,8} and in demand^{9,10}. The specific service offered by nurse practitioners provides care to many under serviced groups such as the homeless¹¹, women and children, the elderly¹², rural and remote communities^{9,13} and specialist services in acute care areas¹⁴. Nurse practitioners have been demonstrated to be effective in managing common acute illnesses and injuries and stable chronic conditions¹². Nurse practitioners have an emphasis on health promotion and assessment and disease prevention⁵. For example, a nurse practitioner working in Scotland coordinates a unique health project that seeks out homeless people, assesses and identifies their health needs and offers them assistance¹¹. In this paper Armstrong posits that without the services of the nurse practitioner, there would be little chance of reaching this vulnerable group using conventional health services.

Research that examines the efficacy of the nurse practitioner role has tended to compare nurse practitioner service outcomes with the outcomes of medical service^{6,15}. This line of inquiry builds upon an assumption of the nurse practitioner as doctor replacement or substitute. The literature is now debating the usefulness of this approach^{6,16} and there is now a trend in nurse practitioner research towards holistic health service research. This examines how the health disciplines (including the extended practice of the nurse practitioner) complement and overlap to build better organised care practices¹⁶. I see this trend as an important and constructive direction as it is a move away from the one dimensional thinking about the nurse practitioner and recognises the potential of the nurse practitioner as a new level of care and a radical departure from the way health service is currently organised.

Australian State and National Development

In Australia, nursing is regulated at state rather than national level and for this reason it is difficult to track the number of authorised nurse practitioners in the country and the influence that this level of service has on the health care system. Estimates suggest that in Australia there are currently between 50 and 80 authorised nurse practitioners, but these are not all currently employed in nurse practitioner positions. The development of the nurse practitioner role and protection of the title across Australia has been uncoordinated and diverse as the states and territories individually moved towards establishment of the nurse practitioner role. To date five jurisdictions in Australia have introduced legislation to protect the title of nurse practitioner and amended relevant legislation to legitimise extended nursing practice over the following time frame:

New South Wales	1999
South Australia	1999
Victoria	2001
ACT	2003/2004
Western Australia	2003

Queensland, Tasmania and the Northern Territory are currently working towards nurse practitioner role development and legislative change.

This progress indicates that the nurse practitioner level of service is being recognised by all Australian state/territory governments as contributing to improving health service and/or delivering health care to marginalised or under serviced populations^{14,17}. Moreover this new level of nurse is now on the national agenda.

The two recent commonwealth inquiries into nursing^{18,19} have both called for greater consistency across the states and territories in progressing the nurse practitioner agenda.

Additionally the longstanding mutual recognition agreements between Australian states and territories and between Australia and New Zealand require a level of standardisation in role definition and educational requirements for authorisation of the nurse practitioner. Consequently the nurse practitioner role is included in the implementation brief of the National Nursing and Nursing Education Taskforce (National Nursing and Nursing Education Taskforce website). Furthermore the Australian Nursing and Midwifery Council in collaboration with the Nursing Council of New Zealand has recently sponsored the development of research-informed nurse practitioner standards for education and practice⁴.

Role Development

In addition to contributing to improvements in health service for the community, the nurse practitioner role provides an exciting and new clinical career pathway for nurses. The nurse practitioner is an advanced practice nurse with extensive experience in a specialty field, postgraduate education and increasingly required to hold a nurse practitioner masters degree^{20,4}. The nurse practitioner works within a defined scope of practice and model of service and is a member of a multidisciplinary team. The structure and proximity of the team is dependent upon the specific nurse practitioner model. Some examples of nurse practitioner models piloted, currently in development or currently practising in Australia include wound care, neonatal intensive care, rural and remote practice, mental health liaison, paediatric renal, neuroscience, primary health, diabetes, gerontology, child health, cardiac rehabilitation and sexual health.

In relation to cancer services, the scope for the nurse practitioner role is open and responsive to development of new and emerging clinical services. Accordingly, health service planners looking to streamline cancer services, improve access to comprehensive palliative care and/or improve case management for patients with co-morbid chronic illness are increasingly building the nurse practitioner role into the health care teams in these areas^{21,22}.

In designing a nurse practitioner role there are factors that need to be considered to enhance the efficacy and sustainability of a new service. First the nurse practitioner is not a medical substitute. The nurse practitioner model needs to conform to a collaborative/team approach to health care that is complementary to other professional roles and central to better organisation of the clinical service. The team may look different depending on the service provided, but the nurse practitioner, like all other health care providers, operates most effectively in an overtly collaborative model. Second the role needs to be sustainable in that it does not replicate existing services. The nurse practitioner level of care is most effective when the service fills a gap in access, efficiency or quality of service for the patient population in a specific field of health care. Finally the candidate for the nurse practitioner role needs to have extensive experience in the specialty field and appropriate educational preparation.

Conclusion

This paper has attempted to clarify some of the issues related to the development of the nurse practitioner role in Australia. The paper has discussed what a nurse practitioner is, the progress in Australia at both state/territory and national levels and has identified factors to be considered in the design of a nurse practitioner role.

The nurse practitioner has been described as an advanced

practice nurse who bridges that grey area between nursing and medicine and is emerging as a new type and level of health care clinician. They represent a new breed of health care professional in that they are not limited by traditional health discipline boundaries, their practice includes what has traditionally been viewed as medical activities within a nursing model of care and they expand clinical practice in both medical and nursing specialty areas.

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A Review of Cancer Nursing Workforce Issues in Australia

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The Diminishing Nursing Workforce

The recently released assessment of national and state skill shortages identifies that Australia has a national shortage of Registered Nurses (RNs), with oncology and palliative care registered nurses being listed as professional groups in shortage in all states and territories of Australia except the Northern Territory¹. The recent National Review of Nursing Education in Australia report entitled *Our Duty of Care* identifies that a nursing vacancy rate of 30,000 is predicted between 2001 – 2006².

Cancer nurses today face major challenges in trying to provide quality patient care in a health care environment that is experiencing such widespread nursing shortages. Nursing workforce data from the Australian Institute of Health and Welfare (AIHW) indicate that despite a 1.2% increase in nursing workforce numbers since 1999, there has been a decrease in the average nursing working hours, thus affecting the overall supply of nurses³. In 1995 there were 1,127 Full Time Equivalent (FTE) nurses per 100,000 population, however this number had decreased to 1,024 FTE nurses per 100,000 population in 2001³. Moreover, AIHW data indicate that nearly 48% of oncology nurses work part-time, employed an average of 32 hours per week.

A shortage of nurses compromises patient outcomes and safety⁴ and can impact on staff welfare⁵. A number of recent US studies report a significant inverse relationship between nurse staffing and adverse events such as thrombosis, pulmonary and urinary complications and medication errors in hospital surgical inpatients^{6,7}. These studies report that an increase of RN hours

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per day is associated with a reduced rate of adverse events. The aim of this paper is to examine the factors contributing to workforce shortages in cancer nursing and discuss a range of potential solutions for addressing the current challenges.

Factors Contributing to the Cancer Nursing Shortage

The current shortage of cancer nurses exists in most countries, reflecting issues in supply and demand. The problem is complex, with several factors contributing to the shortage.

The Increasing Demands for Cancer Nurses

The demand for cancer services overall has increased as a result of the increasing incidence of cancer associated with an ageing population and earlier detection of many cancers. Changing treatment technologies have also had important implications for the health care needs of people diagnosed with cancer. The nature of cancer care has evolved, with the reorganisation of cancer services firmly on the agenda nationally and in many states of Australia. Specifically, current service reforms are seeing changes in models of service delivery, with an explicit emphasis on more responsive and person-centred systems of care. Nursing practice, with its central focus on addressing the supportive care needs for people with cancer, is integral to such reforms. Many Australian states are developing plans to guide the direction for cancer control over the coming years, highlighting the importance of the cancer nursing workforce to future cancer control efforts. For example, in the New South Wales Cancer Plan 2004 – 2006⁸, cancer nursing has been acknowledged as playing an integral role in the support of patients. Moreover, patients are increasingly receiving treatment on an outpatient basis. The changing settings for care require staffing profiles that include professional nurses who have the skills, knowledge and experience to recognise an impending or actual problem in a timely manner and have the ability to act and mobilise resources to intervene as necessary^{9,10}.

Increasing Patient Acuity and Nursing Workloads

Patient numbers per FTE nurse have increased over the past years. The average length of stay has decreased from 4.6 days in 1993-1994 to 3.5 days in 2002 – 2003 and patient separations per FTE nurse continue to increase¹¹. The reducing length of stay has contributed to increased nursing workloads as nurses care for higher acuity patients who require intensive nursing care while they are in hospital or the ambulatory setting. These changes in the nature of hospitalisation and treatment delivery have led to a reduction in the amount of time that nurses can spend with patients¹².

The increasing workloads have many consequences for nurses. Importantly, a number of recent studies suggest nurses are becoming increasingly distressed that they can no longer provide quality care as they do not have the time due to workload pressures^{13,14}, with excessive workloads sometimes remaining hidden as nurses work unpaid overtime or through their meal breaks¹⁵, as nurses adapt their care and work harder and faster¹⁶. In 1999, a Victorian study indicated that workload was perceived as the most frequently occurring source of stress amongst nurses¹⁴. Similarly, a recent Queensland study of oncology/haematology nurses indicated that workload issues were a major dissatisfier for them, with nearly 50% reporting that they did not have the time to get through their work and that overall staffing levels were a concern for them¹². The Queensland study further identified that cancer nurses were at high risk of burnout, with 70% of the sample categorised as experiencing moderate to high levels of emotional exhaustion on the standard burnout measures¹².

Issues with Nursing Recruitment and Retention

The ability to recruit young people and career switchers into nursing is essential. Almost 40% of students applying for undergraduate nursing positions fail to obtain a place, showing that rather than a shortage of willing candidates, the problem lies with the number of places available¹³.

Retention of nursing staff is arguably a more urgent concern, with recent workforce analyses undertaken by the Department of Education, Science and Training noting that it will be difficult to maintain and grow the nursing workforce as exit rates increase¹³. A recent survey of 243 oncology/haematology nurses in Queensland highlighted that nearly 48% of the sample indicated that they could not commit to remaining in the specialty for the next 12 months⁸. While the reasons for turnover were multifaceted, workload issues were identified as the most common reason given for considering leaving the specialty⁸.

The Ageing Nursing Workforce

The Department of Education, Science and Training has reported that the ageing nursing workforce will bring about high exit rates from the profession over the next decade². The proportion of nurses less than 35 years is only 30 percent of the total workforce². The Oncology nursing workforce is slightly younger, with an average age of 38.5 years, compared with the average age of employed clinical nurses being 41.8 years³. The ageing nursing workforce will influence recruitment in the future, as employers compete in a tighter employment market.

Barriers to Participating in Specialist Postgraduate Cancer Nursing Courses

Postgraduate education is well established in most university schools of nursing. However, Yates¹⁷ argues there is an ambivalent relationship between nursing and postgraduate education that is manifested in the differing levels of qualification, and the substantial variation in the length and mix of clinical practice and theory in postgraduate specialty courses¹⁸. Yates suggests that

the lack of clarity about many aspects of the location, design, delivery and outcomes from postgraduate education typically results in confusion for students, employers and academics as to which course to choose or recommend. Other reports indicate that the cost of higher education for nurses is a major barrier to entry into specialist postgraduate courses in areas such as cancer nursing, especially as completed qualifications do not necessarily result in increased remuneration and career advancement¹⁹. Without a clearly defined and accepted pathway for development of specialist skills in cancer nursing, the development of a skilled workforce is likely to be compromised.

Developing a Sustainable Cancer Nursing Workforce

In 2002, the Cancer Nurses Society of Australia (CNSA) indicated their concern that the nationwide shortage of cancer nurses would worsen and published a position statement on this issue¹⁹. CNSA argued that, given the contribution that nurses make to reducing the burden of cancer in this country, coordinated national strategies need to be implemented to recruit and retain cancer nurses to meet future workforce needs⁹. These strategies need to address workforce needs across the cancer continuum, including health promotion, screening detection, treatment, rehabilitation and palliative care.

Management of Nursing Workloads

Workloads are a source of emotional exhaustion and a dissatisfier for oncology/haematology nurses¹². The literature suggests that oncology nurses who believe they work on adequately staffed units report they are better able to care for patients and ensure quality of care when compared to nurses who work on inadequately staffed units²⁰. Furthermore, fully staffed units report less difficulty retaining staff, work less overtime and do not have to rely on supplemental staffing²⁰.

The management of workloads will, however, continue to be a challenge for clinicians and managers alike. Currently, few validated models exist to determine current workloads, care planning and staffing requirements in the oncology setting, especially in ambulatory care. In the cancer care setting it is essential that any such workload models factor in the complex clinical components and the support and education roles of the nurse to ensure that these essential components of patient care are incorporated into workload calculations¹². Moreover, the pressures of finite resources demand efficiency in the workplace and in some cases a re-evaluation of current practices. Work redesign programs are needed that focus on developing models of care centred on addressing the needs of the person with cancer, within the context of a flexible multidisciplinary team approach to care.

Models of Nursing Care

Flexible team approaches to care are likely to be critical to future cancer service delivery, in order to most effectively respond to complex patient needs and increasing demands on resources. Currently the predominant model used to organise nursing work is patient allocation. The patient allocation model arguably has the potential to isolate staff from one another and result in reduced communication and co-ordination of human resources. Models of care that develop a culture of teamwork that foster the sharing of knowledge and expertise may assist in the formation of supportive professional relationships. For example, the Department of Education, Science and Training has indicated that the workforce will have to adjust structurally to distribute the work across registered nurses, enrolled nurses and health carers and articulate arrangements between health care workers of various skill levels². While such approaches may

be an appropriate response to the complex challenges faced by today's health systems, some nurses have expressed concern that they may shift RNs away from hands-on care to serve as 'team leaders' and that they may return nursing to a fragmented, task oriented discipline.

Workplace Culture and Leadership

As the largest group of health care worker, nurses have considerable opportunity to shape the system itself²¹. A significant challenge for nurse leaders is to create positive work environments in which staff feel valued. Constructive leadership behaviour can influence the culture of the work unit and the morale and retention of employees, which in turn improves patient satisfaction and outcomes²². Studies suggest that nurses' trust in their managers has been linked to improved productivity, improved patient care, job satisfaction and commitment²³. Clinical leadership roles should be developed to mentor and develop new cancer nursing practitioners and promote innovative practice in cancer care, thereby contributing to the retention of experienced and motivated cancer nurses. Nurses with leadership potential should be identified and supported, to shape and lead our profession in the future²⁴.

Educational Strategies

Education is an essential component for the preparation of new professionals and specialist nurses. The provision of appropriate funding, flexible and responsive education and the building of collaborative relationships across academic and clinical settings are key to building the capacity of the nursing workforce¹⁸. Immediate strategies that may be implemented include relief from Higher Education Contribution Scheme and other course fees to overcome the financial barriers nurses face in undertaking postgraduate cancer nursing courses⁴.

The recently released NSW Cancer Plan⁹ identifies that cancer nursing education is required to develop a workforce that can provide optimal patient care. Specifically, the plan states that advanced practice positions need to be developed, providing clinical experts and leaders. Such initiatives may provide excellent opportunities to recruit and retain cancer nurses and also to evaluate the efficacy of specialist nurse models in improving outcomes for patients with cancer.

Coordinated National Approaches to Workforce Planning

Three important national initiatives are currently underway that have the potential to set the agenda for future directions in nursing workforce planning. Firstly, the 2002 National Review of Nursing Education¹⁹, and Senate Inquiry into Nursing²⁵ made many recommendations emphasising the importance of nationally coordinated approaches to addressing nursing workforce and education issues. In November 2003, state/territory and Australian Ministers for Health and Education announced the establishment of a National Nursing and Nursing Education Taskforce (N²ET)²⁶. N²ET has been set up to implement the recommendations of the report Our Duty of Care¹⁹, including issues such as the skill mix and work organisation of nurses, augmentation and retention of the current workforce, training of care assistants, funding of clinical education and national education standards. This is the first time there has been national collaboration on these issues.

Secondly, the Nursing Workforce Planning in Australia document has recently been published to guide the Australian Health Workforce Advisory Committee (AHWAC), the National Health Workforce Secretariat and members of nursing workforce working parties established by AHWAC²⁷. It provides a set

of principles to guide health workforce planners. This report highlights that workforce planning for the nursing specialties is highly complex and poorly understood and suggests that planners need to examine work practices, changing roles and scopes of practice as part of workforce redevelopment.

Thirdly, an Australian study is currently being undertaken to reveal what influences nursing workloads and how this affects patient care. The effect of patient acuity and decreased length of stay on nursing workloads will also be assessed, in an attempt to match staffing to workloads¹³. It is expected that the results will be available in 2005.

Conclusion

The complex nature of cancer and its treatment and the increasing population of people living with this disease requires a workforce of nurses that can provide care across the cancer continuum. Cancer nurses possess the specialised knowledge and skills to provide treatment, education and emotional support to patients with cancer and their families, however recent reports have identified that the cancer nursing workforce is in shortage, suggesting that patient outcomes may be compromised. Strategies which facilitate the development of a sustainable cancer nursing workforce include increasing the future supply of nurses, increasing the capacity of the current workforce through education and providing an infrastructure that supports nurses at the workplace and promotes retention. Nursing workforce issues have become increasingly prominent in policy agendas, suggesting that the impact of the nursing shortage of Australia's health care system is becoming more visible. This is an ideal time for nurses to discuss nursing and patient care issues that are important to their practice and to provide solutions to enhance the cancer nursing workforce.

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Medical Oncology Group of Australia/Pierre Fabre Cancer Achievement Award



Richard Fox

I am honoured that the Medical Oncology Group (MOG) has chosen me to give this year's talk. It is sobering to realise how young MOG is and that I started my career before the speciality of medical oncology was conceived. I base my talk around my experiences tracing changes in medical oncology since its embryogenesis in the 1970s. Apart from extraordinary scientific developments, my best memories are of my colleagues who developed the speciality and became world leaders.

My talk will reflect my experiences at the Royal Prince Alfred Hospital (RPA) in Sydney with its Ludwig Institute for Cancer Research (LICR), the University of California, San Diego (UCSD) and the Hammersmith Hospital, London, and now almost 20 years at The Royal Melbourne Hospital (RMH) and its associations with LICR and the Walter and Eliza Hall Institute (WEHI).

I have been fortunate working in two great teaching hospitals that contributed much to medical oncology in Australia.

Beginnings: Sydney

My first dabble was a B.Sc. (Med) year in physiology with Professor Michael Taylor. We analysed the transmission of the arterial pulse from the aorta into arterioles in cats' mesentery. This involved micropuncture and then sophisticated Fourier pulse harmonics.

I did not warm to this, but enjoyed chemical analysis of the elastin and collagen content of the arterial system. I enjoyed the precision and delicacy of the biochemical techniques and this later served me well. I lost interest in vessel catheterisation or endoscopy.

At RPA I was interested in haematology associating with Professor Barry Firkin, Director of the Clinical Research Unit at RPA. He pioneered "translational research" in haematology, although that term had not been invented. We saw some patients with the newly recognised genetic diseases of purine and pyrimidine biosynthesis (Hereditary Orotic Aciduria and Lesch-Nyhan syndrome). Firkin set me up to do a Ph.D. in biochemistry in medicine at RPA with Bill O'Sullivan (later to become Professor of Biochemistry at the University of NSW and then Dean of its Faculty of Science).

We demonstrated that the sequential enzyme defect orotic decarboxylase and orotic acid phosphoribosyltransferase previously, thought to represent an operon gene defect, was due to a mutation in a single protein bearing both enzymatic activities. The inter-reaction of allopurinol with pyrimidine synthesis was a new observation, leading to the so-called allopurinol test used in the diagnosis of enzyme defects in the urea cycle.

We published in *Science*, *The Journal of Biological Chemistry*, *American Journal of Medicine* and *The Journal of Clinical Investigation*. One of my Ph.D. examiners was Gertrude Elion, who was later to receive the Nobel Prize for her development of the purine analog drugs.

