

# CANCER FORUM

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## Psycho-oncology

## OVERVIEW

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"I stared down her housedress as she bent over to bathe me. One breast moved with the motion of her scrubbing me. Where the other one would have been there was a scar. Something frightening had happened; I just didn't know what... Mom and I went on pretending everything was normal, no matter what changed around us, and no matter how sick she got. I went on believing that my mother couldn't disappear, that could never happen. And I believed it couldn't happen because it would have been impossible for me to go on without her".<sup>1</sup>

Frances Cournos was just 11 years of age when her mother died from cancer. The grief and sadness she expresses resonate with the experience of generations of Australians for whom the diagnosis of cancer was all the more devastating because of a reluctance to talk about the situation and a dearth of supportive interventions to assist patients and their families to cope.

Since the 1970s the discipline of psycho-oncology has evolved with the explicit aim of addressing the psychological, social and behavioural dimensions of cancer, at all stages of the disease, from the perspective of both patient and family.<sup>2</sup> Internationally and particularly in Australia, there have been advances in the acknowledgement of the emotional dimensions of the cancer experience, although identification of patient distress is imperfect,<sup>3</sup> increasingly clinicians are aware of critical issues such as anxiety and depression and the effectiveness of treatments for these common complications of cancer.<sup>4</sup> Similarly, there has been increasing recognition of the benefits of communication skills training in improving the capacity of health professionals to respond to the emotional concerns of patients with cancer.<sup>5,6</sup> In this regard, the Breast Section of the Royal Australasian College of Surgeons and the Medical Oncology Group of Australia have demonstrated outstanding leadership in promoting the importance of communication skills training for members.

Attention to the emotional dimensions of the cancer experience, including the capacity of health professionals to respond sensitively to patients and their families, is increasingly being seen as fundamental to cancer care. However these are broad areas and innovative research in Australia is providing key insights into areas hitherto relatively neglected. This edition of Cancer Forum, dedicated to psycho-oncology, aims to update readers on some of these emerging areas of research. All are of key clinical relevance, in many instances addressing issues of particular concern to health professionals who have felt that lack of evidence has previously limited

their capacity to respond appropriately in such contexts. This edition fits fairly neatly into two sections. The first encompasses areas of direct clinical relevance. Although at first glance these papers cover disparate themes, in fact their common link is attention to issues affecting quality of life. The second section addresses the integration of evidence into clinical practice and strategies to enhance the already impressive research history in Australia.

## Research advances

## Sexuality and fertility

The introduction of breast conserving surgery was a milestone in treatment of breast cancer, as it was associated with demonstrably less impact on body image and sexuality than mastectomy.<sup>7</sup> However, as described by Thewes and White, sexuality encompasses more than simply "loss of body parts"<sup>8</sup> and it is important to conceptualise body image and sexuality broadly, appreciating the woman in her social context. As there has been little research into ways of promoting enhanced adjustment in terms of body image and sexuality, the multicentre study evaluating a nurse-led intervention to provide education and promote referral is especially valuable, with the potential to improve outcomes for women in a cost-effective and timely manner. It is unclear to what extent the findings of this study have potential to be expanded to other cancer streams, for example head and neck cancers where morbidity is high,<sup>9</sup> however this project is an important start.

The level of unmet need regarding provision of information about fertility described in this paper is of concern and clearly Australian research is providing a useful framework to appreciate the information and supportive care needs of women diagnosed with breast cancer. This work highlights the importance of excellent communication, as it is clear that the concerns and aspirations of women may not be identical to those perceived by health professionals. Furthermore, information regarding fertility is likely to emerge as an important area informing decision-making for younger women with breast cancer.

## Cognition and chemotherapy

Adjuvant chemotherapy in the treatment of breast cancer has been reported to be associated with improved survival,<sup>10</sup> although anecdotally women have complained that this may come at the cost of “chemo fog”. Subjective complaints of cognitive difficulties by women receiving chemotherapy have only recently been systematically examined. Given the enormity of the cancer diagnosis and high rates of anxiety and depression in women with early breast cancer,<sup>11</sup> it has perhaps been tempting to attribute these complaints to co-morbid depression, however the paper by Beadle et al highlights the cognitive changes demonstrated when neuropsychological testing is performed. As the authors note, there are methodological limitations in existing research, however the prospective study currently being conducted at the Wesley Hospital is likely to provide valuable insights into the nature and extent of cognitive difficulties following treatment with chemotherapy.

This is an important area of research. A central issue is the nature of the demonstrated deficits and the description of Beadle et al will be of interest for clinicians for whom this is not their core area of expertise. Executive dysfunction can indeed be “silent” at a casual social level, but profoundly disabling for the person functioning in areas requiring self-monitoring and correction, planning and organisation. Given the nature of these deficits, it may be, for example, that a lawyer may decline the offer of adjuvant chemotherapy lest she experience cognitive deficits. This has clear implications for informed decision-making. Current knowledge does not provide insights into potential risk factors for the development of cognitive deficits, nor indeed the effectiveness of any remediation or longer-term outcome; these areas merit further examination.

#### Wellness

Improvement in cancer survival has in the past been seen as an outcome in itself, but increasingly the notion that the patient should be “grateful and get on with their life” is negated by research demonstrating significant residual side-effects of treatment for many patients.<sup>12</sup> There is increasing attention to the previously unmet needs of cancer survivors, with recommendations that there be institutional responses to the difficulties experienced by this population.<sup>13</sup>

One of the pressing residual concerns of cancer survivors is fatigue, but it appears that the identification of fatigue and the response is often inadequate.<sup>14</sup> The paper by Hayes and Newman illustrates the benefits of exercise for cancer patients, with often marked reductions in fatigue and improvements in other domains such as body image and mood. Research in this area is a striking reminder of the importance of making treatment recommendations based on evidence rather than personal opinion – the intuitive advice received by many patients who complain of fatigue is to rest, yet this is counter to the evidence that exercise has an important role in promoting wellness in this population. As indicated by Hayes and Newman, there remain major issues in promoting physical activity in a systematic manner for

patients and an area which merits investigation in this regard is the attitude of patients and their families who may have powerful perceptions about the need for rest and calm to cope with cancer, rather than activity.

#### Advanced disease

Despite improved treatments, many patients will develop advanced cancer. As pointed out by Schofield et al the emotional impact of the diagnosis of advanced disease is profound, yet this is an area in which research lags behind that for early-stage disease.

In addition to describing the emotional impact of advanced cancer, this paper emphasises the intimate relationship between emotional adjustment and physical symptoms, reminding health professionals that in this population in particular these cannot be considered in isolation.

Research in this patient population has often been considered “too hard”. This paper considers the impediments to research with patients with advanced disease and overviews some practical strategies which may assist in research design. At a fundamental level, it is also important to reflect on ways in which the responses of health professionals to this patient population might impact on research. Treating patients with advanced cancer is often stressful for health professionals, and in particular exposure to the deaths of patients may lead to a sense of “accumulative loss,”<sup>15</sup> with the potential to withdraw from the emotional issues facing patients as a protective measure.<sup>16</sup> It is possible that some of the methodological difficulties relate not only to the illness and status of patients, but a perception of researchers that it is inappropriate to conduct research in this population and a desire to avoid being confronted by the emotional concerns of this population. However, qualitative research with women with advanced breast cancer has revealed extremely high recruitment rates and acceptability of exploration of highly sensitive issues.<sup>17</sup>

#### Carers

The contribution by informal carers of cancer patients is enormous, but it is only recently that the special needs of carers for information and support are being understood, with a view to improving services and support. The paper by Girgis and colleagues reminds us that it is appropriate to consider the patient within their social context and not assume that the emotional and informational needs of the patient and caregivers are identical. For many health professionals, this may raise concerns about confidentiality and privacy, however open discussion with patients about the demands of illness and treatment and the importance of adopting an inclusive approach to treatment is likely to be reassuring rather than confronting. Patients may be reluctant to voice their own concerns as they consider the doctor is too busy or not interested,<sup>18</sup> so it is likely that they will need the active encouragement of clinicians to raise concerns about their caregivers. The research initiatives described by Girgis et al highlight the high quality of Australian research into areas previously neglected. In particular, efforts to identify carers at increased

psychological risk is crucial for the future development of enhanced supportive and other interventions to reduce morbidity in this population.

#### Promoting implementation of evidence and future research

##### Best practice in psychosocial care

Given the short time in which psycho-oncology has existed as a clinical and research entity, progress has been extraordinary. The amount of evidence about the psychosocial impact of cancer and the benefits of interventions is such that concise summaries of the evidence and clinically-relevant recommendations are increasingly necessary to assist busy clinicians. Luxford and Fletcher provide an overview of some milestone Australian developments, describing the development of a variety of clinical practice guidelines and their implementation. Evidence about the usefulness of the workshops conducted nationally as part of the implementation of the Clinical practice guidelines for the psychosocial care of adults with cancer is compelling and demonstrates increasing clinical interest in psychosocial aspects of cancer. Incorporation of psychosocial care into routine clinical care requires strategic approaches to generate changes in healthcare systems,<sup>19</sup> and the initiatives of the National Breast Cancer Centre described in this paper are likely to enhance identification of psychosocial risk factors and provide a mechanism for reviewing further progress in the provision of psychosocial care.

##### Translation of evidence into practice

Steginga et al provide a perspective on translation of the evidence about psychosocial interventions into clinical practice at a community level. The recently-established telebased Cancer Counselling Service is an innovative response to the geographic barriers faced by many patients with cancer, and builds on the acceptability of The Cancer Council Helpline. This service has been developed within a tiered framework for provision of psychosocial care. Explicit in this model is the notion that a large proportion of patients will benefit from provision of information and good communication from health professionals without the need for further assistance, a smaller number requiring more specialist services. Indeed, specialised psychosocial support for all patients is not viable, even in large metropolitan centres; in rural and remote areas access to such services is often extremely limited. The tiered model of care has intrinsic appeal, as it encourages the tailoring of scarce resources to the particular needs of the individual. This is apt, given accumulating evidence that a sizeable proportion of patients do not benefit from (nor presumably require) highly specialised interventions.<sup>20</sup> Evaluation of the pilot workshops confirms the practical value of a tiered

approach for participants and the planned DVD will be a valuable resource for use in a variety of settings.

##### Future research opportunities

The establishment of the Psycho-oncology Co-operative Research Group will be of interest to researchers and clinicians alike. The group has the potential to “value add” to large-scale trials in oncology and provides opportunities for larger-scale collaborative research than has previously been conducted in psycho-oncology in Australia, in addition to promoting high-quality research by new researchers. The group welcomes new members, and readers of Cancer Forum are invited to join the group using the contact details provided.

In summary, despite the relatively small population of clinicians and researchers in psycho-oncology in Australia, work of high quality and clinical relevance has emerged over the past few years. The papers in this edition of Cancer Forum provide an interesting overview of emerging areas, all clearly demonstrating the potential to continue to improve the care of patients with cancer, their carers and their families. [n](#)

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## PSYCHOSOCIAL ASPECTS OF SEXUALITY AND FERTILITY AFTER A DIAGNOSIS OF BREAST CANCER

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### Abstract

Improved survival from cancer treatments has led to an increasing focus on issues related to long-term survivorship. Research concerning the sexual impact of cancer treatment and the psychosocial aspects of parenthood after cancer are growing areas within the psycho-oncology literature. The impact of these issues are especially important in light of their potential to influence treatment decision-making and thereby survival. This article reviews new Australian and international research and innovative initiatives addressing sexuality and fertility after a diagnosis of breast cancer. It

Approximately 27% of all new breast cancer diagnoses occur in women who are pre-menopausal at diagnosis, 6-7% of diagnoses occurring in women aged 40 years or less.<sup>1,2</sup> For these women chemotherapy and endocrine therapies may have reproductive implications that are distressing or discordant with plans for childbearing. For women of all ages, both the diagnosis and resulting treatments for breast cancer can have an impact on a woman's body image, sexuality and sexual function. These important quality of life issues can be difficult for a woman to raise with the treating team, may increase in adverse outcomes over time and can have an impact on her relationship with partners.

### Impact of breast cancer treatments on fertility and menopause

A number of the treatments for breast cancer can have either a direct or indirect impact on a woman's fertility and hormone function. Chemotherapy causes direct toxicity to the ovaries and may cause either temporary amenorrhea or early menopause.<sup>3-7</sup> Rates of amenorrhea and early menopause following individual chemotherapy regimens vary according to type of chemotherapeutic agent, the duration and cumulative dose, and the woman's age at time of treatment.<sup>8,9</sup> Menses and ovulation may continue during treatment with tamoxifen however, there is a need to delay childbearing during treatment with tamoxifen due to its unknown mutagenic effects.<sup>5,10,11</sup> Suppression of ovarian function induced by goserelin is potentially reversible, however women will be unable to conceive during treatment, resulting in the need to delay pregnancy. Radiotherapy is not directly associated with ovarian dysfunction,<sup>7</sup> however it may reduce the ability to lactate from the irradiated breast should the woman become pregnant and wish to breastfeed following treatment for breast cancer.<sup>12-14</sup> Surgical oophorectomy as a method of ovarian suppression causes a rapid and permanent cessation of menses and is a treatment

option for some pre-menopausal breast cancer patients with hormone receptor positive disease.<sup>15</sup> Oophorectomy may be the preferred method of ovarian suppression for women with a family history of hereditary breast and ovarian cancer.

Early menopause for young women diagnosed with breast cancer is associated with a loss of childbearing capacity and may be accompanied by 'hot flushes', vaginal dryness, sexual dysfunction, a sense of loss and/or isolation from one's peers<sup>16</sup> and prolonged exposure to the risks associated with menopause, including cardiovascular disease, osteoporosis, genitourinary problems, weight gain, psychological distress and possibly cognitive impairment.<sup>5,10,11,17</sup> Treatment-induced early menopause may be experienced as more debilitating than those associated with a natural menopause due to a more rapid decline in oestrogen levels.<sup>3</sup>

### Pregnancy after breast cancer treatment

More women are delaying childbearing for personal, educational or professional reasons<sup>18</sup> and breast cancer in women who are childless is becoming more common. Current evidence suggests that pregnancy following breast cancer does not increase a woman's risk of developing a recurrence following a diagnosis of early breast cancer, perhaps even conferring a protective effect.<sup>19-24</sup> Rates of birth defects in the children of women treated for breast cancer are not significantly higher than those in the general population.<sup>12,21,23,25,26</sup> There are however methodological problems inherent in research on the outcomes of pregnancy among breast cancer patients, most notably, the inability to control for factors such as the self-selection of patients with good prognoses.<sup>3,25</sup> While a past diagnosis of cancer does not influence most cancer patients' childbearing aspirations,<sup>27</sup> it does appear to influence childbearing behaviour. It is estimated that in only 3-7%

of women become pregnant following a breast cancer diagnosis.<sup>7,19,28,29</sup>

### Research into fertility concerns

Psycho-oncology research into the psychosocial aspects of fertility and cancer is in its infancy. To date most of the research has focused on understanding patient and health professional attitudes towards information provision, identifying current and preferred methods of fertility and menopause-related information provision, the majority involving samples of breast cancer patients.

A multi-centre Australian study by Thewes and colleagues<sup>30</sup> surveyed 228 young women (aged 40 years or younger at diagnosis) with a diagnosis of early stage breast cancer about fertility and menopause-related information needs. Seventy-one per cent of participants recalled discussing fertility-related issues with a health professional as part of their breast cancer treatment and 86% recalled discussing menopause-related issues. Consultation with a fertility or menopause specialist and a fertility-related treatment decision aid were the most preferred methods of obtaining fertility-related information. Receiving fertility-related information was rated as most important at time of treatment decision-making, but became important again in follow-up care. Predictors of higher perceived importance of obtaining fertility-related information included a general preference for more information, plans for childbearing at diagnosis and having no children at diagnosis. Interestingly age, psychological distress or severity of disease (eg. nodal status, stage) were not significantly related to perceived importance of receiving fertility-related information.

As part of a longitudinal qualitative study of experiences of young women with breast cancer (diagnosed at 40 years or younger) Connell et al<sup>33</sup> interviewed 13 Australian women at three time phases about their concerns about fertility, contraception, pregnancy and breastfeeding after breast cancer. Perceptions of fertility changed over time among women in this sample. Contraception issues were raised together with recurrence fears related to pregnancy and breastfeeding after breast cancer. Decisions related to unplanned pregnancies and breastfeeding were described as particularly onerous.

In the US, Duffy and colleagues<sup>31</sup> interviewed 166 pre-menopausal women diagnosed with stage 0-III breast cancer and receiving chemotherapy about their experience of receiving information about the reproductive effects of chemotherapy. Sixty-eight per cent of women recalled receiving information about menopause-related issues and 34% recalled receiving information about fertility-related issues. Predictors of recalling menopause-related discussions were receiving hormonal therapy and having earlier-stage disease. Difficulty communicating with the medical team significantly increased the odds of women recalling discussion of fertility-related issues and being older or having greater anxiety in medical situations significantly decreased the odds of recalling such discussions.

Partridge and colleagues reported the results of a web-based survey of 657 survivors of stage 0-III breast cancer who were members of an internet-based survivors group.<sup>32</sup> Respondents were self-selected and the response rate was 38%. The majority of

respondents (62%) were within two years of time of diagnosis. Greater concern about fertility issues was significantly associated with a desire for children at time of diagnosis, number of prior pregnancies and prior difficulty conceiving. Twenty-nine per cent of women in this study said that fertility issues influenced their treatment decision-making, 72% of respondents reported discussing fertility issues with their doctors and 17% had seen a fertility specialist. Only half of all respondents (51%) believed that their fertility-related information needs were adequately met. Many women in this sample over-estimated their risk of permanent infertility. Nearly 50% of women aged 30 years or younger believed that they had a greater than 40% chance of entering menopause. Eighteen per cent of respondents said that they did not want any future pregnancies or were unsure if they would consider a future pregnancy. Of those women who were not considering pregnancy and those who were unsure about it, 36% believed that having a child would increase their risk of breast cancer recurrence.

The above research suggests that among young women with breast cancer there are unmet needs for information about fertility-related issues and that misperceptions about risks of becoming menopausal and the influence of pregnancy on recurrence are common. Overall, breast cancer patients report a strong preference for obtaining specialist information from gynaecology and fertility specialists, although only about a third of patients access these services.<sup>30,32</sup> Some Australian clinics have incorporated these specialists into the multi-disciplinary team when treating pre-menopausal breast cancer patients. (Personal Communication – Prof C Saunders)

No studies to date have explored health professionals' attitudes to providing breast cancer patients with fertility-related information, although one study has examined oncologists' attitudes toward providing male cancer patients with information about sperm-banking.<sup>34</sup> Time spent in consultations with oncologists is often brief and there are competing demands for information provision. Other health professionals, such as nurses, may have a role to play in the delivery of fertility and menopause-related information.<sup>35</sup> However, studies of general nurses' attitudes towards fertility-related information for cancer patients suggest that while nurses acknowledge they have a role in supporting patients with sexual and fertility concerns, they avoid discussing these topics because of a perceived lack of knowledge, experience and resources.<sup>36</sup> Further work is needed to identify the education needs of all members of the treatment team in this area.

### Assisted reproduction following breast cancer treatment

The burgeoning growth of assisted reproductive technologies (ART) and their application to the cancer setting has meant a growing number of fertility preservation methods are available or are on the horizon for cancer patients and increasing numbers of patients are requesting further information about them.<sup>37</sup> Currently the most widely available ART to

women treated for breast cancer is cryopreservation of embryos and reimplantation using standard in vitro fertilisation (IVF) procedures. This method of fertility preservation requires a committed partner, may delay the start of treatment and is generally not suitable for women with hormone receptor positive tumours. A number of other options, such as the cryopreservation of oocytes or ovarian tissue are still experimental, are not widely available and have only limited success in humans. The use of concurrent goserelin during chemotherapy in premenopausal women with hormone receptor negative breast cancer as a method of fertility preservation is currently being investigated in an international clinical trial.<sup>38</sup> There has also been increased focus on providing breast cancer patients access to clinically proven strategies for managing menopausal symptoms following cancer treatment.<sup>39</sup> Despite increasing availability of fertility preservation options and strategies for managing menopausal symptoms, there remains a dearth of comprehensive and widely available information tools to inform cancer patients about these issues. Further development of high-quality, fertility and menopause-related information for young women with breast cancer has been identified as a priority area for research by consumer advocacy groups and health professionals alike.<sup>40</sup>

### Sexuality and sexual function following breast cancer

The impact of breast cancer on sexuality and sexual function can vary greatly between women, with both the diagnosis and treatment having a significant impact on this aspect of well being.<sup>41-42</sup> This impact can include altered sexual function,<sup>43-52</sup> poor self-image,<sup>43,16</sup> loss of libido<sup>43-47</sup> and relationship problems.<sup>43,53</sup> Much of the research in this area has historically focused on limiting the impact of surgery (breast conservation versus mastectomy; sentinel node biopsy versus axillary clearance), maintaining the breast form (prosthesis and reconstruction) and more recently managing the impact of premature menopause.<sup>37</sup> While this work has led to important recognition of approaches to reduce the psychological and physical consequences of breast cancer treatment, it tends to focus on a single aspect in isolation from total experience of a woman. It does not acknowledge the complexity in meaning of "sexuality" for the woman with breast cancer, nor the differing levels of clinical intervention required in response to this varied meaning. The recognition of the existential nature of sexuality, where wholeness of body, not solely the breast, is needed to be truly functional,<sup>53</sup> and the interplay between psychological concerns, physical symptoms such as fatigue and changes in body image is an area that has yet to be addressed. Similarly, the impact of consequences such as lymphoedema on sexuality and sexual function has received very limited attention.

Information on sexuality and sexual outcomes associated with cancer treatments is crucial at time of diagnosis and decision making. A meta-analysis of research on

breast conservation versus mastectomy concluded that breast conservation leads to improved psychosexual outcomes;<sup>54</sup> women with breast conserving surgery having better body image, earlier resumption of sexual activity<sup>55</sup> and maintained breast caressing during sexual activity.<sup>56</sup> For some women this information can be as important as survival figures when considering treatment options. While qualitative studies have identified the variation in the importance women place on this aspect of quality of life, these studies also highlight that this variation is not influenced by age, menopause status or whether the woman is in a relationship or not. There is, however, initial research suggesting that women with breast cancer who have invested significantly in body image as a source of their sense of self-worth adjust poorly following treatment.<sup>57</sup> Women with heightened perceptions of body image pertaining to either attractiveness or wholeness are at an increased risk of poor psychosocial adjustment following treatment for breast cancer.<sup>58</sup>

Access to information on the consequences of treatment on sexual function has been identified as problematic, with women identifying limited or no discussion in this area.<sup>59</sup> Similarly, both women and health professionals have identified this as a sensitive and difficult area to raise in discussions, with a lack or clarity about the best time for this topic to be raised.<sup>59</sup>

With the increase in conservative breast surgery and increasing support for reconstructive surgery for women undergoing mastectomy, there can be an assumption that sexuality and body image concerns are being addressed. However, women who experience a breast cancer diagnosis continue to identify this as a neglected area of research and focus in their recovery. Partners' needs, approaches to providing information and accessing support in this area require further research to determine how to best support women in this aspect of quality of life.

### Current research and developments for the future

An Australian project is currently underway which aims to compare the efficacy of a fertility-related decision aid to usual care among young women with a diagnosis of early breast cancer. (Personal Communication – Dr B Meiser) Another multi-centre Australian project is developing an information tool to improve patient education about the menopausal side-effects of adjuvant therapies for young women with a diagnosis of breast cancer. The information tool will be developed in consultation with existing information sources (eg. Australasian Menopause Society, Jean Hailes Foundation, National Health and Medical Research Council (NHMRC) and North American Menopause Society) in accordance with NHMRC guidelines. The information tool will also address the efficacy and safety of available treatments for menopausal symptoms following breast cancer and implications of treatments for sexual functioning. (Personal Communication – A/Prof M Hickie)

In the US a novel randomised control trial is currently

underway which aims to explore the efficacy of a peer counselling intervention for African-American women with a diagnosis of breast cancer. The intervention under investigation includes individual counselling sessions about fertility issues with specially trained peer counsellors who are guided by a purposely-designed workbook.<sup>35</sup>

The Fertility and Breast Cancer Project<sup>60</sup> aims to evaluate the impact of an internet-based information and support tool that provides comprehensive information about the impact of breast cancer treatment on fertility for women with breast cancer who have fertility concerns.

Further research is needed to explore the psychosocial issues of parenthood after cancer among patients with more heterogeneous diagnoses. A greater understanding is also required of the motivations for attempting or not attempting pregnancy following breast cancer. More research is required to explore health professionals' attitudes toward providing cancer patients with fertility-related information, and to identify and overcome potential barriers facing the wide-spread dissemination of fertility-related information to those who require it.

A breast nurse led intervention to provide information and appropriate referral is currently being trialled in two states in Australia. This project, funded by the National Breast Cancer Foundation and conducted by White, Butow, Saunders et al will examine if the intervention leads to improved access to information, improved outcomes related to sexuality and sexual function and earlier referral to specialist services if required.