La Jolla

With a CJ Martin NH & MRC Fellowship I was able to spend two years at UCSD with Mickey Goulian and John Mendelsohn. Mickey Goulian had come from the University of Chicago and before that was a student of Arthur Kornberg (Nobel Prize winner, DNA polymerase) had synthesised QX174, a simple viral strand, representing the first in vitro synthesis of "a living organism".

La Jolla, a northern suburb of San Diego, is similar to Sydney with its climate and beautiful beaches. We lived in a small 1920s timber cottage in a street lined by eucalyptus trees, 200 yards from the beach. The newly formed UCSD Medical School was close to the Salk Institute on the headlands overlooking the Pacific. Salk himself was still Director of the institute and I remember his vast office lined with wall to wall Picassos. He had married one of Picasso's former wives and there was an intriguing case some years later as to the ownership of those Picassos.

At the Salk was Robert Holly, who had won the Nobel Prize for the structure of transfer RNA, as well as Jacob Bronowski who had created the BBC Television series and book entitled *The Progress of Man*. I would catch the bus up to the medical school, becoming acquainted with an elderly lady paediatrician. She was the widow of Leo Szilard, a physicist from the Manhattan Atomic Bomb project of the 1940s. In retirement he worked at the Salk Institute.

The Chairman of Medicine at UCSD was Eugene Braunwald. He was the doyen of American cardiology and subsequently was Head of Medicine at the Massachusetts General Hospital and Editor of *Harrison's Principles of Internal Medicine*. I was able to do some work with Jay Seegmiller (rheumatology), who had pioneered the development of allopurinol at the N.I.H. and got to know William Nyhan (paediatrics) who had discovered the Lesch-Nyhan syndrome.

John Mendelsohn, at that time a lowly assistant professor, went on to become the Director of the San Diego Comprehensive Cancer Centre and then Chairman of Medicine at the Memorial Sloan Kettering Cancer Center in New York and more latterly, President of the MD Anderson Hospital in Houston.

Working in our lab was Flossie Wong-Stahl, who had come from Hong Kong to do a post-doctoral fellowship with Mickey Goulian. She was later to move to Washington and, in conjunction with Robert Gallo, make many of the breakthroughs in defining the molecular biology of the HIV virus.

In the lab, with John Mendelsohn and Mickey Goulian, we were able to show the presence of RNA in nascent DNA (Okazaki fragments) from cultured human lymphocytes which was published in *Nature New Biology*. We distinguished two DNA polymerases in human cultured cells, one of which was related to repair, and to identify the replicative DNA polymerase inhibition by Ara-CTP.

London

After La Jolla I was able to spend six months at the Royal Postgraduate Medical School at the Hammersmith Hospital. This reflected the generosity of Professor Rythven Blackburn, who found funding for this venture. The Head of Haematology was Sir John Dacy, renowned for his work on the Haemolytic Anaemias and his classic text written in conjunction with Mitch Lewis.

At Hammersmith, Victor Hoffbrand was just about to leave to take

on the Professorship of Haematology at the Royal Free Hospital, Hampstead and David Galton was Head of the MRC Leukaemia Unit. His protégé, John Goldman, was there at that time and was to lead much of the UK work in chronic myeloid leukaemia and the development of bone marrow transplantation. I was able to renew my association with Ray Lowenthal, a Sydney graduate, who was working for his M.D. thesis on the new technologies available for leukapheresis and plasmapheresis.

My path there crossed briefly with that of Martin Tattersall, who was just leaving to work with Tom Frei at the Sydney Farber Institute in Boston. He had just finished his M.D. in methotrexate biochemical pharmacology with Ken Harrap at the Marsden Hospital.

A memorable occasion was an international lymphoma conference held at the Royal Society chaired by Gordon Hamilton-Fairly, then Head of Medicine at the Marsden and of Australian origins. I was particularly impressed by his charismatic manner. Little were we to anticipate his death in 1976, at the hands of a terrorist bomb in London, which would change radically the development of medical oncology in Australia.

The LICR had approached Hamilton-Fairly to set up a LICR branch in Melbourne. Following his death Martin Tattersall was recruited and a LICR unit established in Sydney in early 1977. I was invited to join the unit. The three years previous I had been Senior Lecturer in Medicine in the Monash Department of Medicine at Prince Henry's Hospital. At that time I had become interested in developments in medical oncology and had started treating patients with small cell lung cancer. This caused some consternation in the local haematological community and when we presented our results there was suspicion that our pathologist had confused small cell lung cancer with malignant lymphoma¹.

Sydney LICR

I spent some seven years back at RPA in the LICR. This was a great opportunity, and I was to learn much from Martin Tattersall, who was one of the most superb clinicians I have encountered. There is no doubt that the Sydney LICR "pump primed" Australian medical oncology.

The people who were either recruited as consultants or trained at the Sydney LICR have made an extraordinary impact. Trainees in medical oncology have included Michael Freidlander, Michael Green, Rick Kefford, Fred Kirsten, Graeme Mann, Derek Raghavan, Roger Reddell and John Symes. I note particularly Rick Kefford as Professor of Medicine at the Westmead Hospital, Derek Raghavan as Head of Oncology at the University of Southern California and John Symes is Director of the Clinical Trials Unit of the NH & MRC. Alan Coates went on as Director of the Cancer Society Australia, while Robert Sutherland became Deputy Director of the Garvin Institute in Sydney. It is fascinating to remember Stan Kaye, who spent a year as a junior consultant and went on to become Professor of Medicine at the Royal Marsden Hospital in London.

The Sydney LICR was highly productive. The unit played a major role in establishing the ANZ Breast Cancer Trials Group, as well as the Ludwig Institute's Adjuvant Breast Therapy Group, which went on to become the International Adjuvant Breast Therapy Group. The unit pioneered clinical studies in metastatic cancer of unknown primary publishing in the *New England Journal of Medicine*, *Lancet* and *British Medical Journal*.

In particular, Rick Kefford's work in the lymphocyto-toxicity of purine analogs was to provide the basis for current treatment of lymphomas and chronic lymphocytic leukaemia using antimetabolite therapy. His work was published in *Cancer*

Research and the *Journal of Clinical Investigation*.

Melbourne

I moved to the RMH in 1985, establishing a combined Clinical Haematology and Medical Oncology Department. By linking with the Melbourne LICR and WEHI on the RMH campus, we were able to create cross appointments where individuals could be appointed to both institutions. This subsequently allowed us to build a significant team which was also to "pump prime" medical oncology in Melbourne.

Consultant appointees included Michael Green, George Morstyn, Geoff Lindeman, Jeff Szer, Andrew Grigg and Bill Sheridan. Trainees who returned to work in the department included Mark Rosenthal, Rick De Boer, Peter Gibbs, Russell Basser, Daryl Maher, Jonathan Cebon, Andrew Roberts, Graeme Lieschke, David Curtis and Annabel Tuckfield. It was a pleasure to host for a year a young Russian trainee from what was then the All Union Cancer Research Center in Moscow, Sergai Tjulandin, who worked with Michael Green on the biochemical pharmacology of anthracycline cardiac protection. Sergai returned to Moscow and is now Deputy Director of the Cancer Research Center in Moscow, a 1000 bed cancer hospital. He will clearly be its future director. He has never ceased to thank his Australian hosts and is a good ambassador for Australia in that long suffering country.

Work at the WEHI, which led to the subsequent cloning of human granulocyte colony stimulating factor (G-CSF), prompted the first clinical trials linking the research capabilities of the WEHI and the LICR. With a team including Don Metcalf, Anthony Burgess and George Morstyn, we were successfully able to plan and execute these phase 1 clinical trials. They were able to show the dramatic elevation in the neutrophil count after administration of G-CSF and the protection against neutropenia induced by cytotoxic drugs.

An unexpected effect was the release into the peripheral blood of haemopoietic progenitor cells (CD34 cells) serendipitously observed by Ule Durssen in the WEHI. This led to leucapheresis procedures by which we could harvest these cells and use them as an alternative to bone marrow transplantation. At this time Bill Sheridan had returned from Emory University in Atlanta and demonstrated the successful use of these cells in achieving a rapid recovery of the neutrophils, as well as platelets. These findings, published sequentially in the *Lancet*, were to revolutionise bone marrow transplantation. Stem Cell Autologous transplantation as well as Allogeneic stem cell transplantations are widely established. Bill Sheridan's paper on the platelet recovery was the fourth most widely cited paper in its year of publication.

Subsequently Megakaryocyte Growth and Development Factor (MGDF) was also pioneered in Melbourne and the translational research carried out by Glenn Begley, Head of the newly created Bone Marrow Research Laboratories, a separate group founded within The Royal Melbourne Hospital. His studies were remarkably successful, although MGDF was not to go on clinically because of its antigenic characteristics.

The success of Amgen and its rapid growth as one of the world's largest biotechnology companies, led to its recruiting many of the original Melbourne trialists, including George Morstyn, Bill Sheridan and subsequently Glenn Begley back to California. Russell Basser, who played a large role the MGDF trials and as well the randomised trials of high dose chemotherapy in autologous bone marrow transplantation in breast cancer was appointed Director of Clinical Research at the CSL.

The complexity of the developments saw creation of multiple

groups within the department. Geoff Lindeman, who had come from Sydney, interested in cancer genetics, as well as breast cancer cell biology in the WEHI, created the Familial Cancer Centre, Mark Boughey the Palliative Care Service, Glenn Begley the Bone Marrow Research Laboratories later on run by Steve Jane, Michael Green a new Department of Medical Oncology at the Western Hospital with a combined appointment between both RMH and the Western Hospital. An organisation for running phase I-III clinical trials within the department that had evolved was the Centre for Developmental Cancer Therapeutics, which the clinical research activities of the Austin Repatriation Hospitals, Western Hospital and Peter MacCallum were linked. This was initially run by Daryl Maher, subsequently Russell Bassler and more latterly Mark Rosenthal, changing its name to "Cancer Trials Australia".

I had to participate in a considerable amount of administrative activities and sequentially chaired the Medical Oncology Group, then President of the Clinical Oncological Society of Australia, President of the Australian Cancer Society as well

Two Decades of Progress in Treating Chemotherapy Induced Emesis



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The use of cytotoxic drugs such as cisplatin, which caused severe nausea and vomiting unresponsive to standard antiemetics, stimulated research into the mechanisms of nausea and vomiting. Cisplatin was associated with both an acute emesis in the first 24 hours and a delayed emesis which could last for a week. The discovery of that 5 hydroxytryptamine₃ receptors in the small intestine and brain were responsible for acute chemotherapy induced vomiting and the introduction of 5-HT₃ receptor antagonists revolutionised the treatment of acute chemotherapy induced emesis, but had only minor impact on delayed emesis, which was thought to be mediated by a different mechanism. Now aprepitant a new drug that is a neurokinin1 receptor antagonist, which is centrally acting and given orally, has improved the control of acute emesis when added to a 5-HT₃ antagonist and dexamethasone, but more importantly has made a major advance in the control of delayed emesis when continued for two further days in combination with dexamethasone. This control of nausea and vomiting associated with chemotherapy has translated into improved quality of life of the patients receiving chemotherapy.

Nausea and vomiting have been listed by patients as amongst the most distressing side effects of chemotherapy¹. Much of the knowledge gained over the last two decades about the mechanisms of emesis has resulted from the need to control chemotherapy induced emesis following the introduction of cytotoxic drugs of high emetic potential, such as cisplatin.

There are three phases of emesis associated with chemotherapy. Following cisplatin, which is the cytotoxic used in trials of new antiemetics because without antiemetics it causes emesis in most patients, there is an acute phase of emesis starting a few hours after chemotherapy and lasting until 18 to 24 hours, then a delayed phase, which follows and can last for up to a week. Finally there is anticipatory nausea and vomiting which is a conditioned response prior to the chemotherapy in subsequent cycles when emesis has occurred with previous doses². This

chairing the Research Grants Committee of the Anti Cancer Council, The Royal Melbourne Hospital's Research and Ethics Committee and the Victorian Cooperative Oncology Group. I am now chair of the small biotechnology company, Meditech Research Limited based in Melbourne.

It is clear that medical oncology, particularly with the development of molecular biology DNA chips and PET scanning is evolving into one of the most sophisticated of the medical sub-specialities. However, a great challenge is the increasing age of cancer patients and our need to obtain an evidence based approach to their management.

*The Medical Oncology Group of Australia/Pierre Fabre Award is granted annually in recognition of an outstanding contribution to the scientific study of cancer and/or to the control of cancer in Australia by an Australian scientist, clinician or other health care professional.

This is an edited version of the lecture presented at the Medical

provides the rationale for prophylactically trying to prevent post chemotherapy emesis so there can be no learned response.

Early Drugs Used For Emesis

The initial anti-emetic drugs used for chemotherapy induced emesis were dopamine antagonists, particularly metoclopramide, which blocked the D₂ receptor thought to mediate emesis³. At conventional doses this drug was not very effective, however a breakthrough came when, based on animal studies, clinical trials established that high doses of metoclopramide, up to 3mg/kg were more effective for preventing cisplatin induced emesis and were tolerated with only sporadic extrapyramidal reactions⁴. It is now believed that high-dose metoclopramide affects the 5 hydroxytryptamine₃ (5HT₃) receptor⁵.

Other drugs available at the time included prochlorperazine, where again low doses were minimally effective and higher doses more so, but at the expense of toxicities such as hypotension and extrapyramidal reactions⁶. Of the butyrophenones, oral domperidone has been most used, particularly when extrapyramidal reactions prevent the use of prochlorperazine and metoclopramide⁷. Even cannabinoids were tried because of anecdotal reports from young patients who smoked marijuana that it alleviated their vomiting after chemotherapy. Delta-9-tetrahydrocannabinol was less active than high-dose intravenous metoclopramide in controlling cisplatin-induced emesis, but is better with chemotherapy of moderate emetic potential as are the synthetic cannabinoids levonantradol and nabilone⁸. They are, however, more toxic than other antiemetics with the somnolence and dysphoric reactions tolerated poorly, particularly in older patients⁹.

Co-Administered Drugs

The empiric observation that chemotherapy cycles including a corticosteroid were associated with less emesis than those without led to these agents being investigated as antiemetics¹⁰. Although they have some efficacy as single agents their greatest role has been as part of antiemetic combinations¹¹.

Benzodiazepines such as lorazepam have been used in addition to antiemetics, particularly metoclopramide and prochlorperazine^{12,13}. Lorazepam has an amnesic anxiolytic effect and is a sedative.

This can improve the patients' tolerance of chemotherapy and can reduce the risk of extrapyramidal reactions from metoclopramide¹⁴. Trials of benzodiazepines have been directed at reducing anticipatory emesis¹⁵.

5-Hydroxytryptamine₃ Receptor Antagonists

It was the discovery that cisplatin-induced acute emesis could be ameliorated by specifically blocking one of the seven 5-hydroxytryptamine (5-HT) receptors, the 5-HT₃ receptor, that allowed a great stride in our understanding of the pathways of the emetic response¹⁶. The 5-HT₃ receptors are found centrally and peripherally where the main site of activity is in the small intestine. The 5-HT₃ receptors have allowed identification of the role of the vagal afferent-enterochromaffin cell unit in the emetic response¹⁷. Cytotoxic drugs cause a calcium dependent release of hydroxytryptamine from enterochromaffin cells in the upper gastrointestinal mucosa. This is reflected by the fact that cisplatin-induced emesis is associated with increases in urine and plasma 5-hydroxyindoleacetic acid (5 HIAA), a metabolite of 5-HT supposedly released from the enterochromaffin cells¹⁸. It is an anomaly, however, that cyclophosphamide induced emesis which responds to 5-HT₃ antagonists fails to induce these changes to 5-HT release and so the precise mechanism of emesis remains undefined¹⁹.

The recognition of the role of the 5-HT₃ receptor in acute post chemotherapy emesis and the development of selective antagonists including ondansetron, granisetron, tropisetron and dolasetron has revolutionised the management of this complication of anti-cancer chemotherapy^{20,21}. They are not broad spectrum antiemetics, their major uses being confined to post chemotherapy and post anaesthetic emesis. Despite preclinical differences, there is little difference clinically between the drugs. The 5-HT₃ receptor antagonists were shown to be superior to high dose metoclopramide regimens for preventing chemotherapy-induced emesis and they have a favorable toxicity profile with reversible headache, constipation and mild elevations in liver transaminases being the most common side effects^{22,23}. A 5-HT₃ receptor antagonist combined with dexamethasone had become the gold standard given prophylactically to prevent acute post chemotherapy induced emesis². This results in complete protection from cisplatin-induced emesis ranging from 70-90 per cent²⁴. These drugs are also active for radiation induced emesis²⁰. As a class of drugs, clinically, there is a threshold effect for efficacy, only a modest dose response curve and a plateau in therapeutic efficacy²¹. Failure of response or breakthrough of emesis on these agents may not be remedied by larger or more frequent dosing because other receptor mechanisms may be responsible^{25,26}. Currently single daily dosage regimens are most commonly used. Oral doses when adjusted for their bioavailability seem as effective as intravenous dosing if there are no barriers to absorption²¹. Mainly used intravenously and orally, other formulations such as ondansetron wafers, which dissolve in the mouth and suppositories have been trialed^{27,28}.

Delayed Emesis

The 5-HT₃ receptor antagonists were very effective for acute emesis, but a second mechanism of emesis was responsible for delayed emesis which begins towards the end of the first day and can continue for a week. If a 5-HT₃ antagonist and dexamethasone was continued the control of the delayed phase of emesis rarely exceeded 50 per cent^{29,30}. Here dexamethasone appeared to be the key drug and combining it with metoclopramide yielded similar results to studies combining it with 5-HT₃ antagonists³¹. It is now known that the centrally located neurokinin1(NK1) receptors are important

mediators of delayed post chemotherapy emesis.

Neurokinin Receptor Antagonists

Substance P is an 11 amino acid neurotransmitter which displays a strong affinity for the NK₁ receptor³². There are high concentrations of substance P, which can be imaged by positron emission tomography, in areas of the brain responsible for emesis such as the nucleus tractus solitarius and area postrema³³. NK₁ receptor antagonists are highly selective for NK₁ receptors and they act centrally, inhibiting the binding of substance P. In the ferret model they show activity against both acute and delayed cisplatin-induced emesis³⁴.

The first of the NK₁ antagonists available clinically is aprepitant. Aprepitant has a pro-drug L-758298, which is an intravenous preparation, but itself is an oral formulation with 60 to 65 per cent being absorbed and that absorption not affected by food. It is recommended for once a day administration. It crosses the blood brain barrier which is necessary for its antiemetic effect. Its main pathway of elimination is by the cytochrome P450 CYP3A4 isozyme of which it is a moderate inhibitor. This creates the potential for drug interactions. Of significance, when given with dexamethasone there was a two fold increase in dexamethasone AUC (area under the dose/time curve)³⁵. The AUC of ethinyl estradiol is decreased by 40 per cent and the manufacturer recommends alternate methods of contraception. No significant interactions have been found with 5-HT₃ receptor antagonists or cytotoxics such as docetaxel³⁶. No dosage adjustments are necessary for mild to moderate hepatic or renal insufficiency, age race or gender. Based on negligible pharmacokinetic differences, there are no dosage adjustments recommended on the basis of age, race or gender. PET studies have shown correlations between receptor occupancy and plasma concentration and efficacy. Antiemetic efficacy increases with increased receptor occupancy up until a dose of 125mg but no additional benefit is seen with higher doses³³.

The single agent activity of these agents was disappointing against acute cisplatin-induced emesis and therefore the NK₁ receptor antagonists have been trialed added to 5-HT₃ receptor antagonists and steroids. Following phase I studies there were five phase II trials (two with the prodrug and three with aprepitant) in cisplatin induced emesis, which suggested additive activity in controlling acute emesis and good control of delayed emesis if the three drugs were given on day one (either granisetron or ondansetron with dexamethasone and aprepitant) and the dexamethasone and aprepitant on days 2 and 3³⁷⁻³⁹.

The first phase III placebo controlled trials were performed in South America (Poli-Bigelli et al) and in centers from North America, Europe and Australia (Hesketh et al)^{24,25}. Both studies included patients receiving their first cycles of cisplatin >70mg/m². The patients on the standard arms of both studies received intravenous ondansetron 32mg 30 minutes before cisplatin with oral dexamethasone 20 mg on day one followed by oral dexamethasone 8mg twice daily from days two to four. The aprepitant groups received oral aprepitant 125mg one hour before cisplatin, then intravenous ondansetron 32mg 30 minutes before cisplatin with oral dexamethasone 12mg on day one. On days two and three oral aprepitant 80mg and oral dexamethasone 8mg only once daily (because of the interaction with dexamethasone) was given and then day four oral dexamethasone 8mg. An extension phase of the study evaluated courses two to six.

Combining trials 1099 patients were enrolled. The complete response rate for the days of the first cycle in the Poli-Bigelli trial was 62.7 per cent for the aprepitant group versus 43.3 per cent

for control ($p < 0.001$) and for the Hesketh trial 72.7 per cent aprepitant versus 52.3 per cent control ($p < 0.001$). For acute emesis the results were aprepitant 82.8 per cent versus control 68.4 per cent ($p < 0.001$), for Poli-Bigelli and aprepitant 89.2 per cent versus controls 78.1 per cent ($p < 0.001$) for Hesketh. The biggest differences were seen in delayed emesis; 67.7 per cent versus 46.8 per cent ($p < 0.001$) and 74.4 per cent versus 55.8 per cent ($p < 0.001$) respectively. Similar results were seen with nausea. The efficacy of aprepitant was maintained over six courses as was consistent with the result of a study designed to specifically test protection over multiple cycles⁴².

In the two phase III trials logistic regression analyses of the Functional Living Index Emesis (FLIE) quality of life scale showed that more patients in the aprepitant groups reported minimal or no impact of chemotherapy induced nausea and vomiting on their daily life compared to those on the standard treatments (74.7 per cent versus 63.5 per cent in Poli-Bigelli and 70.4 per cent versus 64.3 per cent in Hesketh). Moreover this result was independent of the gender of the patients. In the Hesketh study, the percentage of males (69.8 per cent) and females (77.6 per cent) with complete response overall were similar in the aprepitant treated group, but in the standard arm complete responses were less for females (38.8 per cent) than males (60.5 per cent), which is the more usual result since females don't respond to other antiemetics as well as males⁴³.

Aprepitant added to a 5-HT₃ receptor antagonist and dexamethasone was effective in both the older and younger age groups, whereas other antiemetics tend to be less effective in younger patients. The overall complete response in patients aged 65 and over was 76 per cent for the aprepitant arm and 54 per cent for the standard arm ($p < 0.001$). Similar results are seen for both the acute and delayed phases of emesis and safety comparisons between older and younger patients showed no difference⁴⁴. The FLIE analysis also showed that the addition of aprepitant to standard therapy reduced the impact of post chemotherapy emesis on both older and younger patients⁴⁵.

Aprepitant was well tolerated. The incidence of drug related adverse events was 19.5 per cent for aprepitant versus 14.4 per cent controls on Poli-Bigelli and 14.6 per cent versus 11.0 per cent on Hesketh. Anorexia, asthenia and hiccoughs were more frequent with aprepitant; the other side effects were similar to the 5HT₃ antagonists with which they were combined.

Conclusions

The new standard for antiemetic prophylaxis for drugs of high emetic potential will be a 5HT₃ receptor antagonist, dexamethasone and aprepitant for the acute phase followed by aprepitant and dexamethasone for two days of the delayed phase of emesis.

Traditionally, with cytotoxics of moderate emetic potential, similar antiemetic regimens are used to those used with drugs of high emetic potential, although one of the newer HT₃ receptor antagonists, palonosetron, has been specifically given an indication for use for delayed emesis in this setting⁴⁶. Studies are ongoing to evaluate combinations including the NK₁ receptor antagonists for cytotoxics of moderate emetic potential and see whether delayed emesis will be as well controlled in this setting as it is when used with cytotoxics of high emetic potential.

Finally in the era of more targeted therapy, the emergence of gene array technology identifying the genes coding for the 5-HT₃ and NK₁ receptors may allow clinical correlations and

more rational selection of antiemetic regimens for patients. For example, patients with genetic variations in the 5-HT_{3B} receptor gene might respond differently to antiemetic treatments including the 5-HT₃ receptor antagonists.⁴⁷

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Computerised screening for anxiety, depression and radiation toxicity in cancer patients

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Background

Anxiety and depression associated with the diagnosis of cancer are widely prevalent¹⁻⁶. Together with the side effects associated with cancer treatment, this can have significant effects on the quality of life of patients undergoing radiation therapy for cancer. Computer administered questionnaires have the potential to improve patient-provider communication and to improve patient outcomes in busy clinical settings⁷⁻¹⁰.

Radiotherapy is effective in the treatment of cancer, but is associated with a range of side-effects that vary depending on the part of the body that is treated with radiation. While it is routine for clinicians to inquire about side effects during patient

review and follow-up meetings, there may be no systematic method of serially recording and monitoring symptoms. Inadequate recognition and response to the symptoms of radiation toxicity can adversely affect the patient's quality of life.

In this trial computerised (touchscreen) questionnaires were used to screen for anxiety, depression and the side effects of radiotherapy in patients with breast, bowel, prostate or head and neck cancer. Questionnaires were developed to screen for symptoms of radiation toxicity in each site. The Hospital Anxiety and Depression (HAD) scale was used to screen for anxiety and depression¹¹. The program was evaluated for errors, logical inconsistencies and patient acceptability by trialling it on 50 newly diagnosed cancer patients.

Aim

To develop an interactive computerised system to provide feedback to clinicians on the incidence of treatment toxicity, anxiety and depression in cancer patients undergoing radiotherapy; and to

trial the system on 50 patients newly diagnosed with breast, prostate, bowel or head and neck cancer.

Methods

Questionnaires

Radiation toxicity questionnaires were developed by radiation oncologists for each of the selected cancer sites (breast, prostate, bowel and head and neck cancer). Toxicity questions were based on scales developed by the Radiation Therapy Oncology Group and the European Organisation for Research and Treatment of Cancer (RTOG/EORTC)¹². Three sets of questions were developed for each of the four cancer sites. The first set of questions (pre-treatment questionnaires) sought to ascertain baseline values such as the patient's normal bowel or urinary habits prior to radiation treatment. The second set of questions was designed to be answered by the patient during the course of their radiotherapy and contained questions dealing with expected immediate or acute toxicity. The final set of questions (post-treatment questionnaires) was designed to be answered by patients during their follow-up visits to the clinic after completion of their radiotherapy and dealt with the possible long-term side-effects of radiotherapy.

The HAD scale was used to screen for anxiety and depression. This scale was specifically developed for patients with physical illness and is designed so that somatic items are largely excluded from the depression sub-scale¹¹. The HAD scale has previously been extensively tested and validated as a screening instrument for anxiety and depression in cancer patients^{13,14}. The patients in this trial answered the HAD questionnaire every time they answered the touchscreen questionnaires.

Software

A commercial software company incorporated the questionnaires into an interactive touchscreen computer program and developed a database that would interface with the hospital cancer records system. To protect the security and integrity of the hospital cancer recording system, the link was designed to provide read-only access from the touchscreen database to patient identification and diagnosis details in the hospital cancer records.

The computer program opened with an introductory video clip including instructions for patients on how to use the program. Each question was presented individually on the screen in a multiple choice format and the patient was merely required to touch the screen next to the appropriate answer. The computer program generated two reports at the end of the session, one for the toxicity questionnaire and the second for the HAD questionnaire. The data was stored within the



Fig. 1 Touchscreen computer with purpose-built desk that prevents unauthorised access to the hard drive and maintains patient privacy.

computer in a Microsoft Access database.

Patients

The program was piloted on 50 newly diagnosed cancer patients who presented for radiation treatment to the Cancer Therapy Centre at Liverpool Hospital. Patients were eligible for the trial if they were newly diagnosed with prostate, breast, bowel or head and neck cancer, were to receive potentially curative radiation treatment and could read English and perform a touchscreen survey. There were no age limits for the trial.

Trial

Patients were recruited into the trial prior to commencing radiotherapy. A researcher was present at the first touchscreen session to help patients through the program. The time taken to complete the initial questionnaires and any problems encountered were recorded. A verbal patient satisfaction questionnaire was administered at the end of the first touchscreen session.

Patients were requested to answer the touchscreen questionnaires once a week during their radiation treatment and at every follow-up visit. They were instructed to hand the print-out of their touchscreen results to their oncologist during their treatment review and follow-up visits.

All patients with elevated HAD scores (scores above eight) were referred to the psychosocial team, comprising a clinical psychologist, social worker and breast nurse trained in counselling. Treatment options included provision of information, problem solving, support, reassurance, psychotherapy, social interventions or recommendation for referral to a psychiatrist for further management of depression or anxiety.

Results

Patient Characteristics

A total of 50 patients with breast, prostate, bowel or head and neck cancer were recruited into the study. Twenty-one patients (42 per cent) were female. Table 1 shows the primary cancer site and median age of patients in the trial. The time that had elapsed since the diagnosis of primary cancer was five months

Table 1:
Age, Primary cancer site and Time taken to complete initial touchscreen questionnaires

Cancer site	No of patients	Median age (years)	Median Time to complete initial questionnaires (mins)	Number with Elevated* HAD scores (%)
Breast	17	56	9 (7-16)	6 (35)
Prostate	15	66	12 (7-21)	1 (7)
Bowel	9	60	14 (9-23)	5 (55)
Head and neck	9	65	10 (8-15)	3 (33)
TOTAL	50	63		15 (33)

* Score of 8 or above

or less in 63 per cent of patients.

The median time taken by patients to complete the touchscreen questionnaires ranged from nine minutes for breast cancer patients (who had the shortest questionnaire and were significantly younger than the other groups of patients) to 14 minutes for bowel cancer patients.

The majority of patients in the study (70 per cent) had not completed high school and more than half of the patients (56 per cent) had no prior experience with computers. About half of the patients in the study (54 per cent) did not encounter any problems in their first touchscreen session. Twenty-two percent of patients had difficulty with understanding one or more of the toxicity questions (some of these questions were later reworded to make them clearer). A small proportion (8 per cent) of patients experienced difficulty with starting the touchscreen program because they repeatedly entered their hospital number or date of birth incorrectly.

Acceptability

Despite the fact that many of the patients had never used a computer before, the vast majority of patients (93 per cent) found that the touchscreen survey was easy to use and all agreed that it did not take too long and was not stressful. All the patients felt that it was a good way to convey information to their treating doctor.

Screening for Anxiety and Depression

Out of the 50 patients who were screened for anxiety and depression, 30 per cent (15 patients) had at least one elevated HAD score. Thirteen patients had mildly elevated (8-10) HAD scores, one patient had a moderately elevated (11-14) HAD score and one patient had a severely elevated (15-21) HAD score. Four patients had one or more elevated scores on the depression subscale only, one patient scored on the anxiety subscale only and 10 patients had elevated scores on both the anxiety and depression subscales.

Ten patients had an elevated HAD score on only one occasion. Out of these, seven patients had an elevated HAD score only at the first survey, with subsequent HAD scores being within normal limits. Thirty-eight per cent of female patients had one or more elevated HAD scores, compared to 24 per cent of male patients who had elevated scores on HAD.

Screening for Radiation Toxicity

Most patients experienced some degree of radiation toxicity, which increased in severity with the duration of treatment. The majority (80 per cent) of patients with breast cancer reported no breast pain or discomfort during their first touchscreen session, but by their fifth touchscreen session, 70 per cent of patients experienced mild or moderate degrees of breast pain or discomfort. Patients with head and neck cancer reported maximal toxicity (pain or difficulty in swallowing) at their third touchscreen session. Patients with prostate cancer reported gradually increasing levels of bowel and bladder toxicity over visits one to five and similarly patients with bowel cancer experienced increasing symptoms over the duration of their treatment.

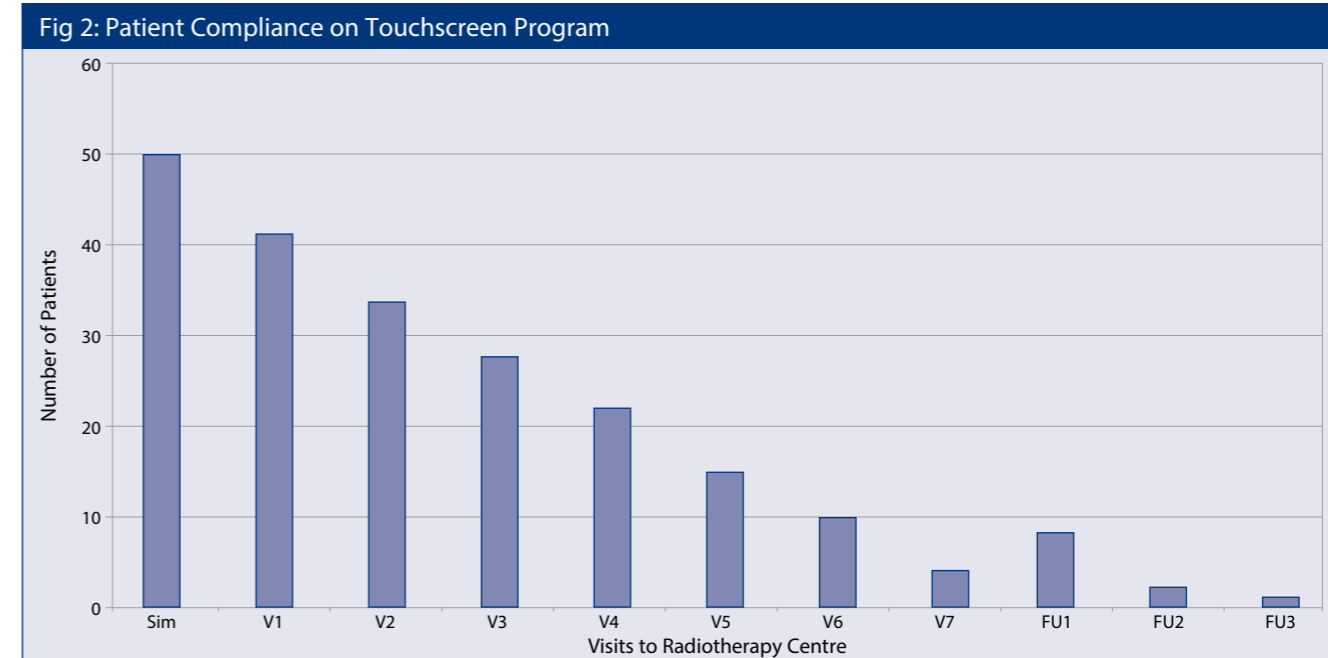
Patient Compliance

Patients were asked to continue to answer the touchscreen questionnaires on their own, once a week during their course of their radiation treatment and during all follow-up visits. As can be seen from Figure 2, patient compliance fell markedly with time. The average number of touchscreen sessions completed by patients on the trial was 4.6 (ranging from a minimum of one to a maximum of eight sessions). Patient compliance during follow-up visits was extremely poor with only nine patients answering at least one follow-up questionnaire (however some patients attended follow-up visits at other hospitals).

Discussion

Anxiety and depression are known to be widely prevalent in cancer patients. Approximately 25 to 30 per cent of cancer patients experience anxiety and/or depression severe enough to merit psychological intervention¹⁵. Most of these patients receive no support for their psychological condition; Maguire¹⁶ reported that only 20 to 50 per cent of cancer patients with significant anxiety or depression were diagnosed and treated. DiMatteo et al¹⁷ found that depressed patients were three times more likely to be non-compliant with medical treatment than patients who are not depressed. Patients need more support to deal with the side effects of cancer and cancer treatment¹⁸.

Electronic self-administered questionnaires for the collection of patient information have several advantages, including increased patient privacy and confidentiality, more accurate data capture and improved storage of data. Velikova et al⁷ compared touchscreen computerised administration of the HAD and EORTC QLQ-C30 with paper questionnaires and found that



the differences between scores obtained with the two modes of administration were small, with equivalence for most of the QOL scales. On the emotional, fatigue and nausea/vomiting scales at the group level, patients tended to give more positive responses on the touchscreen than on paper questionnaires.

Several studies⁸⁻¹⁰ have examined patient preferences regarding electronic collection of data, mainly with reference to quality of life data. Bliven et al⁹ sought to validate the electronic collection of health-related quality of life data relative to pencil and paper collection and found that 82 per cent of their patients preferred the computerised version to the paper version. Computer literacy, educational level, age and sex were not significantly associated with the ability to successfully complete the computer-assisted questionnaire. Newell et al¹⁰ tested the acceptability of a touchscreen computer survey to assess the levels of physical side effects, anxiety, depression and perceived needs among cancer patients receiving chemotherapy and found that over 95 per cent of patients found the computerised survey easy and enjoyable.

The results reported above are similar to our findings in this trial where all of the patients surveyed agreed that the touchscreen program was a good method of conveying information about their symptoms to their treating doctor. Patients who had never used a computer before were initially apprehensive about completing a computer questionnaire, but once they found out that it was not as difficult as they had anticipated, they were happy to participate in the trial. However this initial enthusiasm for the project did not extend beyond the treatment course and into the follow-up phase and patient compliance declined with time. A weakness of this study is that patient satisfaction was not assessed at the end of the study period and that the reasons for the fall in patient compliance were not explored. Possible ways of improving compliance might include issuing reminders to patients who have missed a touchscreen session and clinicians and patients routinely discussing the results from the touchscreen survey during clinical consultations.

Screening for anxiety or depression among the cancer patients in our trial found that almost a third of the patients (30 per cent) had at least one positive result (using a HAD cutoff score of eight). Carroll et al¹⁹ found that 48 per cent of 930 inpatients and outpatients with cancer had scores of 8 or above on the HAD scale. In our trial only two patients (four per cent) had HAD scores of 11 or higher. Pascoe et al² in a survey of oncology outpatients in four Sydney Hospitals found that 12 per cent of patients scored 11 or more in the anxiety subscale and seven per cent of patients had clinically significant depression (score of 11 or above). The possible explanations for the comparatively lower incidence of anxiety and depression in our study may be the small sample size, the time that had elapsed since the initial diagnosis and the fact that only outpatients receiving potentially curative radiation treatment were included in our study. Several studies^{2-4,19} have shown that cancer patients with advanced disease, more metastases, pain or restricted activity levels are more likely to be depressed than patients without these factors. Aass et al¹ found that the risk of psychiatric distress in hospitalised patients, measured using the HAD scale, was approximately twice that of patients in the outpatient clinic.

The majority (66 per cent) of patients in our trial who had elevated HAD scores were found to have an elevated score on only one occasion and this was often during their initial simulation visit before they commenced their radiation treatment. Ford et al¹⁵ studied a group of 117 newly referred outpatients with cancer and found that the incidence of both anxiety and depression was greater at initial referral than at six-month follow-up.

Although other studies have looked at computerised administration of the HAD questionnaire, no previous studies have examined the use of computerised questionnaires to screen for the incidence of the side effects of radiotherapy, possibly because the questions need to be specific to the cancer site. Velikova et al²⁰ assessed the feasibility of immediate feedback of computer administered quality of life measurements of cancer patients receiving chemotherapy to medical oncologists in oncology clinics. They found that having symptoms and functional problems expressed quantitatively on a scale was useful for detection of change over time.

This trial has demonstrated that computerised screening for the side effects of radiation treatment is acceptable to patients. A further trial is currently being conducted to determine whether giving computerised feedback to oncologists about their patients' incidence of radiation toxicity and level of anxiety and/or depression would result in a change in patient management and ultimately in better patient outcomes.

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REPORTS

Australian behavioural research in cancer

This is a regular feature in Cancer Forum describing behavioural applications in cancer prevention.

New Results

- n Centre for Behavioural Research in Cancer (CBRC), VIC
- n Centre for Cancer Control Research (CCCR) and the Tobacco Control Research Evaluation Program (TCRE), SA

Southern Partner's Smoking Cessation Project

TCRE was commissioned to evaluate the effectiveness of Phase II of the Southern Partner's Smoking Cessation Project, which involved the Noarlunga Health Service (NHS) and the Repatriation General Hospital. The aim of this project was to consolidate gains made from Phase I and expand the project across all inpatient and outpatient areas in both hospitals. The evaluation revealed some very positive results, including: staff belief that smoking cessation intervention was part of their role; a decrease over time in perceived barriers to the provision of cessation intervention at NHS; an increase over time in staff confidence and practice of delivering cessation intervention, after receiving training; high patient satisfaction with the NHS smoking cessation intervention they received; and high NHS referral rate to the Quitline.