These innovative research projects currently underway in Australia and internationally are likely to play an important role in improving education about fertility preservation methods, sexuality and management of menopausal symptoms, as well as facilitate treatment decision-making to help women balance the survival gains of adjuvant therapies with their childbearing aspirations. [n](#)

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# THE EFFECT OF ADJUVANT CHEMOTHERAPY ON COGNITIVE FUNCTIONING IN EARLY BREAST CANCER: IMPLICATIONS FOR OUTCOMES RESEARCH AND ONCOLOGY PRACTICE

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## Abstract

Outcomes research is an important focus of public and research policy in Australia. Recent reports of cognitive impairment after chemotherapy for breast cancer have highlighted the emerging importance of cognition as a clinically relevant outcome. To date, most studies have utilised cross-sectional study designs to investigate impairment after treatment. Future research requires a within-group study design that utilises a longitudinal repeated measures approach to identify the nature and magnitude of cognitive change after adjuvant chemotherapy and to evaluate factors that mediate cognitive functioning. The results of within-group studies will also provide the foundations for individual patient assessment, with its focus on the development of tailored behavioural interventions for significantly

The neurotoxicity of chemotherapy is well known, but cognitive impairment in the absence of a demonstrable neurological disability has been recognised only recently as an important clinical problem. To date, most of the research literature has reported cognitive functioning in women with early breast cancer who have been treated with adjuvant chemotherapy. This review briefly describes the conceptualisation of cognition and its measurement and summarises the results of studies that report cognitive impairment in women after adjuvant chemotherapy for breast cancer. It also evaluates the research agenda required to better understand the nature and extent of cognitive change after chemotherapy and to develop tailored interventions for women diagnosed with cognitive impairment.

## Cognition – conceptualisation and measurement

Cognition is a knowledge based process that recognises, stores and retrieves information. In contrast to the

cognitive states of other animal species, human cognition is characterised by a far more richly diverse interplay of perception, memory and thinking. Furthermore, human cognition displays enormous plasticity throughout life in response to brain development and fluctuations in physical, emotional and social health.

The main components of cognition incorporate attention, memory, language, conceptualisation and visuospatial abilities.<sup>1</sup> These components in turn comprise a multi-faceted array of interlocking domains, each representing a specific cognitive attribute. An additional construct, executive functioning, describes higher order control and coordination of cognitive operations that are required for normal daily living activities such as planning, organisational capacity, strategic thinking and problem solving.<sup>2</sup> The discipline of neuropsychology is devoted to the study of brain – mind relationships and numerous tests have been devised by research neuropsychologists over the past 60 years to investigate cognitive functioning.

Cognitive tests can be classified as global, component or

construct specific and disorder specific. Ideal tests are characterised by appropriate conceptualisation, robust psychometric properties, the capacity to detect changes over time and validated alternate forms that neutralise the potentially confounding effect of test recollection after repeated administration. The selection of an appropriate testing protocol for a particular clinical setting should take into account the cognitive phenotype of the disease by profiling the cognitive symptoms described by patients. The terms ‘chemobrain’ and ‘chemofog’ are

often used by women with breast cancer to describe the effects of adjuvant chemotherapy on memory, concentration and mental agility. In order to fully understand the nature and severity of these symptoms, validated tests capable of reliably detecting change over time should be selected from cognitive domains that target this clinical phenotype. Table 1 summarises examples of symptoms described by women, the domains of cognitive functioning into which these symptoms fit and examples of cognitive tasks that can

Table 1: Cognitive symptoms frequently described after chemotherapy, matching cognitive phenotype and examples of tests to measure impairment.

SYMPTOMS / TASK IMPAIRMENT	COGNITIVE DOMAIN	EXAMPLES OF MEASURES
Difficulty retaining verbal information (eg. keeping a phone number in mind).  Difficulty retaining visual information (eg. recalling details of a map).	Memory  Verbal learning and memory (immediate and delayed recall) Visual memory (immediate and delayed recall)	RAVLT*  WMS-III Visual Reproduction*
Being distracted from the task at hand.	Attention	WAIS-III Digit Span Forwards*
Taking longer to process information. Lengthy verbal instructions may not be fully processed.	Cognitive processing speed	Stroop Word-Reading and Colour-Naming Trials Symbol Digit Modalities Test – Oral Version SCOLP*
Slowing of motor skills such as typing.	Psychomotor speed	Purdue Pegboard DKEFS Motor Speed*
Difficulty when required to switch attention between tasks (eg. making dinner and helping children with homework).  Difficulty when required to both recall and manipulate information (eg. maths calculations).  Difficulty recalling words quickly.  Disinhibition – not thinking before talking.  Not being able to do more than one thing at a time.  Not being able to identify appropriate strategies for new tasks	Executive functioning Attentional switching  Working memory  Verbal fluency Inhibition of interference  Multitasking (dual task)  Complex reasoning/planning	DKEFS Letter-Number Switching* TEA Visual Elevator*  WAIS-III Digit Span Backwards*  COWAT* Stroop Interference Trial  TEA Telephone Search While Counting DKEFS Card Sort Test Tower of London – Dx

\*RAVLT: Rey Auditory Verbal Learning Test; WMS-III: Wechsler Memory Scale; WAIS-III: Wechsler Adult Intelligence Scale; SCOLP: Speed and Capacity of Language Processing Test; DKEFS: Letter-Number Switching; TEA: Visual Elevator; COWAT: Controlled Oral Word Association Test

be selected to test these domains.

## Results of adjuvant and chemotherapy studies

Since the first report a decade ago, numerous studies utilising a cross-sectional design have investigated cognitive functioning in women with breast cancer after adjuvant chemotherapy.<sup>3-7</sup> In these studies, cognitive functioning was assessed during chemotherapy, at six months after treatment and one to ten years

after treatment. The findings were compared with various control groups. The neuropsychologic tests varied widely between studies and included a self-report scale of cognition, a self-administered instrument of cognitive functioning and a battery of administered neuropsychological tests designed to assess a variety of cognitive domains. Self-report measures of quality of life, depression, anxiety and fatigue were also evaluated in various studies to examine the relationships between

these constructs and cognitive functioning. Findings from each of the cross-sectional studies indicated that treatment groups performed more poorly than control groups in at least some areas of cognitive functioning. While between-group analyses failed to identify significant differences in many cognitive tasks, women in treatment groups were more likely to be impaired on memory, attention, processing speed and motor tasks than control groups.<sup>4,6</sup>

Three studies have utilised a longitudinal design, two with pre-treatment assessments and one with the first assessment after commencement of adjuvant chemotherapy. In one study, cognitive functioning was assessed in 18 patients before commencement of chemotherapy, three to four weeks after chemotherapy and 12 months after chemotherapy.<sup>8</sup> A large battery of neuropsychological tests, taking several hours to complete, assessed attention, processing speed, learning, memory, executive functioning, visuospatial processing and motor skills. Participants also completed self-report scales of anxiety and depression and quality of life. This study reported that 61% of patients experienced a decline in cognitive functioning relative to baseline in one or more domains immediately after chemotherapy, with 45% of those patients showing improvement at 12 months post-chemotherapy. Importantly, 35% of patients exhibited cognitive impairment before commencement of chemotherapy. The second study with baseline measures reported preliminary results in 50 women undergoing adjuvant chemotherapy for early breast cancer.<sup>9</sup> A comprehensive battery of neuropsychological tests evaluated verbal and visual memory, working memory, processing speed and executive functioning. In comparison with healthy controls, chemotherapy treated patients had a measurable cognitive decline, especially in tasks of verbal and working memory. In the third study, cognitive functioning was assessed using a global screening tool in 100 women undergoing chemotherapy and in a patient nominated, age matched control group.<sup>10</sup> The results indicated that patients were more likely to show cognitive impairment at the time of completion of chemotherapy than the control group, but there was a subsequent trend towards recovery.

The recently recognised effect of chemotherapy on cognitive functioning has stimulated numerous reviews, a meta-analysis and a workshop to summarise results to date and recommend future directions for research. A meta-analysis of 29 studies identified three basic research methods that compared post-treatment performances to normative data, control groups, or baseline assessments.<sup>11</sup> In comparison with normative data and control groups, chemotherapy treated groups exhibited consistent reductions of task performance in the domains of verbal memory, motor function and executive functioning. The findings from the workshop recognised that even small changes in some areas of cognition, such as attention and executive functioning, could be associated with reductions in the ability to function effectively in work, home and family/social environments.<sup>12</sup> Recommendations from the meta-analysis, workshop and other reviews placed emphasis on the development of longitudinal studies with larger

samples and pre-treatment assessments to better understand the nature, degree and duration of cognitive changes after chemotherapy.

#### Interpretation of results and future directions

Although the results of published studies are proof of principle that administration of chemotherapy is associated with altered cognitive functioning, significant conceptual and methodological gaps separate the notion of a measurable change and the management of a clinically relevant impairment. For example, what does the term 'cognitive dysfunction' mean and how is it diagnosed and managed? What is the appropriate structure of future clinical studies to investigate causality and which cognitive tests should be used? The results of published studies to date provide only limited insights into these issues. Partnership with the mature and expanding discipline of neuropsychology is required to understand gaps in knowledge and to establish an appropriate assessment/treatment model.

The selection of appropriate cognitive tasks is a crucial requirement to assess and treat clinically relevant deficits. Global cognitive measures have the advantage of ease of administration, but are less likely to detect changes over time in a domain that might be specifically relevant to a particular disease or group of patients. However, there are also limitations of tests that tap specific domains. To date, no domain specific test has been devised that addresses all aspects of that domain. At the same time, tasks intended to be domain specific frequently cross into other domains. Considerable expertise is therefore required in the interpretation of tests that apply artificial cognitive scenarios distant from daily living. While self-administered tests have been the hallmark of research in psycho-oncology, investigation of specific domains of cognitive functioning requires administration and interpretation of tests by board registered neuropsychologists.

Advances in study design are also required in order to provide more detailed information about factors that mediate cognitive functioning or confound the interpretation of results. While inter-group comparisons provide a snapshot of a clinical problem, intra-group comparisons are required to identify factors that both influence cognitive performance and confound the interpretation of results. For example, baseline and follow-up assessments not only provide additional information about the nature and magnitude of change, but also assess factors that influence task performance (eg. psychotropic medication, change of ovarian function after chemotherapy, use of endocrine treatments). Furthermore, within-subject studies provide intra-individual data that provide the basis for diagnosing and managing cognitive impairment. Thus the term "cognitive dysfunction" described in published cross-sectional studies, assumes that a statistically significant difference of scores between chemotherapy and control groups describes a clinically significant impairment, rather than merely a change. Since some of these statistically significant differences occur when mean scores in both groups are still in the normal range, within-subject studies are necessary to distinguish impairment and change.

By way of example, consider the following three scenarios of individual women treated with adjuvant chemotherapy whose baseline cognitive scores are known and who participate in a cross-sectional study that reports impaired post-treatment scores in comparison with those of a control group. In the first scenario, a woman with a baseline score just below the mean of the post-treatment group does not change as a result of chemotherapy. Her result contributes to the overall poorer score of the post-treatment group, but this woman does not have a chemotherapy induced impairment. In the second scenario, a woman with a baseline score two standard deviations above the mean of the control group drops to the mean of the control group after chemotherapy. She is a computer programmer who now has difficulty in performing complex tasks at work. She reports that she is concerned about losing her job and is now anxious about her declining work performance. Her score after chemotherapy does not contribute to the overall poorer result of the post-treatment group, but clearly she has an impairment. In the third scenario, a woman has a baseline score equal to the mean of the control group and drops to the mean of the post-treatment group after chemotherapy. She is a housewife whose daily activities have not changed but she perceives that she is different now and is distressed by this awareness. This woman's score contributes to the worse result of the chemotherapy group and her perception of change and objective change match. She is anxious about the change, but her daily living cognitive performance as a housewife remains normal.

These scenarios illustrate the need for longitudinal studies with baseline measures in order to provide a better understanding of the nature of cognitive change after adjuvant chemotherapy and its relationship to other patient reported outcomes. Although published cross-sectional studies have employed self-report scales of quality of life, anxiety and depression to 'correct' for differences in cognitive scores between groups, the nature of this relationship is unknown. Changes in quality of life, anxiety and depression are well documented in women with early breast cancer after chemotherapy, but scenario two above suggests that impaired cognitive functioning may mediate anxiety as a result of significant impairment of daily living. In

scenario three, the perception of cognitive impairment, not matched by impairment of daily living activities, could also plausibly mediate anxiety.

These examples highlight the emerging importance of the cognitive domain in psycho-oncology research. Unlike self-report scales of quality of life however, tests of cognitive functioning are applied and interpreted by trained neuropsychologists. The addition of the neuropsychologist to the multi-disciplinary cancer team can therefore add a new dimension both to psycho-oncology research and cancer care by integrating the clinical skills of history taking and the application and interpretation of cognitive tests to assess impairment and to develop individualised behavioural interventions.

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## EXERCISE IN CANCER RECOVERY: AN OVERVIEW OF THE EVIDENCE

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#### Abstract

With survival prospects following cancer diagnosis improving, more attention is being placed on the need for effective rehabilitation strategies. One strategy with the potential to positively influence the psychosocial as well as physical and functional status of patients with cancer is exercise. Increasing scientific evidence is available to support that participating in exercise during and following treatment for cancer, in particular breast cancer, is associated with improvements in psychosocial and physical outcomes. Although the exercise prescriptive characteristics have differed between investigations, the general recommended exercise prescription is of moderate-intensity, regular frequency (3-5 times/week) for 20-30 minutes per session. To ensure translation of research knowledge into clinical practice, future research



Cancer has become a leading cause of morbidity and mortality for Australians. However, while cancer is estimated to be responsible each year for about 261,000 years of life lost before the age of 75 years, survival prospects have never been better. Females have higher survival probabilities than males, with five-year relative survival rates being 63.4% and 56.8%, respectively.<sup>1</sup> For some of the more common forms of cancer, five-year survival prospects are even higher: melanoma, >90%; breast, >84%; prostate, >82%. Unfortunately, surviving cancer is not without its problems, as it is often associated with the presence of adverse physical and psychosocial side effects.

### Treatment and side effects

Surgery, radiation therapy and systemic therapy (ie. drugs) represent the most common treatment modalities for cancer,<sup>2</sup> all of which have the potential to induce adverse patient effects. While the presence of side effects tends to peak during treatment, symptoms may persist for many months or even years following treatment.<sup>3</sup> Of all the potential physical and psychosocial side effects during and following cancer treatment, fatigue is regarded as one of the most common and disabling, occurring in 40-100% of patients.<sup>4,6</sup> As many as 40% of cancer survivors continue to report fatigue months or years following treatment,<sup>7</sup> with the presence of fatigue either significantly (31%) or somewhat (39%) adversely influencing survivors' daily lives.<sup>8</sup>

Increased survival rates after cancer treatment have placed more attention on the need for effective rehabilitative procedures. Arguably a public health imperative exists to assist this population to bridge the gap between treatment cessation and effectively returning to 'normal' daily lives. The role of pharmacological, behavioural and psychosocial interventions in this endeavour has been assessed.<sup>9</sup> Unfortunately, many of these are unlikely to address the physical and functional problems of patients with cancer.<sup>10</sup> Exercise is one strategy that has well-documented effects on all quality of life (QoL) domains with healthy adults,<sup>11</sup> as well as those with chronic disease,<sup>12</sup> including cardiovascular and pulmonary, metabolic, orthopaedic, neuromuscular and cognitive, emotional and sensory conditions. Hence it is a logical candidate for evaluation with cancer patients and cancer survivors.

### Exercise and cancer

Exercise pre, during and post-treatment has been recommended for those with cancer since 1975, to prevent the sequelae of disuse and to maintain functional capacity.<sup>13</sup> However, only recently has there been sufficient evidence to support its effectiveness in reducing symptoms and improving QoL among cancer survivors.<sup>3</sup> The pioneering work in exercise and cancer recovery was first published in the early 1980s.<sup>14-18</sup> Since then the field has significantly expanded and now there are several reviews on the topic<sup>2,3,19-26</sup> highlighting that exercise is an important, safe, feasible and appropriate

QoL intervention for cancer patients and survivors. What follows is a summary of this work.

Exercise interventions have focused predominantly on women with breast cancer,<sup>27-32</sup> although effects have been investigated with other patients including those with head and neck,<sup>33</sup> stomach,<sup>34</sup> colorectal<sup>21</sup> and prostate<sup>35</sup> cancers, melanoma,<sup>36</sup> cancer during childhood and adolescence,<sup>37,38</sup> as well as those undertaking bone marrow transplant treatment.<sup>39,40</sup> Observational (prospective,<sup>40</sup> retrospective<sup>38</sup> and cross-sectional<sup>41</sup> in design) and intervention studies<sup>27,39,42,43</sup> have been completed. Among the intervention studies, the effects of aerobic-based exercise have received the greatest attention. By far the most preferred exercise modes investigated include stationary cycling and walking. The potential benefits derived from resistance-based exercise programs have only relatively recently been studied.<sup>44,45,35</sup> Exercise intervention programs have been scheduled during<sup>27,28,42,44</sup> and/or following treatment,<sup>37,45,46</sup> implemented with varying degrees of supervision, lasting in duration from two<sup>47</sup> to 52<sup>48</sup> weeks, and studies have involved between five<sup>45</sup> to 442<sup>49</sup> participants. Exercise interventions usually included at least three exercise sessions per week of at least 15 minutes duration, at moderate intensities. However, these prescriptive characteristics vary across studies: frequency, 1-6 days/week; duration, 15-60 minutes/session; intensity, low to moderate (50-85% of maximal effort/heart rate). Finally, various physical and psychosocial outcomes have been assessed throughout these investigations.

### Exercise and promotion of wellness

Usually the role of an exercise intervention during treatment is to minimise the adverse impact of the cancer treatment. Following treatment, rehabilitative interventions predominantly aim to reduce the physical and psychosocial burden of the disease and its associated treatment and to restore function and assist the return to 'normal' daily life. Examples of outcome measures assessed in exercise intervention studies among those with cancer include QoL, well-being, mental health, depression, anxiety, self-esteem, fatigue, fitness, nausea, cardiac function, body composition, immune function and haematology. These outcome measures can be broadly categorised as physical or psychosocial. Despite modest sample sizes in a large proportion of the studies, statistically significant beneficial effects have been observed.<sup>3</sup> Positive changes in physical measures, including fitness, flexibility, body composition, haematological parameters (such as natural killer cell cytotoxic activity, neutropenia, thrombocytopenia, required platelet transfusions), fatigue and nausea, as well as physical and functional well-being, have been reported. Participating in physical activity during and following treatment has also been linked with: improved psychosocial status; increased vigour and coping behaviours; reduced depression, anger and anxiety; and improved QoL.

While another purpose of exercise interventions following treatment for cancer includes the prevention of secondary cancer and other chronic disease, to date this objective has largely been overlooked. Recently published findings from the Nurses' Health Study,<sup>50</sup> conducted in the US, has found that physical activity after a breast cancer diagnosis may reduce the risk of death from this disease, with the greatest benefits occurring in women who participated in the equivalent of walking 3-5 hours per week at an average pace. Compelling evidence is now available demonstrating that quality of survival is enhanced through exercise participation. Determining whether quantity of survival is influenced via exercise requires further investigation.

### Exercise prescription – the clinical concerns

Clinical concerns regarding exercise prescription to cancer patients and survivors have included: the potential immunosuppressive effect of vigorous exercise; risk of bone fractures in those with compromised bone health; potential for elevating the cardiotoxic effects of cancer treatment; potential for exacerbating treatment side effects including fatigue, pain, lymphoedema, nausea; and the perceived reduction in the ability of cancer patients to tolerate exercise.<sup>3</sup> These clinical concerns have potentially dictated the prescriptive characteristics of the exercise interventions studied. Vigorous exercise has been avoided, as have high-impact types of activity. Furthermore, cancer survivors with particular side effects such as lymphoedema have until recently been excluded from participating in exercise intervention studies, with fear of exacerbating this condition the likely reason. While caution is appropriate when prescribing exercise to special populations, it is important to ensure that cancer survivors are not unnecessarily restricted from participating in activity types or intensities that would at worst do no physical harm, yet could lead to significant QoL improvements. For example, it makes sense that patients with bony metastasis avoid high-impact activities and/or activities that increase risk of falls. However, this same advice may not be appropriate for a woman who has completed treatment for breast cancer and enjoys the social and physical aspect of a game of netball. Exercise of vigorous intensity would be an inappropriate starting point for those whose functional capacity has significantly decreased following cancer treatment. However, there are likely cases (eg. cancer survivors who have been regularly active pre-diagnosis and remained active throughout treatment) for whom there are no physiological reasons why vigorous activity should be avoided. Furthermore, the concept of a standard exercise prescription for the group, individualised for each participant, needs to be understood. For example, for an exercise intervention of moderate intensity, one participant might run at a speed of 10km per hour while another walks at a pace of 20km per hour, yet both individuals will be working at moderate intensities.

Fatigue and lymphoedema merit special attention, as

they represent cancer symptoms that have previously been treated with rest. It is now understood that exercise participation during and/or after cancer treatment at worst does not exacerbate fatigue.<sup>40,45</sup> It is also known that failure to participate in a progressive exercise program could potentially exacerbate fatigue rather than prevent or minimise it.<sup>42</sup> With rest, or when physical activity levels are down-regulated, a detrimental cycle of diminished activity which leads to being easily fatigued and vice versa is initiated. As for lymphoedema, evidence is accumulating demonstrating that participation in an exercise program does not increase lymphoedema risk or exacerbate the condition if already present.<sup>44,48,53</sup> Restricting the involvement in exercise of cancer survivors with secondary lymphoedema may limit their opportunity to participate in a potential rehabilitative strategy that could lead to significant changes in their physical and psychosocial well-being.

Importantly, among exercise interventions tested, now totalling more than 1000 patients diagnosed with various cancers and involving various treatment regimes, no major adverse events linked to exercise have been reported. There is sufficient evidence to support the notion that exercise is a safe, feasible and effective QoL intervention following cancer diagnosis.

### Enhancing benefit and minimising risk

It is also important to clarify that exercise is 'safe' when being prescribed by appropriately qualified health professionals working in collaboration with treating specialists. Accredited exercise physiologists (accreditation from the Australian Association for Exercise and Sports Science) possess the necessary skills, experience and qualifications to undertake this prescription within the private setting. Furthermore, the effectiveness of exercise as a QoL intervention depends on the participant's motivation and adherence.<sup>51</sup> Although adherence rates were not well-reported throughout exercise intervention studies, of those that were, rates ranged between 64-100%.<sup>24</sup> Compared with most physical activity interventions among healthy men and women where adherence rates are on average 50%, the rates for cancer survivors are high, potentially suggesting that cancer presents a 'teachable moment'.<sup>52</sup> The role of the physician must be acknowledged as a likely important factor influencing participants' motivation and adherence.<sup>3</sup> Courneya et al<sup>3</sup> summarises this issue by highlighting the results of international work demonstrating that at least 50% of breast cancer survivors reported that their physicians neither mentioned nor recommended exercise as part of their rehabilitation. Of the survivors who were recommended exercise, they participated in more physical activity than those who did not receive this information.

### Exercise prescription recommendations

Table 1 presents the exercise prescription guidelines for early-stage cancer patients and cancer survivors. This table has been taken from a review by Courneya et al<sup>3</sup> published in 2000. Despite more work in the field since this was published, it continues to represent appropriate exercise prescription guidelines, with the



Table 1: Exercise prescription guidelines for early-stage cancer patients and cancer survivors

Parameter	Recommendation and comment
Mode	Most exercise involving large muscle groups is appropriate, but walking and cycling are especially recommended because they are safe and tolerable for patients. Exercises are modified based on acute or chronic treatment effects from surgery, chemotherapy and/or radiotherapy.
Frequency	At least 3-5x/wk, but daily exercise may be preferable for deconditioned patients who do lighter intensity and shorter duration exercises.
Intensity	Moderate, depending on current fitness level and medical treatments. Guidelines recommend 50-75% VO2 max or HR <sub>reserve</sub> , 60-80% HR <sub>max</sub> or an RPE of 11-14. HR <sub>reserve</sub> is the best guideline if HR <sub>max</sub> is estimated rather than measured.*
Duration	At least 20-30 minutes continuous exercise; deconditioned patients or those experiencing severe side effects of treatment may need to combine short bouts (eg. 3-5 minutes) with rest intervals.
Progression	Patients should meet frequency and duration goals before they increase intensity. Progression should be slower and more gradual for deconditioned patients or those who are experiencing severe side effects of treatment.

\* HR<sub>reserve</sub> = maximal heart rate (HR<sub>max</sub>) minus standing resting heart rate (HR<sub>rest</sub>). Multiply HR<sub>reserve</sub> by 0.60 and 0.80. Add each of these values to HR<sub>rest</sub> to obtain the target HR range. HR<sub>max</sub> can be estimated as 220 minus age (years). HR = heart rate; RPE = rating of perceived exertion; VO2 max = maximal oxygen uptake.

Table 3 page 68 reproduced, with permission, from Courneya KS, Mackey JR, Jones LW: Coping with cancer: can exercise help? *Phys Sportsmed* 2000;28(5):49-73 Vendome Group LLC.

possible exception of being too restrictive for mode. As indicated earlier, only recently has resistance exercise been included in exercise interventions under study. This is relatively surprising since a known role of resistance exercise is to increase muscle mass and to improve muscular endurance and/or attenuate muscle-wasting associated with various conditions, such as cancer. While there is much to be learned about the role of this exercise mode in cancer recovery, preliminary evidence suggests that resistance training alone or in combination with aerobic-based exercise has the potential to reduce fatigue and improve QoL.<sup>35</sup> Resistance exercise interventions tested have been of moderate intensity using large-muscle group exercises (eg. chest press, leg press); two sets, 8-12 repetitions of 60-70% of one repetition maximum<sup>35,44</sup> or one set to failure between 15-20 repetitions progressing to 8-12 repetitions.<sup>53</sup>

Future work needs to push the boundaries of this exercise prescription, so that we can begin to develop a better understanding of what constitutes optimal, desirable and necessary frequency, duration, intensities and type, and whether these levels are dependent on characteristics of the individual (eg. age, cancer type, treatment).