Progress in Tobacco Control in SA: 2003 Monitoring Results

A battery of questions was included in the 2003 South Australian Health Omnibus Survey (HOS) to monitor progress in tobacco control in South Australia. The aim of TCRE's HOS questions is to monitor smoking prevalence and consumption, passive smoking exposure and population beliefs and attitudes on tobacco-related issues. Evaluation showed the following findings: high awareness from most people (including smokers) of smoking's negative health effects; high levels of public concern about passive smoking; improvements in the rate of smoke-free homes; and a downward trend in smoking prevalence.

- n Viertel Centre for Research in Cancer Control (VCRCC), Qld

How Common is Screening for Melanoma in Queensland?

Following a similar survey in 1998, we completed a large cross-sectional telephone interview survey throughout Queensland in 2003, in which participants were questioned about their past skin screening history, common melanoma risk factors, attitudes towards screening for skin cancer and sociodemographic characteristics. A total of 1559 randomly selected residents living in regional and urban communities in Queensland were included.

Close to 12 per cent of participants reported having had a whole-body skin examination by a doctor in the previous 12 months, similar to the proportion reported in our 1998 survey. There was no difference between men and women in the reported frequency of whole-body clinical skin examinations.

A part-body clinical skin examination was reported by 55 per cent of all participants during the past 12 months and men and women over 50 years of age were more likely to report having received such an examination. Whole-body skin self-examination in the past 12 months was reported by 23 per cent of all participants and 65 per cent reported a having performed a part-body skin self-examination in that time. While men and women were equally likely to report skin self-examination, this was more common among younger participants.

These results demonstrate that skin screening remains common in Queensland, despite the lack of definitive evidence of benefit. Screening for melanoma in the general asymptomatic population is not currently recommended by The Cancer Council Australia.

Melanoma Diagnosis in Queensland

As part of a large case-control study of melanoma screening, we have interviewed, over the last four years, a total of 3772 recently-diagnosed melanoma patients in regard to how and by whom their melanoma was discovered. Most melanomas were first noticed by the patient (44 per cent), their partner (18.6 per cent) or another lay person (12.1 per cent). One quarter (25.3 per cent) were first detected by the patient's doctor, of which close to 70 per cent were detected during a deliberate skin examination. Over 70 per cent of all melanomas first detected by a doctor were thin lesions (less than 0.75mm thick), compared with about half (49.3 per cent) of those lesions first detected by the patient or another lay person that were thin. The majority (85 per cent) of lesions first detected during a deliberate skin examination by a doctor were thin lesions, pointing to the potential but still unproven benefit of skin screening in terms of improved melanoma survival.

- n Centre for Health Research and Psycho-oncology (CHERP), NSW

Direct-telemarketing of Smoking Cessation Strategies

Few smokers currently make use of available and effective cessation strategies, despite their expressed desire to quit and reported interest in cessation support. Smoking cessation strategies are usually offered in a passive manner, relying on the smoker to express a need for help. There are many barriers however, to the expression of this need. The use of direct-telemarketing has been identified as one proactive way of offering cessation strategies. Dr Chris Paul and others from CHERP and researchers from Hunter Population Health conducted a community survey to explore the views of current adult smokers regarding the acceptability, likely uptake and barriers to uptake of smoking cessation services offered by direct telephone marketing. One hundred and ninety-four people from the Hunter in NSW participated in a phone survey with 75 per cent reporting they would use vouchers for discount nicotine replacement therapy, 66.5 per cent would use a mailed self-help booklet, 57 per cent would take up the offer of regular mailings of personalised letters and self-help materials and 46 per cent would utilise a 'we-call-you' telephone counselling service. The two major barriers to uptake



of services were preferring to quit without help and a belief that a particular service would not help the participant. The results suggested strong support for the direct marketing of smoking cessation strategies and also the need for further research into the cost-effectiveness of such a strategy.

This research has been recently published: Paul CL, Wiggers J, Daly J, Green S, Walsh RA, Knight J, Girgis A. Direct telemarketing of smoking cessation interventions: will smokers take the call? *Addiction* 2004;99:907-913

Smoking in Drug and Alcohol Agencies

Smoking has a huge impact on the mortality and morbidity of the general population. This impact increases considerably among people with alcohol and other drug related problems, with smoking prevalence around 90 per cent and significantly more cigarettes smoked on a daily basis. Programs to encourage smoking cessation amongst this group of people needs to be a priority.

Dr Raoul Walsh and researchers from CHERP undertook a cross sectional survey of all Australian drug and alcohol treatment agencies to assess their smoking cessation policies and practices and related staff attitudes. Barriers to smoking cessation interventions were also examined. The manager and a staff member at the agency were sent questionnaires, with around 60 per cent of the agencies completing the questionnaire.

Only approximately one quarter of agencies indicated that they have a smoking cessation intervention policy. In most cases, the only cessation intervention smokers receive involves the recording of their smoking status on the client file. Based on the staff's own assessment, about two thirds of clients of such agencies receive inadequate smoking advice. In summary, the survey showed that smoking cessation receives little attention from drug and alcohol agencies indicating, an urgent need for training and policy initiatives in this area.

n Centre for Behavioural Research in Cancer (CBRC), Vic

Experimental Study of Effects of Exposure of Youth at Risk for Smoking to Television Advertising for Nicotine Replacement Therapy and Zyban®

Television advertising for nicotine replacement therapy (NRT) and Zyban® exposes the entire population, including adolescents, to persuasive messages about these smoking cessation products. There is a risk that adolescents exposed to the advertising might gain an unintended message that it is easy to quit smoking. This is of concern, since optimism about quitting is a major predictor of trial and progression to heavier smoking. In a study funded by an NHMRC project grant, Melanie Wakefield, Russil Durrant and Kim McLeod randomly allocated 492 youths aged 12-14 years to one of three viewing conditions, where they viewed either: a) four NRT ads; b) four Zyban® ads; or c) four ads promoting non-pharmacologic cessation services, such as telephone quitlines. After viewing each ad twice, each completed a one page rating form. After all ads had been viewed, they were given a questionnaire which measured intentions to smoke in future, perceived addictiveness of smoking, perceived risks and benefits of smoking and perceived need for pharmaceutical products and services. Compared with the Quitline ads, youth were more likely to agree that the NRT and Zyban® ads made it seem easy to quit smoking ($p < .001$). However, there were no systematic differences between groups after all viewing was completed in perceived addictiveness of smoking, intentions to smoke or other outcomes. This study suggests that although ads for NRT and Zyban® may create 'face value' impressions that it is easier to quit, at least in an experimental context where

different advertising exposure is equal for pharmaceutical and non-pharmaceutical quitting products/services, such appraisals do not undermine more enduring perceptions about smoking. Field research taking into account the relatively high volume of pharmaceutical cessation product advertising is needed. This study is now in press in *Health Communication*.

Breast Cancer Management in Victoria, 1999

The results of our study examining the management of early breast cancer in Victoria pre (1995) and post (1999) the introduction of clinical practice guidelines have recently been published in the journal *Cancer*. The project involved studying the management of 1066 cases in 1995 and 1001 cases in 1999. Results suggest that the management of early breast cancer in Victoria changed in the direction expected if the national guidelines had been incorporated into the practice of surgeons treating breast cancer. While pathological staging of cases was similar in the two study years, there was an increase in the use of breast conservation therapy (BCT) from 54 per cent of cases in 1995 to 69 per cent in 1999. The proportion of cases treated by BCT receiving radiotherapy also increased from 59 per cent in 1995 to 80 per cent in 1999. In addition more women were being seen by medical oncologists in 1999 than 1995 and this was associated with more appropriate use of endocrine therapy for women.

CBRC has published nine research papers, which are available in PDF format at www.cancervic.org.au/cbrc

n Centre for Behavioural Research in Cancer Control (CBRCC), WA

Evaluation of Fresh Start Smoking Cessation Courses

Fresh Start is a comprehensive quit smoking course which provides information, resources and support to smokers about quitting and staying stopped. The course consists of eight sessions of 1-1½ hours, held over four weeks. Since August 2002 The Cancer Council WA has provided 10 Fresh Start smoking cessation courses and has also sponsored eight independently facilitated courses in regional Western Australia to 107 smokers. Follow-up telephone interviews were conducted with participants 9-19 months after participation. A response rate of 83 per cent was achieved and a consent rate of 98 per cent. Responses were compared with pre-course and post-course questionnaires completed immediately prior to and after the courses. The Fresh Start course typically attracted long-term smokers. At the time of the follow-up survey, 83 per cent of respondents who completed the course had attempted to quit and 25 per cent were still not smoking. Of the 75 per cent of participants still smoking, tobacco consumption was lower than pre-course levels and a large majority of participants (85 per cent) still stated their intention to quit within the next six months. Participants thoroughly enjoyed the course, found it highly motivating and felt it had armed them with an excellent array of useful skills for quitting. Follow-up surveys are currently underway with health professionals who have attended brief intervention training courses provided by The Cancer Council WA.

Research in the Pipeline

n CCCR and TCRE (SA)

Integrated Cancer Care

A key strategy area of TCCSA concerns integrated cancer care. The CCCR is developing a survey of the needs and perceptions of people with cancer and their carers in relation to their hospital experience and the hospital-community interface. The

survey will be in the form of a telephone questionnaire and the sample of people with cancer will be drawn from two major teaching hospitals in Adelaide. Selected patients from these hospitals will be asked to nominate their primary informal carer, who will also be invited to participate. This survey will provide valuable baseline information prior to an intervention strategy in each of the hospitals, which is being developed in partnership with the institutions. Qualitative analysis of the perceptions and experience of general practitioners, in relation to integrated cancer care, is also being planned.

Cancer Information Seeking: Patterns, Preferences and Needs of the South Australian Community.

The Centre for Cancer Control Research is planning to undertake a study looking at cancer related information needs and current patterns of health information seeking among various client groups within the South Australian community. The aims of this study are to determine how people currently access information about cancer (or health more generally) how they would like to access such information in the future and to identify what specific information they currently find difficult to access. Study participants will include recent cancer patients selected from four large hospitals in metropolitan hospitals (two public and two private), their nominated informal carers and a sample of SA residents selected from the electronic white pages. The proposed method of data collection is via telephone interviews, with the possibility of focus groups to further explore specific issues or communication media. Results of this study will inform the development of new technologies to enhance communication and improve on current methods of providing information and support to the community. The study will commence early in 2005 subject to ethics approval.

Evaluation of the Critics' Choice Program

TCRE is working with Quit SA to undertake a major evaluation of the Critics' Choice tobacco education resource. Critics' Choice is used in both primary and secondary schools across SA (and other states including WA, Vic, NSW), with the project's aim to influence students' attitudes, tobacco knowledge and intention to smoke. This is done by showing a video featuring Australian and international smoking prevention/cessation advertisements. Students then undertake critical literacy and voting exercises. Pre and post-test questionnaires are being used by TCRE with 74 of the schools, to ascertain the effectiveness of the resource. An evaluation report of the findings will be available by the end of this year.

Surgical Outcomes for Smokers

TCRE is working with Quit SA to investigate the risk of surgical complications for smokers, using data from the hospital coding system (ICD-10 codes). Project findings will be reported on by the end of this year.

Smoke-free Pregnancy Project

Quit SA is undertaking a Smoke-free Pregnancy Project, aiming to establish an effective and sustainable set of interventions to reduce the harm caused by smoking amongst pregnant women in South Australia. The project has involved the establishment of a Pregnancy Quitline, a media campaign and the training of antenatal staff at two major hospitals to deliver brief smoking cessation interventions with pregnant women who smoke. TCRE is evaluating the project and some results will be available in 2005.

n VCRCC (QLD)

Communicating Prostate Cancer Risk

Both consumer advocates and research bodies believe that

Australian men need to be fully informed about their own risk of prostate cancer before making a decision about whether to be tested. This decision often depends on a man's own perception of his risk of prostate cancer and requires clear messages about absolute and relative risk. Most published estimates of risk of diagnosis and mortality are based on standard population-based lifetime risk estimates. For a number of reasons we believe that these can give misleading estimates of risk for individual men in their 50s, 60s and 70s who are facing that decision. If men facing this decision are going to be adequately informed about their risk of prostate cancer, then they and their general practitioners need to be aware of the many components of assessing an individual's risk. This study investigates different ways of estimating and presenting the latest available estimates of risk for prostate cancer diagnosis and death among Australian men and highlights some potential difficulties when interpreting those risks.

Lifestyle Interventions in Survivors of Childhood Cancers

This pilot study is being conducted to determine the current problems with physical and psychosocial function being encountered by survivors of the main childhood cancers: acute lymphoblastic leukemia, CNS tumours and lymphomas, as well as the level of interest in health promotion programs for survivors and their families. This pilot project is being undertaken in conjunction with a larger study by Dr Wendy Demark-Wahnefried of Duke University, US.

Queensland study participants are past and present members of the Queensland Cancer Fund's 'Seize the Day' support program and past and present members of CanTeen – the Australian Organisation for Young People Living with Cancer. Data collection will be completed in 2004.

n CHERP (NSW)

Community Views on Smoking

Smoking has been identified as the single, most preventable cause of premature mortality in Australia. Three national surveys are currently conducted to examine selected smoking-related issues on a regular basis. However, these surveys do not cover a number of issues important for tobacco control, are conducted infrequently and are subject to long delays prior to the data being published. Australian tobacco control experts have highlighted the need for regular, frequent, high quality monitoring research into smoking behaviour. A need remains for a NSW vehicle which facilitates both ongoing tracking and detailed exploration of critical tobacco issues. Some of these issues include community attitudes toward environmental tobacco smoking-related issues, relapse issues among smokers, the use of pharmacotherapies in quitting and topical issues such as perceptions of recent campaign messages or proposed legislation.

Researchers at CHERP, in conjunction with The Cancer Council NSW, are conducting the first of a series of biennial surveys to track key indicators of attitudes and practices relevant to tobacco control policies and activities. The survey will include both core items for tracking over time and additional items which will be included periodically on the basis of need. Core items will include:

- n prevalence and patterns of smoking behaviour for current smokers;
- n reasons for and patterns of relapse during quit attempts for current smokers;
- n smokers' access to tobacco products and the influence of access on smoking and quitting behaviour;



- n prevalence and patterns of pharmacotherapy use for current smokers and recent quitters;
- n community views about and exposure to environmental tobacco smoke including smoking in cars, homes, bars, hotels and workplaces;
- n community perceptions of the need for government regulation of tobacco retailing;
- n community perceptions of the tobacco industry.

A market research company will be contracted to administer the computer assisted telephone interview (CATI) to 3500 New South Wales residents aged 18 years and older, with the survey being conducted on a biennial basis. This survey, used to complement existing data sources, will allow a much more timely approach to tobacco control policy development and implementation in NSW.

- n CBRC (Vic)

Assessing the effects of healthy and unhealthy TV food advertising on children's food-related attitudes and preferences: research to inform policy and practice.

TV food advertising targeted at children has attracted criticism for its potential role in promoting unhealthy dietary practices among Australian children. Content analyses indicate that "junk food" advertising is prevalent on Australian children's television and that healthy eating is rarely promoted. There is heated debate between the health and advertising sectors as to the impact of such advertising on children and whether regulation of TV food advertising targeted at Australian children would be desirable. A team of researchers from the Cancer Council Victoria (Helen Dixon (PI), Melanie Wakefield and Vicki White) and the Centre for Physical Activity and Nutrition Research, Deakin University (David Crawford) has been awarded a grant from The Financial Markets Foundation for Children to conduct a research study assessing the effects of healthy and unhealthy TV food advertising on children's food-related attitudes and preferences.

The study will systematically assess the impact of varying combinations of TV advertisements for unhealthy and healthy foods on children's dietary knowledge, attitudes and intentions, in order to evaluate the potential of various regulatory approaches to children's food advertising to contribute to promoting healthy eating among Australian children.

Participants will be 800 grade 5 and 6 students from primary schools in Melbourne. We are focusing on children in these years because poor dietary practices have been observed among children in this age group, children this age tend to influence household food purchasing practices and they are an important target market for food manufacturers. Each child in the study will be randomly assigned to watch a half hour TV program with different combination of healthy/unhealthy foods advertised within. Baseline and post-intervention multiple-choice questionnaires will assess food preferences, perceived social norms, barriers and benefits relating to diet, dietary knowledge and intentions.

The study will yield much-needed data on the relative impact of different models for regulating TV food advertising targeted at children on children's food-related attitudes, beliefs and intentions. It is hoped the results will help to inform public health policy and practice concerning food advertising targeted at children and offer insights into to how to advertise foods to children in an ethical and responsible manner that promotes healthy dietary practices among Australian children.

- n CBRCC (WA)

Childhood Obesity: Investigating the Influence of Television Food Advertising

Rob Donovan and Owen Carter have been awarded a two-year grant to investigate the influence of television food advertising on childhood obesity. A record number of Australian children are overweight or obese, leaving them susceptible to a range of serious psychosocial and short and long term health problems, including a range of cancers. The causes of obesity are both genetic and environmental, yet only environmental factors can account for the recent increased prevalence of overweight and obese children. The environmental factors likely to have contributed to increases in childhood obesity include: the marked increase in Australian children's consumption of energy dense foods that are high in fats and sugars; and the decreased energy expenditure associated with the large amount of sedentary time Australian children spend watching television. Television is also thought to be interrelated to food consumption as television ads for such foods are ubiquitous in children's programming timeslots. Younger children have been shown to be highly susceptible to television ads and are able to greatly influence the purchasing intentions of their parents for food. It is not until around the age of 12 years that a large majority of children are able to discern the persuasive intent of advertising. Current advertising regulations within Australia do not appear capable of protecting children from junk food ads. A number of groups are advocating stricter controls of food advertising in Australia, yet much of the data to support such controls is not specifically related to food advertising, nor is it based on Australian samples of children. These weaknesses can be exploited by advertisers and manufacturers and as such it is both a public health and political imperative that advocates have Australian data to support stricter controls on food advertising. We will be investigating the extent to which food advertising aimed at children breaches current advertising regulations over a four week period and through a series of experiments with 600 children aged 5 to 12 years, assess their verbal and non-verbal understanding of the persuasive intent of food advertising and the ability of food advertising to alter their food preferences.

Mental Health Promotion Intervention

Poor mental health is associated with higher levels of smoking, physical inactivity and poor diet – all risk factors for cancers. We have received funding from Healthway to develop a mental health promotion intervention in regional areas of Western Australia, aiming to evaluate the relative effectiveness of various approaches to mental health promotion campaigns as identified by the Healthway Mental Health Promotion Scoping Project (Donovan et al., 2003). Two approaches were identified, including: Individual focused campaigns which aim to reframe people's perceptions of mental health as the absence of mental illness by emphasising that proactive steps can, and should, be taken to protect and strengthen individual mental health; and Authority focused campaigns, which focus on interactions between those in authority and those under their charge (ie. supervisors/workers; parents/children; teachers/students; coaches/trainees etc), where emphasis is placed upon on replacing coercive, negative interaction styles with encouraging, positive styles under the overall message that "how you treat people under your care has significant implications for their mental health". A cross-over study has been designed whereby three pairs of matched regional towns will receive either the individual or authority focused campaigns for one year, followed by the alternative the year after. Overall, the project will provide a blueprint for implementing a state-wide or national mental health campaign that will include lessons about appropriate campaign messages, sequences, target behaviours for target groups, partnerships

with local groups and performance indicators.

News

- n CCCR and TCRE (SA)

Linda Foreman has commenced working at TCCSA in the role of Group Executive, Research and Development. Linda has a background in general practice and has also worked at BreastScreen SA and with the Bowel Cancer Screening Pilot Program. Linda is completing the coursework component of her MPH.

Sophie Kriven has returned from overseas and re-joined TCRE in June 2004. Sophie won the position vacated by Sinead Quinn, who has moved to Sydney.

Caroline Miller and Jacqueline Hickling attended the 7th Biannual Behavioural Research in Cancer Control Conference in June, presenting four posters. The topics were: Mounting Public Support for Smoke-free Hospitality Venues in South Australia; Smoking and Social Inequalities in South Australia; Community Perceptions about Tobacco Control Policy and the Tobacco Industry; and Quit Mass Media Campaign Comparisons: South Australia 2001-2003. Caroline also gave an oral presentation on: Tackling Social Inequalities by Reducing Passive Smoking.

- n VCRCC (QLD)

Associate Professor Lin Fritschi PhD has been appointed to head the Cancer Epidemiology Unit within the Viertel Centre for Research in Cancer Control, commencing in early February 2005. Dr Fritschi is a cancer epidemiologist with a wealth of experience in research into occupational health-related morbidity and exposure to carcinogens.

The official launch of the newly released Clinical Practice Guidelines for the Prevention, Diagnosis and Management of Lung Cancer was held at the Queensland Cancer Fund on 9 September, attended by clinicians, practitioners and consumers. The new guidelines represent an important step forward in quality care for patients with lung cancer.

Researchers from the Viertel Centre for Research in Cancer Control presented papers at the recent Behavioural Research in Cancer Control Conference in Newcastle in June. The papers demonstrated the range of research taking place at the centre, including: 1) The Queensland Cancer Risk Study, a study of the cancer risk behaviours of 10,000 Queenslanders; 2) research on the prevalence and predictors of skin screening behaviour; 3) The Colorectal Cancer and Quality of Life study, a prospective cohort study of outcomes and quality of life in survivors of colorectal cancer; 4) The Logan Healthy Living Study, a cluster randomised trial of a telephone and print delivered lifestyle intervention targeting cancer survivors recruited from general practice; and 5) The ProCan Study, a large randomized trial of a telephone and print delivered psychosocial support and lifestyle intervention targeting men newly diagnosed with prostate cancer in Queensland.

- n CHeRP (NSW)

CHeRP recently hosted the 7th Behavioural Research in Cancer Control Conference from the 23rd-25th June. The conference was attended by 91 people from around Australia representing research, program and policy areas. Delegates found the two and a half day program very informative and provided great opportunities for developing new ideas and networking with others from the various centres represented. Two workshops were held on the first day of the conference: Behavioural Principles for cancer control and Applying behavioural research: Bridging the gap between research and practice. Over the remaining days, Associate Professor Afaf Girgis presented a plenary on Psycho-social support: luxury item or mainstream care? Professor Graham



Giles presented the second plenary on Diet & cancer: Where's the evidence? A number of papers were presented by delegates covering: cancer prevention – tobacco control, UVR, nutrition & physical activity and cancer risk; life after cancer – understanding and meeting survivors' needs; and changing clinical practice. Copies of all presentations and photos are available at <http://www.newcastle.edu.au/centre/cherp/conferences/brcc/index.html>

Congratulations to Clare Johnson, a PhD student with ChERP working in palliative care, who received the Pulse Education Prize (\$3000) at the Hunter Medical Research Institute (HMRI) Awards Night held on the 9th September. This will contribute to her attendance at the 17th Multinational Association for Supportive Care in Cancer International Symposium in Geneva, 30 June-2 July 2005 and will also enable her to visit the office of Supportive and Palliative Care, Department of Health in the UK.

ChERP staff and affiliates received two further HMRI awards: Dr Jiong Li, A/Prof Afaf Girgis, Dr Chris Paul and Ms Allison Boyes received \$10,000 funding for their study on the lifestyles and cancer surveillance practices of newly diagnosed cancer patients. Professor Jon Adams from the Centre for Clinical Epidemiology and Biostatistics, University of Newcastle, along with A/Prof Afaf Girgis and others, received a collaborative grant of \$15,000, funded by the Lions Club of Adamstown and the Lions/Lionesses Club of Toronto, for research into the use of complementary and alternative medicine amongst prostate cancer patients.

A/Prof Afaf Girgis also received the Newcastle Conference Ambassador Program Appreciation Award in recognition of her contribution as a Newcastle Conference Ambassador 2001-2004 for bringing the Behavioural Research in Cancer Control conference to Newcastle. The award was presented by the University of Newcastle and Newcastle City Council.

ChERP has published a number of papers:

- n Rankin N, Williams P, Davis C and Girgis A. The use and acceptability of a one-on-one peer support program for Australian women with early breast cancer. *Patient Education and Counseling* 2004;53(2):141-146.

kConFab, Australian Ovarian Cancer Study & Familial Cancer Clinics of Australia and New Zealand: Series Two of Kith and Kin

Meeting report on "Familial Cancer 2004 – Research & Practice" Couran Cove, Queensland, August 2004.

This scientific meeting, held for the second year at Couran Cove on South Stradbroke Island in Queensland, was the seventh national meeting organised by kConFab, and the second to include the Australian Ovarian Cancer Study (AOCS) and the Family Cancer Clinics of Australia and New Zealand. The conference organisers (Graeme Suthers, David Bowtell, Christine Clarke, Georgia Chenevix-Trench, Dorota Gertig, Joe Sambrook, Nadia Traficante, Mary-Anne Young and Heather Thorne) continued last year's successful formula, providing a program suitable for registrants with diverse clinical and research backgrounds linked by an interest in hereditary cancer or cancer biology.

The first day of the meeting was again restricted to members of Family Cancer Clinics. This provided a helpful opportunity for participants to discuss common challenging issues facing familial cancer clinics and should serve to further consolidate

- n Paul CL, Wiggers J, Daly JB, Green S, Walsh RA, Knight J, Girgis A. Direct telemarketing of smoking cessation interventions: will smokers take the call? *Addiction*, 2004;99:907-913
- n Walsh RA. Dr Patrick J.J. O'Neill, BA(Cantab), MRCS, LRCP England, circa 1930-2003: reflections on his drug and alcohol career. *Drug and Alcohol Review*, 2004;23:219-222

ChERP staff have presented at a number of conferences including:

- n Afaf Girgis was invited to present in two workshops on Influencing Breast Cancer Research and Lymphoedema at Australia's 2nd National Breast Cancer Conference for Women - Still Making a Difference, Melbourne Convention Centre, 27-29th August.
- n Girgis A & Boyes A. A four-step model to facilitate the provision of more integrated, coordinated and patient-focused psychosocial care for cancer patients. *Health Outcomes 2004: Perspectives on Population Health*. 10th Annual National Health Outcomes Conference, 15-16 September, Canberra.

It is with much sadness that we announce that our dear colleague and friend, Professor Jill Cockburn, passed away on 13th October. Jill demonstrated exceptional courage during a long illness with breast cancer, through which she had the support of her devoted husband Craig (known to her many cancer research colleagues), her loving family and a dedicated group of friends and colleagues.

Jill was an extraordinary person who achieved more in her 48 years than many would in a dozen lifetimes. She was made paraplegic by a viral infection as a young teenager, but never let this interfere with a stellar academic career and a life lived to the full. She had a long association with the University of Newcastle, graduating in 1981 with first class honours and the University Medal in Psychology, before graduating in 1986 as the first PhD student in the Discipline of Behavioural Science in Relation to Medicine of the then Faculty of Medicine, under the supervision of Professor Rob Sanson-Fisher. After completing

links between various units. Topics covered included Familial Cancer Risk Management strategies, an update on predictive testing, expectations of families regarding genetic testing and a session where difficult or controversial cases were presented for discussion. One of the more challenging issues at present seems to be the lack of a standard and acceptable approach to inform relatives within mutation-positive families about their potential genetic risk, although there is increasing recognition of the "duty to warn".

The remaining two and a half day conference attracted over 200 registrants from a variety of backgrounds (data managers, genetic counsellors, research nurses, psychologists, patient advocates, epidemiologists, clinicians, surgeons, pathologists and laboratory scientists). Sessions included: national update on programs including kConFab, AOCS and new tissue banking initiatives; Hormones Genes and Cancer; Clinical Prevention and Intervention Trials; Breast Cancer Susceptibility genes; Etiology and Prevention; Functional analysis of BRCA1 and BRCA2; Genomics and Proteomics of Breast and Ovarian Cancer; and genes involved in

development and tumorigenesis.

There were six international plenary session speakers:

Valerie Beral from the University of Oxford, UK, presented an overview of findings from the UK Million Women Study, The Collaborative Group on Hormonal Factors in Breast Cancer and the Collaborative Group on Epidemiological Studies of Ovarian Cancer. Based on epidemiological data, a strong case was made for the role of parity (9 per cent reduction in risk for each birth) and lactation (4.3 per cent reduction in risk for each year of breast feeding) with respect to breast cancer risk. This (rather than other factors) may largely explain the striking difference in breast cancer incidence between developed countries and rural Asia/Africa (6.3 per cent versus 1.0 per cent by age 70, respectively). Despite the many thousands of women in these studies, there still remain difficulties in evaluating the interaction effect of modifiers (such as alcohol, body mass index and oral contraceptive pill use) in subgroups, such as those with a family history of breast or ovarian cancer.

Bruce Ponder from Cancer Research UK, Cambridge, presented an update on efforts to evaluate Single Nucleotide Polymorphisms (SNPs) in putative cancer susceptibility genes. Analysis of patterns of familial cancer clustering suggests that the difference in relative risk between 20 per cent of women who are most highly predisposed to the 20 per cent least predisposed may be as great as 40-fold. Only a small part of familial risk is accounted for by highly penetrant mutations (eg in BRCA1 or BRCA2) and most risk within the population will be due to the combined effect of a number of genes. In initial work, analysis of 295 SNPs in 74 candidate genes (such as DNA repair or oestrogen signalling pathways) in 2300 cases and controls has revealed six genes where a modifier effect may be present, and these are being further studied in a second set of 2300 cases and controls. Future plans include a genome-wide evaluation of 250,000 SNPs in 400 cases and controls.

Malcolm Pike from the USC/Norris Cancer Center, Los Angeles, California, presented an epidemiologist's view on preventative strategies to best impact on breast and ovarian cancer using hormonal intervention. Data was presented supporting the lasting benefits of oral contraceptive pill use on reducing endometrial and ovarian cancer risk, although breast cancer risk appears to be increased with current or recent use. Since the proliferative index of breast epithelium appears to be increased with hormone use, it was argued that analogous labelling studies in mouse mammary glands provides a good surrogate outcome measure. Prevention of ovulation with a GnRH analogue with minimal add-back of oestrogen (at early follicular-phase levels) would seem one option. Additionally, pseudopregnancy, parity or short-term progestin treatment appears to protect rats from DMBA-induced mammary tumours. It might therefore be feasible to mimic these beneficial effects with a short course of progestin treatment in young women (with concurrent oestrogen to increase progesterone receptor levels). While these hormones clearly play a fundamental role in breast tumorigenesis, the effect of other hormones (such as prolactin) and signalling pathways are also of interest, but were not addressed.

Fergus Couch from the Mayo Clinic College of Medicine, Rochester, Minnesota, gave a fascinating presentation on a

recently devised algorithm to determine whether missense variants in BRCA1 or BRCA2 represent pathogenic/deleterious mutations or benign/neutral variants. It was based on a panel of in vitro functional studies (such as subcellular localisation, protein stability and effects on genomic stability) as well as 'in-silico' measures (such as co-segregation and evolutionary sequence conservation). This kind of approach is likely to assist in the management of patients who harbour BRCA1 and BRCA2 variants of uncertain significance, which is a remarkably common and vexing clinical issue.

Kieth Baggerly from the Department of Biostatistics & Applied Mathematics, MD Anderson Cancer Center, Houston, Texas, presented reanalysis of data from a SELDI-TOF mass spectrometry study published by Petricoin et al (*Lancet* 359:272-7, and more recent work). The original study identified unique profiles in serum from ovarian cancer patients (not present in controls or those with benign disease) and has led to the development of an 'OvaCheck' ovarian cancer screening kit. Re-evaluation of the data seems to convincingly suggest that the perceived differences are more likely to be due to poor experimental design and systematic bias rather than true biological differences. It would seem that this finding requires dissemination and rebuttal through the original high profile journal, although this has not occurred to date. Independent studies are clearly also required.

Sara Sukumar from Johns Hopkins, Baltimore, Maryland, has used SAGE analysis to identify a number of genes whose expression is silenced by promoter hypermethylation in breast cancer cells when compared to normal breast epithelium. Six genes (RASSF1A, Twist, Cyclin D2, Hin-1, RARb and ERa) have been evaluated for promoter hypermethylation and reduced expression in breast cells derived by ductal lavage, suggesting that hypermethylation may be an early and common event. These findings are to be evaluated in a prospective clinical trial. She also presented some intriguing findings using intra-ductal injection of liposomal doxorubicin to treat carcinogen induced pre-invasive and established lesion, as well as mammary tumours in Her2/neu transgenic mice. Remarkably, the ductal side branches throughout the entire mammary fat pad appear to be largely cleared using this approach. She plans to evaluate the utility of this approach in the treatment of established tumours prior to mastectomy and for pre-invasive disease in humans.

Other overseas speakers included Richard Pestell (Lombardi Comprehensive Cancer Center, Georgetown University, Washington DC), who spoke about his group's work that links the breast tumour suppressor BRCA1 with inhibition of ERa activity, an effect that is antagonised by cyclin D1.

Representation by Australian speakers was again strong, with a range of interesting talks on topics ranging from basic biology to clinical intervention studies, as listed in the conference program, which can be accessed from the kConFab website: www.kconfab.org

Geoff Lindeman
Head, Royal Melbourne Hospital Familial Cancer Centre and Co-Head, VBCRC Laboratory, The Walter and Eliza Hall Institute of Medical Research, Melbourne on behalf of the kConFab



Unprecedented Political Support

For the first time in a federal election, both the Coalition and the ALP included detailed cancer control policies among their campaign promises, with commitments that reflected much of The Cancer Council Australia's recommended policy platform.

In separate announcements in September, the ALP committed to more than \$112 million in prevention and treatment initiatives, while the Coalition launched its comprehensive \$137 million policy, Strengthening cancer care, in October.

The Cancer Council Australia publicly endorsed both policies, particularly the many initiatives consistent with the evidence-based position we put forward to all federal parliamentarians in June.

One of the most significant announcements was the Coalition's pledge to establish a national cancer care agency, Cancer Australia, at \$10 million over four years, which was a key Cancer Council priority.

There was unanimous support for funding independent clinical trials capacity building, with the Coalition and the ALP committing to \$15 million and \$12 million respectively over four years. The Cancer Council Australia had sought \$5 million per annum.

Both sides also committed to rolling out a national bowel cancer screening program, as well as funding for national SunSmart campaigns. The ALP allocated \$21 million for a tobacco control program aimed at a five per cent decrease in national smoking rates, while the Coalition announced \$4 million to reduce smoking in pregnancy.

The ALP's commitment to introducing a Medicare Benefits Schedule item for cancer multidisciplinary care reflected The Cancer Council Australia's overarching theme of improving multidisciplinary care.

The Cancer Council Australia CEO, Professor Alan Coates, said considerable effort went into engaging with both sides of politics in the lead-up to the election.

"We continue to emphasise the fact that, while there have been improvements in cancer outcomes for Australians over recent years, cancer remains the nation's deadliest disease and there is great scope for federal policy makers to reduce the burden," Professor Coates said.

"We were very pleased to see both sides of politics show strong leadership in cancer control and look forward to continuing to build good relationships with our supporters in Federal Parliament."

Cancer Control in Indigenous Communities: Ways Forward

The Cancer Council Australia is developing a national advocacy strategy aimed at reducing the unacceptable disparities in cancer outcomes between Indigenous and non-Indigenous Australians.



The strategy will be based on the recommendations made at Australia's first national discussion forum on cancer control

in Indigenous communities, held in Darwin on 25-26 August, 2004.

Aboriginal and Torres Strait Islander peoples have markedly poorer overall cancer survival rates and higher incidence rates of some cancers than non-Indigenous Australians.

The discussion forum drew many of Australia's leading cancer specialists, frontline Aboriginal health workers, health administrators and Indigenous cancer survivors to Darwin to examine the epidemiological data and the reasons for the disparities.

Issues explored included: language and cultural barriers affecting access to prevention, screening and treatment services; Indigenous peoples' spiritual views about health; tobacco use; concerns about institutionalised racism; and funding availability.

Speakers noted the "double burden" on Indigenous health – infectious diseases typical of developing countries coupled with disproportionately high rates of chronic illnesses prevalent in developed nations, such as cancer, diabetes and heart disease.

Cancer in Indigenous communities will feature in the March 2005 edition of Cancer Forum and a summary of the Forum outcomes will be posted shortly on The Cancer Council Australia's website, www.cancer.org.au.

Health Groups Welcome Ratification of Tobacco Treaty

The Cancer Council Australian and other national health organisations have welcomed the Federal Government's ratification of the World Health Organisation's Framework Convention on Tobacco Control (FCTC).

Commenting that the initiative would help combat the tobacco epidemic in Australia and among our neighbours in the Asia-Pacific region, The Cancer Council Australia, National Heart Foundation of Australia and Action on Smoking and Health (ASH) all congratulated the Government for its ratification of the treaty.

The Cancer Council's Chief Executive Officer, Professor Alan Coates, said smoking remained the world's biggest cause of cancer and that in Australia alone it was responsible for more than 10,000 new cancer cases every year. "Ratifying the FCTC commits governments to a range of measures to improve controls on tobacco use and will help reduce smoking's unacceptable toll in Australia and the Asia-Pacific," Professor Coates said.

The health groups had collaborated on a submission last year supporting the signing and ratification of the FCTC.

Links

Federal Government announcement: www.health.gov.au/internet/wcms/publishing.nsf/Content/health-mediareel-yr2004-cp-pyn001.htm

Framework convention alliance: www.fctc.org

Hope blooms on Daffodil Day

Throughout August daffodils were in full bloom helping The Cancer Council Australia spread the message of hope for all touched by cancer.

Daffodil Day is one of the largest national cancer awareness day in Australia, raising \$7.3 million to fund the cancer control initiatives, patient support and education services of our eight state and territory member organisations.

Daffodil Day relies heavily on the supporting retail outlets to sell event-related merchandise. These products include silk ribbons, pens, enamel pins, magnets, balls and the popular Dougal teddy bear.

The Cancer Council Australia would like to thank its national supporters: Coles, QUIX, First National Real Estate, Amcal, ANZ, Katies, Rockmans, HIC network of Medicare offices and the Miller's Retail Club.

For more information on the event, please visit the Daffodil Day website – www.daffodilday.com.au or 1300 65 65 85.



World Health Organisation: www.who.int/tobacco/

Deadly Perception of a "Healthy Tan"

New research showing half of all Australians still believe a tan is healthy has added to cancer experts' fears of a prolonged national skin cancer epidemic.

The finding is contained in preliminary data from the first National Sun Survey, released by The Cancer Council Australia.

The Cancer Council's Chief Executive Officer, Professor Alan Coates, described the finding as "disturbing" and said that while sun protection programs had made an impact, there was still a widespread lack of understanding about the dangers of sun exposure.

"Back in the 1980s we would have expected a much higher response to the question of a tan being healthy and while this research demonstrates we have made progress, clearly we

[framework/en/](#)



Home and Away stars Ada Nicodemou and Kate Ritchie, proud supporters of Pink Ribbon Day.

Pink Ribbon Day

The Cancer Council urged men and women from across Australia to wear a pink ribbon on Pink Ribbon Day – Monday 25 October 2004.

The pink ribbon is a national symbol of support and recognition for women who have been touched by breast cancer. Through Pink Ribbon Day, The Cancer Council aim to make a difference to the lives of the 11,000 Australian women who will be diagnosed with breast cancer this year.

One in 11 Australian women are diagnosed with breast cancer, making it the most common cancer, and cause of cancer death, in women. Elisabeth Kochman, a breast cancer survivor, supported The Cancer Council Australia's Pink Ribbon Day.

"As a breast cancer survivor, I am proud to support Pink Ribbon Day. The Cancer Council Australia not only funds research, but also helps with the day-to-day challenges of living with breast cancer by providing support services and assistance for women with cancer, and their family and friends," said Ms Kochman.