### Translating evidence into clinical practice

Despite the high prevalence of physical and psychosocial impairment among cancer survivors, as well as the recognition that cancer rehabilitation is an essential component of cancer care, exercise rehabilitation does not yet form part of standard care. If patients have the inclination and knowledge, they may access resources available within the community to assist in their rehabilitative endeavours. These are somewhat limited, with more options currently available for breast cancer

survivors. On a national front, Cancer Councils around Australia provide counselling services, information, support services and offer a 'living with cancer' education program. The YWCA's Encore program is also available for women with breast cancer and some hospitals may provide their own rehabilitative programs, such as the STRETCH or the domiciliary allied health acute care and rehabilitation service (DAART) programs for women undertaking breast cancer treatment. However, of the programs available for cancer survivors in Australia, few encompass components that address both the psychological as well as functional concerns.<sup>54</sup> Of those that do include some form of exercise, the prescriptive characteristics are likely to fall below what current research recommends and to focus on specific areas only rather than embracing a whole-body approach. For example, exercise programs tend to occur once per week and to emphasise light intensities or to target shoulder and arm function. For those patients who have adequate financial resources, the services of an accredited exercise physiologist could be used to assist in their physical rehabilitative endeavours (Medicare rebates are now available for payment of these services). However, clearly this option is not an appropriate public health solution.

### Conclusion

The quality of research on exercise and cancer varies, with few rigorous randomised control trials being completed. Difficulties in recruitment, overcoming the notion that patients during and after cancer treatment need to 'take it easy and rest' and yet at the same time avoid ethical implications of only providing a potential effective rehabilitative strategy to some participants, contribute to the flaws in study designs. However, other contributing

factors include lack of measuring adherence, lack of quantification and control for pre-intervention activity levels, poor data collection of potential confounders and failure to use an intention-to-treat analysis. Cancer includes over 100 types and treatment strategies often vary both between and within cancer types, also contributing to the inconsistencies observed across exercise and cancer studies. Generally speaking, the quality of work in this area has gradually improved over the years. Nevertheless, more rigorous randomised control trials that are well described, involving larger sample sizes and population-based samples are required to continue to advance our understanding in this research arena. Furthermore, our understanding of how we can best assist cancer survivors to become active needs substantial improvement. Therefore, future work must address the feasibility and acceptability of various exercise programs from the perspective of the survivor as well as the medical profession. That is, how can exercise programs be feasibly integrated into the routine clinical care of people with cancer, for the purpose of minimising the impact of cancer treatment, restoring QoL following treatment and preventing recurrence and other chronic disease. [n](#)

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## PSYCHOSOCIAL ISSUES FOR PEOPLE WITH ADVANCED CANCER: OVERCOMING THE RESEARCH CHALLENGES

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### Abstract

Being diagnosed with advanced cancer is devastating for the person and their family. It progressively affects the individual's physical functioning, which in turn affects emotional well-being, social interactions, daily living and quality of life. Advancing illness also impinges upon family functioning and raises existential questions related to facing death. There is relatively little research investigating psychosocial interventions for people with advanced cancer. This paper discusses the psychosocial issues associated with advanced cancer, the challenges inherent in conducting research

Cancer patients experience a range of challenges that can encompass: psychological distress; difficulties communicating with health providers, family and friends; obtaining the required health information; physical changes in body functioning and appearance; sexual dysfunction; and disruption to family functioning and occupation.<sup>1,3</sup> These challenges are exacerbated as the disease progresses.<sup>4</sup> Moreover, there can be vast variations in the prognosis of individuals with advanced disease. The length of survival time between different disease types can vary from expectation of years, such as for locally advanced prostate cancer, to an expectation of a few months, such as for metastasised small cell lung cancer. These factors have implications for the types of psychosocial or supportive care interventions that will be effective in ameliorating suffering. This paper describes the impact of advanced cancer on the person and the issues associated with the development and testing of appropriate psychosocial and supportive care interventions.

### Impact of the 'bad news' about advanced cancer

While the news of an advanced cancer diagnosis has many similarities to earlier bad news episodes, it also has some unique characteristics. Understandably, most people rate this news as more devastating than the initial diagnosis of localised disease.<sup>5</sup> The challenges for patients and their families on hearing that their cancer is not curable are multifaceted. They face worsening quality of life (QoL) and having to confront existential and spiritual questions, which in addition to increasing physical symptoms, cause significant psychological distress.<sup>6</sup>

A high proportion (61%) of Australian women with advanced breast cancer indicate that they would like changes to the way their diagnosis of advanced disease was communicated to them.<sup>7</sup> While there is research on preferences for prognostic information among patients

with advanced cancer,<sup>8,9</sup> there have been no empirical studies evaluating ways of communicating 'bad news' to patients with advanced disease.

### Impact on physical functioning and quality of life

Physical functioning, emotional functioning and general QoL are all intimately connected. Fatigue in advanced disease is the most common symptom and the most challenging to manage.<sup>10</sup> Indeed, dealing with a lack of energy and tiredness is rated by patients with advanced cancer as their top unmet need.<sup>11</sup> Severe fatigue has been associated with higher levels of depression and increased pain.<sup>10</sup> Effective management options are limited, however there is evidence that exercise programs can reduce cancer-related fatigue in patients with early cancer.<sup>12</sup>

Pain, both neuropathic and nociceptive, is critical to control. It is arguably a more important symptom than fatigue because it can be debilitating and is likely to lead to loss of activity, which in turn exacerbates fatigue. Patients also see pain as a sign of advancing disease and this contributes to psychological symptoms of fear, depression and anxiety.<sup>13</sup>

Dyspnea is also highly prevalent among those with advanced cancer, especially lung cancer.<sup>14</sup> It is a highly distressing symptom, which restricts all activity and causes anxiety, panic, depression and fear of impending death.<sup>14</sup> Nausea, vomiting and constipation are often poorly controlled and can also adversely affect a patient's QoL.<sup>15</sup> Optimising QoL is not only an important outcome in itself, but it is also associated with longer survival and lower levels of depression among patients with advanced cancer.<sup>16-17</sup> These studies highlight the importance of controlling symptoms, especially fatigue and pain, however, research into effective interventions for people with advanced cancer is scarce.

### Impact on psychosocial functioning

People with advanced cancer often experience high levels of psychological distress, with as many as a third meeting diagnostic criteria for psychiatric disorders.<sup>18-19</sup> Distress has been linked to prognostic awareness. Depression among people receiving palliative care who did not acknowledge their prognoses has been found at rates almost three times that of those who demonstrated partial or complete conscious acknowledgement of their condition.<sup>20</sup> Patients' social interactions also suffer, as symptoms restrict functioning in social and work-related roles.<sup>21</sup> In comparison to others, people with advanced disease report higher levels of unmet needs in most domains, but especially in the psychological, physical and daily living domains.<sup>2-3,22</sup>

In a recent systematic review<sup>23</sup> of 329 trials of psychological interventions for cancer patients, it was concluded that group-based therapies require further research before recommendations can be made about their use to reduce anxiety and depression, improve general affect and coping and increase survival time. Informational and educational interventions also warrant further research for their role in reducing depression, improving QoL and increasing survival time. The involvement of significant others in psychosocial interventions for cancer patients reduces their anxiety and distress and enhances their QoL.<sup>23</sup> The review also showed that only 15% of the 329 trials reviewed examined psycho-educational intervention oriented to patients with advanced disease. Disturbingly, only one trial of the 329 was judged methodologically adequate; consequently only tentative recommendations could be made about the effectiveness of interventions on patient outcomes.

### Impact on family functioning

Many people with advanced cancer experience guilt as a result of the burden they perceive being placed on their caregivers.<sup>11</sup> Family physical and emotional distress increases as the cancer advances, peaking during the terminal phase of the illness.<sup>24-25</sup> Children of parents with advanced cancer experience significant psychological distress, particularly adolescent daughters of ill mothers, and parents may not be aware of this distress.<sup>26-27</sup> Given the impact advanced illness has on family functioning, it has been recommended that the patient and their family should be recognised as the 'unit of care'.<sup>28</sup> Carers of people with advanced disease also have significant unmet informational needs and experience high levels of distress.<sup>29</sup> As Australian palliative services are predominantly community-based, family caregivers are required to assess and monitor the patients' needs and then deliver the required therapeutic intervention for symptom control at home.<sup>29</sup> Pain management can be particularly challenging and many carers experience difficulties performing these activities.<sup>3,30</sup>

### Existential issues

A person with incurable cancer is likely to face important existential questions related to the meaning of life and the prospect of facing death. "Uncertainty about the future" was described as an unmet need by a majority of women (61%) with advanced breast cancer.<sup>3</sup> These existential concerns can cover a range of issues including isolation, loss of control, burden on others, uncompleted life tasks, hope, hopelessness and preparation for death.<sup>31</sup> Using the construct of demoralisation syndrome, Kissane and colleagues<sup>32</sup> have attempted to incorporate the idea of existential distress into palliative care. They argue that the concept of demoralisation provides clinicians with a framework for identifying the deep emotional pain and existential distress that accompanies loss of hope and social isolation in the terminally ill.

Recently, a dignity therapy intervention designed to improve psychosocial and existential distress among terminally ill patients was evaluated using a pre/post design.<sup>33</sup> Post-intervention measures indicated reductions in suffering and depression among participants. Despite a short follow-up, only 7-10 days after baseline, there was a 22% dropout rate, primarily due to death or deterioration. This illustrates one of the many difficulties with conducting psychosocial research with people with advanced disease.

### Conducting psychosocial research in the advanced cancer setting

In order to address the psychosocial issues facing people with advanced cancer and their significant others, we need a repertoire of effective interventions that have been demonstrated to improve patient outcomes in the clinical setting. Hence, it is imperative that targeted, rigorous research is conducted. The highest level evidence for the effectiveness of an intervention is a series of well-conducted randomised control trials.<sup>34</sup> However, very few randomised control trials are conducted in the advanced cancer setting.<sup>35</sup> The primary reason is most likely the difficulties encountered in implementing a randomised trial with this population.

The most serious difficulty is recruitment and attrition rates. The pool of potential recruits may be smaller than anticipated because: patients may fail to meet eligibility criteria because they are judged to be unable to complete the study requirements due to low performance status; cognitive dysfunction resulting from brain metastases or treatment side-effects; or poor prognosis. Further impacting on recruitment rates, there is a comparatively higher refusal rate by eligible patients and greater professional gate-keeping of access to patients because advanced cancer frequently makes people feel unwell or distressed.<sup>35</sup> With randomised control studies, issues may arise for the treatment team about withholding supportive interventions that may be reasonably expected to benefit patients who have a shortened life expectancy.<sup>36</sup> Moreover, higher refusal rates increase the probability of sample bias



that can limit the generalisation of the findings. Some of these difficulties can be addressed by: broadening the inclusion criteria; conducting bias analyses; working closely with the treatment team to reduce gate-keeping; and ensuring that study burden is kept to a minimum, for example, by reducing the length of the questionnaire.

The high level of attrition results from the unpredictable health of people with advanced cancer who can quickly become too sick to complete the study requirements, or die unexpectedly. The estimation of prognosis is known to be inaccurate. Christakis and Lamont<sup>37</sup> have shown that the life expectancy estimates for individual palliative patients by the treating physician are frequently wrong, on average by a factor of five, usually overestimating survival time. Reducing the length of follow-up can ameliorate the problem of attrition. However, when follow-up assessments are close together, outcome measures need to be chosen carefully. For example, it is recommended that some QoL measures are not repeated within 30 days as more frequent administrations may affect the validity of scores.<sup>38</sup>

Participant engagement in the intervention as specified by the protocol is another problem. Fluctuating health may mean that patients do not receive the intervention or receive only part of it. Conducting 'intention to treat' analysis as recommended by the CONSORT criteria for randomised control trials<sup>39</sup> means that if a sizeable proportion of intervention patients do not receive the entire intervention, this will dilute the impact of the intervention on outcome measures. Hence, it is critical to consider carefully practical issues when conducting this type of research. Certain intervention modalities may be tricky to implement in practice, such as group sessions, as it may be difficult for participants all to attend at the same time. One study examining a group intervention for carers of palliative care patients found that for elderly carers, the provision of a transport service assisted with uptake of the intervention.<sup>40</sup>

The evaluation of supportive care interventions for the family members of people with advanced disease poses additional challenges, including the design of studies that do not place too great a time burden on family members who may already have many competing demands. Achieving adequate study retention may also be difficult, especially if the study has follow-ups planned for during bereavement. Other difficulties relate to rapid fluctuations in patients' health and the reliability of data where carers are asked to make assessments on patients' behalf.<sup>41</sup>

The challenges associated with conducting supportive care research in this area may account for why there are considerable gaps in our knowledge about optimal supportive care interventions for people with advanced cancer. The care of people with advanced cancer will only be improved by the conduct of high quality research to inform practice change. The research challenges with this population are greater than with other groups, but many difficulties are able to be ameliorated if not overcome, by various mechanisms such as broadening inclusion criteria, careful consideration of intervention delivery, reducing length of follow-up, shorter questionnaires and data collection by telephone. Higher levels of attrition and lower recruitment rates may also need to be accepted

as features of this research. However, eschewing this work on the basis that it is too hard or that it is unfair or inappropriate to ask people with advanced disease to take part in research is unacceptable. It is paternalistic to assume that people with advanced disease do not wish to be involved in research because they are unwell or have limited time left. As researchers, we need to rise to this challenge and not subscribe to the excuses that are proffered to avoid working with this worthy group.

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## CHALLENGES EXPERIENCED BY INFORMAL CAREGIVERS IN CANCER

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### Abstract

Evidence from the literature highlights the significant negative impact of care giving on the physical, mental and financial aspects of caregivers' lives. It also reinforces the importance of reducing the barriers to meeting the unmet needs of caregivers and that research priorities in intervention development need to focus on reducing the negative aspects of care giving. Increased assistance to caregivers needs to ensure that they have the knowledge, skills, income security, job protection and other supports to provide care, while maintaining their own health and well-being throughout the dying and grieving process. This is particularly important in light of the predicted shortfall in the number in caregivers and especially as caregivers are increasingly replacing skilled health workers in the delivery of unfamiliar,

Cancer is a major disorder which affects many people directly and indirectly. In Australia, one in three men and one in four women will be diagnosed with cancer before the age of 75.<sup>1</sup> There has been a significant increase in long-term survival for most cancers and more than half of all newly diagnosed cancer patients will survive for more than five years.<sup>2</sup> The course of many cancers is now chronic, requiring long-term treatment and a continuing need for care.

The diagnosis of cancer presents a major event not only to the patient, but also to the family and caregivers. The primary setting for the delivery of care to patients with cancer has shifted from the hospital to the home as a result of increased use of outpatient services for cancer treatment, longer survival and patients' wishes to be cared for at home.<sup>3,4</sup> Care giving is commonly equivalent to a full-time job with 20% of caregivers providing full-time or constant care.<sup>5</sup> The increased trend for home-

based care of advanced cancer in the Australian health system<sup>6</sup> places a greater emphasis on the care given by the patients' informal caregiver.

However, concerns have been raised about the future availability of informal caregivers in the light of social and demographic changes.<sup>7,8</sup> The increased proportion of older people in the population, declining fertility rate, increased rates of female labour force participation, increased rates of relationship breakdown and health care reforms that are shifting care from the hospital to home are all pressures that will impact on the availability of an informal family caring workforce.<sup>7</sup>

The study by the National Centre for Social and Economic Modelling has added a new dimension to the debate by contrasting the demand for care to the likely supply of informal care in Australia. As the number of older

people needing care increases, there will be a lesser increase in the number of potential caregivers due to population ageing. Older age groups contribute more to the disabled population than they do to caregiver populations, with the ratio of primary caregivers to older persons needing informal care estimated to drop from 57/100 to 35/100 in the next 30 years.<sup>8</sup> Thus, there may be an increased demand for institutional care due to an inadequate supply of primary caregivers.

### Profile and roles of caregivers

In Australia, caring for people with a disability is a role predominantly assumed by women, with 71% of primary caregivers being female, 13% being female and 65 years or over. Most primary caregivers aged 65 and over are caring for patients in their own age group.<sup>9</sup> Almost 80% of primary caregivers live with the person receiving the care and 43% of all caregivers are partners, 25% are children and 21% are parents of the person receiving the care. The majority of caregivers report taking on the role of caring because of family responsibility and there being little choice or no one else to provide the care.

Care giving activities undertaken for people who are terminally ill or who have a disability are varied and numerous and include personal care, assistance with mobility, transportation, communication and housework, emotional support, organising appointments, social services, assistance with social activities, shopping, meal preparation, managing finances and management and coordination of medical care (including the complex management associated with patients in pain, administration of medications and therapies and managing infusions).<sup>10-16</sup> More than half of caregivers have reported more things to do than they could handle.<sup>17</sup>

### Impact of care giving

Although many caregivers derive deep satisfaction and feel positively about caring,<sup>14</sup> feelings of sadness,<sup>13,18</sup> anger, resentment<sup>19</sup> and a sense of inadequacy<sup>20</sup> are other common reactions. Not only are caregivers confronted with the fear of a potentially life threatening illness, the continuous caring can result in feeling exhausted and burnt out.<sup>15,21</sup> Opportunities for social contact and support are also reduced, as caring disrupts usual activities and reduces the caregiver's personal time.<sup>4,22</sup> The emotional and social burden of care giving contributes to significant mental health morbidity, with elevated rates of anxiety, depression and distress<sup>16,23</sup> and poor quality of life<sup>24</sup> being reported in caregivers of patients with cancer.

Sub-groups of caregivers may be at increased risk of psychological morbidity due to personal physical, social and psychological factors and/or factors associated with patients they are caring for. Caregivers are reported to be more likely to have higher levels of psychological distress and strain if they are female, younger,<sup>25</sup> or are the spouse, rather than the child of the patient.<sup>26</sup>

Caregivers with higher levels of anxiety, higher levels

of anger, smaller social networks, lower perceived caregiver satisfaction and higher years of care giving are at increased risk of depression, as are caregivers who care for patients with higher perceived levels of stressful behavioural and self-care problems, and with higher levels of pain.<sup>27,28</sup> Caregiver wives are reported to have higher levels of depression and poorer health than caregiver husbands.<sup>28</sup>

Conversely, lower levels of depressive symptoms are reported by caregivers if they perceive that doctors listen to them and consider their opinions regarding the patient's illness, needs and medical treatment.<sup>29</sup>

Physical health risks have also been found to be associated with caring and include high blood pressure, tiredness, stress, burnout, physical injury<sup>21</sup> and poor overall physical health compared to the general population.<sup>30,31</sup> In addition, care giving is often performed by people who are themselves elderly or ill.<sup>9</sup>

Research has identified a significant impact of care giving on areas including holidays, time away, travel and having limited time for social life, personal relationships, hobbies and for themselves.<sup>17,21</sup> These limitations result in social isolation and loneliness, changes in family and other relationships and a sense of grief and loss.<sup>21,32</sup> Caregivers report trying to participate in social activities, but give up due to concern for the patient whilst they are absent. Younger caregivers and caregivers of patients with cancer who have limited social networks and more restrictions in their daily activities are reported to have the highest caregiver burden.<sup>33</sup> Some caregivers report difficulty expressing their own needs, unless asked specifically away from the hearing of the patient.<sup>25</sup>

Care giving creates a financial burden for family members, both in outright expenses and in lost income and benefits. An Australian study found that caring for a person with illness and disability amounted to an extra \$119 per week.<sup>34</sup> One quarter of bereaved caregivers report that caring for someone with terminal cancer a financial strain, with one third using their savings or inheritance for costs associated with home care and one fifth modifying their usual expenditure on other items.<sup>32</sup>

Care giving also appears to reduce a person's chance of being employed.<sup>9</sup> Many caregivers are unable to work, need to take leave without pay, work fewer hours, are in lower paid jobs or work from home to manage the caregiver demands.<sup>17,35</sup> In Australia, only 15% of caregivers list paid work as their primary source of income, with two-thirds on a government pension or benefit as their primary source of income. Financial impacts of care giving include loss of superannuation and savings for retirement.<sup>4</sup> Caregivers who work report being worried about the patient while absent and being interrupted repeatedly during working hours. While work may be a relief from care giving, it is also a source of conflicting demand.<sup>17</sup> Reduction in paid work also contributes to social isolation.<sup>32</sup>

While caregivers report experiencing surprise, shock, disbelief, anger, distress, fear and depression in response to a terminal diagnosis, they also feel that caring for a patient with advanced cancer is an experience that can produce positive emotions. In an Australian study, 60% of caregivers were able to identify positive aspects of their role.<sup>36</sup> When patients' symptoms were minor,

time together was described as very precious and allowed the exploration of emotions and expression of love. Post-bereavement, caregivers report being proud, pleased and satisfied that they had managed the care giving role.<sup>32</sup> Happiness over quality time spent with the patient, the ability to explore and resolve issues and feelings of value and self-worth have all been reported by caregivers.<sup>14,37</sup> It is suggested that caring for the patient may help caregivers to accept the death and work through their grief.<sup>37</sup>

### Caregivers' information needs

Lack of adequate information is reported as one of the most important concerns of caregivers of patients with advanced cancer.<sup>32</sup> Sixty per cent of close relatives of deceased cancer patients have reported that they were not able to find out all they had wanted to know about the patient's medical condition and how it would affect him or her.<sup>38</sup> Caregivers identified a need for updates on the course and prognosis of the disease and treatment. Not knowing much about the illness and fear of not knowing what to do or to expect was perceived as very stressful and led to an increase in caregiver anxiety, increasing frustration and uncertainty.<sup>39</sup> Understanding details relating to the illness were reported to help caregivers cope.<sup>40</sup> Once specialist palliative care services (SPCSs) are involved, communication is reportedly more likely to be honest and direct.<sup>32</sup>

However, barriers confronting health care professionals regarding provision of support need to be acknowledged in order to more effectively provide relevant interventions to family caregivers. The dynamics of relationships within the family may restrict optimal communication with the health professional. Incongruent patient and caregiver needs also make it difficult for service providers to determine whose needs take priority. This is particularly challenging when the caregiver precludes health professionals and other family/friends from disclosing the prognosis to the patient or the patient does not want the caregiver or other family members to know about the prognosis.<sup>41</sup> Caregivers are often reluctant to disclose their needs to health professionals, for reasons including not wanting to put their needs before those of the patient, not wanting to be judged inadequate as a caregiver and believing that concerns and distress are inevitable and cannot be improved.<sup>42</sup>

### Utilisation of existing services

Australian research suggests that few caregivers report being aware of the extent of services available to them and most of their information comes from friends and family rather than health professionals.<sup>32,43</sup> Knowledge of community and health services is lower for non-metropolitan caregivers and higher for retired caregivers. Knowledge of allied health professionals and community nursing is high, however federally funded programs such as Home and Community Care and Aged Care Assessment teams are poorly recognised. Patients

report greater knowledge of supportive care services than their caregivers.<sup>43</sup>

Respite services are not well utilised by caregivers and despite the significant financial impact of care giving few Australian caregivers are aware of some of the government benefits available to them and only one third have accessed any payment. Others have difficulty accessing payments, do not meet the criteria, are given incorrect advice and experience delays.<sup>32</sup> Some patients and caregivers report not accessing specialist services because of their own or relatives' fear of death or emotional difficulties in discussing such issues.<sup>44</sup>

### Addressing some research gaps

It is evident that caregivers of cancer patients are an important target group for further research to better understand how their needs change over the course of the patient's illness and to streamline their access to available services that may assist in addressing identified needs.

In a review of cancer care literature specific to caregiver interventions, Pasacreta and McCorkle reported limited research on evidence-based interventions aimed at caregivers. Considering the lack of positive findings in some of the studies reviewed, the authors concluded that an important direction for research was identifying caregivers who were at risk of having problems in specific areas and tailoring interventions to their special needs.<sup>45</sup>

Harding and Higginson also lamented the lack of outcome evaluations in the care giving population and lack of evidence to ensure cost-effective allocation of resources. The authors argued that, in light of the methodological and ethical issues of randomised clinical trials of caregiver interventions in cancer and palliative care, other experimental designs might be more feasible and should be considered.<sup>46</sup>

Landmark Australian studies are currently underway that will improve our understanding of the psychosocial needs of partners and caregivers of cancer survivors over the course of the illness. The Centre for Health Research & Psycho-oncology (CHERP), of The Cancer Council NSW and University of Newcastle, is undertaking a large longitudinal study of the partners and caregivers of recently diagnosed cancer survivors from NSW and Victoria who are recruited to the Cancer Survival Study. The Partners and Caregivers Study, which has recently commenced recruitment, will: a) describe changes in the levels of anxiety, depression, quality of life and unmet needs reported by partners/caregivers of cancer survivors over the first five years since the cancer diagnosis; b) identify the partner/caregiver factors associated with these outcomes including social support, coping style and demographic and financial characteristics; c) describe the relationships between cancer survivors' and partners'/caregivers' psychosocial and other health outcomes; d) assess the costs associated with living with or caring for a person with cancer; and e) identify the partner/caregiver predictors of poor bereavement following the death of the cancer survivor-pair.

Researchers from the Medical Psychology Research



Unit, University of Sydney and the Queensland Institute of Medical Research are undertaking the Australian Ovarian Cancer Study (AOCS) Quality of Life Study, collecting information on quality of life, psychological distress, social support, coping style and unmet needs for women with ovarian cancer and their partners/carers, with access to medical and demographic information from the main AOCS. This study will: a) track variations in quality of life and psychological distress over two years; b) examine the role of psychological distress, social support and coping style in predicting outcomes, in terms of quality of life, recurrence, and survival; and c) determine whether services are currently meeting the needs of women and their carers.