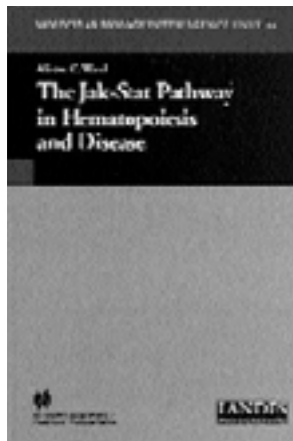
"By buying a pink ribbon, people are investing in breast cancer research which could improve the future of thousands of Australians," says Professor Alan Coates AM, Chief Executive Officer of The Cancer Council Australia.

"We are making progress. Since Pink Ribbon Day's inception, we have seen a decrease in the breast cancer death rate and an increase in awareness of the disease. However, breast cancer remains the number one cancer killer of Australian women, so we still have much to do. The funds raised from Pink Ribbon Day will assist The Cancer Council to continue our vital work in breast



THE JAK-STAT PATHWAY IN HEMATOPOIESIS AND DISEASE

AC Ward
Published by Kluwer/Plenum (2002)
ISBN: 0-3064-7424-7. 138 pages plus index
RRP: US\$147.00



The stated aim of the Editor is to describe the role of the Jak-Stat pathway in the normal development and function of haemopoietic cells and to describe how perturbations of this pathway lead to diseases, including one form of cancer - leukaemia. By all measures, this aim is well achieved. A compendium of invited chapters by seven different groups of authors, this book works particularly well as a detailed introduction to the importance

and basic biology of the Jak-Stat signalling pathway. Central to our understanding of how cytokines and growth factors extrinsically influence cell proliferation, differentiation and function, the Jak-Stat pathways have been the subjects of thousands of original articles in the last decade and a focused review is most welcome.

The book logically proceeds from a broad discussion of the Jak family, through a very detailed chapter on Jak3, to a chapter on non-Jak pathways to Stat activation and a superb analysis of the roles Stat signalling pathways regulate normal haemopoiesis. This sets the stage for a discussion of Stat signalling in leukaemia. The penultimate chapter does not fit as neatly into the flow of the book, being a summary of current knowledge of Jak-Stat signalling in the fruit fly, but does maintain the high standard of academic writing that characterises the book. Balancing out the compendium is a chapter detailing recent knowledge of the SOCS family of proteins which potently negatively regulate cytokine signalling by inhibiting the Jak-Stat pathway.

International authorities in the field have written each chapter and the quality of information is high. While presentation style varies between chapters and there is inevitable redundancy, I found the layout easy to follow. Diagrams are included to good effect. Overall, Alister Ward and co-authors have presented an up-to-date summary of facts and points of conjecture surrounding Jak-Stat and cytokine signalling in haemopoiesis. Students of both the haemopoiesis and cytokine fields will find this book a useful resource, particularly as a point of origin from which to assess future discoveries in this fast moving areas of science. It may also serve as an initial reference for basic cancer scientists trying to understand how Jak-Stat signalling fits into their system of interest.

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ADVANCES IN CANCER RESEARCH (VOL 88)

GR Vande and G Klein
Published by Academic Press (2003)
ISBN: 0/1200-6687-4. 168 pages plus index
RRP: A\$278.85

This is a book in an annual series of Advances in Cancer Research, edited by George Vande Woude and George Klein. The book consists of five lengthy reviews of new or topical areas in cancer biology. The topics are: 1) HAMLET (Human alpha-lactalbumin made lethal to tumor cells); 2) Survivin and Apoptosis control; 3) Retroviral insertional mutagenesis to tag cancer pathways; 4) Ubiquitin-mediated proteolysis affecting cell cycle regulatory proteins; and 5) The role of epigenetic variability and the evolution of human cancer.



The topics are varied and the reviews are well written and do not assume detailed specific knowledge of the subjects. However solid grounding in molecular biological concepts and techniques is essential. Those with such a background will find the reviews informative. Some of the chapters are easier to read than others, with the discussion of HAMLET being particularly lucid and that of retroviral mutagenesis being much heavier.

The strength of this book is that it provides five comprehensive reviews of topics that may otherwise stay within the confines of specialist journals. The interested reader is taken through the background, current research and potential implications of the findings. There is a moderate amount of speculation in the text. The distinction between data and speculation is clear and the speculative comments contribute to the strength of the book by giving the reader an insight into the thinking of experts in the areas. The future prospects are discussed with the correct balance of imagination and caution.

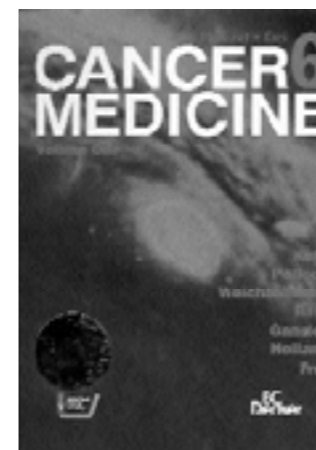
The five topics covered are quite diverse, ranging from the intricacies of the cell cycle regulation to a discussion of epigenetic variability in human cancer. All are focused on molecular biology, reflecting the fact that this remains the focus of most basic cancer research. It will be a very useful introduction to an area for someone embarking in research in that particular field and a good overview for anyone wanting a general understanding of these promising areas of cancer research. Those primarily interested in clinical research will find the book difficult, but may find some of it helpful in introducing them to new concepts.

It is unlikely to find its way into many private collections, but is worth a place in university and research institute libraries.

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CANCER MEDICINE (6th Edition) Vol 1 and 2

E Frei, J Holland et al (eds)
Published by BC Decker Inc, Ontario (2003)
ISBN: 1-55009-213-8. 2699 pages plus index.
RRP: A\$623.70



This impressive two volume tome is the 6th edition of Cancer Medicine and marks the 30th anniversary of its original publication. This is one of the truly comprehensive textbooks of oncology and covers aspects of surgical oncology, radiation oncology and medical oncology. The scope of this text takes the reader through the basic science of oncology, provides a collation of recent scientific discoveries and more importantly meshes the science and the clinical

applications that arise from these findings. Fortunately it comes accompanied by a CD, which is a far more portable and practical way for most of us to access. The two volumes contain an impressive array of contributions from 357 eminent scientists and oncologists all of whom (with four exceptions) are from North America. One of the outstanding features of this text is the excellent tables, diagrams and pictures.

The first section describes the cardinal manifestations of cancer including the essential biological properties of cancer cells and the spectrum of clinical presentations. Part two contains five chapters on the basic science of oncology ranging from tumour biology and immunology, clinical epidemiology to the fundamentals of drug development and clinical trial conduct. As well as providing a good introduction to the basic science of oncology it gives an historical perspective to scientific discoveries. Given the vast array of contributors it is inevitable that there is some repetition in the chapters. Interestingly, there is not a good description of gene microarray technology and recent findings in this area. The majority of the scientific chapters finish with a section describing how the findings of basic science have lead to the identification of therapeutic targets, which brings the reader back into the clinical context.

There are detailed chapters on the fundamentals of clinical trial design and good description of basic statistical methods. It does not however, contain a reference to standard criteria for assessing tumour response and toxicity of treatment. Discussions on cancer screening and health care delivery have a necessarily American perspective. The chapters on medical imaging contain detailed site-specific tumour evaluation, but interestingly a detailed description of the use of PET imaging for particular tumour types is lacking. The inclusion of sections on multidisciplinary care, psycho-oncology, palliative care, paediatric oncology and oncology informatics complete a truly comprehensive oncology resource.

For a book which contains such a wealth of scientific information, it also contains surprisingly insightful sections on physician burnout and psychosocial and ethical issues relevant to the clinical practice of oncology. This book provides a firm foundation for students of oncology from any discipline and is a useful reference for the experienced

clinician and educator. I was particularly impressed by the inclusion of Loeb's rules of therapeutics:

1. If what you are doing is doing good, keep doing it.
2. If what you are doing is not doing good, stop doing it.
3. If you do not know what to do, do nothing.
4. Never make the treatment worse than the disease.

It is unlikely these basic tenets will ever be surpassed by scientific advances.

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HANDBOOK OF COLORECTAL SURGERY (2ND EDITION)

D Beck (Ed)
Published by Marcel Dekker (2003)
ISBN: 0-8247 4025-4. 526 pages plus index
RRP: US\$99.75

This textbook is of a good size that is small, light, portable and yet very comprehensive.

Aimed at the resident and fellow, it will also find a place with consultants as a useful teaching tool.

Revised and updated in this second edition, this handbook serves as a basic guide to the management of patients with colorectal diseases.

It illustrates anatomical structures, examination procedures and surgical techniques.

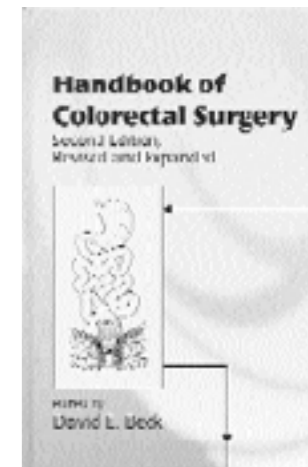
It covers preoperative preparation, pain management, postoperative management and the care of conditions including paediatric conditions, functional disorders, diverticular disease, inflammatory bowel disease, rectal prolapse, haemorrhoids, perianal sepsis and colorectal carcinoma. Illustrations and photos are in black and white. New concepts in patient care and operative techniques, including laparoscopic surgery, are covered.

On showing this book to a few colorectal surgical colleagues it had an instant and universal appeal. The responses were all favourable and related to its size, handling, hard cover, ability to fit in a bag and the self explanatory nature of the photographs. The well organised content was also a strong point.

I anticipate that those who purchase this excellent book will use it much more often than the weightier tomes, which though thorough, often inhibit use by their sheer size. It would make a welcome addition in any library.

C Young
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Newtown, NSW

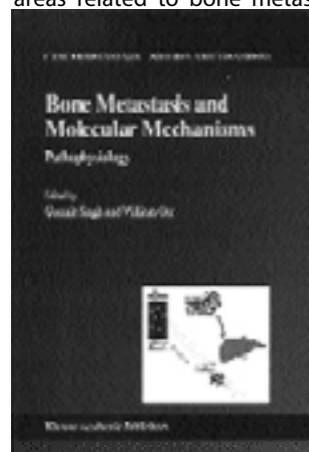
BONE METASTASES AND



MOLECULAR MECHANISMS

G Singh (Ed)
Published by Kluwer Academic Publishers (2004)
ISBN: 1-4020-1984-X. 301 pages plus index
RRP: US\$138.00

This is a thorough yet readable book covering a spectrum of areas related to bone metastases, from experimental models



through to clinical modalities for detection and treatment. Following the standard format of the Cancer Metastases - Biology and Treatment series, each chapter is a review of current literature by a team of experts in that field. It is gratifying to see that the first two chapters are authored by Australian groups.

This book is aimed at non-expert clinicians and scientists interested in recent advances regarding the pathophysiology of bone metastases. The references are extensive and reasonably current. The diagrams are well chosen and helpful.

One criticism is that although the chapters are very readable, there is no logic to the order in which they are presented. Chapters describing clinical practice, such as diagnostic methods and bisphosphonate therapy, are interspersed with research chapters seemingly randomly. This makes the flow of the book somewhat awkward.

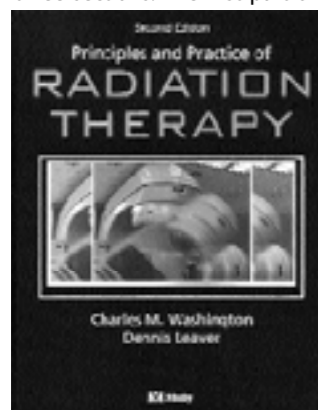
Overall, a useful but not essential text that would be worthwhile having in a hospital or departmental library.

E Segelov
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PRINCIPLES AND PRACTICE OF RADIATION THERAPY (2nd EDITION)

CM Washington and D Leaver (Eds)
Published by Lippincott Williams & Wilkins (2003)
ISBN: 0-323-01748-7. 941 pages plus index
RRP: A\$280.50

This textbook is primarily aimed at the radiation therapist, although some chapters provide nice overviews for a trainee radiation oncologist or medical physicist. The book has been divided into three sections. The first part of the book includes an overview of



cancer management (including pathology, chemotherapy and surgery), the ethics and legal considerations of cancer management, detection and diagnosis, equipment, education and drug administration. Some chapters (eg. legal aspects of radiation therapy) are written from a US viewpoint and therefore some of the issues are not

particularly useful for the non-American reader. However, some concepts such as informed consent have wider application and may prove useful for those interested.

The second section relates to physics, simulation and treatment and includes chapters on mathematical concepts, radiation physics, radiation safety, quality improvement and dosimetry. The sections on electronic charting and image management are a welcome addition, as departments are increasingly storing records electronically.

The final part discusses specific tumour or treatment sites and covers the majority of treatment sites, including sections on total body irradiation, splenic irradiation, prostate brachytherapy and paediatrics, as well as the more common treatment sites. Each chapter describes the epidemiology, prognostic factors, natural history, clinical presentation, detection and diagnosis, anatomical pathology and staging before describing treatment techniques including possible immobilisation techniques and possible field arrangements. Recent technological advances such as three-dimensional planning system and technology enhancements such as multileaf collimation have been incorporated where appropriate. There is some discussion of non-radiation treatment modalities in each of the chapters, but one of the strengths of the book is that it focuses on the issues related to the radiotherapy and leaves other well-known oncology texts to better discuss other treatment modalities. The omission of large amounts of discussion relating to other treatment modalities maintains the size at a reasonable level for a textbook.

Most of the criticisms that could be levelled at the book are relatively minor and mainly relate to layout. For instance, a helpful table on all of the Radiation Therapy Oncology Group morbidity scores is presented in the breast cancer section even though this table would be better placed in a general toxicity section.

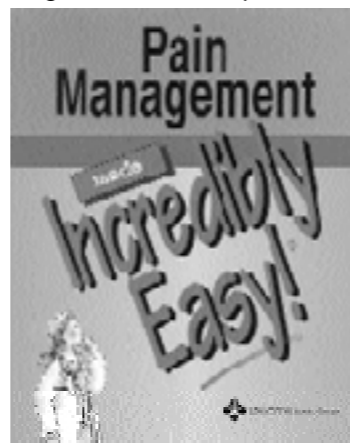
Overall, this textbook provides a good, solid educational resource for any radiation oncology department or individual radiation therapist.

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PAIN MANAGEMENT MADE INCREDIBLY EASY

J Munden et al (Eds)
Published by Lippincott Williams & Wilkins (2003)
ISBN: 1-58244-277-4. 329 pages plus index
RRP: A\$59.40

Pain Management Made Incredibly Easy combines all major aspects of current pain management in a comprehensive guide to practice, aimed primarily at nurses. Indeed, 24 of the 25 contributors/consultants are nurses based in the US, many of whom are nurse practitioners or clinical nurse consultants in pain management; the 25th has a pharmacy doctorate and is a Drug Information Specialist at the University of Maryland. In the foreword, mention



is made of the requirement of the US Joint Commission on Accreditation of Healthcare Organisations (JCAHO) for health facilities to meet standards of pain assessment and management and one assumes that the text is written to aid compliance with this requirement.

From a quick search of the internet, this book appears to be one of an Incredibly Easy series; other titles covering wound care, diagnostic tests, clinical pharmacology and medical-surgical nursing. Its format is intended to be user-friendly, with annotated cartoon characters making pertinent points to reinforce the accompanying text and unique features that include "Rein in the pain" - pointers on how to manage pain, and "Myth busters" - dispelling misconceptions about stereotypes and prejudices. Each chapter ends with a quick quiz to consolidate knowledge on the chapter's main messages.

The text provides an easy to understand discussion of pain physiology and psychological responses to pain. It is encouraging to see a chapter devoted to pain assessment, including standards introduced by JCAHO in 2000 and a comprehensive description of the range of pain assessment tools. Pharmacological and non-pharmacological treatments, including therapies such as aromatherapy, yoga and biofeedback are discussed. Differentiation is made between acute, chronic non-malignant, cancer and HIV/AIDS pain, with a chapter on each that includes suggestions for pharmacological and non-pharmacological treatments within these domains. Specific areas of paediatric and geriatric pain management plus addictive disease, including understanding addiction, managing addiction and managing pain in patients with addiction, are discussed. A final chapter looks at lifestyle management for people with chronic pain.

The scope of the book is impressive; no aspect of pain management comes to mind that is not mentioned. Of particular interest to oncology/palliative care nurses is management of cancer pain. The chapter on this topic is broad; it includes current thinking about pain management, such as suggestion of a fourth rung to the WHO analgaesic ladder to incorporate invasive interventions (epidural and intrathecal drugs), different routes of drug administration, adjuvant therapies, surgical intervention and complementary therapies. What is not discussed and what many practitioners are keen to know, are specifics of opioid conversion rates, opioid rotation, uses and doses of co-analgaesics and costs to consumers. This level of detail however, would be necessarily limited to local and idiosyncratic pain management strategies of specific practice settings and could not be expected in a generic text such as this.

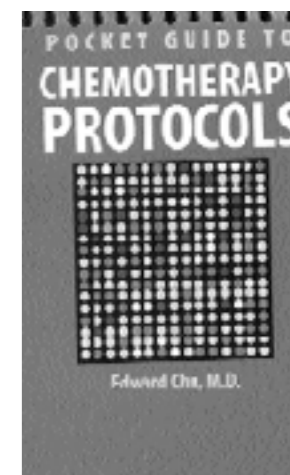
Overall, the text provides a good overview of a wide range of topics associated with pain management and is appropriate for nurses wishing to increase their general knowledge in the area. A personal note about the whimsical additions, like the cartoon characters, aimed to increase appeal and appreciation of a complex subject. Although this format may appeal to some, I found the whimsy distracting and superfluous and incredibly annoying.

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POCKET GUIDE TO CHEMOTHERAPY PROTOCOLS

E Chu
Published by Jones and Bartlett (2004)
ISBN: 0-7637-4838-2
RRP: A\$40.15

This book lists commonly used combination and single agent regimens used in the treatment of solid tumours and haematological malignancies. The book presents the regimens in alphabetical order, listed by tumour type. Each entry lists the drugs to be used, at which doses, on what days and how often the cycle is repeated. The last 50 pages (one third of the book) consist of the references for the regimens.



The preface states that the Food and Drug Administration in the US has not approved all the regimens contained within the book for the stated uses, and this information is repeated in the first and only chapter, which is curiously numbered 4! The preface also suggests that this manual should be used as a quick reference and carries the disclaimer that users should "carefully review the original reference for each regimen". The concern that the reader must not base treatment decisions and prescription solely on the information presented in the book is repeated a number of times. The reader is asked "to check the package insert for each agent" on three occasions in the preface and introductory notes.

There are many protocol books available today and many pocket sized versions, which provide more comprehensive information. The Baxter Oncology's Selected Schedules of Therapy for Malignant Tumors would be a good example.

The information presented does not include particular indications for regimens, guiding the user as to why one regimen would be used over another. The book states infusion administration details for a couple of regimens, but most do not.

The author suggests the book provides a handy, quick reference for physicians, nurses and health care providers. Attempting to provide a simple resource, which is relevant to such a wide range of health professionals, is problematic.

From an Australian perspective it omits some commonly used regimens, such as PCAB and C-VAMP. It includes new combinations, such as Gemcitabine and Oxaliplatin for pancreatic cancer, which have already been shown to be of limited additional benefit over single agents and new agents, such as Bortezomib, which are only used in trial situations in Australia.

The back cover claims the book to be quick access, evidence-based, up-to-date, comprehensive, authoritative and pocket-sized. Well it is certainly pocket sized, but it is hardly comprehensive and it is certainly not authoritative. In this day of net based protocols, one would hope that chemotherapy treatments are written up based on more than memory and basic prompts such as this.

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Shoalhaven District Memorial Hospital

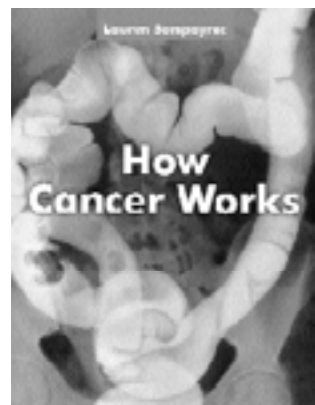
HOW CANCER WORKS

L Sompayrac (Ed)

Published by Jones and Bartlett Publishers (2004)

ISBN: 0-7637-1821-1. 104 pages plus index

RRP A\$40.15



This book is an American publication with the author being a retired professor from the Department of Molecular, Cellular and Developmental Biology University of Colorado Boulder, Colorado.