Palliative care services have been demonstrated to benefit not only the patients but also the families and the bereaved.<sup>47-49</sup> A South Australian population study has found that caregivers who reach out for support, especially for day-to-day care, have fewer unmet needs and are much more likely to move on with their life in the first 6-12 months after their loss than caregivers who do not reach out to services.<sup>50</sup> While health professionals are ideally placed to provide information and proactively assess the need for referral to SPCSs, Australian research has shown that referral to SPCSs is often late or does not occur at all. Furthermore, some sub-groups consistently under-utilise SPCSs, including those of lower socio-economic status, the elderly and people of Aboriginal and Torres Strait Islander backgrounds.<sup>51-54</sup> There is also a focus on physical symptoms and prognosis as the main triggers for referral to SPCSs, at the exclusion of psychosocial and caregiver needs. To improve needs-based access to palliative care, the Australian Government Department of Health and Ageing has funded a national team headed by CHERP to undertake research into palliative care referral. Part of that work is to develop SPCS Referral Guidelines and a Palliative Care Needs Assessment Tool (PC-NAT), initially for people with cancer. The systematic use of the guidelines and PC-NAT could reduce the identified gap between knowledge and practice, thus reducing the incidence of late and crisis referral and improving referral where psychological, spiritual, social and physical problems are evident. The PC-NAT will provide a rapid strategy for efficiently and systematically identifying patients and families who need specialist palliative care initially, as well as any change in status over the course of their advancing disease.

### Conclusion

Care giving is associated with a significant negative impact on the physical, mental and financial aspects of caregivers' lives. Increased assistance to caregivers must ensure that they have the knowledge, skills, income security, job protection and other supports to provide care, while maintaining their own health and well-being throughout the dying and grieving process. This is particularly important in light of the predicted shortfall in the number in caregivers and especially

as caregivers are increasingly replacing skilled health

workers in the delivery of unfamiliar complex cancer

care at home. Needs based access to existing services,

including SPCSs, also needs to be encouraged and

facilitated to help caregivers in their important role. n

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## LEADING THE WAY – BEST PRACTICE IN PSYCHOSOCIAL CARE FOR CANCER PATIENTS

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### Abstract

Australia has taken an international lead in recognition of the importance of psychosocial care for cancer patients and in the associated development of evidence-based best practice recommendations. The guidelines provide practical advice to health professionals about effective psychosocial interventions to alleviate the significant burden experienced by patients. Strategies have been undertaken nationally to promote adoption of best practice recommendations across a number of psychosocial guideline areas. Current and future initiatives should aim to further promote the integration

The diagnosis and treatment of cancer is associated with significant emotional morbidity.<sup>1</sup> Research indicates that cancer patients experience elevated levels of depression and anxiety.<sup>1,2</sup> Although the psychological consequences of cancer are significant, they frequently go undetected and untreated.<sup>3</sup>

Australia has taken a leadership role in promoting the importance of psychosocial issues for cancer patients and in many areas has established world-first best practice recommendations.

### Australian initiatives

In recognition of the importance of psychosocial issues,

the National Breast Cancer Centre (NBCC) launched the Psychosocial Clinical Practice Guidelines: information, support and counselling for women with breast cancer in 2000.<sup>4</sup> These guidelines provided the first comprehensive overview of the emotional impact of breast cancer and included evidence-based recommendations about the provision of optimal psychosocial care.

Many of the psychosocial concerns of women with breast cancer are also key issues for adults with other cancers. Hence, the NBCC and the National Cancer Control Initiative (NCCI) developed the Clinical practice guidelines for the psychosocial care of adults with cancer,<sup>3</sup> which were launched by the then Federal Health Minister Kay Patterson in August 2003. Based

on the NBCC's guidelines for psychosocial care of women with breast cancer, the generic psychosocial guidelines were funded by the Australian Government Department of Health and Ageing (DoHA). Both sets of National Health and Medical Research Council (NHMRC) approved guidelines were developed by multidisciplinary working groups, with consumer involvement, based on systematic reviews of research and benefited from the NHMRC recommended public consultation process and independent review.

Clinical practice guidelines for the psychosocial care of adults with cancer<sup>3</sup> were the first of their kind in the world to describe the emotional, psychological and practical impacts of Australia's leading forms of cancer including breast, colorectal, gynaecological, lung, melanoma, prostate, urogenital and non-Hodgkin's lymphoma. Pancreatic and head and neck cancers were also included given the high mortality attached to pancreatic cancer and the high morbidity to head and neck cancer.

Typically, best practice recommendations focus on the diagnostic or treatment aspects of care. It is recognised that the oncological aspects of care are changing with increasing rapidity, with new research emerging daily. Hence, it was intended that the psychosocial guidelines should be of practical value, summarise key research and include evidence-based recommendations to assist health professionals who deal with cancer patients from diagnosis through treatment and palliative care. The importance of uptake of these recommendations is emphasised by the fact that there appears to be a greater amount of high level evidence about beneficial psychosocial interventions than there is for many traditional aspects of care management such as treatment.

The guidelines provide information about how to improve psychosocial outcomes using techniques to increase patient recall and understanding, prepare patients for procedures they are about to undergo and identify patients at risk of psychosocial distress. They also include cognitive behavioural techniques to decrease anxiety, distress and reduce symptom burden (eg. pain control) and discuss the management of depression through combined therapies including supportive psychotherapy and pharmacotherapy. In addition they cover appropriate service referral and issues requiring specialist consideration.

The guidelines have received international attention with the International Union Against Cancer (UICC) acknowledging their international significance. Several countries have requested permission to use them in their own local programs to encourage improvement in psychosocial care.

#### Promoting awareness and uptake of best practice

Clinical practice guidelines for the psychosocial care of adults with cancer<sup>3</sup> have been widely disseminated and well received to date. Added to an effective dissemination strategy, active implementation of the guidelines was seen as paramount to their success.

Although there is some evidence about the implementation of clinical practice guidelines, most of the data relates to guidelines that focus on the diagnostic or treatment

factors of specific diseases.<sup>5</sup> Implementation of the Clinical practice guidelines for the psychosocial care of adults with cancer<sup>3</sup> poses a unique challenge. Unlike other implementation strategies, the aim when implementing guidelines such as these is to enhance knowledge and awareness of health professionals who may not regard psychosocial care as their core business.<sup>6</sup> In effect the aim of implementation is three-fold: to raise awareness of psychosocial issues; to improve knowledge about effective interventions; and to assist in the provision of strategies to deliver these outcomes.

Given the importance of the material contained in the guidelines and the challenges of implementation, DoHA provided support to the NCCI in early 2003 to develop, in conjunction with the NBCC, an active multifaceted implementation strategy. A multidisciplinary steering committee was established and a four-module implementation strategy developed. This strategy included interactive educational workshops (module 1), health professional summary cards (module 2), consumer strategy (module 3) and a rural and remote strategy (module 4). Funding for modules 1 and 2 of the four-module strategy was approved in July 2004.

In late 2004, a nationwide series of interactive educational workshops was conducted to promote the guidelines. These workshops were undertaken in New South Wales, the Northern Territory, Queensland, South Australia, Tasmania, Victoria and Western Australia. Over 300 clinical and allied health professionals attended the workshops. The primary audience was medical specialists, such as medical and radiation oncologists and surgeons. They focused on education relating to the psychosocial issues faced by cancer patients and their families. The secondary audience for the workshops comprised other health professionals including general practitioners, nurses, social workers, psychologists, psychiatrists, occupational therapists, physiotherapists and pharmacists. The workshops were open to all health professionals dealing with cancer patients. The same format was used in each state and territory with each workshop including a local consumer speaking about their cancer journey. This was followed by presentations on the emotional impact of cancer, gaps in service delivery and the development of the guidelines. Two case vignettes were presented and the second hour of each workshop contained a multidisciplinary panel discussion around a hypothetical case. Panel members represented the wide range of disciplines involved in psychosocial care in an oncology setting.

Pre and post evaluation of the educational workshops was based on improvements in attendees' attitudes, knowledge and confidence in dealing with psychosocial issues. The evaluation, using self-report questionnaires, was performed at three time points: pre workshop, immediately post workshop and three months post workshop. Familiarity with the guidelines improved post workshop and was maintained at three-months. Improvements were seen on questions relating to knowledge of psychosocial risk factors and treatments, referral networks, the identification of minor and major disorders and the psychosocial outcomes of cancer. Improvements in confidence in relation to referral, the assessment of suicide risk and the identification and management of depression and anxiety among cancer patients were observed.

In addition to the interactive educational workshops, health professional summary cards were developed. Given the size of the guidelines it was seen as unrealistic to expect all clinicians involved in cancer care to read the full version of the document. In addition there is evidence to suggest that increased uptake of guideline information can be achieved if the key points are distilled into a useable format.<sup>7,8</sup> Therefore the card contains summaries of key sections within the guidelines and includes information on the psychosocial issues facing people with cancer, communication skills, types of interventions available, referral for specialist care and prompts to explore and respond to specific concerns. The card represents a concise summary of the guidelines and has been developed using a multifaceted approach, including extensive focus group testing and consultation with the target audiences.

The card is suitable for use by a wide range of health professionals including general practitioners, medical and radiation oncologists, surgeons, nurses, occupational therapists, physiotherapists, psychiatrists, psychologists, social workers and any other health professionals dealing with oncology patients. It has been disseminated to these and other relevant groups.

Evaluation of the health professional summary card was undertaken by self-report questionnaire distributed with the August 2005 edition of *Marryalyan*, the COSA newsletter. Increased familiarity with psychosocial issues, knowledge of psychosocial risk factors, treatment, referral for specialised care and psychosocial issues in relation to cancer were reported as a result of reading the summary card. Confidence in the ability to identify distress, communicate with patients and refer to an external service was also increased. The majority of respondents rated usefulness, relevance, layout, readability and content of the summary card in a positive manner.

A further application has been made to DoHA for funding of a consumer and rural and remote strategy to implement the guidelines. At present other funding options are being considered.

#### Additional strategies to promote psychosocial care

Psychosocial care was considered an integral component of the national multidisciplinary care demonstration project conducted by the NBCC. To promote an integrated approach to patient care participating hospitals were encouraged to include supportive care staff (such as breast care nurses or psychologists) as core team members at care planning meetings. At the completion of the project, staff reported that patients were more frequently referred for psychosocial care and patients reported that coordination of care and provision of support and information for women had increased. The follow-up survey demonstrated that many changes initiated in this project were sustained.

The NBCC has promoted the evidence of benefit gained from this Australian project and studies from overseas in a recent national forum series for professionals and service administrators, which included highlighting the importance of psychosocial care in multidisciplinary teams. The forums

were well attended with participants suggesting local and state level strategies to improve care provision.

#### Other guidelines

Following on from recommendations about early breast cancer, the NBCC developed Clinical practice guidelines for the management of advanced breast cancer.<sup>9</sup> In recognition of the importance of psychosocial care, extensive information about the psychosocial impact of advanced breast cancer appears first in the guidelines before the expected recommendations about management of clinical issues. The guidelines are supported by a literature review of the emotional impact of advanced breast cancer.

To promote the adoption of the guidelines a national seminar series was conducted. An interactive panel discussion was held at each seminar, including open discussion about the psychosocial impact of advanced breast cancer for women and their families. This discussion enabled health care professionals to raise issues experienced with local service delivery and to consider ways in which these services might be improved.

In addition to guidelines and education for clinicians, the NBCC includes information on effective supportive care approaches in guides developed for women diagnosed with breast cancer.

The need to integrate conventional patient management with psychosocial care is clearly illustrated in the NBCC Clinical practice guidelines for the management and support of younger women with breast cancer.<sup>10</sup> Released in 2004, the NHMRC approved guidelines acknowledge that the impact of a diagnosis of breast cancer and the treatment considerations for a woman aged 40 years or younger may be quite different from those of an older woman with this disease. Younger women are also more likely to experience psychological distress. Issues of body image, sexuality and fertility are especially significant for younger women.

Focusing on a specific patient characteristic (in this case, younger age), the guidelines follow the patient journey from pre-diagnosis (risk factors and detection), through diagnosis and treatment, to transition to palliative care. At each stage of the journey the psychosocial aspects are also addressed. For example, information about systemic adjuvant therapy for younger women is accompanied by information about younger women experiencing poorer adjustment than older women and recommendations about advising younger women about the consequences of therapy for their fertility.

The guidelines also recognise that clinicians managing younger patients can in turn experience elevated levels of stress. Research indicates that doctors often distance themselves in this situation and the guidelines recommend participation in communication skills training to assist with knowing how to respond to specific patient needs. The NBCC will be holding training workshops in 2006 specifically aimed at helping health professionals communicate with younger patients.

#### Where to from here?



There is still some way to go before we have a truly comprehensive multidisciplinary approach to cancer care. Although this approach is already undertaken by a number of the larger cancer centres and specialist clinics across the country, in many places psychosocial care is still considered an 'after thought' or optional extra 'time permitting'. Given the major burden these issues represent – with up to 30% of cancer patients experiencing clinically significant anxiety disorders and up to 35% experiencing depression,<sup>1,2</sup> and that patient satisfaction with their care is improved when supportive care issues are addressed, it would appear timely to consider active approaches to integrating all aspects of care.

As a new initiative the NBCC is currently developing a tool to encourage discussion of psychosocial issues at multidisciplinary treatment planning meetings for cancer patients. The tool will provide a checklist to promote discussion during the meeting of factors highlighted in the psychosocial guidelines as putting patients at increased risk of psychosocial problems (eg. young age, advanced disease). The tool also aims to encourage appropriate referral of patients considered at high risk of adverse psychosocial outcomes.

Currently, we know very little about the national state of psychosocial care for Australian cancer patients. There has been considerable focus in recent years on minimum clinical data sets and clinical audits, but these data collections typically fail to include items reflecting significant psychosocial aspects of patient care. In recognition of this gap, the NBCC is developing a limited number of generic psychosocial items that could be included nationally in clinical data sets to benchmark and review progress in supportive care provision.

There is also a growing interest in the interdisciplinary

training of clinicians to better reflect the work environment of many health professionals. Although we are already witnessing this approach in some undergraduate courses, it rarely occurs in continuing professional development programs. There are opportunities in the ongoing education of cancer care professionals to consider integrated training packages, particularly in aspects of psychosocial care crucial to all stages of the patient journey. [n](#)

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## TRANSLATING PSYCHOSOCIAL CARE: GUIDELINES INTO ACTION

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### Abstract

Clinical practice guidelines for the management of psychosocial distress in people with cancer have been produced in Australia and North America and these provide a framework for the provision of psychosocial care for patients with cancer and their families. However, psychosocial care is not yet a routine part of oncology care and within the psychosocial literature there is little practical advice about the best way to achieve this. This article describes a community-based approach to this challenge that builds on existing resources and responds to the concerns of those working in the field. It is proposed that this approach provides a way forward in translating evidence-based psychosocial care

The diagnosis and subsequent treatment of cancer is a major life stress that is followed by a range of well described psychological, social, physical and spiritual difficulties.<sup>1-5</sup> Further, the overall experience of cancer can be seen as a series of stressful events as the

person moves through the illness continuum from diagnosis, to treatment and rehabilitation or palliation.<sup>6</sup> Responsive and well targeted psychosocial care is essential to assist people coping with cancer and their families to successfully negotiate and manage these

events and to be well prepared and supported for any future health threats. Thus, psychosocial care services need to be responsive across the illness experience and accessible beyond the acute treatment setting.

In response to the increasing recognition of psychosocial care as an integral part of best practice oncology care, various groups in North America and Australia have developed clinical practice guidelines for such care.<sup>7-10</sup> While these guidelines are an important step in placing the issue of psychosocial care clearly on the clinical agenda, a number of challenges remain to the implementation of such guidelines, not the least of which is a lack of awareness of the existence of the guidelines among health professionals. A number of explanations have been proposed to explain the lack of integration of psychosocial services into routine care for patients with cancer. First, clinicians tend to overlook patients' psychosocial needs, such that many distressed patients remain unidentified, with few referred for counselling or support.<sup>11-13</sup> Second, patients' desire for support has been found to not correlate to their levels of psychological distress.<sup>14</sup> Thus, relying on patients to self-refer is likely to leave many high distress patients unidentified and unassisted. Third, psychosocial care is often under-funded within the acute health care system and this further limits patients' access.<sup>15</sup> Fourth, the move to outpatient care where possible means that patients' interactions with the acute health care system may be more intermittent and less time intensive, thereby potentially limiting opportunities to gain support within this setting.

In this regard, community-based organisations provide an ideal setting for the dissemination of evidence based practices through the integration of practical experience with science.<sup>16</sup> Accordingly, to address the question of how to best integrate support services in a manner consistent with evidence-based guidelines for psychosocial care we adopted a two pronged approach. First, a triage and stepped care model was developed to

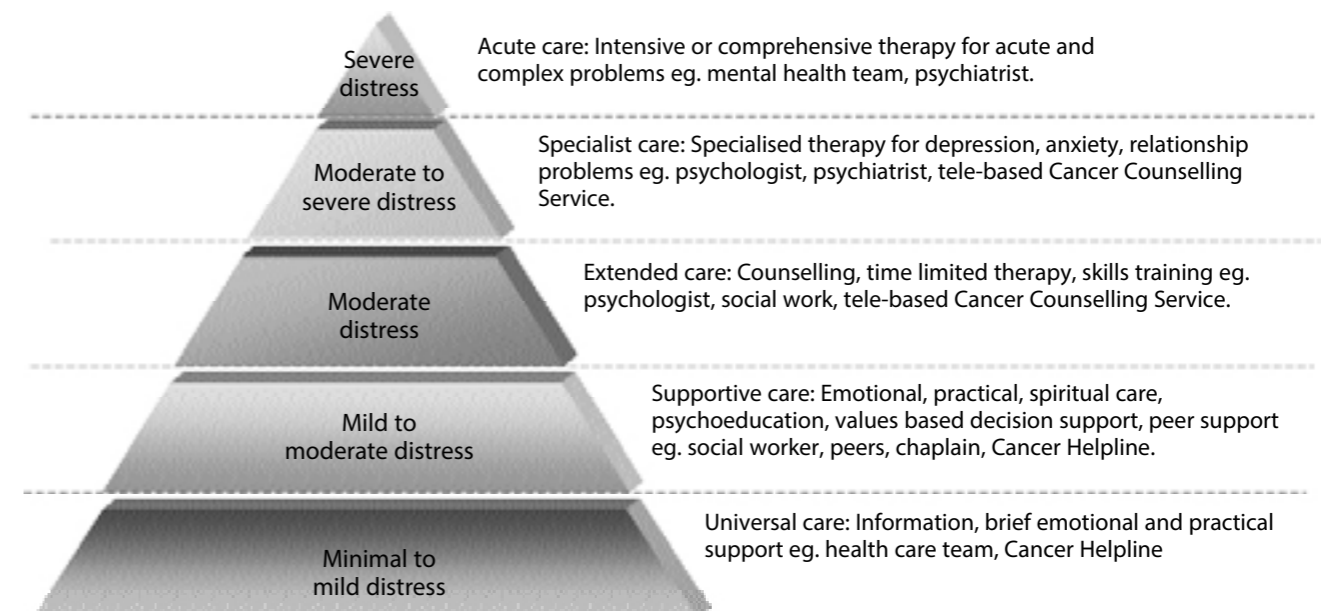
provide a systematic method of assessing and referring cancer patients and family members to appropriate psychosocial care services.<sup>17,18</sup> Importantly this model was imprinted on an existing highly successful Cancer Helpline information and support service providing for broad access and community impact. Second, a training package was developed for health professionals that integrated the National Health and Medical Research Council (NHMRC) Clinical Practice Guidelines for the Psychosocial Care of Adults with Cancer (2003) with a stepped care approach.

### Stepped care for people coping with cancer: Queensland Cancer Fund tiered model

Although cancer is a major life stress, over time most people diagnosed with cancer adjust effectively to their changed life circumstances without clinical intervention. However, a significant group (as many as one third) experience heightened distress that persists or even worsens over time.<sup>19</sup> As well, many partners of cancer patients report high levels of distress, sometimes even greater than that of the patients, and for some this distress may persist.<sup>20,21</sup> Thus, it is important to identify those patients and family members experiencing, or at risk of greater distress and refer them to more intensive psychosocial therapies.<sup>8,22</sup> Within this process it is also important to assess individuals' preferences and supportive care needs and from this systemically refer patients to the type of psychosocial service that would be expected to most closely match their needs. This stepped care approach maximises the effectiveness and efficiency of health services resource allocation.<sup>17</sup>

The tiered model of care is a stepped care approach that aims to match the patient's or family member's level of distress and expressed need to an appropriate level of psychosocial intervention.<sup>18</sup> (see Figure 1)

Figure 1: Tiered Model of Psychosocial Care in Oncology



Triage to the appropriate levels of intervention can be undertaken using a range of methods from an in-depth clinical interview to psychometric screening.<sup>22-24</sup> As need or distress increases, the level of care also increases with five levels of care outlined, from universal care for all patients, to acute care for patients with complex needs. On this view, universal care is standard care and should be offered to anyone affected by cancer, both patients and relevant family members. This level of care includes: provision of cancer-related information; brief support from a health care professional in the treatment team and referral to a cancer-related telephone helpline; and information focused interventions such as patient education. Supportive care, the next level in this tiered model, includes services such as: psycho-educational interventions, in either individual or group format; decision support that may be delivered by a Cancer Helpline or other trained health professional; and emotional support provided by a trained peer volunteer or a peer-led support group.

Extended care refers to more focused counselling and active skills training, for example, teaching specific skills such as problem solving or anxiety management. Another component might include structured group therapy facilitated by a trained health professional. Specialist care refers to specialised interventions provided by a health professional with extensive psychosocial training and includes individual or couple therapy for people with mood or anxiety disorders or significant relationship/sexual problems. Finally, acute care is appropriate for complex cases in which extreme distress or multiple problems require acute intervention from, for example, a multidisciplinary mental health team.

These levels of care provide a general guide, but it is of principal importance to listen and respond to what patients say about the level of support they feel they need. There should also be particular awareness of patients and families that may be predicted to have higher levels of need based on risk factors such as a pre-existing psychiatric disorder, poor social support or advanced disease.<sup>25</sup> The tiered model is based first on the assumption that individuals differ, with regards to both their support needs and the type of services that they would prefer to receive or access. Second, it is assumed that support needs change and differ over time so there is an imperative to check on needs and distress regularly during treatment and follow-up. Finally, it is proposed that health professionals aim to be patient centred, flexible in approach, well connected to psychosocial care referral networks and work within the scope of their clinical practice.

In Queensland, this model has been applied to underpin the integration of Queensland Cancer Fund (QCF) services with other community based and acute services. Queensland has a population of four million in a state close to seven times the geographic size of the United Kingdom, which has a population of approximately 60 million. The Queensland population is concentrated on the eastern seaboard, with 56% of people living outside of the state capital Brisbane and close to 30% living outside of the (relatively) more populous south-east corner. Thus, geographic barriers are a key issue with a need for remote access services. Consistent with this, tele-based services have proven to be highly acceptable

to people with cancer in Queensland with the QCF Cancer Helpline receiving over 25,000 patient related calls in 2005, demonstrating a 36% increase in such calls over the past two years. The Cancer Helpline is staffed by health professionals with specialised training in understanding and responding to the psychosocial needs of cancer patients and in decision support and provides universal and supportive care to patients and families at no cost. A database with over 1600 community and acute settings services listed underpins the Cancer Helpline service to support referral to accessible services appropriate to callers' needs.

As well, triage to a tele-based Cancer Counselling Service staffed by clinical psychologists and masters' trained nurse counsellors is applied to provide extended and specialist care for Helpline clients who have higher levels of distress or expressed need. Triage is undertaken using client interview and a single item verbal screening question assessing global distress.<sup>9,22</sup> Since its inception in May 2004 to November 2005, the Cancer Counselling Service has received over 700 referrals and will extend to provide face-to-face counselling in 2006. Table 1 overviews the pattern of client demographics and presenting problems for this service for the first 12 months of operation. At intake assessment, most clients demonstrated moderate to severe distress (78%), with 9% assessed as having minimal to mild distress and 13% as having severe distress. This data suggests that triage from the Cancer Helpline is effective in appropriately matching client need to the intervention level of the Cancer Counselling Service.

#### Translating evidence into clinical practice: educating health professionals about psychosocial care

Problematically, although the Cancer Helpline provides a 'no cost' service to the consumer, professional referral to the service remains low with only 5% of callers advising that they received the Helpline contact details from their treating health professional team and most indicating they found the contact details in the telephone directory. These figures are consistent with research showing that many health professionals have a low appreciation of patients' support needs and are infrequent referrers to psychosocial support services.<sup>11-13</sup> Clinical practice guidelines aim to address such issues, but unless they are widely disseminated and integrated into practice they will have little influence on health professionals' behaviour.<sup>16</sup> Thus, unless dissemination is paired with practically focused training, efforts to encourage adoption of such practices may be unsuccessful. To address this problem we developed a workshop training program designed to increase health professionals' understanding of the clinical relevance of the NHMRC Clinical Practice Guidelines for the Psychosocial Care of Adults with Cancer (2003). This training program specifically targeted the following issues: 1) knowledge about the psychosocial support

Table 1: Client demographics and presenting problems for the cancer counselling service

Demographic variable		%
Age	M=50 yrs (range 20 to 85 yrs)	
Gender	Female	80
	Male	20
Geographic residence	Brisbane	46
	Regional	54
Client type	Patient	59
	Family/carer	41
Cancer type	Breast	32
	Colorectal	16
	Lung	10
	Prostate	9
	Brain	7
	Other	26
Presenting problem		%
	Adjustment to cancer	20
	Bereavement	16
	Anxiety	15
	Depression	12
	Family relationships	11
	Other: eg. survivorship, physical symptoms, relationship issues	26

Note: N=444.

needs of cancer patients and their families; 2) the concept of stepped care as outlined in the tiered care model; 3) knowledge of local psychosocial care referral networks; and 4) attitudes towards integration of psychosocial care into usual practice.