The book is written in the form of lectures utilising metaphor, humour and diagrams, thus making sometimes complex concepts understandable.

Each lecture concludes with

a concept table with examples and "thought" questions, with each new lecture starting with a review of the previous lecture before introducing new concepts.

Professor Sompayrac chose nine cancers as models as he felt they offered the clearest examples of how cancer works. For each model he addressed three questions:

"What risk factors make it more likely that an individual will get this cancer?"

"What does this cancer do to a person that has it?"

"How is this cancer treated?"

The first chapter is an overview introducing cellular control growth systems, leading on to how multiple growth promoting systems are activated inappropriately and multiple safeguard systems are inactivated for a normal cell to become a malignant cell.

Leukaemia is used as an example when multiple control systems within a maturing cell are corrupted.

In this lecture environmental factors, translocations, oncogenes and proto-oncogenes are introduced. Treatments are discussed including the history and development of Gleevec, which is used as an example of how treatments are developing to reverse the effects of an oncoprotein.

In the lecture on lymphoma, there is an outline of the process of how new anti cancer drugs are developed using the example of monoclonal antibodies and the stages of clinical trials.

Rituxan is used as the example as how monoclonal antibodies are used to treat cancer.

The lecture on breast and prostate cancer uses an example of lactation and apoptosis as the ductal system returns to the pre-pregnant state. Hyperplasia, carcinoma in situ and the process of metastatic spread is discussed. The example of genetic predisposition and breast cancer is discussed, as well as hormonal influences in breast and prostate cancer. Again there is coverage on treatment using monoclonal antibodies and as well as the utilisation of anti-hormone drugs in treating hormone dependent treatment.

The lecture on lung and skin looks at environmental factors and the development of certain types of cancers, as well as the importance of screening to detect cancers at an early stage.

In the lecture on colon cancer screening and the importance of accurate staging is discussed as well as the mechanisms that

cancer cells use to resist anti-cancer therapies.

In cancer of the cervix and liver, viral infections and the increased likelihood of developing cancer are discussed and again the importance of screening for cervical cancer.

Normal immune function and the system's primary function of protection against infection, by parasites, bacteria and viruses is overviewed, as well as how the immune system has problems detecting tumour cells from normal cells. Treatments utilising active and passive immunotherapy are included.

The lectures are summarised with a comprehensive table of concepts and examples as well as a glossary.

This book is an excellent resource for high school students, student nurses and will be utilised as part of orientation for registered nurses and new graduates undergoing orientation in our unit.

K McFarland

Port Macquarie Base Hospital

Port Macquarie, NSW

SEEDS OF MORTALITY: THE PUBLIC AND PRIVATE WORLDS OF CANCER

S Justman

Published by Ivan R Dee (2003)

ISBN: 0-7637-4838-2

RRP: A\$40.15

The image of seeds is common in this book, from seeds of fertility, to seeds that kill growth, to the concept that cancer itself seems to germinate, lying latent for years. Justman's seeds are made of titanium, numbering 103 and his chosen treatment for his prostate cancer. This book is about a personal cancer journey that draws its companions from the world of art and literature.

The book is not to be read in one sitting. It is to be read leisurely and savoured as Justman takes the reader into the world of Aristotle, Homer, Tolstoy, Chaucer, Montaigne and Rousseau. The message he brings is for doctors who deliver bad news and researchers who design questionnaires. To the question "Would you want to know you have an incurable illness" he replies, "How is it possible to capture thought itself in an opinion survey?" How can something so private, shadowy and unformed be registered as a check mark".

He challenges whether individuals can truly make informed choices about cancer treatment. He questions the contemporary culture of cancer that encourages "talking-therapy", support groups, stress management and meditation. He rages against the lack of information on the accuracy of prostate cancer staging and the uninvited and unwilling choices he has to make.

This book is about the author's perceived clash between the private and public world of cancer. His membership to this "one secret society of the body" has to balance not only men's



reluctance to discuss prostate cancer, but the reality that "not only does cancer override differences... it subverts our pride, ignores our fashions, tests our certainties". He retreats to his own private oasis, where he draws on images and analogies for his journey from the likes of Odysseus, Achilles, Icarus and Ivan llych.

Justman argues that he wishes to deal with cancer on his own, without sharing his private pain with strangers and that even the language of cancer glosses over its reality. However, one wonders if his approach is not that different to the many before him who have taken the journey. In reality, he, like others, is attempting to make sense of his experience. He chooses to find answers in the world of art and literature, a familiar world to him in his public life as an English teacher at the University of Montana. He shares a common vulnerability in the book's closing sentence: "You hear of trees that wait for fire to release their seeds. Can cancer cells ride out the fire of radiation, awaiting their time? I am left with a seed of doubt".

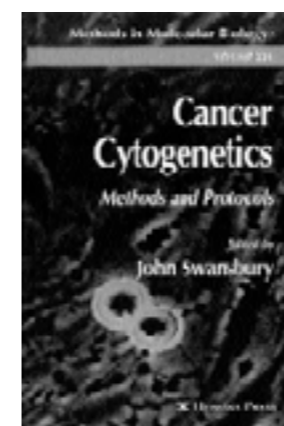
E Lobb

WA Centre for Cancer Palliative Care

Churchlands, WA

CANCER CYTOGENETICS, METHODS AND PROTOCOLS

J Swansbury (Ed)



Published by Humana Press

(2003)

ISBN: 0-5882-9080-2. 269 pages

plus index

RRP: A\$89.50

Cancer Cytogenetics, Methods and Protocols is an immensely useful book for anyone working in the field of cytogenetics. The author has filled this volume with the sort of detail that enables ready translation of methods into practice and provides clear explanations of individual steps within procedures, which are as valuable to the experienced cytogeneticist as they are to the novice.

The book is organised into chapters dealing with conventional cytogenetic techniques for different malignancies including myeloid disorders, acute lymphoblastic leukaemia, other lymphoid malignancies and solid tumours. These chapters are then followed by explanations of other techniques: fluorescence in situ hybridisation (FISH), comparative genomic hybridisation and multicoloured FISH (M-FISH or spectral karyotyping). Each group of malignancies has a chapter devoted to background, summarising the utility of cytogenetics in these areas and the common abnormalities that one might expect to observe in such disorders. The subsequent chapter then outlines techniques for culturing and harvesting each type of malignancy. For areas that prove problematic, such as the culturing of acute lymphoblastic leukaemias (ALL), two chapters by different authors describe the techniques that work best in their laboratories.

Overall, the background areas are brief but appropriate. One might take issue with the author's contention that the term chronic myeloid leukaemia (CML) can be used to cover a range of disorders including chronic myelomonocytic leukaemia and

that the finding of a Philadelphia translocation, t(9;22), in essential thrombocythaemia does not necessarily indicate that the patient has CML. However, it is for the technical insights that this book should be read, rather than for the background details that are available from many other sources. The wealth of detail given with each method provides invaluable pointers. I found myself taking notes in a number of places to apply in my own laboratory; for example, the author provides an explanation and solution for a difficult problem frequently encountered with extremely blood dilute samples, causing the resulting cell pellet post harvest to meld into a gelatinous mass. The book is filled with such little nuggets of information for the practising cytogeneticist.

The author also makes some rather frank statements concerning the practical realities of providing a cytogenetics service. His comment in chapter eight regarding the cytogenetics of lymphoid disorders other than ALL would strike a chord with all who work in the area: "The relatively large amount of work involved in a proper cytogenetic study of lymphoid disorders can place a strain on the manpower and finances of a cytogenetics unit, an imposition that is rarely appreciated by the referring clinician". Of course, the techniques outlined in this book for the "proper" analysis of lymphomas make it clear why such a heartfelt comment made its way into the book. He advocates the use of at least eight or nine cultures for each sample. This is probably an ideal way to analyse lymphomas, but the practical realities of a busy service laboratory preclude such practices.

L Campbell

Sir Charles Gairdner Hospital

Nedlands, WA

PRINCIPLES OF MOLECULAR ONCOLOGY (2ND EDITION)

M H Bronchud et al (Eds)

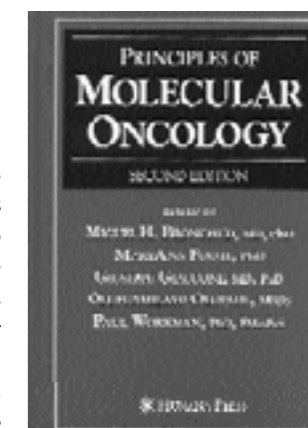
Published by Humana Press

(2004)

ISBN: 1-588929-279-7. 704

pages plus index

RRP: A\$149.50



This book contains an enormous amount of information and is indeed a welcome addition to an ever-growing literature. The book is divided into three parts, the first introducing molecular markers in oncology, the second detailing regulatory pathways that are involved in disease development and the third which examines future directions in disease treatment. Together the three sections of this book make for a comprehensive treatise, bringing together a range of concepts and evidence to show that molecular approaches to cancer treatment and prevention are likely to offer the best therapeutic modalities in the near future, compared to current treatment practices.

Importantly, this book contains much information about many of the key genes that have been identified over the past decade or so and is, by this inclusion alone, an extremely useful resource for anyone wishing to get an overview of the field without having to trawl through a considerable amount of literature. There remains a level of redundancy, which is inevitable in such a volume but it does not detract from the



CALENDAR OF MEETINGS – AUSTRALIA AND NEW ZEALAND

Date	Name of Meeting	Place	Secretariat
2004			
November			
8-9	27th Annual Oncology Nurses Group Conference	Brisbane QLD	Oncology Nurses Group Conference Secretary Queensland Cancer Fund PO Box 201 Spring Hill QLD 4004 Tel: + 61 7 3258 2263 Fax: + 61 7 3257 1306 Email: ADewar@qldcancer.com.au Web: www.qldcancer.com.au
10-14	Leura V International Breast Cancer Conference	Sydney NSW	Leura V Conference Managers Tour Hosts Conference & Exhibition Organisers Level 4, 66 King Street Sydney NSW 2000 Tel: +61 2 9248 0800 Fax: +61 2 9248 0894 Web: www.bci.org.au/leura
21-26	Australian Health and Medical Research Congress	Sydney NSW	ASN Events Secretariat Tel: +61 3 5983 2400 Email: congress@asnevents.net.au Web: www.ahmrccongress.org.au
24-26	31st COSA Annual Scientific Meeting	Canberra ACT	31st COSA Annual Scientific Meeting Pharma Events Ph: +61 2 9280 0577 Fax: +61 2 9280 0533 Email: cosa@pharmaevents.com.au Web: www.cosa.org.au
2005			
March			
17-20	Australasian Brachiotherapy Group	Alice Springs NT	Pharma Events Ph: +61 9280 0577 Fax: +61 2 9280 0533 Email: conferences@pharmaevents.com.au
April			
15-17	RACR Paediatric Oncology Course (College of Radiologists)	Sydney NSW	Pharma Events Ph: +61 2 9280 0577 Fax: +61 2 9280 0533 Email: conferences@pharmaevents.com.au
May			
15-18	Australasian College of Dermatologists Annual Scientific Meeting	Perth WA	Australasian College of Dermatologists PO Box 2065 Boronia Park NSW 2111 Tel: +61 2 9879 6177 Fax: +61 2 9816 1174 Email: info@dermcoll.asn.au Web: www.dermcoll.asn.au
25-28	Trans-Tasman Radiation Oncology Group Annual Scientific Meeting	Darwin NT	Pharma Events Ph: +61 2 9280 0577 Fax: +61 2 9280 0533 Email: conferences@pharmaevents.com.au
July			

overall usefulness of the book. What is surprising is how up-to-date the contents of the book are, which makes it extremely useful for the practising oncologist to come up to speed in this ever-changing discipline.

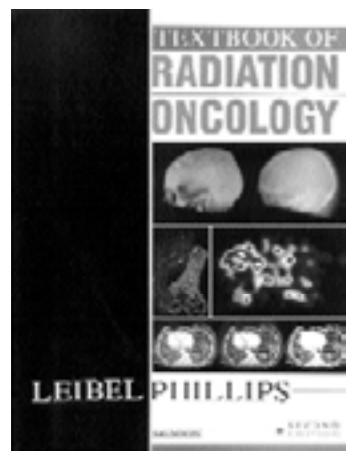
The main drawback to a book like this is the relatively small amount of apparent thought that went into cross-referencing and the indexing section. With a more comprehensive indexing system and the removal of repeated figures from later chapters, it would be become a more concise and easily referred to source of information. To emphasise this point, there are areas where certain aspects described early in the book are referred to in later chapters and these really ought to be indicated in the reference section.

Notwithstanding, this book represents an excellent edition dealing with a complex and growing area of oncology and it may well become a leading reference source for molecular oncology.

R Scott
John Hunter Hospital
Newcastle, NSW

TEXTBOOK OF RADIATION ONCOLOGY (2ND EDITION)

S Leibel and T Phillips (Eds)
Published by Saunders (2004)



ISBN: 0-7216-0026-3. 1649 pages plus index
RRP: A\$456.50

The Textbook of Radiation Oncology, with its first edition in 1998, was designed to meet readers' needs as a reference source for radiation oncology trainees, as well as practicing radiation oncologists. It was an instant success in the US and to a lesser extent in Australia and New Zealand,

as it helped the reader to establish a well-informed and balanced view of the role of radiation therapy in the complex multi-disciplinary care of cancer patients.

The second edition, published in 2004, has maintained its high standard in delivering an up-to-date version of the already complete textbook. It embraces the important changes in radiation physics, biology and clinical radiation therapy in the past five years.

The strength of this textbook lies in its uniform treatment philosophy and its treatment recommendations, after considering all available options. This is derived from the ongoing successful partnership of the two editors, Doctors Leibel and Phillips.

This textbook is divided into four sections. Section I deals with the principles of the sciences that define the practice of radiation oncology. Section II is a much-needed addition that emphasises the importance of different imaging modalities, specific to anatomic tumour sites, in the precise delivery of three-dimensional conformal radiotherapy and intensity-modulated radiotherapy. Section III provides an in-depth overview of the management of specific cancer sites, the role of

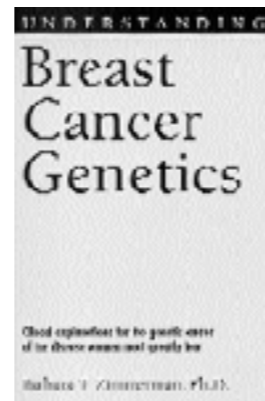
radiotherapy and how it incorporates into the multidisciplinary care of cancer patient. The final section covers the emerging radiation modalities in gene-targeted therapy, tumour-targeted radioisotope therapy, particle radiotherapy, photodynamic therapy and extracranial stereotactic radio-ablation.

I believe that this textbook would be suitable as an excellent manual/reference source for trainees and practising clinicians with special interests in radiation oncology.

V Do
Westmead Hospital
Westmead, NSW

UNDERSTANDING BREAST CANCER GENETICS

BT Zimmerman
Published by University Press of Mississippi (2004)
Hardback – ISBN: 1-57086-578-X. RRP: US\$28.00
Paperback – ISBN: 1-57806-579-8.
RRP: US\$12.00



Breast Cancer Genetics is a relatively short book of six chapters by scientist Barbara Zimmerman. The author's background is in cellular and molecular biology, although she is currently the director of a US-based consulting firm. She has written the book for the general audience and claims that her principle aim is to explain the genetics of both sporadic and familial breast cancer.

The book begins with an overview of the epidemiology of breast cancer before taking a step back into the science lab where normal and tumour cell biology, breast anatomy and the malignant potential of breast cancer are outlined. The third and fourth chapters are devoted to the role of specific genes known to have a role in breast cancer tumorigenesis, metastasis and resistance. The fifth chapter diverts back to the clinical side of breast cancer and describes prevention, the diagnostic process, staging and treatment possibilities. The final chapter, Breast Cancer Research, gives a brief summary of the some of the major areas of both clinical and scientific research.

The language and detail is extremely complex in parts and would be beyond the scope of many readers. However, given there are some serious information seekers in the world of breast cancer, there are likely to be some breast cancer aware readers who would persevere with the text and come out a little ahead on completion.

The biggest criticism I have with this book is that the promise of genetics is limited to two of the six chapters. There are dotted references to inherited versus sporadic cancers in the remaining chapters, however largely the book is a general overview of breast cancer with a serious but brief step into genetics. This would be an ideal text for a student (medical or nonmedical) about to undertake a project in breast cancer, who wanted a quick review of breast cancer and some of the more prominent areas of current research focus.

Y Antill
Peter MacCallum Cancer Centre



Date	Name of Meeting	Place	Secretariat
7-9	Royal College of Nursing Australia National Conference	Glenelg SA	Royal College of Nursing Australia PO Box 219 Deakin West ACT 2600 Tel: +61 2 6282 5633 Fax: +61 2 6282 3565 Email: Nicole@rcna.org.au Web: www.rcna.org.au
21 -23	Cancer Nurses Society Of Australia	Hobart TAS	Pharma Events Ph: +61 2 9280 0577 Fax: +6 1 2 9280 0533 Email: conferences@pharmaevents.com.au
August			
10-13	Medical Oncology Group Australia Annual Scientific Meeting	Hobart TAS	Pharma Events Ph: +61 2 9280 0577 Fax: +61 2 9280 0533 Email: conferences@pharmaevents.com.au
21-26	11th World Congress on Pain	Sydney NSW	International Association for the Study of Pain (IASP) 909 NE 43rd Street Suite 306 Seattle USA Tel: +1 206 547 6409 Fax: +1 206 547 1703 Email: iaspdesk@juno.com Web: www.iasp-pain.org
October			
6-9	Royal Australian and New Zealand College of Radiologists, Faculty of Radiation Oncology Annual Scientific Meeting	Sydney NSW	RANZCR Level 9, 51 Druitt Street Sydney NSW 2000 Tel: +61 2 9268 9777 Fax: +61 2 9268 9799 Email: ranzcr@ranzcr.edu.au Web: www.ranzcr.edu.au
7-8	28th Annual Oncology Nurses Group Conference	Cairns QLD	Oncology Nurses Group Conference Secretary Queensland Cancer Fund PO Box 201 Spring Hill QLD 4004 Tel: +61 7 3258 2263 Fax: +61 7 3257 1306 Email: ADewar@qldcancer.com.au Web: www.qldcancer.com.au
November			
15-18	32nd Clinical Oncological Society of Australia Annual Scientific Meeting	Brisbane QLD	Pharma Events Ph: +61 2 9280 0577 Fax: +61 2 9280 0533 Email: conferences@pharmaevents.com.au

CALENDAR OF MEETINGS – International

Date	Name of Meeting	Place	Secretariat
2004			
November			
5-7	Oncology Nursing Society Institute of Learning	Nashville Tennessee USA	Oncology Nursing Society 125 Enterprise Drive Pittsburgh Pennsylvania 15275-1214 USA Tel: + 1 86 6257 4667 Email: meetings@ons.org Web: www.ons.org
10-12	11th Hong Kong International Cancer Congress	Pokfulam Hong Kong	11th HKICC Congress Secretariat Dept of Surgery University of Hong Kong Medical Centre Queen Mary Hospital Hong Kong Tel: +8 52 2818 0232 Fax: + 8 52 2818 1186 Email: hkicc@hku.hk Web: www.hkicc.org
17-19	1st International Conference for Oncologists and Other Health Care Leaders	New York USA	Barrie Cassileth Memorial Sloan-Kettering Cancer Center 1275 York Ave New York - 10021 - New York Tel: +1 212 639 2000
17-19	First International Conference of the Society of Integrative Oncology	New York USA	SIO Registration 19 Mantua Road, Mt Royal, NJ 08061, USA Web: www.integrativeonc.org
December			
3-7	46th Annual Meeting of the American Society of Hematology	San Diego California USA	American Society of Haematology 1900 M street NW Suite 200 Washington DC 20036 USA Tel: +1 20 2776 0544 Email: meetings@hematology.org Web: www.hematology.org
3-6	27th Annual San Antonio Breast Cancer Symposium	San Antonio Texas USA	Cancer Therapy & Research Center SACI, Rich Markow San Antonio, Texas, USA Fax: +1210 949 5009 Email: Rmarkow@saci.org Web: www.sabcs.org
15-16	4th International Meeting of Hepatocellular Carcinoma: Eastern and Western Experiences	Wanchai Hong Kong	4th HCC-EWE Congress Secretariat Department of Surgery, University of HongKong Medical Centre Queen Mary Hospital, Pokfulam Tel: + 85 2 2818 0232 Fax: + 85 2 2818 1186 Email: hccewe04@hku.hk Web: www.hcc-ewe.org
2005			
January			
12-14	4th International Meeting of ISCOR T	Eliat Israel	Israeli Society for Clinical Oncology & Radiation Therapy (ISCORT) Eliat Israel Tel +97 286- 00 680 Fax +97 286 232 336 Email: wilmosh@bgumail.bgu.ac.il
14-15	Perspectives in Gynecologic Oncology	Nice France	Imedex 70 Technology Drive Alpharetta Georgia 30005 USA Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: c.chase@imedex.com Web: www.imedex.com/calendars/oncology.htm
16-21	9th European Winter Oncology Conference	Films Switzerland	Federation of European Cancer Societies AV. E. Mounier 83 Brussels 1200 Belgium Tel: +36 2 775 02 01 Fax: +32 2 775 02 00 Email: Ewoc-9@fecs.be Web: www.fecs.be