The workshop was designed as a two hour presentation that was jointly delivered in three regional Queensland locations by two of the present authors (JT and SKS). The tiered model of care is overviewed with reference to a number of case study scenarios including patients with different need and distress levels. These scenarios are then linked to relevant sections of the NHMRC guidelines, to illustrate how this document can be practically relevant for individuals' practices. Participants' pilot data from the workshops showed a highly positive endorsement of this approach with the tiered model of care viewed as clinically relevant. Follow-up data indicated positive changes in participants' knowledge and attitudes to psychosocial care with a full report currently in preparation. A DVD version of the workshop program is in planning for 2006, as well as further workshop roll-outs in Queensland regional and metropolitan settings.

#### Conclusion

Cancer has a powerful emotional impact on patients and their families throughout the continuum of diagnosis, treatment and survival, and palliative care. Psychosocial care is integral to quality cancer care. However, psychosocial care should not be a 'one size fits all'

service – matching resources and services to the needs of patients and families makes for effective use of resources and is likely to promote optimal adjustment of patients and their families. The dissemination and wide spread adoption of evidence-based public health and clinical programs into action remain an unresolved challenge.<sup>16</sup> The tiered model of care provides a link between evidence based clinical guidelines and actual clinical practice, and between community and acute care settings. n

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## THE PSYCHO-ONCOLOGY CO-OPERATIVE RESEARCH GROUP

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### Abstract

The Psycho-oncology Co-operative Research Group was conceived in response to the recognised need to develop the capacity and coordinated collaboration to conduct large-scale, multi-centre psycho-oncology and supportive care research. In 2005, it was successful in achieving infrastructure funding for two years from the Cancer Institute NSW and has already achieved a national membership of 75.

The Psycho-oncology Co-operative Research Group's mission is to improve the outcomes of patients experiencing a diagnosis of cancer, their families and carers through evaluation and implementation of psychosocial and supportive care interventions for patients, carers, health professionals and the health care system.

It is hoped that the Psycho-oncology Co-operative Research Group will attract leading researchers and psycho-oncology health professionals and will facilitate a flow of increased collaborations and the development of high-quality

### Psychological distress and disorder in cancer patients

Optimal care of the patient with cancer incorporates effective physical and psychological care, through diagnosis and treatment, long-term survivorship, recurrence and death. A diagnosis of cancer is a threat to life itself, generating turmoil in the lives of patients diagnosed with the disease<sup>1,2</sup> as they, and their families, struggle to define and resolve the series of meanings and decisions that confront them.<sup>3,5</sup> A cancer diagnosis and treatment may also impact on patients' psychological and physical health, sexuality, body image, finances, relationships and their ability to continue in their roles at home and at work.<sup>6</sup>

People with cancer suffer significant emotional morbidity. An Australian study conducted by Kissane and his colleagues<sup>7</sup> found that 45% of cancer patients had a psychiatric disorder and 42% were diagnosed with depression or anxiety, or both (compared to a prevalence of 9% in the general population). While the prevalence of clinical disorder varies from study to study, almost all cancer patients report some distress associated with their illness and its treatment. Many patients also lack information about their illness and possible support services. Recent studies measuring stress levels of patients with colon and prostate cancer and their partners indicate that partners experience significantly more distress than patients and receive less support,<sup>8</sup> while patients themselves often report family needs and issues as their biggest concern.

It is known that psychosocial concerns and morbidity often go undetected and are under-treated in the oncological setting.<sup>3</sup> Strategies to ensure effective

screening, referral and treatment of psychosocial concerns are urgently needed. Our current response to these levels of distress and morbidity are inadequate. Up to 40% of patients report a range of unmet needs.<sup>9</sup>

In summary, there is a continuing need to explore the psychosocial needs, understanding of cancer and barriers to care for patients and their families. Several recent reports have highlighted the importance of, and current deficiencies in, psychosocial care of cancer patients. In the 1997 National Cancer Control Initiative report, Cancer Control Towards 2002, psychosocial care was identified as one of the 13 actions recommended for priority implementation.<sup>10</sup> Recent policy documents, for example the NSW Cancer Care Model and the National Cancer Control Plan Priorities for Action in Cancer Control 2001–2003, have stated that improving the psychosocial care of cancer patients in Australia is a national priority.<sup>11,12</sup>

Cancer and its treatment has a considerable impact on a person's quality of life (QoL) which encompasses physical functioning, psychological functioning, social interaction and physical symptoms of the disease and its treatment.<sup>13–17</sup> The importance of assessing QoL in cancer patients is recognised particularly for those receiving treatment, whether standard or experimental, and there is a need to establish collaboration between psychosocial researchers and clinical trials groups to effectively explore patients' needs in this area.

### Psycho-oncology research

The research climate has shifted in Australia over the past 15 years towards providing greater support for psychosocial research. This has resulted, in part from

the improvements in cancer treatment, leading to an increasing focus on improving QoL as well as extending life. The influence of consumer groups in Australia, who place a priority on psychosocial concerns, has influenced funding bodies. The establishment of the Psycho-oncology Group within the Clinical Oncological Society of Australia (COSA) gave this discipline credibility within the multi-disciplinary clinical setting. In NSW, a clinical support/interest group of psychologists working in cancer has been meeting for 10 years. Similarly in Victoria, there is a thriving group, the Victorian Psycho-oncology Group, which is dedicated to improving psychosocial care for cancer patients through the development and exchange of research ideas and the promotion of collaborative research. With the expansion in psycho-oncology services occurring as a result of the policy documents described above, the total workforce in this field is expanding rapidly and will continue to do so in the next few years.

There are several psycho-oncology research groups in Australia with international reputations in this arena, which have been enormously productive despite limited infrastructure support. However, the infrastructure to enable collaboration and implementation of large-scale research has been, until recently, insufficient. It is only through strong foundations and a commitment to research in this area that collaborations will flourish. The existing expertise is disparate and collaboration has been opportunistic rather than coordinated and comprehensive.

### Formation of the Psycho-oncology Co-operative Research Group (PoCoG)

PoCoG was conceived in response to the recognised need to develop the capacity and coordinated collaboration to conduct large-scale, multi-centre psycho-oncology and supportive care research. In 2005, PoCoG was successful in achieving infrastructure funding for two years from the Cancer Institute NSW, as a state organisation with the expectation that within that time, it would become self-funding and national in scope. The group has already achieved a national membership of 75.

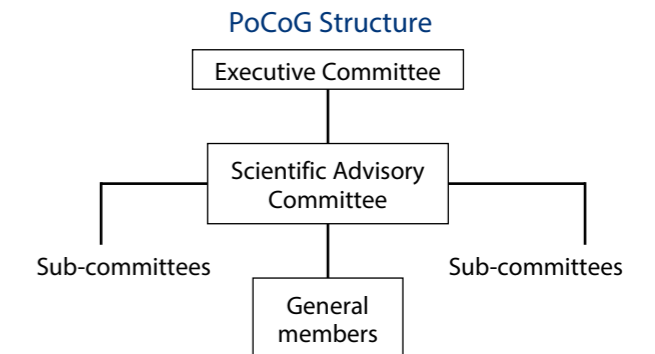
It is hoped that PoCoG will attract leading researchers and psycho-oncology health professionals and will facilitate a flow of increased collaborations and the development of high-quality psycho-oncology research with strong links to the clinical cancer community. PoCoG has the potential to become a leading group for psycho-oncology research, attracting research collaborations from around the globe. A great advantage of a collaborative network is the formal and informal mentoring of junior researchers that occurs as an integral part of this process.

PoCoG's mission is to improve the outcomes of patients experiencing a diagnosis of cancer, their families and carers through evaluation and implementation of psychosocial and supportive care interventions for patients, carers,

health professionals and the health care system.

The aims of PoCoG are:

1. To bring together researchers, clinicians, health care professionals and consumers with an interest in psycho-oncology to foster collaboration and the



exchange of ideas.

2. To develop large-scale, multi-centre psycho-oncology studies of clinical relevance and importance which would be difficult for any one team to mount.
3. To develop formal links with cancer clinical trial groups to facilitate quality of life and psychosocial sub-studies.
4. To promote psycho-oncology research and support emerging new researchers in this area.

Currently located within the University of Sydney, PoCoG is managed under the broad direction of an Executive Committee comprising the Chair (Professor Phyllis Butow) and Coordinator (Dr Rebecca Hagerty) of PoCoG, Chair of the Psychosocial Group in COSA (Professor Afaf Girgis), COSA liaison (Haryana Dhillon) and two nominees from the Scientific Advisory Committee (SAC), currently Professor Kate White and Dr Michael Jefford. The Executive is responsible for day-to-day management, financial and administrative issues, liaison with other trials groups and general central coordination.

The SAC comprises 34 Australian and New Zealand members representing the disciplines of psychology, health research, medical, radiation and surgical oncology, social work, psychiatry, biostatistics, palliative care and nursing, as well as consumer interests. This committee will oversee the direction of PoCoG and lead the establishment and enhancement of links with cancer trials groups within Australia and review protocols submitted to PoCoG. The first PoCoG SAC meeting was held at the COSA Annual Scientific Meeting in Brisbane in November 2005.

PoCoG membership is open to clinicians, allied health professionals and researchers in Australia and New Zealand with an interest in psycho-oncology research. An application form is available by contacting the coordinator and there is no charge to join the group.

Members benefit from access to PoCoG resources and review processes, links to others involved in psycho-oncology research, newsletters, the Annual General Meeting and the planned biannual scientific meeting to be held in conjunction with the Behavioural Research in Cancer meeting currently auspiced by the Cancer Council behavioural groups.

### Activities

PoCoG is conducting a series of focus groups with associated professional groups regarding priority research questions that are clinically relevant. From this process, one psycho-oncology protocol has been developed which will be open for recruitment and submitted to NHMRC for funding in early 2006. Two further protocols are under development.

Equally importantly, PoCoG is committed to working with other cancer trial groups to initiate new sub-studies concerning QoL and psychosocial issues within their existing and planned trials. The merits of establishing one centralised QoL/psychosocial clearing house/coordination centre, servicing the needs of all cancer trials groups in Australia, are great. The importance of assessing QoL in cancer patients is well recognised, however, each trials group on its own lacks the funds and personnel to develop this expertise. Furthermore, working with a range of trials groups provides an opportunity to conduct cost-effective QoL/psychosocial studies where major questions can be answered without additional recruitment and infrastructure costs. Several Australian QoL studies are currently running in this manner (for example with the Australian Ovarian Cancer Study). There is also evidence that recruitment and compliance is greater in clinical trials when QoL assessment is included because patients feel that these concerns are being addressed.

Attracting research funding for such trials remains difficult and for individuals with limited infrastructure

is a major challenge. In addition, the granting bodies in Australia and internationally are increasingly promoting the importance of collaborative, large-scale, multicentre research. Dissemination research is also emerging as a key issue, however this is difficult to conduct in single institutions. For these reasons, the formation of PoCoG is timely, providing a forum to potentially improve the already impressive psychosocial research productivity in Australia.

### Summary

The Psycho-Oncology Co-operative Research Group will add significant value to existing research, and allow a quantum leap forward in the strength and innovation of research within this area. The activities of PoCoG will have benefits not only for psycho-oncology research in this country, but through its QoL coordinating centre for every cancer trials group. This will ensure that research and guideline development for new treatments appropriately consider QoL trade-offs. Cancer patients, their carers and families and cancer staff will all benefit from a strong Psycho-Oncology Co-operative Research Group in this country. We expect to have at least three trials funded and recruiting by the end of 2006. [n](#)

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## DIVERSITY AND AVAILABILITY OF SUPPORT GROUPS

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### Abstract

**OBJECTIVE:** To explore the nature and structure of cancer support groups in the state of NSW Australia.

**METHOD:** Support groups were identified through The Cancer Council NSW and a cancer consumer advocacy group. Participants (n = 179) were cancer support group coordinators who completed a cross-sectional audit assessing the group setting, facilitation, structure and difficulties experienced by groups.

**RESULTS:** In NSW there has been a marked increase in the number of available cancer support groups. The main variations between groups related to their location, specificity, setting, leadership and structure. The most frequently identified objectives of groups were to provide psychological support and information. The main difficulty being faced by groups was poor attendance and referral.

**CONCLUSIONS:** There is great diversity in the nature and structure of cancer support groups in NSW. There is an

Social support has been found to have a pivotal role in the adjustment and psychosocial well-being of people with cancer,<sup>1,2</sup> yet cancer patients report high levels of unmet need in the area of support.<sup>3</sup> Social support may be formal (such as that provided by health care professionals) or informal (as provided by family and friends). Comprehensive psychosocial support services are not currently part of routine patient care in most Australian cancer treatment centres. One response to the gaps in support services in mainstream health care has been the formation of cancer support groups existing either in association with or independent of the healthcare system.

While there is limited empirical research evaluating the nature and efficacy of cancer support groups,<sup>4</sup> the research that does exist suggests that there may be benefits in attending a cancer support group.<sup>5</sup> Clinicians however, report limited knowledge of available cancer support groups<sup>6</sup> and their nature and structure. A Canadian study of a support group for women with early stage breast cancer found that 41% of participants found out about the group themselves, 40% found out about the group from nursing staff and only 10% found out about the group from their oncologist.<sup>7</sup> This study set out to examine the nature and structure of cancer support groups, focusing on a specific geographical area, NSW Australia.

### Method

This study examined, through telephone interviews or self-report surveys, the nature and availability of support groups for adults with cancer in NSW. A state-wide, cross-sectional audit of existing groups assessed the organisational structure, practical features and modalities, aims and degree of integration with the health system or with voluntary organisations.

Group coordinators or a nominated contact person for all cancer support groups in NSW were identified both through listings in The Cancer Council NSW (TCCN) Services Directory (2001), as well as through a 'snowballing' technique. The list was further expanded after consultation with Cancer Voices, the peak cancer consumer advocacy group in NSW. The audit commenced in May 2002. By April 2003, 264 cancer support groups had been identified.

For the purpose of this study, the support groups included were those that: identified themselves as providing mutual support; were open to adults who had been diagnosed with cancer and/or for adult carers of adults who had been diagnosed with cancer; were located in NSW; and held face-to-face meetings. Groups that operated through individual phone or email contact, or operated through a web-based site only, were excluded.

Ethical approval for all aspects of the study was obtained from the University of Western Sydney and



the University of Sydney Human Research Ethics Committees. Participant group coordinators were contacted by telephone. The aims of the project were outlined, verbal consent sought and either a telephone interview arranged or a self-report survey mailed, equivalent to the interview. One hundred and twenty-six coordinators were telephone interviewed and 53 were sent the self-report survey.

The telephone interview and self-report survey included open-ended and closed questions assessing various aspects of group functioning, including contact details, group setting, group aims, history and structure. Participants were also asked about any difficulties their group had experienced.

## Results

Of the 264 cancer support groups identified, 173 active and 11 non-active support groups participated in the audit. Of the 80 groups who did not participate, 20 groups did not meet the inclusion criteria and 21 were duplicate listings. Twenty-three of the groups listed had ceased to operate. The results presented in this article

**Table 1**

Characteristics of cancer support groups (n=184)

Group characteristics	No.	%
<b>History:</b>		
- 1970-1979	1	1
- 1980-1989	16	9
- 1990-1999	91	53
- 2000-2003	65	38
<b>Setting:</b>		
- Hospital/health centre	110	60
- Community centre	48	26
- Group members' homes	9	5
- Other	30	17
<b>Financial/administrative assistance:</b>		
- Charity	23	13
- Member contributions	39	24
- Other external funding source	28	17
- Administrative assistance	83	53
<b>Frequency of meetings:</b>		
- Weekly	31	17
- Every second week	19	11
- Every third week	1	1
- Monthly	116	64
- Every second month	7	4
- Every third month	6	3
<b>Group membership:</b>		
- Open group	170	93
- Carers included	155	85

relate to the 184 participating cancer support groups.

## Nature and specificity of cancer support groups

The earliest recorded group started in 1978. Groups ranged in age from one month to 25 years (mean = 6.4 years, SD = 4.9) (see Table 1). Over one third of the groups (n=65) had commenced since 2000. Support groups had been established by a range of people including health professionals (nurses, social workers, psychologists and doctors), religious officials, speech pathologists and employees of TCCN. Of note, people with cancer founded at least a quarter of the groups surveyed (>70 groups).

Sixty-one cancer support groups were located within the Sydney metropolitan area (33%) (see Table 2). There was a roughly even split between general and specific (restricted to a particular cancer type or site) groups. Of the general cancer support groups, one restricted membership to male participants and two restricted membership to women. Four cultural and language-specific groups, all located in Sydney, were identified (Indigenous, Chinese, Spanish and Greek). There were three groups specifically for people with recurrent cancer or receiving palliative care, one for carers, one for people newly diagnosed with cancer and a group for people experiencing lymphoedema (not limited to participants with a breast cancer diagnosis). Five of the breast cancer groups were for young women only. Some groups included people with

**Table 2**

Location of support groups and specificity of cancer diagnosis

Specificity of group	Sydney-based (No.)	Outside Sydney (No.)	Total (No.)
General cancer support groups	29	58	87
<b>Groups specific to:</b>			
- Breast	15	45	60
- Partners of people with breast cancer	1	0	1
- Prostate	7	14	21
- Colorectal	1	3	4
- Gynaecological	3	0	3
- Haematological	2	1	3
- Brain	1	1	2
- Asbestos-related diseases	1	0	1
- Pancreatic	1	0	1
- Throat	0	1	1
<b>Totals</b>	<b>61</b>	<b>123</b>	<b>184</b>

diagnoses other than cancer eg. the asbestos-related diseases group.

Cancer support group meetings were most frequently located in a health care setting (n = 110; 60%) (see Table 1). Other venues (n = 30; 17%) for meetings included business premises, local clubs or restaurants/cafes. Some groups varied the location of their meetings, thus identifying more than one venue.

Groups were facilitated by health professionals, people affected by cancer (which included a person with cancer, a carer or a volunteer with cancer experience), or a combination of these. A small number of groups were facilitated by a qualified health professional who also had a cancer diagnosis. Over half of the support groups (61%) were facilitated by either one or two health professionals, typically social workers, nurses or psychologists. Half (50%) of all group coordinators were conducting the group as part of their paid health professional role, while the other half were leading the group voluntarily. There were at least 39 groups with a person with cancer in a leadership role within the group.

The costs associated with running the group were subsidised by a charity organisation (n=23; 13%), group members' contribution (n=39; 24%) or an external funding source (n=28; 17%) (see Table 1). Group members' contributions varied from a "gold coin" donation to an annual subscription to the group. These funds were often used to offset the cost of beverages, room rental or insurance costs. External funding sources identified included the local community, hospital departments, government/cancer organisations, or businesses. Administrative assistance was received by 53% of groups from external sources including the hospital or community health centre to which the group was attached, cancer organisations such as TCCN, private businesses or other community organisations.

Support group coordinators were asked to identify the main aim or aims of their group. Most group leaders reported that the primary aims of the group were psychological and emotional support (n = 179; 98%) and information and education (n = 168; 92%). Smaller numbers identified social contact (n = 136; 74%), practical assistance (n = 112; 62%), spiritual assistance (n = 89; 49%), physical needs (n = 84; 47%), advocacy (n = 65; 37%) and other aims (such as fundraising) as aims of the group.

Support group meeting times varied from 45 minutes to two hours. Nearly two thirds of groups met monthly (n = 116; 64%) (see Table 1). Of the 31 groups that held weekly meetings, 17 ran set programs that were conducted over a fixed number of weeks.

Over three-quarters (n = 142; 79%) of the support groups regularly invited guest speakers to present topics of interest at their meetings. Guest speakers included doctors, nurses, psychologists, dieticians, naturopaths and pharmacists. Mutual support and sharing occurred in most support groups (n = 175; 98%).

Participants reported the most effective recruitment strategy was through "word of mouth". Many group coordinators (n = 131; 82%) advertised their group through media including local newspapers, radio or television, or through pamphlets/public notices placed in

various health care settings and/or the wider community. The majority of support groups (n = 140; 90%) reported that they maintained a mailing list of their group members.

Most support groups (n=170; 93%) were open for new participants to join at any time (see Table 1). There was a large variation in the reported attendance at support group meetings, ranging from one to 200 with an average of 13 participants at group meetings.

Attendance of carers or family members at meetings was permitted by 155 groups (n=155; 85%), with three such people attending on average (range 0-18). Some breast or gynaecological cancer groups restricted participation to female carers or family members only.

One hundred and eight group coordinators (61%) reported that their support group was currently experiencing some difficulties, including poor attendance/referral, unsuitable venue, lack of administrative and leadership resources and limited accessibility to guest speakers.

Among the 11 groups that were inactive, the most frequently identified difficulties were poor attendance because of illness/death, difficulties recruiting new members, support and information needs of participants having been satisfied by the group (leaving no reason for its continued existence), lack of support from the community and practical issues such as transport difficulties and work commitments. Some group coordinators reported planning to recommence group meetings employing a different format.

## Discussion

This study examined the nature and structure of cancer support groups in NSW. The study identified a large number of active cancer support groups in NSW with marked proliferation of these groups in the last decade. This finding may reflect an increasing role for groups in meeting the supportive care needs of cancer patients. Many of the groups identified had been functioning over many years, however the fluid nature of support group formation, evolution and cessation was very evident in this study.

Groups varied in their location, specificity, setting, leadership and structure. There was a wide variation in attendance with, on average, 13 attendees at group meetings. The frequency of meetings also differed, with many groups (63%) providing monthly meetings while nearly 20% held weekly meetings. Despite this diversity, groups appeared to be similar in their aims and function. Psychological support and information/education were found to be universally important.

Referral to support groups by health professionals was however, relatively uncommon. Word of mouth was the most frequent method of recruiting new members, with leaders frequently identifying that poor attendance and referral was one of the main difficulties being faced by the group. Groups typically operated with little direct financial support and variable formal input from health services and cancer organisations. This was reported to contribute to difficulties in maintaining a viable group. Mechanisms to rectify this situation need to be

identified. It is possible that health professionals and support group leaders would benefit from developing a better level of mutual understanding, such that health professionals increase their awareness of the structure and content of the support groups that are available for their patients, while group leaders can be confident of ongoing professional support and assistance, thus overcoming some of the key difficulties faced by cancer support groups.

This research aimed to examine the nature and structure of cancer support groups specifically in NSW, Australia. This information was provided by leaders of cancer support groups and was cross-sectional. The generalisability of these findings to other regions is unknown. Despite these limitations this research has added to the small amount of literature available on the nature and structure of cancer support groups, specifically, those groups not engaged in formal psychotherapeutic intervention. Groups offer support to a large number of people at the one time and thus are a cost and time effective method of delivering social support. The small body of evidence that does exist on cancer support groups suggests that they may be beneficial to attendees. Little is known however about

the effectiveness of cancer support groups not engaged in formal psychotherapeutic interventions. It would be of interest therefore to consider the effect of differing group structures on psychological well-being.

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## PROMOTING SHARED DECISION MAKING AND INFORMED CHOICE FOR THE EARLY DETECTION OF PROSTATE CANCER: DEVELOPMENT AND EVALUATION OF A GP EDUCATION PROGRAM

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#### Abstract

Prostate cancer is the most commonly diagnosed cancer in Australian men. At present, there is no definitive data confirming that widespread screening for prostate cancer will reduce the death rate from this disease. In Australia population based screening for prostate cancer in asymptomatic men is not promoted. However, regardless of public health views on this issue, prostate-specific antigen testing in Australian men is prevalent.

Most guidelines advocate that asymptomatic men seeking prostate-specific antigen testing to detect early prostate cancer should be advised of the pros and cons of testing and make an informed choice. The difficult task of managing consumer demands in the face of conflicting viewpoints and uncertain medico-legal requirements usually falls on general practitioners who until recently have had few resources to assist them.

This paper describes the development and evaluation of a pilot general practitioners education program in Victoria. After attendance, participants' knowledge about prostate-specific antigen testing and level of understanding increased, they were more likely to initiate discussions with patients about the risks and benefits of testing and were more confident in doing so. Participant satisfaction with the program and materials was high. In a health topic characterised

Prostate cancer presents a significant public health concern. Cancer of the prostate is the most commonly diagnosed cancer in males. In Australia in 2001 there were 11,191 men diagnosed, while in Victoria, approximately 3000 men are diagnosed with the disease every year. Since 1989, diagnosed rates of prostate cancer cases have more than doubled. This significant rise in prostate cancer incidence is likely to be the result of increased numbers of men undergoing prostate specific antigen (PSA) testing.<sup>1</sup>

There is controversy surrounding the value of population-based screening for prostate cancer with the PSA test. Levels of PSA in the blood only act as an indicator of the disease and there are no definitive data to confirm that PSA testing will reduce prostate cancer mortality.<sup>2,3</sup> However, some research suggests there may be benefit from the early detection and treatment of localised prostate cancer.<sup>4-6</sup> There is also some concern that the quality of men's health may be compromised by not offering individuals the opportunity to be tested. Furthermore, there is support for the position that men should be able to access testing if they are fully informed of the benefits and also the uncertainties related to the efficacy of PSA testing and the risks surrounding treatment outcomes.<sup>7,8</sup> Thus, at this time population-based screening with the PSA test for the early detection of prostate cancer in asymptomatic men is not recommended by The Cancer Council Australia. This position is supported the Urological Society of Australasia, the Australian Department of Health and Ageing and the Australian Prostate Cancer Collaboration (APCC). On the matter of opportunistic testing, these organisations and most clinical practice guidelines recommend that patients be fully informed of the risks and benefits before making their own choice.<sup>9-11</sup>

Shared decision making is based on patients and health professionals sharing relevant information (eg. about risks, benefits, patient's characteristics and values) and agreeing on decisions. It is most suitable for situations in which there is a diagnostic intervention of low risk and a decision involving two or more acceptable choices.<sup>12</sup> Patient decision aids are "interventions designed to help people make specific and deliberate choices among options by providing information on the options and outcomes relevant to the person's health status".<sup>13</sup> They are usually reserved for circumstances in which patients need to carefully deliberate about the personal value of the benefits and harms of options.<sup>14</sup> Shared decision making and informed choice are currently viewed as the most appropriate approach for men deciding about PSA testing for the purpose of the early detection of prostate cancer and men themselves indicate a preference for shared decision making.<sup>15</sup>

In most cases, the decision to inform men about, and initiate testing, is the responsibility of general practitioners (GPs). Some GPs are likely to perceive this task as complex, demanding and time consuming given that they must consider consumer health demands and uncertain medico-legal requirements among much controversy.<sup>16,17</sup> Although many men express interest in informed choice and shared decision making in regards to PSA testing for the early detection of prostate cancer,<sup>15</sup> others may be tested by their GP as part of routine blood checks without knowledge of the test or the implications of having a positive test. It is

vital that men are informed about the advantages and disadvantages of testing and treatments and that they participate in decisions regarding their care. Since GPs are the most likely source of information for PSA testing and subsequent referral, there is also a need for GPs to fully understand screening and treatment issues so that men in their care make informed choices about prostate cancer screening.