Date	Name of Meeting	Place	Secretariat
21-22	Focus on Myeloma and Plasma Cell Disorders	Las Vegas USA	Imedex 70 Technology Drive Alpharetta Georgia 30005 USA Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: c.chase@imedex.com Web: www.imedex.com/calendars/oncology.htm
26-29	British Thoracic Oncology Group 3rd Annual National Meeting 2005	Dublin Ireland	British Thoracic Oncology Group Hospital Management Offices, Glenfield Hospital Leicester LE3 9QP United Kingdom Tel: +44 116 2502811 Fax: +44 116 2502810 Email: Dawn.mckinley@uhl-tr.nhs.uk Web: www.btog.org
26-29	Primary Therapy of Early Breast Cancer	St Gallen Switzerland	Hans-Jörg Senn St. Gallen Oncology Conferences Rorschacherstr. 150 St. Gallen - 9006 Switzerland Tel: +41 71 243 0032 Fax: +41 71 245 6805 Web: www.oncoconferences.ch/index.html
27-29	7th International Symposium on Febrile Neutropenia	Seville Spain	Imedex 70 Technology Drive Alpharetta Georgia 30005 USA Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: meetings@imedex.com Web: www.imedex.com/calendars/infectiousdisease.htm
27-29	American Psychological Oncology Society 2nd Annual Conference	Charlottesville USA	American Psychological Oncology Society 2365 Hunters Way Charlottesville Virginia 22911 USA Tel: +1 434 293 5350 Fax: +1 434 977 0899 Email: aholcomb@apos-society.org Web: www.apos-society.org
February			
1-4	16th International Congress on Anti-Cancer Treatment	Paris France	Travel Congress Organisation (TCO) 2, rue de Berri Paris 75008 France Tel: +33 1 4294 8732 Fax: +33 1 4294 8733 Email: info@icact.com
10-14	American Society for Blood and Marrow Transplantation Annual Meeting	Keystone CO USA	American Society for Blood and Marrow Transplantation 85 West Algonquin Road Suite 550 Arlington Heights Illinois 60005 USA Tel: +1 84 7427 0224 Email: mail@asbmt.org
18-19	New Targets in Cancer Therapy III	Nice France	Imedex 70 Technology Drive Alpharetta Georgia 30005 USA Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: c.chase@imedex.com Web: www.imedex.com/calendars/oncology.htm
23-26	22nd annual Miami Breast Cancer Conference Weston	Florida USA	Miami Cancer Conference, Inc. PO Box 266948 Weston Florida 33326 USA Tel: +1 954 888 9472 Fax: +1 954 888 9472 Email: Losey1@aol.com Web: www.cancerconf.com

Date	Name of Meeting	Place	Secretariat
March			
3-5	3rd International Symposium on Targeted anticancer Therapies	Amsterdam Netherlands	NDDO Research Foundation c/o Convenience Conference Management PO Box 77 Harmelen 3480 DB Netherlands Tel: +31 348 567 667 Fax: +31 348 446 057 Email: congress@nddo.org Web: www.nddo.org
3-6	58th Annual Cancer Symposium of the Society of Surgical Oncology	Atlanta Georgia USA	D.K. Kubis - Society of Surgical Oncology 85 W Algonquin Rd Suite 55 Arlington Heights IL - 60005 Tel: +1 (847) 427 1400 Fax: +1 (847) 427 9656 Web: www.surgonc.org/
7-9	Functional Genomics and Animal Tumour Models	Madrid Spain	CNIO-Spanish National Cancer Centre C/ Melchor Fernandez Almagro, 3 Madrid 28029 Spain Tel: +34 91 2246900 Fax: +34 91 2246980 Email: ccc@cnio.es Web: www.cnio.es/ccc
11-13	7th Shaukat Khanum Memorial Cancer Symposium	Lahore Pakistan	Shaukat Khanum Memorial Cancer Hospital and Research Centre Johar Town Lahore Pakistan Tel: +92 42 5180 725-34 Fax: +92 42 5180 723/54 Email: trainingmanager@skm.org.pk Web: www.shaukatkhanum.org.pk
13-16	13th International AEK-AIO Cancer Congress	Wurzburg Germany	BioMedTec Franken e.V. Friedrich-Bergius-Ring 15 Wurzburg 97076 Germany Tel: +49 931 2998875 Fax: +49 931 299 8894 Email: ssk@biomedtec-franken.de Web: www.aek-aio-congress.de
15-16	Building Palliative Care programs in Hospitals	Miami USA	Center to Advance Palliative Care Mount Sinai School of Medicine 1255 Fifth Avenue, Suite C-2 New York New York 10029-6574 USA Tel: +1 212 201 2680 Web: www.capc.org
17-19	6th International Symposium and Expert Workshops on Leukemia and Lymphoma	Amsterdam Netherlands	VU University Medical Center Dept. PAOG P.O Box 7057 Amsterdam 1007 MB Netherlands Tel: +31 20 4448444 Fax: +31 20 4448445 Email: icm.vanbaardwijk@vumc.nl Web: www.vumc.hemonc.nl
18-19	3rd Annual Atlanta Lung Cancer Symposium	Atlanta USA	Imedex 70 Technology Drive Alpharetta Georgia 30005 USA Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: c.chase@imedex.com Web: www.imedex.com/calendars/oncology.htm
18-19	National Update on Advances in Urology	New Orleans USA	Imedex 70 Technology Drive Alpharetta Georgia 30005 USA Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: c.chase@imedex.com Web: www.imedex.com/calendars/urology.htm
18-20	Second Annual Winter Lung	Florida	Cadent medical Communications

Date	Name of Meeting	Place	Secretariat
	Cancer Conference	USA	1707 Market Place Boulevard, suite 350 Irving Texas 75063 USA Tel: +1 972 929 1900 Fax: +1 972 929 1901 Email: jmccown@cadentmed.com
21-25	Cancer in Developing World	Cairo Egypt	Fakkous Center for Cancer and Allied Diseases 11Boulos Hanna Street, Dokki Cairo Egypt Tel: +1 972 929 1900 Fax: +1 972 929 1901 Email: jmccown@cadentmed.com
31 – Apr 02	Lymphoma The Next Questions	Florida USA	Imedex 70 Technology Drive Alpharetta Georgia 30005 USA Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: c.chase@imedex.com Web: www.imedex.com/calendars/oncology.htm
April			
16-20	96th Annual Meeting of the American Association for Cancer Research	Ahaheim California USA	AACR 615 Chestnut Street 17th Floor Philadelphia, PA USA 19106-4404 Tel: +1 21 5440 9300 Email: meetings@aacr.org
19-24	10th International Congress on Oral Cancer	Crete Greece	International Congress on Oral Cancer 509 B Sarita Vihar New Delhi 110 044 India Tel: +91 11 694 4551 Fax: +91 11694 4472 Email: cancerak@del6.vsnl.net.in
25-27	The 4th Regional Conference of APOCP	Zibakemar Rasht Iran (Islamic Republic of)	Gastrointestinal & Liver Diseases Research Center (GLDRC) Razi Hospital, Sardar Jangle Ave. Rasht 41448-9565 Iran Islamic Republic of Tel: +98 131 5535116 Fax: +98 131 5534951 Email: secretary@iran-apocp.org Web: www.iran-apocp.org
28-30	1st International Symposium on Cancer and the Lymphovascular System	San Francisco USA	University of California, San Francisco Office of CME 3333 California Street, Suite 450 San Francisco California 94143 USA Tel: +1 415 476 4252 Fax: +1 415 502 1795 Email: graysonk@ocme.ucsf.edu.au Web: www.iran-apocp.org
28 – May 01	Oncology Nursing Society's 30th Annual Congress	Orlando USA	Oncology Nursing Society 125 Enterprise Drive Pittsburgh Pennsylvania 15275-1214 USA Tel: +1 86 6257 4667 Email: meetings@ons.org Web: www.ons.org
29 – May 06	22nd International Papillomavirus Conference and Clinical Workshop	Vancouver Canada	Venue West Conference Services Ltd 645-375 Water Street Vancouver BC V6B 5C6 Canada Tel: +1 604 681 5226 Fax: +1 604 681 2503 Email: congress@venuewest.com Web: www.hpv2005.org

Date	Name of Meeting	Place	Secretariat
May			
05-08	Second quadrennial meeting of the World Federation of Neuro-Oncology EANO VI	Edinburgh UK	Federation of European Cancer Societies Avenue E. Mounier 83 Brussels 1200 Belgium Tel: +32 2 775 0205 Fax: +32 2 775 0200 Email: EANO6@feces.be Web: www.feces.be
13-17	41st Annual Meeting of the American Society of Clinical Oncology (ASCO)	Orlando USA	American Society of Clinical Oncology (ASCO) 1900 Duke Street, Suite 200 Alexandria Virginia 22314 USA Tel: +1 703 299 0150 Fax: +1 703 299 1044 Email: asco@asco.org Web: www.asco.org
30 – Jun 01	CNIO Cancer Conference: MAP Kinases and Cancer	Madrid Spain	CNIO _ Spanish National Cancer Centre C/ Melchor Fernandez Almagro, 3 Madrid 28029 Spain Tel: +34 91 224 6900 Fax: +34 91 224 6980 Email: ccc@cnio.es Web: www.cnio.es/ccc
June			
01-04	13th Reach to Recovery International Breast Cancer Support Conference	Athens Greece	Hellenic Association of Women with Breast Cancer 21-23 Leosthenous str. Piraeus 185 36 Greece Tel: +30 210 41 80 006 Fax: +30 210 41 80016 Email: breastca@otenet.gr Web: www.breastcancerhellas.gr
2-5	EHA-10: 10th Annual Meeting of the European Haematology Association	Stockholm Sweden	Eurocongres Conference Management Jan van Goyenkade 11 Amsterdam Netherlands NL-1075 HP Tel +31 20 679 3411 Eha2005@eurocongres.com www.ehaweb.org
8-11	9th International Conference on Malignant Lymphoma	Lugano Switzerland	Olga Jackson Lymphoma Conference Secretary viale Cattaneo 23 Lugano - 6900 Tel: +41 91 921 4561 Fax: +41 91 921 4563 Web: http://www.lymphcon.ch/
08-12	World Conference on Breast Cancer	Halifax Canada	World Breast Cancer Organization, Inc 841 Princess Street Kingston Ontario K7L 1G7 Canada Tel: +1 613 549 1118 Fax: +1 613 549 1146 Email: wbcwbc@cogeco.net Web: www.worldbreastcancerconf.ca
15-17	Sarcoma Meeting Stuttgart 2005	Stuttgart Germany	Olgahospital Stuttgart Postfach 103070 Stuttgart 70176 Germany Tel: +49 711 992 2466 Fax: +49 711 992 2462 Email: lhazlewood@olgahospital.de Web: www.sms2005.de
15-18	World Congress on Gastrointestinal Cancer	Barcelona Spain	Imedex 70 Technology Drive Alpharetta Georgia 30005 USA Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: meetings@imedex.com Web: www.worldgicancer.com

Date	Name of Meeting	Place	Secretariat
16-18	International East-West Symposium on Nasopharyngeal Cancer	Toronto Canada	Princess Margaret Hospital, University of Toronto 610 University Avenue, Room 5-983 Toronto Ontario M6G 2M9 Canada Tel: +1 416 946 2123 Fax: +1 416 946 4586 Email: Fei-Fei.Lui@rmp.uhn.on.ca
23-26	2nd Quadrennial Meeting of the World Federation of NeuroOncology	Edinburgh Scotland	EANO 6 Secretariat Federation of European Cancer Societies Avenue E Mounier 83 Brussels, Belgium 1200 Tel: +32 0 2775 0201 Email: eano6@fecs.be
26-30	XVIII World Congress of Gerontology	Rio de Janeiro Brazil	ACE Eventos SHN Qd. 02 BL. E Sobreloja 50 Kubitschek Plaza Hotel Brasilia-DF CEP 70710-908 Brazil Tel: +55 61 328 6912 Fax: +55 61 328 6912 Email: Secretariat@aceeventos.com.br Web: www.gerontology2005.org.br
July			
3-6	11th World Conference on Lung Cancer	Barcelona Spain	Heather Drew Imedex 70 Technology Drive Alpharetta - 30005 - Georgia Tel: +1 770 751 7332 Fax: +1 770 751 7334 Web: www.2005worldlungcancer.com/2005WLC/
14-16	2005 Gastrointestinal Oncology Conference	Arlington USA	International Society of Gastrointestinal Oncology (ISGIO) 200 Broadhollow Rd Melville New York 11747 USA Tel: +631 390 8390 Fax: +63 13 935091 Email: email@isgio.org Web: www.isgio.org
September			
13-16	9th International Nottingham Breast Cancer Conference	Nottingham UK	Nottingham Breast Cancer Conference City Hospital Nottingham, UK Tel: +44 11 596 257 07 Fax: +44 11 596 277 65
25-28	109th Annual Meeting of the American Academy of Otolaryngology – Head and Neck Surgery Foundation	Los Angeles USA	American Otolaryngology – Head and Neck Surgery c/o The AAO-HNS Foundation Inc. 1 Prince Street Alexandria VA 22314-3357 USA Tel: +1 703 836 4444 Fax: +1 703 519 1546 Email: aaomeet@entnet.org
29 – Oct 01	10th International Conference on Geriatric Oncology & 6th Meeting of the International Society of Geriatric Oncology (SIOG)	Genolier Switzerland	IMO _ Clinique de Genolier Genolier 1271 Switzerland Tel: +41 22 366 9106 Fax: +41 22 366 9131 Email: siog@genolier.net
October			
02-05	31st European Congress on Cytology	Paris France	MCI France 11, rue de Solferino Paris France Tel: +33 1 53 858252 Fax: +33 1 53 858283 Email: Cytology2005@mci-group.com

Date	Name of Meeting	Place	Secretariat
			Web: www.cytologyparis2005.com
09-12	34th Congresso Brasileiro de Radiologia	Brazil	Congresso Brasileiro de Radiologia Av, Paulista 491, 130 Andar Cj. 132-CEP 01311-909 Brazil Tel: +55 11 285 4022 Fax: +55 11 285 4022 Email: cbradiol@cbr.org.br
16-20	ASTRO: 47th Annual Meeting	Denver Colorado USA	American Society for Therapeutic Radiology and Oncology (ASTRO) 12500 Fair Lakes Circle Suite 375 Fairfax Virginia 22033 USA Tel: +1 70 3227 0170 Email: meetings@astro.org
30 – Nov 03	ECCO 13 The European Cancer Conference	Paris France	Federation of European Cancer Societies Avenue E. Mounier 83 Brussels 1200 Belgium Tel: +32 2 775 0205 Fax: +32 2 775 0200 Email: ECCO13@fecs.be Web: www.fecs.be
November			
05-09	53rd Annual Scientific Meeting of the American Society of Cytopathology	San Diego USA	American Society of Cytopathology 400 West 9th Street Suite 201 Wilmington DE 19801-1555 USA Tel: +1 302 429 8807 Email: asc@cytopathology.org Web: www.cytopathology.org/meetings/index.php
07-09	CNIO Cancer Conference: Cancer and Aging	Madrid Spain	CNIO – Spanish National Cancer Centre C/ Melchor Fernandez Almagro, 3 Madrid 28029 Spain Tel: +34 91 2246900 Fax: +34 91 2246980 Email: ccc@cnio.es Web: www.cnio.es/ccc
11-13	Oncology Nurses Society Institutes of Learning	Phoenix USA	Oncology Nursing Society 125 Enterprise Drive Pittsburgh Pennsylvania 15275-1214 USA Tel: +1 866 257 4667 Fax: +1 877 369 5497 Email: meetings@ons.org Web: www.ons.org
27 – Dec 02	91st Meeting of the Radiological Society of North America (RSNA)	Chicago USA	Radiological Society of North America (RSNA) 829 Jorie Blvd Oak Brook IL 60523-2251 USA Tel: +1 630 571 7879 Fax: +1 603 571 7837 Email: sdrew@rsna.org
December			
2-6	47th Annual Meeting of the American Society of Hematology	San Diego California USA	American Society of Haematology 1900 M street NW Suite 200 Washington DC 20036 USA Tel: +1 20 2776 0544 Email: meetings@hematology.org Web: www.hematology.org
06-10	28th Annual San Antonio Breast Cancer Symposium	San Antonio USA	San Antonio Breast Cancer Symposium c/o San Antonio Cancer Institute 7979 Wurzbach Rd, Suite U-531 San Antonio Texas 78229 USA Tel: +1 210 616 5912 Fax: +1 210 949 5009 Email: RMarkow@ctrc.net Web: www.sabcs.org
10-14	American Society for Cell Biology (ASCB): 45th Annual Meeting	San Francisco USA	American Society for Cell Biology (ASCB) 8120 Woodmont Avenue Suite 750 Bethesda MD 20814-2755 USA Tel: +1 301 347 9300 Fax: +1 301 347 9310 Email: ascbinfo@ascb.org

THE CANCER COUNCIL AUSTRALIA

The Cancer Council Australia is the peak national cancer control organisation. Its members are the leading state and territory cancer councils, working together to undertake and fund cancer research, prevent and control cancer and provide information and support for people affected by cancer.



MEMBERS

The Cancer Council ACT
The Cancer Council New South Wales
The Cancer Council Northern Territory
The Cancer Council South Australia
The Cancer Council Tasmania
The Cancer Council Victoria
The Cancer Council Western Australia
Queensland Cancer Fund

AFFILIATED ORGANISATIONS

Australasian Association of Cancer Registries
Clinical Oncological Society of Australia Inc
Palliative Care Australia

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Professor J Ward MBBS, MHPEd, FAFPHM, PhD
Dr K White PhD

CLINICAL ONCOLOGICAL SOCIETY OF AUSTRALIA INC

The Clinical Oncological Society of Australia (COSA) is a multidisciplinary society for health professionals working in cancer research or the treatment, rehabilitation or palliation of cancer patients.



It conducts an annual scientific meeting, seminars and educational activities related to current cancer issues. COSA is affiliated with The Cancer Council Australia.

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Executive Officer
Ms M McJannett

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Dr D Goldstein MBBS, MRCP (UK), FRACP
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MEMBERSHIP

Further information about COSA and membership applications are available from:
www.cosa.org.au or cosa@cancer.org.au

Membership fees for 2004

Ordinary Members: \$140
Associate Members: \$80
(includes GST)

INTEREST GROUPS

ANZ Children's Haematology and Oncology
Breast Oncology
Cancer Nurses Society of Australia
Cancer Research
Data Managers
Epidemiological
Gastrointestinal Oncology
Gynaecological Oncology
Lung Oncology
Medical Oncology
Melanoma and Skin
Neuro-oncology
Palliative Care
Pharmacy
Psycho-Oncology
Radiation Oncology
Regional and Rural Oncology
Social Workers
Surgical Oncology