The development of workshops up-skilling GPs to provide informed choice for prostate cancer testing was initiated by the Queensland Cancer Fund (QCF) after a 2003 symposium on informed choice organised by the APCC and the National Cancer Control Initiative (NCCI).<sup>18</sup> Recognising the complex health care service environment in which GPs operate, in 2003 the APCC supported the development of a GP education program to facilitate shared decision making and informed choice for men seeking PSA testing for the early detection of prostate cancer. In consultation with this and other medical groups, the QCF developed an education and decision making resource program that aimed to up-skill GPs in order to promote shared decision making within their practices for men considering prostate cancer testing.

With this objective in mind, the program was designed to cover two main areas:

1. The medical context of screening, which includes information about the natural history of the disease; benefits and harm of screening for and treating prostate cancer; use and interpretation of PSA testing; and
2. Shared decision making, which covers the medico-legal requirements of: informed choice; understanding how men make decisions; and effective patient centred education to facilitate informed choice.

An extensive resource kit for participants was also developed, including all relevant brochures and web-based information.

The program was designed to be presented by expert medical professionals in two-and-a-half-hour interactive workshops. The workshop format included two presentations and three case studies that were discussed in small groups, followed by larger group discussions. The medical context of screening and shared decision making presentations, along with the patient show card, aimed to develop participant capabilities in informed choice for prostate cancer testing. A multi-model learning approach was used, consisting of formal presentations, discussion of case scenarios and the role of the interactive decision/summary card in a shared decision making process.

The workshops were accredited for professional development points under the Royal Australian College of General Practitioners' Quality Assurance and Continuing Professional Development Program and the Australian College of Rural and Remote Medicine's Professional Development Program. Workshops were held as part of a pilot study conducted in Queensland by the QCF and in Victoria by The Cancer Council Victoria. In Victoria, three workshops were held in November 2004 in conjunction with Victorian Divisions of General Practice. It is anticipated that this education program will become part of a national strategy to deliver prostate cancer education to GPs.



This report describes findings from three pilot workshops conducted by the Cancer Education Unit of The Cancer Council Victoria.

Method

Five Victorian Divisions of General Practice (Divisions) hosted three workshops in November 2004 in conjunction with The Cancer Council Victoria; the first workshop was held in partnership with the Northern Division in Preston (3072), the second workshop was held in partnership with Inner Eastern Melbourne Division and Melbourne Division in Hawthorn (3122) and the third workshop was held in partnership with Greater South Eastern Division and Dandenong District Division in Mount Waverley (3149). The five metropolitan divisions participated in the pilot due to their interest in prostate cancer and their capacity to deliver a workshop within the pilot timeframe.

The divisions coordinated the recruitment of GP participants to the workshops using a combination of communication methods including newsletter articles, direct mail and fax streams. GP participants were recruited from within the division boundaries.

The pre and post-workshop questionnaires, developed by Steginga, Pinnock and Baade,<sup>19</sup> assessed confidence, intention to discuss, knowledge and workshop satisfaction. Confidence in and intention to discuss prostate cancer screening with asymptomatic men was assessed using four case-scenario items with five-point Likert scales. Attitude towards discussing the risks and benefits of prostate cancer testing with men was assessed with one item rated on a five-point Likert scale. Knowledge about prostate cancer screening was measured via 17 items consisting of 12 statements to which participants responded true, false, or unsure and four multiple choice questions. One further question was used to assess GPs' level of understanding about the risks and benefits of screening. Finally, participants were requested to complete five questions relating to their behaviours with regard to initiation of discussions about screening, as well as use of resources.

The workshop evaluation questionnaire consisted of a number of questions regarding the usefulness of the workshops, including whether GPs' learning needs had been met. Satisfaction with the workshop's content, delivery and structure were also measured. Open-ended questions were included to give participants the opportunity to comment about ways the workshop could be modified or improved. The resource cards were evaluated using nine items that included both multiple choice and open-ended questions. Finally, the resource kits for GPs were also evaluated to assess their usefulness in practice.

An evaluation strategy has been built into the program and includes pre and post-workshop questionnaires to assess the effectiveness of the program in improving GP knowledge about the benefits and risks of testing and their confidence in discussing this with men. GP satisfaction with the delivery, structure and content of the workshops and resources was also assessed and we observed any impact of the program on the likelihood that GPs would opportunistically discuss

testing with men.

A single arm pre-post test design was used to evaluate the effectiveness of the three Victorian workshops in improving participants' knowledge about prostate cancer testing and their confidence in discussing testing with men. We also assessed self-reported intention to discuss testing opportunistically. Data regarding knowledge and confidence in and intention to discuss prostate cancer testing with asymptomatic men were collected via self-administered mailed questionnaires that participants were requested to complete prior to attending the workshops and four weeks after the workshops. At the conclusion of each workshop, participants were also requested to complete a workshop evaluation form assessing program structure and delivery and an evaluation of the resource cards used during the workshop.

Results

In total, 70 GPs attended the three workshops. There were 42 (60%) participants who completed the pre-test questionnaire, which measured confidence in and intention to discuss prostate cancer screening with asymptomatic men. Twenty-eight (40%) participants completed the post-test questionnaire, which was designed to assess change in confidence and intention to discuss prostate cancer screening issues with asymptomatic men four weeks after workshop participation. The workshop evaluation was completed by 63 (90%) participants who attended the workshops and the resource evaluation was completed by 59 (84%) participants.

Before attending the workshop, participants thought they had 'some' to a 'good' level of understanding about the benefits and risks of prostate cancer screening in asymptomatic men (M=3.56, SD=.91). Scores on the actual knowledge scale suggested that some GPs overestimated their knowledge about prostate cancer, with the average score on this scale being around the mid-point (M=8.26, SD=2.58 of a possible total score of 17). Following workshop attendance participants' knowledge scores significantly improved (t(27)=-4.17, P<.01), as did their self-rating of understanding about the benefits and risks of prostate cancer (t(25)=-4.80, p<.01). Participants' rating of the importance of making men aware of the benefits and risks of prostate cancer testing did not change (t(27)=.21, p>.05).

Participants' confidence in and intention to discuss testing with an asymptomatic man significantly increased after attendance. Confidence in and intention to discuss testing with an asymptomatic man with a family history also increased after attendance but did not reach statistical significance. Mean scores and standard deviations for these items from the pre and post-workshop questionnaire are presented in Table 1.

Table 1: Descriptive data for confidence about and intention to initiate a discussion about testing for prostate cancer (N = 28)

Intention to initiate a discussion about testing for a 45-year-old asymptomatic man with a family history <sup>a</sup>						Intention to initiate a discussion about testing for a 55-year-old asymptomatic man <sup>a</sup>					
Pre test		Post test		t value	df	Pre test		Post test		t value	df
Mean	Standard deviation	Mean	Standard deviation	-2.00	27	Mean	Standard deviation	Mean	Standard deviation	-2.74*	27
4.57	0.79	4.79	0.50			3.61	1.40	4.14	1.15		
Confidence in discussing testing for a 45-year-old asymptomatic man with a family history <sup>b</sup>						Confidence in discussing testing for a 55-year-old asymptomatic man <sup>b</sup>					
Pre test		Post test		t value	df	Pre test		Post test		t value	df
Mean	Standard deviation	Mean	Standard deviation	-1.72	27	Mean	Standard deviation	Mean	Standard deviation	-3.15**	27
4.36	0.73	4.54	0.69			3.89	0.96	4.46	0.58		

Note: <sup>a</sup> – intention to initiate a discussion about testing was assessed on a scale from: 1, not at all likely to 3, somewhat likely, to 5, very likely. <sup>b</sup> – confidence in discussing testing was assessed on a scale from: 1, not at all confident to 3, somewhat confident, to 5, very confident.

\* p < .05  
\*\* p < .01

Fifty-nine participants rated the interactive decision card and the summary reference card. The majority of participants (61%) rated the decision card as 'easy' or 'very easy' to follow and 25% reported it as 'somewhat easy'. In line with this pattern of responses, 59% of participants reported that the card would be 'useful' or 'very useful' for their general practice and 29% thought it would be 'somewhat useful'. For the summary reference cards, two-thirds (66%) of participants rated the summary reference card as 'easy' or 'very easy' to follow and 29% reported that it was 'somewhat easy' to follow. Consistent with this finding, 63% of participants reported that the summary reference card would be 'useful' or 'very useful' for their general practice and 34% thought it would be 'somewhat useful'. Eighty six per cent rated the resource kits as 'good' or 'excellent'.

Participants rated their satisfaction with a number of aspects of the workshop (Table 2). Overall most participants rated the various aspects as 'good' or 'excellent'.

Table 2: Participants' satisfaction ratings with various aspects of the workshop

	Good/Excellent		Fair/Poor	
	n	%	n	%
Speaker (medical content)	60	95.2	-	-
Speaker (communication content)	55	87.3	5	7.9
Workshop content	56	88.9	2	3.2
Relevance to practice	56	88.9	3	4.8
Length	54	85.7	5	7.9
Timing	54	85.7	4	6.3
Presentation slides	57	90.5	2	3.2
GP resource kits	54	85.7	2	3.2
Discussion time	53	84.1	3	4.8

Note: N=63; Due to missing data percentages may not equal 100.

Overall, 59% of participants reported that the workshop was 'very useful' or 'extremely useful' and a further 32% rated it as 'generally useful'. Only 5% of participants reported that the workshop was 'a little useful' or 'not at all useful'. The vast majority of participants (89%) said they learned something new at the workshop and 92% said that they would recommend the workshop to other GPs. The majority of participants (64%) reported that 'most' or 'all' of what was learned in the workshop would lead to an improvement in the quality of care provided to patients. A further 30% said that 'some' of what was learned in the workshop would lead to an improvement in the quality of care provided to patients. Similarly, 67% of participants reported that they would try to implement 'most' or 'all' of what was learned in the workshop into their practice. A further 30% said they would try to implement 'some' of what was learned in the workshop into their practice.

A brief qualitative analysis of responses to the open-ended questions revealed that a small proportion of participants (14%) said that there were areas either not covered or not covered in enough detail. Most of the areas listed by participants related to the treatment of prostate cancer. Three participants mentioned screening issues and one mentioned the patient's psychological response. Many participants anticipated that there would be some barriers to implementing the knowledge obtained in the workshop. The most commonly reported barriers were lack of consultation time and patient understanding and attitudes towards prostate cancer testing. Other barriers that were less commonly mentioned included the large volume of relevant information, patient follow-up, the GP's own philosophy and being female, particularly in relation to digital rectal examination. Some participants suggested ways the program could be improved. The most common suggestions related to the workshop content, such as including a brief overview of prostate cancer issues and providing more case studies. A small number of participants commented on the length of the

program.

Discussion

The findings from this evaluation revealed that physician knowledge about the potential risks and benefits of prostate cancer testing increased significantly after attending the workshop. Physician confidence in discussing prostate cancer testing with asymptomatic men over 50 years increased significantly after attending the workshop, as did their intention to discuss testing. There were also small but non-significant increases in physician confidence and intention to discuss prostate cancer testing with asymptomatic men who were younger than 50 years but had a significant family history of prostate cancer.

Overall, the program was well received by GPs and it appeared to meet their needs on a number of levels. A possible explanation for this can be attributed to the delivery of a multi-model learning approach. The results showed that the majority of participants reported that it was very or extremely useful and a further one-third thought the program was generally useful. When participants rated their satisfaction with a number of aspects of the program (including the speaker, workshop content, relevance, length, timing, presentation slides, GP resource kit and discussion time), the vast majority rated each aspect as good or excellent. In line with their satisfaction ratings, almost all participants said that they would recommend the workshop to other GPs. Another encouraging finding was that the majority of participants thought that the information they learned through the workshop would lead to an improvement in the quality of care they provided to patients and that they would implement most or all of what they had learned.

In general, the results for the interactive decision card and the summary reference card were encouraging with the vast majority finding the resources at least somewhat easy to use and at least somewhat useful. While most participants reported that both resources were easy to follow and that they would be useful for their general practice, a small proportion did not agree. These findings suggest that the interactive decision card and summary reference card may need more time dedicated to them in the workshop or they may need to be revised to make them even easier to use. As a consequence of the findings from these workshops, the interactive decision card and the summary reference card have been recently updated.

Conclusions

In conclusion, the workshops were well received by GPs and were associated with positive changes in knowledge and confidence about shared decision making and informed choice in relation to prostate cancer testing. The potential impact of the education on opportunistic testing was not explored. In this regard, the program did not advocate for or against testing, but rather aimed to educate GPs about the relevant issues and the need for shared decision making and informed choice. Feedback from the participants suggested that they were very satisfied with the workshop content and the way it was presented. Furthermore,

participants reported that the resources provided within the workshop were easy to follow and appropriate for their practice. Nevertheless, there were some issues provided by participants that should be considered in order to improve the workshop. One of the key barriers to using the skills and resources provided in the workshop is the lack of consultation time. Strategies for GPs to use the skills and resources within the time constraints need to be considered. This is an area of further research and will need both changes in the GP environment and new government preventative health strategies. The findings also highlight some aspects of the workshop that might be further developed, such as providing more time for additional practical case studies and giving an initial brief overview of prostate cancer screening and treatment issues.

Acknowledgement

We gratefully acknowledge the assistance of Ross Snow, Michael Chamberlain and Damien Bolton in the development and piloting of this education program. We also gratefully acknowledge the support of the Queensland Cancer Fund, the Australian Prostate Cancer Collaboration, the Prostate Cancer Foundation of Australia, the Northern section of the Urological Society of Australasia, The Cancer Council Victoria, the National Cancer Control Initiative, the Brisbane North Division of General Practice, the Northern Division of General Practice, Inner Eastern Melbourne Division of General Practice, Melbourne Division of General Practice, Greater South Eastern Division of General Practice and Dandenong District Division of General Practice.

A PDF version of the GP/Patient Show Card and GP Reference Card can be downloaded from the NCCI website ([www.ncci.org.au](http://www.ncci.org.au)) or from the Information for health professionals page on The Cancer Council Australia's website ([www.cancer.org.au](http://www.cancer.org.au)).

References

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SUPPORT FOR RESEARCH

The Cancer Council Australia and its members, the state and territory Cancer Councils, are the leading funders of independent cancer research and related activities in Australia. Grants are made following competitive, peer-reviewed assessment of funds derived from donations and bequests.

In 2006 Cancer Councils allocated over \$32 million to cancer research in Australia.

In addition, the grants for breast cancer research made by the National Breast Cancer Foundation are listed. The Foundation has been established by the Federal Government, with an independent Board of Trustees to encourage research in all aspects of breast cancer.

Please note: for research grants spanning more than one year, only funds to be dispersed in 2006 have been included.

THE CANCER COUNCIL AUSTRALIA



The Cancer Council Australia Sally Birch Fellowship in Cancer Control

D Young VicHealth Centre for Tobacco Control	Reducing cancer by improving tobacco control – an application of actor network theory.	\$100,000
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TOTAL RESEARCH FUNDED		\$100,000
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THE CANCER COUNCIL ACT



Research grants

D Yip, P Craft, R Stuart-Harris, D Leong, A Davis The Canberra Hospital	A clinical trials cancer research program.	\$33,700
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N. Druhan – commissioned by The Cancer Council ACT	Toward a comprehensive cancer prevention and early detection program for the ACT and SE NSW region.	\$12,000
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A Gardner, M Eggert The Canberra Hospital and University of Canberra Research Centre for Nursing Practice	A post-intervention consumer satisfaction survey in the haematology unit.	\$3300
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TOTAL RESEARCH FUNDED		
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THE CANCER COUNCIL NSW

New Research Project Grants

M Friedlander University of Sydney	Carboplatin Flat Dosing versus Inpatient Dose Escalation in First Line Chemotherapy of Ovarian Cancer	\$60,400
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N Suchowerska University of Sydney	Prostate Cancer Radiotherapy: urethral dose measurements using Fibre Optic Dosimeters	\$110,638
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S Breit University of NSW	The role of the TGF-β superfamily cytokine MIC-1 in the biology of cancer	\$125,000
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S Kilbreath University of Sydney	Early exercise program for women following breast cancer surgery: a randomised controlled study	\$109,800
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D Marsh	Biomarkers of Cell Signalling Pathways in Ovarian Cancer	\$86,000
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University of Sydney		
R Hogg Westmead Hospital	Total Laparoscopic Hysterectomy (TLH) vs Total Abdominal Hysterectomy (TAH) for the Treatment of Endometrial Cancer	\$13,875
N Suchowerska University of Sydney	Radiobiological Spatial Model for Radiation Therapy	\$92,650
S Chapman University of Sydney	Television news on health and medicine in Australia: content, framing and impact	\$120,500
B Henderson University of Sydney	Regulation of BARD1 localisation and apoptotic function in breast cancer	\$52,716
G Mann University of Sydney	Molecular genetics of melanoma predisposition	\$112,100
A Dolnikov University of NSW	Targeting the IRF2 transcription factor to inhibit leukaemic cell growth	\$97,250
G Mendz University of NSW	The role of pathogenic bacteria in hepatocarcinoma	\$107,250
B Meiser University of NSW	Evaluation of a Fertility-Related Decision Aid for Young Women with Early Breast Cancer	\$89,875
M Boyer University of Sydney	The Effects of Chemotherapy on Cognitive Function in Patients with Testicular Cancer	\$53,500
L Trevena University of Sydney	A randomised controlled trial of a meta-decision aid for evidence-based preventive activities in general practice	\$110,500
B Allen University of NSW	Response of metastatic melanoma to bi-fold targeted alpha therapy of tumour capillary pericytes and melanoma cells	\$150,275
M Tattersall University of Sydney	Enhancing cancer patient participation when discussing clinical trial enrolment: evaluation of a question prompt list	\$48,400
<b>Total New Research Project Grants</b>		<b>\$1,540,729</b>

## New Research Program Grants

R Reddel Children's Medical Research Institute	Alternative lengthening of Telomeres: a target for cancer treatment	\$400,000
P Hogg University of New South Wales	New arsenical-based cancer drugs	\$358,054
M Norris University of New South Wales	Improved treatment outcomes for children with leukaemia	\$400,000
<b>Total New Research Program Grants</b>		<b>\$1,158,054</b>

## New Strategic Research Partnership Grants

A Biankin Garvan Institute of Medical Research	New South Wales Pancreatic Cancer Network	\$250,000
B Meiser University of New South Wales	Psychosocial impact of hereditary cancer and the development and evaluation of effective patient education and decision support strategies	\$249,856
R Ward University of New South Wales	The Colorectal Cancer Research Consortium: a model for the integration of biomedical research into patient care	\$318,000
<b>Total New Strategic Research Partnership Grants</b>		<b>\$817,856</b>

<b>Total New Research Grants</b>		<b>\$3,516,639</b>
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## Continuing Research Project Grants

L Khachigian University of N S W	DNAzymes as Novel Inhibitors of Human Basal Cell Carcinoma Growth	\$76,000
K MacKenzie Children's Cancer Institute Aust for Medical Research	Characterisation of a novel mechanism that prevents immortalisation and malignant transformation	\$125,000

R Fulton University of Sydney	Motion Compensation in FDG PET Imaging for Improved Cancer Diagnosis and Treatment	\$58,500
P Butow University of Sydney	Quality of life and psychosocial predictors of outcome in a population based study of ovarian cancer	\$92,097
B Henderson Westmead Millennium Institute	Regulated targeting of BRCA1 to nuclear sites of DNA repair	\$72,500
R Saw University of Sydney	Lymphoedema following axillary and groin sentinel node biopsy	\$53,250
R J Simes University of Sydney	Intermediate & high risk, resected gastro-intestinal stromal tumours expressing kit: RCT of adjuvant imatinib mesylate	\$52,000
S Tangye Centenary Institute of Cancer Medicine and Cell Biology	The development and function of anti-tumour cytotoxic lymphocytes in health and disease	\$69,000
D Gottlieb Westmead Hospital	EBV - specific Cytotoxic T Lymphocytes as Tools for Adoptive Immunotherapy for EBV-positive Hodgkin Lymphoma	\$10,000
V Ahern Westmead Hospital	A phase III study of regional radiation therapy in early breast cancer	\$38,362
H Gurney Westmead Hospital	The timing of androgen deprivation in relapsed or non-curable prostate cancer patients	\$10,650
R Reddel Children's Medical Research Institute	Functions of ALT-Associated PML Bodies	\$164,050
C Lean University of Sydney	Improved management of thyroid disease by the correct pathological diagnosis obtained non-invasively by magnetic resonance at 3 tesla	\$190,000
G Halliday University of Sydney	The role of UVA in human skin carcinogenesis	\$99,250
B Meiser University of N S W	A randomised trial of a decision aid for genetic testing for hereditary cancer	\$29,250
H Mitchell University of N S W	The role of helicobacter pylori infection and host cytokine polymorphisms in the aetiology of gastric cancer	\$107,136
<b>Total Continuing Research Project Grants</b>		<b>\$1,247,045</b>

## Career Development Research Fellowship

G O'Neill Children's Hospital Westmead		\$150,000
<b>Total Research Fellowships</b>		<b>\$150,000</b>

<b>Total Investigator-Initiated Research Grants</b>		<b>\$4,913,684</b>
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## Other Research Programs

Cancer Trials NSW (CTN)	\$1,490,313
Cancer Epidemiology Research Unit (CERU)	\$1,539,613
Cancer for Health Research & Psycho-Oncology (CHeRP)	\$600,000
Hereditary Cancer Register	\$214,106
Quality Improvement in Cancer Care Research and Demonstration	\$300,000
45 and Up Cohort Study	\$400,000

## Commissioned Research Projects

How retailing of tobacco influences smoking behaviour	\$160,000
Surveillance of Community Attitudes and Practices towards Tobacco	\$80,000
Research into Cost Burden of Cancer	\$100,000
Needs of Caregivers	\$56,482
Social Marketing Research –sun protection in adolescence	\$44,000

Evaluation of intervention to support carers



Development and validation of Consumer Research Review Criteria \$30,500

Training and Development Needs of Support Group Leaders \$36,000

Total Other Research Programs and Commissioned Research \$5,091,014

**TOTAL RESEARCH FUNDED \$10,004,698**

## THE CANCER COUNCIL SOUTH AUSTRALIA

### Research grants

Dr Chris Hahn, A/Professor Jennifer Gamble Vascular Biology Laboratory Hanson Institute	Identification of the role of a novel angiogenic gene, VasGAP, in development and cancer	\$76,000
A/Professor Paul Vasey, Dr Michael Quinn, Professor John Simes, A/Professor Michael Friedlander, Dr Martin Buck, Dr Bogda Koczwara Department of Medical Oncology Royal Brisbane and Women's Hospital	Carboplatin Flat Dosing versus Inpatient Dose Escalation in First Line Chemotherapy of Ovarian Cancer	\$6000
Dr Stuart Pitson Human Immunology Institute of Medical and Veterinary Science	The cellular regulation of sphingosine kinase by eEF1A and its role in tumorigenesis	\$70,500
A/Professor Robert Richards School of Molecular and Biomedical Sciences Molecular Life Sciences The University of Adelaide	Function of the FOR/WWOX gene and its contribution to cancer cell biology	\$80,025
A/Professor Geoffrey Lindeman, Dr Gillian Mitchell, Dr Alan Stapleton Familial Cancer Centre Royal Melbourne Hospital	Identification of Men with a genetic predisposition to Prostate cAncer and their Clinical Treatment - The IMPACT Study	\$47,700
Professor David Currow, Dr Amy Abernethy, Ms Debra Rowett, Ms Tania Shelby-James, Ms Belinda Fazekas, Dr Peter Allcroft Palliative and Supportive Services Flinders University	A pilot study of the effectiveness of academic detailing on dyspnoea in cancer patients in a palliative care setting	\$65,263
E/Professor Alexander Morley, Dr Michael Brisco, A/Professor Pamela Sykes, Dr Bryone Kuss School of Medicine, Flinders University	Improving the measurement of minimal residual disease in acute leukaemia	\$76,000
Professor Martin Tattersall, Dr Michael Jefford, Professor Ian Olver Department of Cancer Medicine University of Sydney	Enhancing cancer patient participation when discussing clinical trial enrolment: evaluation of a question prompt list	\$36,300
Professor Ian Olver, A/Professor Guy Toner, Professor Willis Marshall, A/Professor Michael Boyer, A/Professor Paul Maruff RAH Cancer Centre Royal Adelaide Hospital	The Effects of Chemotherapy on Cognitive Function in Patients with Testicular Cancer	\$53,500
Professor Wayne Tilley, Dr Lisa Butler, Professor David Roder, Dr Gelareh Farshid Dame Roma Mitchell Cancer Research Laboratories, Department of Medicine University of Adelaide	Androgen receptor status as a determinant of breast cancer risk	\$76,000
A/Professor Dorothy Keefe Department of Medical Oncology RAH Cancer Centre	Chemotherapy-induced diarrhoea: characterisation of mechanism	\$70,500
Professor Sharad Kumar Department of Haematology Hanson Institute, IMVS	Caspase-2 function in apoptosis and disease	
Dr Yeesim Khew-Goodall Division of Human Immunology Institute of Medical and Veterinary Science	A potential novel signalling pathway regulating epithelial-mesenchymal transition	\$70,500
A/Professor Paul Reynolds, A/Professor Mark Holmes Department Thoracic Medicine Royal Adelaide Hospital Chest Clinic	Gene Delivery of Tissue Inhibitors of Matrix Metalloproteinases for Pulmonary Metastases	\$76,000





A/Professor Geoffrey Lindeman, Dr David Amor, A/Professor Judy Kirk, Dr Graeme Suthers, Professor Jack Goldblatt, Dr Mike Gattas RMH Familial Cancer Centre/VBCRC Laboratory Royal Melbourne Hospital	kConFab – A Consortium for Research on Familial Breast Cancer	\$60,255
A/Professor Timothy Hughes Division of Haematology Institute of Medical and Veterinary Science	Causes and significance of persistent leukaemia in CML patients treated with ABL kinase inhibitors	\$68,527
Professor R John Simes, Professor John R Zalberg, A/Professor Paul Waring, A/Professor G Bruce Mann, A/Professor B Mark Smithers, Dr Dusan Kotasek, Dr Guy Van Hazel NHMRC Clinical Trial Centre University of Sydney	Intermediate & high risk, resected gastro-intestinal stromal tumours expressing kit:RCT of adjuvant imatinib mesylate	\$10,834
A/Professor Murray Whitelaw School of Molecular and Biomedical Science University of Adelaide	Investigating the role of Sim2 in pancreatic cancer	\$64,500
Dr Mark Guthridge Human Immunology, Hanson Institute, IMVS	The role of a novel GM-CSF signalling pathway in regulating cell survival in myeloid leukemia	\$78,205
Dr Andrew Zannettino, Dr Stan Gronthos Division of Haematology, IMVS	Does Stromal Derived Factor 1a (SDF - 1a) Play a Role in Osteolytic Bone Disease and Increased Bone Marrow Microvessel Density in Multiple Myeloma?	\$75,838
<b>Total Research Grants</b>		<b>\$1,249,697</b>

## Senior Fellowships

C Ricciardelli, University of Adelaide	\$87,119
Pending new appointment	
<b>Total Senior Fellowships</b>	

## Fellowships

G Howarth, University of Adelaide	\$76,355
A Brown, Child Health Research Institute (to commence mid 2006)	\$38,170
R Gibson, Royal Adelaide Hospital	\$76,355
<b>Total Fellowships</b>	
W Bruce Hall Cancer Research Fellowship A Sakko, University of Adelaide	\$81,650
Peter Nelson Leukaemia Research Fellowship M Guthridge, IMVS	\$87,119

## Other Research Programs for 2006

Chair in Cancer Care – Professor Ian Olver	\$100,000
Travel Grants	\$35,000
Distinguished Visitors	\$15,000
Student Vacation Scholarships	\$15,000
The Freemasons Cancer Research Scholarship (1)	\$25,000
Data Managers Program	\$152,000
Microarray Bioinformatics	\$38,468
<b>Total of Other Research Programs</b>	
<b>TOTAL RESEARCH FUNDED</b>	<b>\$2,164,052</b>



## THE CANCER COUNCIL TASMANIA

### Research grants

Dr Alison Venn	Exposure to high dose estrogens in adolescence: long term effects on Mammographic breast density	\$3000
Associate Professor Greg Woods	Long term effects of UV-B irradiation on the developing skin immune system	\$37,750
Dr Penny Blomfield	Molecular epidemiology of endometrial cancer – addition of Tasmania	\$40,500
Dr Christine Trambas	Microscopic, biochemical and functional characterisation of NK cell invasion into tumour cells (emperipolesis)	\$51,600
<b>Total Research Grants</b>		<b>\$132,850</b>

### Funded by David Collins Leukaemia Foundation (DCLF) (amount not included in total research funding)

Dr Adele Holloway	Investigating the role of the RUNX1 protein in the regulation of gene expression in myeloid cells	\$20,000
	Purchase of Veritas Micoplate Luminometer	\$5000
Associate Professor Greg Woods	Analysis of a lentivirus-delivered shRNA to prevent leukaemic cell growth	\$10,000
Dr Scott Ragg	Survey into the effect of bacterial contamination upon bone marrow transplant outcome	\$2180
<b>Total funded by DCLF</b>		<b>\$37,180</b>

### Other research grants

To be announced	Jeanne Foster Scholarships	\$5000
Launceston General Hospital & Royal Hobart Hospital	Clinical Trial Data Managers	\$54,500
To be announced	Tasmanian Acord Workshop for new researcher	\$2500
Clare Healy, Clinical Nurse, Royal Hobart Hospital	Athena Karydis Foniadakis Scholarship	\$5000
Gillian Sheldon-Collins, Nurse Royal Hobart Hospital	Athena Karydis Foniadakis Grant	\$2000
Melinda Minstrell	The Cancer Council Tasmania Post Graduate Research Scholarship	\$24,000
Mr Kelvin Low Hian Yang, University of Tasmania	The Cancer Council Tasmania Tattersalls Award	\$10,000
<b>Total other research grants</b>		<b>\$103,000</b>

**TOTAL RESEARCH FUNDED \$235,850**

## THE CANCER COUNCIL VICTORIA

### Fellowships

Carden Fellowship D Metcalf, Walter and Eliza Hall Institute of Medical Research	Regulatory control of normal and leukaemic cells	\$200,000
Colebatch Fellowship K Phillips, Peter MacCallum Cancer Centre	Reducing the burden of breast cancer	\$144,500
Dunlop Fellowship G McArthur, Peter MacCallum Cancer Centre	Development of targeted therapies for cancer	\$144,500
K & H Fraser Fellowship P Colman, Walter and Eliza Hall Institute of Medical Research	Novel regulators of apoptosis	\$75,000
Lions Fellowship B Anderson, Walter and Eliza Hall Institute	Coeliac disease and increased risk of cancer - novel therapeutic approaches	\$20,000 (approx)



of Medical Research	
<b>Total fellowships</b>	<b>\$584,000</b>

**Research Grants**

D Bowtell, A de Fazio, P Blomfield, N Zeps, D Gertig, M Friedlander, P Harnett, D Wyld, M Davy Peter MacCallum Cancer Centre	Molecular epidemiology of ovarian cancer: Australian ovarian cancer study – Western Australia, Tasmania and a national clinical follow-up core	\$69,993
I Campbell Peter MacCallum Cancer Centre	Molecular and functional analysis of the chromosome 7q31 tumour suppressor gene ST7	\$70,000
W Chen Ludwig Institute for Cancer Research	Study immunodominance of natural and induced anti-NY-ESO-1 T cell responses to optimize future cancer vaccine strategies	\$70,000
H Cheng, H Zhu, T Mulhern University of Melbourne	Regulation of activity and subcellular localisation of the tumour suppressor PTEN	\$70,000
P Choong, C Dass St Vincent's Hospital	The resistance of growth plate cartilage to invasion by tumour: PEDF, a potent anti-angiogenic factor regulates osteosarcoma behaviour	\$70,000
C Christophi, V Muralidharan, A Shulkes University of Melbourne	Mechanisms of action of thermal ablation on colorectal liver metastases	\$70,000
B Chua, D Joseph, J Harvey, V Ahern Peter MacCallum Cancer Centre0	A phase III study of regional radiation therapy in early breast cancer	\$70,000
C Clyne, M Jones Prince Henry's Institute of Medical Research	Role of the orphan nuclear receptor LHR-1 in breast cancer proliferation	\$67,922
W Cook, M Southey University of Melbourne	Myeloid leukaemia suppressor genes of mouse and man	\$70,000
P Darcy, M Kershaw, J Trapani Peter MacCallum Cancer Centre	Preclinical development of gene-engineered T cells for immunotherapy of cancer	\$70,000
G Duchesne, N Spry, A Stapleton, H Gurney, E Beller Peter MacCallum Cancer Centre	The timing of androgen deprivation in relapsed or non-curable prostate cancer patients	\$10,650
P Fuller Prince Henry's Institute of Medical Research	Characterisation of the molecular pathogenesis of ovarian granulosa cell tumours	\$70,000
C Hawkins, D Ashley, H Friedman Murdoch Children's Research Institute	Factors influencing TRAIL sensitivity in ex vivo malignant glioma	\$70,000
J Hopper, E Smibert, A Mitchell, K Waters University of Melbourne	Victorian Paediatric Cancer Family Study	\$70,000
P Humbert, S Russell, H Richardson Peter MacCallum Cancer Centre	The role of mammalian scribble in proliferation and tumorigenesis	\$70,000
D Jans Monash University	The tumour cell-specific nuclear targeting signal of chicken anaemia virus VP-3: potential for anti-tumour therapy	\$65,000
R Johnstone Peter MacCallum Cancer Centre	Mechanisms of action of histone deacetylase inhibitors: novel anti-cancer drugs	\$70,000
R Kluck, A Strasser Walter & Eliza Hall Institute of Medical Research	Defining how the essential apoptosis regulators Bax and Bak mediate apoptosis	\$70,000
G Lindeman, G Mitchell, A Stapleton Peter MacCallum Cancer Centre	Identification of men with a genetic predisposition to prostate cancer and their clinical treatment – The IMPACT Study	\$63,300
G McArthur Peter MacCallum Cancer Centre	Targeting CDK2 in breast cancer associated with mutations in BRCA1	\$70,000
J McCluskey, J Rossjohn University of Melbourne	The structural and functional basis of tumour recognition by NKT cells	\$70,000
M McCormack, S Jane, D Curtis Royal Melbourne Hospital	Analysis of the interaction of the T-cell oncoproteins Sc1 and Lmo2 as a therapeutic target for T-cell acute lymphoblastic leukaemia	\$70,000
M Michael, B Burmeister, A Wirth Peter MacCallum Cancer Centre	Randomised phase II study of two regimens of palliative chemoradiation therapy in the management of locally advanced non small cell lung cancer	\$22,238

C Mitchell Monash University	Role of the PIPP lipid phosphatase in cell differentiation and polarity	
E Nice, J Cebon, P Gibbs Ludwig Institute for Cancer Research	Development of a generic biosensor platform for cancer biomarker screening	\$70,000
A Obermair, A McCartney, T Manolitsas, M Janda, F Chan Monash Medical Centre	Total Laparoscopic Hysterectomy (TLH) vs Total Abdominal Hysterectomy (TAH) for the treatment of endometrial cancer	\$27,750
I Olver, G Toner, V Marshall, M Boyer, P Maruff Peter MacCallum Cancer Centre	The effects of chemotherapy on cognitive function in patients with testicular cancer	\$53,500
H Puthalakath Walter & Eliza Hall Institute of Medical Research	Post-translational regulation of the pro apoptotic protein BIM	\$55,000
R Ramsay, I Bertonecello, E Stanley Peter MacCallum Cancer Centre	CSF-1 is an essential intestinal epithelial cell mitogen	\$70,000
G Risbridger, S McPherson Monash Institute of Medical Research	Early origins of prostate cancer	\$70,000
P Schofield, R Sanson-Fisher, S Aranda Peter MacCallum Cancer Centre	A randomised controlled trial of consumer-driven multi-disciplinary care to manage the needs of men with prostate cancer	\$70,000
A Scott, V Rayzman Ludwig Institute for Cancer Research	Development and evaluation of a transgenic mouse model for anti-human A33 targeted therapy	\$70,000
J Simes, J Zalcborg, P Waring, B Mann, M Smithers, D Kotasek, G Van Hazel Peter MacCallum Cancer Centre	Intermediate and high risk, resected gastro-intestinal stromal tumours expressing kit: RCT of adjuvant imatinib mesylate	\$13,334
M Smyth Peter MacCallum Cancer Centre	TRAIL-mediated immunosurveillance, immunoselection and immunotherapy of cancer	\$70,000
M Tattersall, M Jefford, I Olver Peter MacCallum Cancer Centre	Enhancing cancer patient participation when discussing clinical trial enrolment: evaluation of a question prompt list	\$36,300
T Tiganis, Monash University	Regulation of the Src proto-oncogene	\$70,000
P Vasey, M Quinn, J Simes, M Friedlander, M Buck, M Davy Walter & Eliza Hall Institute of Medical Research	Carboplatin Flat Dosing versus Inpatient Dose Escalation in first line chemotherapy of ovarian cancer	\$30,000
<b>Total research grants</b>		<b>\$2,263,237</b>

**Postdoctoral Research Fellowships**

A Deans, Peter MacCallum Cancer Centre	\$30,500
N Huntington, Walter & Eliza Hall Institute of Medical Research	\$61,000
C McNees, St Vincent's Institute	\$61,000
S Ting, Royal Melbourne Hospital	\$30,500
S Willis, Walter and Eliza Hall Institute of Medical Research	\$30,500
Two fellowships to be appointed mid-year	\$61,000
<b>Total postdoctoral research fellowships</b>	<b>\$274,500</b>

**Postgraduate Research Scholarships**

S Amos, Peter MacCallum Cancer Centre	\$22,950
F Barnett, Ludwig Institute for Cancer Research	\$27,950
L Dow, Peter MacCallum Cancer Centre	\$10,938
C Fedele, Monash University	\$23,350
J Fletcher, St Vincent's Institute	\$22,950
H Gan, Ludwig Institute for Cancer Research	\$14,060
K Horan, Monash University	\$10,938



E Lee, Walter & Eliza Hall Institute of Medical Research	\$22,718
M Loughrey, Peter MacCallum Cancer Centre	\$2343
K Mason, University of Melbourne	\$28,450
E Naik, Walter & Eliza Hall Institute of Medical Research	\$23,350
J Stone, University of Melbourne	\$9017
N Thomas, Monash University	\$22,950
M Wall, Peter MacCallum Cancer Centre	\$27,920
L Williams, Peter MacCallum Cancer Centre	\$22,718

## Vacation Studentships

15 six week summer Vacation Studentships were awarded

**Total scholarships and studentships \$312,852**

## Support for Medical and Scientific Activities

### Total Medical & Scientific Support



## Cancer Control Research Institute Programs

Cancer Epidemiology Centre	\$1,099,698
Victorian Cancer Registry	\$1,944,550
The Melbourne Collaborative Cohort Study (Health 2000)	\$667,711
Centre for Behavioural Research in Cancer	\$1,747,763
Centre for Clinical Research in Cancer	\$1,563,800
VicHealth Centre for Tobacco Control (Cancer Council Victoria contribution to VicHealth Centre)	\$ 436,323
<b>Total Cancer Control Research Institute programs</b>	<b>\$7,459,845</b>

**TOTAL RESEARCH FUNDED \$10,963,750**

## THE CANCER COUNCIL WA

### Research grants

M Millward	Cancer Therapeutics Research Group - Establishment of the Perth node to perform novel cancer clinical trials in WA (two year grant)	\$60,000
P Hart	Regulatory T cells and modulation by ultraviolet B radiation of both type 1 and type 2 immune responses	\$55,000
M Byrne	Use of FDG PET in the Assessment of Tumour Extent and Response in Pleural Mesothelioma (two year grant)	\$59,500
A Obermair	Total Laparoscopic Hysterectomy (TLH) vs Total Abdominal Hysterectomy (TAH) for the Treatment of Endometrial Cancer (multi-state)	\$55,500
D Nelson	'Angio/immuno' agents alter tumour vasculature and enhance immune cell traffic/function: a novel anti-cancer strategy	\$60,000
L Abraham	Control of CD30 Expression in Anaplastic Large Cell Lymphoma	\$60,000
R Lake	Immunotherapy and Chemotherapy; A Practical Partnership for the Treatment of Cancer	\$35,000
G Yeoh	Mechanisms underlying the transformation of liver progenitor cells	\$60,000
J Olynyk	Investigating the role of pro-inflammatory cytokines on hepatic progenitor cell proliferation in chronic hepatitis B & C	\$35,500
<b>Total research grants</b>		<b>\$480,500</b>

### Edward and Patricia Usher Student Vacation Research Scholarships

C Leong	Expression and purification of pre-B cell colony enhancing factor (PBEF)	\$2000
J Rampellini	Inhibition of osteoclastogenesis and osteoclast signalling pathways by proteasome inhibitors in multiple myeloma	\$2000
D Tan	Preventing the unwanted side effects of the anticancer drug cyclophosphamide	\$2000

B Wyse	Identification of p27 binding partners in androgen-treated breast cancer cells	\$2000
S Murphy	Which genes transform liver progenitor cells?	\$2000
J Ngeow	Assessment of anti-cancer potential of plant extract	\$2000
V Zasun	Identifying the function of the novel gene, c20orf121 in prostate cancer	\$2000
B Knezevic	Understanding the role of PACT in human breast cancer	\$2000
<b>Total vacation research scholarships</b>		<b>\$16,000</b>

## John Nott travelling fund

D Joseph - Sir Charles Gairdner Hospital	To invite A/Prof Scott W Menzies and Prof J Thompson to speak at the Royal Australasian College of General Surgeons, WA Branch Annual Scientific Meeting to be held in August 2006.	\$10,000
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**Total John Nott travelling fund \$10,000**

## Professorial Chairs

Chair of Palliative Care Research	Edith Cowan University	\$100,000
Chair of Behavioural Cancer Research	Curtin University of Technology	\$125,000
Chair of Clinical Cancer Research	University of Western Australia	\$250,000

**Total professorial chairs \$475,000**

## Cancer Research Equipment Initiative

U Kees - Telethon Institute for Child Health Research	BD LSRII Flow Cytometry System	\$187,500
N Lenzo - WA PET Service	Surgical Radiation Detection System	\$55,200
P Klinken - WA Institute for Medical Research	Cellscreen	\$222,675
A Charles - Princess Margaret Hospital	Digital microscope	\$281,000
L Palmer - University of Western Australia	Illumina BeadStation 500GX and Genotyping package	\$153,600

**Total Cancer Research Equipment Initiative \$899,975**

## Other research grants

Bone tumour registry		\$27,000
Children's Cancer Research Fellowship	TVW Institute Child health Research	\$15,000
Formative evaluation of a physical activity and nutrition program for Western Australian primary schools	Edith Cowan University	\$5000
Travel grants		\$12,000
<b>Total other research grants</b>		<b>\$59,000</b>

**TOTAL RESEARCH FUNDED \$1,940,475**

## QUEENSLAND CANCER FUND

### Research grants

2006-2007

Dr Geoffrey Beadle, Wesley Research Institute	The effect of adjuvant chemotherapy on cognitive functioning in early breast cancer	\$75,000
Dr Lisa Chopin, Queensland University of Technology	The role of autocrine ghrelin, a growth hormone releasing peptide, and a novel preproghrelin variant in breast cancer	\$75,000
Prof Judith Clements, Queensland University of Technology	Role of prostatic Kallikreins in in vitro and in vivo human bone models of prostate cancer bone metastasis	\$75,000
Prof Thomas Gonda,	Role, and potential for therapeutic targeting, of transcriptional co-regulators	\$75,000

University of Queensland	in transformation by the MYB oncogene	
Dr Stuart Kellie, University of Queensland	The role of DEP-1 as a tumour suppressor in breast cancer	\$75,000
Prof Anne Kelso, Queensland Institute of Medical Research	Differential regulation of perforin and granzyme gene expression in CD8+ T lymphocytes	\$75,000
Prof Martin Lavin, Queensland Institute of Medical Research	Functional Importance of ATR - dependent Mre11 phosphorylation in response to stalled DNA replication forks	\$75,000
Dr Kelli MacDonald, Queensland Institute of Medical Research	Lineage specific roles of SOCS3 in the regulation of GVHD	\$75,000
Prof Denis Moss, Queensland Institute of Medical Research	A phase I trial on adoptive transfer of EBV-specific cytotoxic T cells to nasopharyngeal carcinoma patients	\$118,000
Dr Jiri Neuzil, Griffith University	Vitamin E analogues as selective modulators of the FGF-FGFR signalling in malignant mesothelioma	\$75,000
A/Prof Andreas Obermair, Royal Brisbane Hospital Research Foundation	Total Laparoscopic Hysterectomy (TLH) vs Total Abdominal Hysterectomy (TAH) for the Treatment of Endometrial Cancer	\$75,000
Dr Sandro Porceddu, Princess Alexandra Hospital	Post-operative chemo-radiotherapy vs radiotherapy in high risk cutaneous squamous cell carcinoma of head and neck	\$75,000
Dr Alison Rice, Mater Medical Research Institute	Fanning the Fire: combination immunotherapy to treat relapsed leukaemia post transplant	\$75,000
A/Prof Nicholas Saunders, University of Queensland	The molecular basis for the initiation of squamous differentiation	\$75,000
Dr Aaron Smith, University of Queensland	Elucidating PPARgamma regulation of melanocytic cell function and tumorigenesis	\$75,000
A/Prof Paul Vasey, University of Sydney	Carboplatin Flat Dosing versus Inpatient Dose Escalation in First Line Chemotherapy of Ovarian Cancer	\$8000
Prof Craig Veitch, James Cook University	Experiences of colorectal cancer and oncology services: a rural/urban comparison to identify locational differences	\$61,625
Dr Penelope Webb, Queensland Institute of Medical Research	Folate and related micronutrients, folate metabolising genes and risk of ovarian cancer	\$75,000
Dr Ming Wei, University of Queensland	Development of a novel gene therapy vector for multiple modalities of tumour killing	\$75,000
Dr Joanne Young, Queensland Institute of Medical Research	Molecular Pathways in Endometrial Cancer	\$75,000
Dr Kong-Nan Zhao, University of Queensland	Molecular mechanisms of regulatory expression of human papillomavirus L1 genes in keratinocytes	\$75,000
2006-2008		
Dr Graeme Walker, Queensland Institute of Medical Research	Mechanisms of UVR-induced melanoma in melanoma-prone mice	\$100,000
2005-2006		
Dr Lisa Chopin, Queensland University of Technology	Ghrelin receptor isoforms in prostate cancer proliferation heterodimerisation and signalling cross-talk	
Dr Brian Gabrielli, University of Queensland	G2 phase cdk4 activity regulates expression of p fidelity of mitosis: a target for UV-induced p16 expression	
A/Prof Frank Gardiner, University of Queensland	Multiple molecular markers for prostate cancer diagnosis from enriched cells from ejaculate	\$73,700
A/Prof Nicholas Hayward, Queensland Institute of Medical Research	Identification of novel tumour suppressor genes in melanoma using array-CGH	\$73,700
Dr Geoffrey Hill, Queensland Institute of Medical Research	Host B cells and Graft-versus-Host Disease	\$73,700
Dr Kum Kum Khanna, Queensland Institute of Medical Research	Characterisation of a novel protein implicated in breast cancer progression	\$73,700
Dr Norbert Kienzle, Queensland Institute of Medical Research	In Vivo functions of CD8low T cells	\$73,700



Dr Graham Leggatt, University of Queensland	The role of NKT and CD8 cells in tumour immunotherapy using epithelial tumour models	\$73,700
Dr Xiao Song Liu, University of Queensland	Optimising immunotherapy in tumour antigen experienced host	\$73,700
Dr Kelly Loffler, Queensland Institute of Medical Research	Molecular mechanisms of insulinoma development	\$73,700
A/Prof Michael McGuckin, Mater Medical Research Institute	CA125 (MUC16) in the immunology of ovarian cancer	\$73,700
Dr Andrew Nicol, University of Queensland	Immune therapy for melanoma with dendritic cells co-pulsed with $\alpha$ -galactosylceramide and peptides	\$73,700
Prof Michael O'Rourke, Mater Medical Research Institute	Phase III Trial of an immunotherapy for Stage III (AJCC) melanoma based on cultured autologous dendritic cells presenting autologous tumour cell analysis	\$73,700
Dr Kristen Radford, Mater Medical Research Institute	Selection of prostate-derived kallikreins for dendritic cell immunotherapy	\$73,700
Dr Kevin Spring, Queensland Institute of Medical Research	Role of oncogenic BRAF (V599E) mutation in the molecular pathogenesis of sporadic colorectal cancer	\$73,700
Dr Alpha Yap, University of Queensland	Tiam-1: a key regulator of E-cadherin signalling and epithelial organisation	\$73,700
Dr Joanne Young, Queensland Institute of Medical Research	Characterisation of a novel syndrome of familial colorectal cancer based on the serrated pathway of tumour development	\$73,700
Prof Phyllis Butow, University of Sydney	Quality of life and psychosocial predictors of outcome in a population based study of ovarian cancer	\$70,870
Dr Maher Gandhi, QIMR	EBV-specific Cytotoxic T Lymphocytes as Tools for Adoptive Immunotherapy for EBV-positive Hodgkin Lymphoma	\$73,700
Dr Michael Michael, Peter MacCallum Cancer Centre	Randomised Phase II study of two regimens of palliative chemoradiation therapy in the management of locally advanced Non-Small Cell Lung Cancer	\$18,530
2005- 2007		
Prof David Bowtell, Peter MacCallum Cancer Centre	Molecular epidemiology of ovarian cancer: The Australian Ovarian Cancer Study – Clinical follow-up core.	\$71,960
Prof John Simes, University of Sydney	Intermediate & high risk, resected gastro-intestinal stromal tumours expressing kit: RCT of adjuvant imatinib mesylate	\$11,140
Dr William Warren, James Cook University	The role of the "deflated" gene in the control of cell proliferation	\$73,700
<b>Total research grants</b>		<b>\$3,210,425</b>
<b>Fellowships</b>		
Senior Research Fellowship Program		\$421,059
M McGuckin, Mater Medical Research Institute		
P Webb, Queensland Institute of Medical Research		
G Kay, Queensland Institute of Medical Research		
Jean-Pierre Levesque, Mater Medical Research Institute		
<b>Total Fellowships</b>		<b>\$421,059</b>
<b>Epidemiology and Psycho-Oncology Research Programs</b>		
Cancer Epidemiology Unit		\$1,048,400
Psycho-Oncology Research Unit		\$494,048
Queensland Cancer Risk Study		\$93,723
Prostate Cancer Supportive Care & Patient Outcomes Trial		\$399,416
<b>Total Epidemiology and Psycho-Oncology Research Programs</b>		<b>\$2,035,587</b>
<b>Other Research Grants</b>		
Queensland Family Bowel Cancer Registry		\$50,000
Australian Paediatric Cancer Registry		\$83,404
Colorectal Cancer & Quality of Life Study		\$55,200



Skin Clinics Project	\$62,652
<b>Total Other Research Grants</b>	<b>\$251,256</b>
<b>PhD Program 2006</b>	
2006 – 2008	
John Earnshaw Scholar 2006	
C Zapata, The University of Queensland	
M Davidson, The University of Queensland	
2005 – 2007	
John Earnshaw Scholar 2005	
M Hsueh-Li Lai, Queensland Institute Medical Research	
K Wynn, Queensland Institute Medical Research	
C Morais, University of Queensland	
2004 – 2006	
John Earnshaw Scholar 2004	
M Jones, Queensland Institute of Medical Research	
A Ramsay, Queensland University of Technology	
S Mattarollo, University of Queensland	
<b>Total PhD Program 2006</b>	<b>\$175,600</b>
<b>Hospital Based – Data Managers</b>	
Royal Children’s Hospital	
Mater Hospital – Oncology Centre	
Royal Brisbane Hospital	- Radiation Oncology - Medical Oncology - Gynaecology Oncology
Princess Alexandra Hospital	
Darling Downs Medical Oncology Unit	
Mater Children’s Hospital	
Townsville Hospital	
<b>Data Managers Total</b>	<b>\$598,744</b>
<b>TOTAL RESEARCH FUNDING</b>	<b>\$6,692,671</b>

**NATIONAL BREAST CANCER FOUNDATION**

**Research Grants**

**NEW SOUTH WALES**

NBCF Postdoctoral Fellowship L Cubeddu University of Sydney	LMO4-DEAF-1 interactions in cellular development and breast cancer	\$67,500
NBCF Scholarship K Skelding, University Of Newcastle	Viral Oncolysis of Human Breast Cancer	\$30,000
NBCF Concept Award C Clarke, University of Sydney	Cell architectural determinants of transcriptional disruption in breast cancer	\$75,000
NBCF Concept Award S Jones, University of Wollongong	Communicating the importance of breast cancer screening via counterfactual thinking messages	\$74,313
Kathleen Cuninghame Research Grant M Eisenbruch, University Of NSW	Understanding barriers to effective cross-cultural communication about prognosis of metastatic breast cancer	\$105,000
Kathleen Cuninghame Research Grant S Clark, Garvan Institute	Epigenetic activation of c-fms oncogene in breast cancer	\$73,250
Kathleen Cuninghame Research Grant G Llewellyn, University Of Sydney	Optimising participation by women with disabilities in mammography screening	\$67,958
Kathleen Cuninghame Research Grant C Scott, University Of Sydney	Role of a soluble receptor in regulating proliferation in breast cancer	\$65,250

**AUSTRALIAN BEHAVIOURAL RESEARCH IN CANCER**

**New Results**

n Centre for Cancer Control Research and Tobacco Control Research Evaluation (TCRE) SA

Monograph series (CCCR)

The Centre published its 8th monograph on South Australian cancer statistics, entitled Time trends in cancer mortality in South Australia between 1990 and 2011. The monograph showed that cancer now accounts for about 28% of deaths in South Australia. It was reassuring that age-adjusted death rates between 1990 and 2003 showed a 10-year reduction of 12% in males and 8% in females.

Cancers contributing to reductions in males included those with a primary site of lung (24% reduction), prostate (18% reduction), large bowel (17% reduction) and stomach (26% reduction), whereas cancers contributing to reductions in females included those with a primary site of breast (19% reduction), large bowel (13% reduction), stomach (33% reduction) and cervix (40% reduction).

Factors responsible for these reductions are considered to include:

- n Male lung cancer – reduced tobacco smoking
- n Female breast cancer – earlier detection through screening mammography and gains in adjuvant therapy
- n Prostate cancer and large bowel cancer – potential treatment gains and earlier detection
- n Stomach cancer – improved refrigeration, potentially reduced infection with Helicobacter pylori, and in some instances, increased consumption of fruit and vegetables and a reduced salt intake.
- n Cervix cancer – increased screening coverage of older women and other high-risk groups.

Despite reductions in age-adjusted mortality rates for all cancers combined, absolute numbers of cancer deaths are projected to increase by about 9% in the 10 years to 2011, due to increases in population size and ageing. This will impose upward pressure on end-of-life cancer services.

The health behavioural implications of these mortality trends have been reviewed and opportunities for interventional studies considered.

Patient and carer perceptions of cancer care study

Telephone surveys were conducted with approximately 470 cancer patients being treated at 2 major public hospitals in South Australia and 350 carers of their carers to measure their perception of the care provided to them during admission and at discharge from hospital. Findings suggest that patients and carers perceive the

clinical care provided to be very good. Issues that need addressing in terms of improving experiences for both patients and their carers include the provision of more written information, enhanced psychosocial support and better planning and communication around discharge. In general, carers reported less favourable experiences than patients. Results were similar at both hospitals.

Referrer feedback on the value of the respite care program of The Cancer Council South Australia

A brief questionnaire was sent to all health professionals who referred clients to The Cancer Council South Australia’s (TCCSA) Respite Care program during the first 6 months of 2005. The purpose of the questionnaire was to determine whether the program was meeting the needs of their clients and was still necessary given the availability of commonwealth grants for carer respite. Results indicate that TCCSA’s Respite Care Program is an important source of funding and is perceived by some to provide more flexibility than the Commonwealth Carers Respite Funding. Often both sources of respite funding are used to create an extended care package that allows patients to die at home, which may not have been possible otherwise.

Evaluation of the local government sun protection program

The local government sun protection survey has been conducted in 1999, 2002 and 2005. These surveys have examined activities undertaken by local governments to enhance sun protection for community members, as well as council employees. Results show some improvements, particularly in relation to councils recognising their role in protecting community members from excess sun exposure. Legislative requirements have resulted in substantial improvements in relation to protecting council workers, however progress in the area of shade creation has been much slower. Limited funding is a major barrier for some councils. Further gains are most likely through taking an advocacy approach at the Local Government Association and State Government levels, with the aim of strengthening legislative requirements for councils to protect it’s community members.

Evaluation of the 2005 Quit television campaign – “Bubblewrap”

In May 2005, Quit SA aired a new television campaign “Bubblewrap”. The commercial featured a pair of lungs made from bubble wrap, with the bubbles being burnt by a cigarette. Responses of smokers to the campaign were very favourable. Comments reflected that the execution of the commercial was effective in communicating its message, and the content of the

message itself was seen as important and motivating to prompt quitting.

## Cinema Project

The Cancer Council NSW developed an anti-smoking advertisement for the cinema. The intention was to place the advertisement before movies which are seen by young people and which include considerable smoking. It was hoped that the anti-smoking advertisement would help to "inoculate" young people against the pro-smoking depictions of tobacco use in the movies, by raising their awareness and critical analysis of smoking in movies. A controlled trial was established and South Australia administered an arm of the trial. The Cancer Council NSW has the findings.

## Keep Left Youth Smoking Cessations Workshop

The Keep Left Youth Smoking Cessation Guide was developed by Curtin University of Technology in Western Australia for the Smoking Cessation for Youth Project. The guide was developed as a resource for school nurses to: encourage students who smoke experimentally or occasionally to quit; reduce or prevent progression to smoking more; and encourage students who smoke regularly to quit or reduce the number of cigarettes they smoke.

Quit SA adopted the guide for use in schools and ran four workshops. Attendees were asked to complete evaluation forms at the end of the workshop. Overall the feedback was positive, the workshops were considered to be a good introduction to the cessation guide, which was widely accepted as a great mechanism for teaching students and staff how to quit smoking. They were also useful in educating staff on ways to implement this guide into their own drug strategy program.

## Review of the Australian Quitline Services: in preparation for new cigarette packet health warnings

In March 2006, graphic cigarette packet warnings will be introduced in Australia. In addition to the new graphic images, the Quitline number is being displayed prominently on cigarette packets for the first time. This review was undertaken to identify the likely impact of these initiatives on the Australian Quitline Service, to review the Quitline service in its current form and to make recommendations about mechanisms that would enable the Quitline to deliver a responsive, consistent, research base and effective service to smokers in Australia. It was found that Quitline, though administered differently in each state and territory, is more consistent than it is different. The review of the Quitline found that the callers to the Quitline from anywhere in Australia would receive a good level of service, however there was room to enhance consistency and service. Recommendations were that a defined set of Minimum National Standards be implemented.

## Critics' Choice

The Critics' Choice program is an anti-tobacco resource utilised in schools across South Australia. Students were asked to critique 12 commercials and to vote for which commercial they thought would most likely prevent them from smoking. Teachers were also asked to evaluate the program. Results from the teachers survey indicate that the resource is easy to use and integrate into school lessons and complements the existing drug and tobacco component of the curriculum. It was found that the Critics' Choice resource raised awareness, as well as influenced perceptions about smoking. Despite findings being specific to the commercials included in the 2004 resource, the findings suggest that the Critics' Choice resource is a valuable educatory tool.

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

### New UV Index Format

In October 2005 Dr Owen Carter was commissioned by the National Skin Cancer Committee (NSCC) of The Cancer Council Australia and the Bureau of Meteorology to test various UV Index display concepts designed for inclusion on the daily weather forecast pages of newspapers throughout Australia. Four concepts were tested with a convenience sample of 300 Perth residents in October 2005. Results strongly favoured the Bell Curve concept over the traditional method of reporting the UV index and two other alternatives. The Bell Curve concept performed particularly well as it highlights the variability of UV conditions throughout the day and the importance of solar noon. This format has now been adopted by 48 newspapers around Australia.

### Cancer in the workplace

The Cancer Council WA commissioned CBRCC to conduct a series of interviews and focus groups with people with cancer and their employers, to discuss their experiences of continuing to work while undergoing treatment. The results suggest that a majority of people with cancer chose to continue working throughout their cancer experience, with varying levels of flexibility and support from their employers. What was highlighted by the consultations is the important role the workplace has in facilitating the cancer journey of sufferers by providing a mentally cathartic semblance of continuity while their cancer treatment progresses and ongoing exposure to the social support networks provided by co-workers. Guidelines were developed from the results to facilitate workplace challenges that arise when an employee is diagnosed with cancer.

### 1997-2005 National Quit Report Audit

Under the auspices of the National Quit Coordinators group, CBRCC has received over 350 mainly unpublished research reports from the Quit offices of all states of Australia from 1997-2005. Dr Owen Carter presented a talk entitled "Looking Back, Moving Forward: We're Not Done With Smoking Yet" which outlined preliminary results

from television campaign evaluations. These suggest that: hard-hitting, visceral ads are highly effective; clear figure ground executions are most memorable; attention is best gained by presenting new information; high media weights predict high advertising cut-through and recognition rates (mediated by message and execution); sadness and fear are better motivators to quit than humour and entertainment; and advertisements aimed at adults are equally effective on teenagers.

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

### National study of sun protection behaviours and related attitudes

In 2003, with funding from state Cancer Councils, the Australian Government Department of Health and Ageing and the National Cancer Control Initiative, a research group coordinated by CBRC was convened to carry out the first national survey to monitor Australians' sun protection behaviour to assist the development of skin cancer prevention strategies.

A total of 5073 interviews of adults, 699 interviews of adolescents and 1140 parent proxy reports of children aged up to 11 years were conducted on Monday evenings over eight weeks of summer. Reports released in 2004 and 2005 on adults and adolescents have previously been circulated to Cancer Councils.

In the third report on children released in late 2005, compared with adults and adolescents, children were overall better protected from the sun during their outdoor activities. Parent's reports indicated 73% of children were outdoors during peak UV times on summer weekends and spent on average 110 minutes outdoors. When outdoors, 42% of children wore a protective style of hat, 58% wore sunscreen (SPF15+), while shade, sunglasses and clothing were less commonly utilised. However, 8% of children were sunburnt when they were outdoors on summer weekends suggesting room for further improvement. A significant association with parent role modelling of sun protective behaviours was also found. These and other detailed findings of the study will assist Cancer Councils in refining specific strategies to encourage children's skin cancer prevention.

### Exposure to and perceptions of the dangers and illnesses of passive smoking among Victorians: 2004

Data from the 2004 Victorian Population Survey indicates that many Victorian adults are exposed to passive smoking. Almost half (48%) reported being somewhere in the past 48 hours where people have been smoking cigarettes. Most respondents (80%) said they had some level of concern about being exposed to passive smoking. Seventy-three per cent indicated they believed lung cancer can be caused by passive smoking, followed by asthma (70%), emphysema (65%) bronchitis (61%) and heart disease (60%). There was a relatively low level of belief among respondents that sudden infant

death (30%), miscarriage (30%) and cancer of the cervix (16%), can be caused by passive smoking. Although most non-smokers suggested they do not like people smoking near them, only 6% of non-smokers said they would ask a person to stop smoking if they lit up a cigarette nearby, with the majority reporting they would simply move away (71%) or do nothing (18%).

Overall, this report suggests that many Victorian adults are concerned about being exposed to second-hand smoke and believe that passive smoking can cause a range of serious illnesses. Furthermore, findings suggest that using a 'common courtesy' approach (asking people not to smoke) is not effective on its own to eliminate exposure to second-hand smoke, and that legislative reforms are likely to be the only effective strategy to eliminate exposure.

The full research paper can be viewed at <http://www.cancervic.org.au/cbrc-papers/rps17-2005.pdf>

### Does the effect of anti-smoking television advertising on calls to a Quitline vary by socioeconomic status?

It has been suggested that smoking interventions are less effective with low socioeconomic groups. In a recent paper, Mohammad Siahpush, along with Melanie Wakefield, Matt Spittal and Sarah Durkin from CBRC assessed socioeconomic variations in the impact of anti-tobacco television advertising on the number of calls to the Quitline in Victoria. These television advertisements predominantly featured hard-hitting messages on the health risks of smoking, plus promotion of the Quitline in Victoria. The outcome measure in the analysis was the number of calls to the Quitline for each week and each socioeconomic group for the period January 2001 to March 2004. Socioeconomic status (SES) was derived from the caller's postcode using the Index of Socio-economic Disadvantage provided by the Australian Bureau of Statistics. The exposure measure was weekly Target Audience Rating Points (TARPs, a standard measure of television advertising weight) for anti-tobacco advertising broadcast in Victoria over the same period. The study found that call volume did not vary by SES in Victoria. That is, the increase in the number of Quitline calls as a response to a given increase in the volume of advertising was the same across socioeconomic groups. The findings indicate that anti-smoking media campaigns can prompt help seeking for quitting smoking equally among people of lower and higher SES.

Visit our website [www.cancervic.org.au/cbrc](http://www.cancervic.org.au/cbrc) for information about current CBRC research projects, details of our latest publications and access to the CBRC Research Paper Series.

## n Centre for Health Research & Psycho-oncology (ChERP)

A monetary incentive increases postal survey response rates for pharmacists



Postal surveys are a well used tool for collecting data from a range of health related settings. Various incentives have been trialled to maximise response rates, with one of the most effective strategies being the use of a monetary incentive. Important community-based health care providers such as retail or community pharmacists have received little attention to date.

Dr Christine Paul and colleagues undertook research to explore the impact of a \$20 incentive on response rates for pharmacists. A sample of 700 pharmacies in NSW was selected at random, with pharmacies eligible to participate if they had sold any Nicotine Replacement Therapy or bupropion in the previous month. The pharmacist in charge was sent a primer postcard followed by a brief survey regarding pharmacotherapies and advice for smoking cessation. One mail reminder and then one telephone reminder was provided to non-responders. Half of the sample was randomly allocated to receive an offer of \$20 gift voucher. The response rate for the voucher group was 65.9% and 53.5% for the no-voucher group. The odds of response from the voucher group was 1.68 (95% CI=1.23, 2.30) times greater than for the non-voucher group.

The results indicate that a significant increase in pharmacists' response rates to a postal survey can be achieved using a modest monetary incentive and that this incentive acts independently from using reminders that also increase response rates.

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

A new support program for men diagnosed with prostate cancer: The ProsCan program

Men diagnosed with prostate cancer experience a range of psychosocial and physical difficulties and in particular high levels of decision-related distress that can persist for long periods even after treatment has been completed. However, although the benefits of psychosocial interventions for patients with cancer are well accepted, research in this area specifically targeting men with prostate cancer is limited. In response, the Psycho-Oncology Research Unit within the VCRCC, in collaboration with the Northern Section of the Urological Society of Australasia, is undertaking a randomised controlled trial of a new support intervention, involving approximately 600 men diagnosed with localised disease.

The support intervention is a multi-component intervention applying therapy strategies proven to be effective in previous research and targeting these to specific challenges men experience in the early diagnostic and treatment phase of prostate cancer. On the basis that cancer threat appraisal has been found to predict decision-related distress the support intervention integrates psycho-education (ie, stress, coping and problem-solving models) and decision support in a novel approach. Structured counselling protocols and patient

education materials underpin the telephone-based nurse delivered intervention that commences at diagnosis and extends six to eight weeks after treatment, with a booster session five months after treatment.

A pilot study of the support intervention was undertaken in late 2004 with 20 men newly diagnosed with localised prostate cancer (mean age 63.2 years; 85% married or living with a partner). Preliminary analyses from the pilot study found that men's decisional uncertainty and overall decisional conflict were significantly lower after the intervention.

Recruitment for the main study began in April 2005. Recruitment is conducted within the private practices of urologists in Brisbane, Townsville and Mackay, and the urology departments of eight public hospitals in these regions. All men participating in the randomised controlled trial complete written questionnaires and short interviews at diagnosis and again at two, six, 12 and 24 months post-treatment. To date, out of 388 patients notified to ProsCan, 352 have been diagnosed with localised disease and of these 277 (78.7%) patients have agreed to participate in the trial of the support intervention.

This project forms part of a larger program of research which also aims to: examine the patterns of care and health-related outcomes for all men diagnosed with prostate cancer (localised or advanced) in Queensland; and in collaboration with the Queensland University of Technology, examine the genetic biomarkers associated with prostate cancer and their relationship to clinical outcomes.

Achieving broad reach translation for decision support in cancer

Cancer Helplines that provide broad access for the public to information and supportive cancer services are now widely available with established services in the UK, Europe, Australia, North America and elsewhere. While these services focus on the provision of high quality patient education, their potential role in supporting people facing cancer-related decisions has not yet been described. Decision support is a key need area in cancer care throughout the cancer trajectory, from cancer risk reduction and prevention, through early detection, diagnosis, treatment and to palliation or survivorship.

In a collaboration with the Ottawa Health Research Institute, focus groups were first held with Cancer Helpline staff in Queensland to identify cancer decisions frequently raised by helpline callers and barriers to addressing decision support needs of these callers. Following this, decision support skills training programs were held with 32 Helpline nurses and allied health professionals throughout Queensland with pre-post assessment of decision support knowledge and

skills. The training program consisted of a web-based autotutorial, a three-hour seminar and was evaluated with pre and post simulated calls and knowledge, attitude and behaviour questionnaires.

After the training program, staff reported increased confidence in providing decision support and more positive attitudes towards decision support as a component of the Cancer Helpline service.

Decision support is set to increase in importance in line with the trend for patients to prefer greater involvement in decision making and increasing treatment choices and complexity of those choices.

Evaluation of the effectiveness of a targeted educational psychosocial workshop for Australian health professionals working in cancer care

This research aimed to evaluate the effectiveness of an educational workshop for oncology health professionals about the clinical practice guidelines for the psychosocial care of adults with cancer. In collaboration with the University of Queensland, a workshop was developed that integrated the guidelines with a stepped care approach to psychosocial care. The workshop included small group discussions and a lecture style format overviewing the psychosocial distress associated with cancer and risk factors for this distress; barriers to support; effective strategies for supporting patients and their families; and the tiered model of psychosocial care.

A total of 107 health professionals participated in this study from three regional locations in Queensland. The majority of participants were nurses from the community, domiciliary, aged care, practice nursing and hospital fields of expertise. Over 93% of participants were female, with a mean of nearly 23 years of clinical experience and a mean age of 48 years. Approximately 53% of participants were not at all familiar with the NHMRC Clinical Practice Guidelines for the psychosocial care of adults with cancer and 40% were somewhat familiar before the workshop. Overall, participants rated the workshop between good and excellent.

After the workshop, participants rated their knowledge more highly in the areas of identification of psychosocial risk factors, psychosocial treatment, referral networks within their communities and understanding psychosocial effects of cancer. Participants' confidence in referring cancer patients to appropriate external resource services and identifying distress were increased.

Extension of this work is planned for 2006.

Clinicians' attitudes towards prostate cancer support groups

Clinicians' attitudes have been found to be related to patients' perceptions of their experiences at prostate cancer support groups. In collaboration with the Australian Prostate Cancer Collaboration, The Cancer

Council NSW and The Cancer Council Victoria, a project was undertaken to assess clinicians' knowledge and attitudes towards these groups. In all, 36 clinicians from across Australia participated in this study. Analysis of the interviews revealed that peer support was rated positively by most clinicians and most report a fair to good knowledge of groups. However, less than one quarter of clinicians regularly refer to support groups. Further analysis is underway.

Prostate Cancer GP Education Program

The Queensland Cancer Fund, in collaboration with the Australian Prostate Cancer Collaboration, Queensland Faculty of the Royal Australian College of General Practitioners, the Northern Section of the Urological Society of Australasia, the National Cancer Control Initiative and other relevant groups recently developed a new education program and resource to assist GPs in supporting men to make informed choices about protein specific antigen (PSA) testing. The development process took place over a 12 month period with input from a range of health practitioners and experts including urologists, GP's, psychologists, epidemiologists, educationalists, medico-legal experts and consumer groups.

The program was piloted with GPs in two regional and one major metropolitan setting and found the program was effective in increasing GPs' knowledge about and confidence in discussing PSA testing with men. The workshop format and the practice resources were very positively evaluated. The program was subsequently further piloted in Victoria by The Cancer Council Victoria and is extending nationally. We are now developing the workshop materials into an online learning program for GPs with funding from Andrology Australia and in collaboration with gplearning, the online educational arm of the RACGP, and the Australian Prostate Cancer Collaboration.

Oncology nurses work satisfaction, job stress and preferences for further education

We surveyed 388 nurses working in oncology to assess their levels of job stress and job satisfaction and their preferences for further education in cancer care. Overall, the nurses reported a low intention to leave cancer nursing with more experienced nurses more satisfied and less stressed. A trend was observed for nurses who were working part time to report more stress in managing their workload. Nurses desired more training in pain and symptom management, palliative care, psychosocial aspects of cancer care and communication skills, with a preference for community-based seminars rather than courses in tertiary settings.

Easily accessed and practice-focused educational upskilling and mentoring provides a potential mechanism for maintaining the oncology nursing workforce.

Optimism and psychosocial outcomes in men newly

diagnosed with prostate cancer

In order to effectively meet the supportive care needs of men diagnosed with prostate cancer, research needs to identify both men who are at risk of poorer adjustment following diagnosis and treatment of prostate cancer and effective treatment targets. In collaboration with Griffith University we examined the predictors of the course of psychological adjustment over time for men diagnosed with localised prostate cancer in 111 newly diagnosed men. Multilevel modelling techniques were applied to the data across four time periods: pre-treatment, and two months, 12 months and 24 months post-treatment.

Optimistic men were more likely to make a positive threat appraisal in the early stages of prostate cancer diagnosis and two years after treatment, the positivity of this appraisal results in better outcomes. By contrast, men who are not optimistic were less likely to make a positive cognitive appraisal of their situation and experienced more negative psychological outcomes. Men who are already optimistic at first presentation in the early stages of cancer treatment may require less intensive intervention as they are likely to already be utilising positive cognitions and coping strategies that are associated with positive psychological outcomes. These results have implications for the development of supportive care programs for men diagnosed with localised prostate cancer.

Skin cancer campaign targeting Queensland men under 40 years

The Queensland Cancer Fund Queensland Cancer Risk Study (2005) found that men aged 20-39 years are at increased risk of sunburn. This is especially true among those men who live in metropolitan areas of Queensland. Accordingly, focus groups were held with men to develop a sun safety educational campaign, which has been developed for the 2005/2006 summer, targeting this group. The key deliverables for this proposal are a radio community service announcement, brochure and poster with the concept "Because Grown-Up Skin Needs Protection Too". Further development of the campaign and evaluation will take place in 2006.

Research in the Pipeline

n TCRE

Changes in State Government tobacco regulations

Amendments to the Tobacco Products Regulation Act (1997) introduced a phased in approach to smoke-free laws that affected workplaces, hospitality venues and tobacco retailers in South Australia. (See <http://www.tobaccolaws.sa.gov.au/> for more details.) TCRE has planned an extensive evaluation around the smoke-free laws. To date TCRE has evaluated the impact of the communication campaign around phase one of the laws and analysed call volume to a tobacco control Infoline promoted to the public and hospitality industry to answer

queries related to the laws. TCRE has also coordinated baseline and follow-up surveys with community and bar owner/manager to: assess support for and the impact of phase one of the restrictions; support for total restrictions in hospitality venues in 2007; impact on enjoyment, patronage and smoking behaviour. The results will be published in mid 2006.

n CBRCC

Life beyond cancer

The Cancer Council WA identified that people with cancer are typically well supported in both the diagnosis and treatment stage of their cancer journey, but experience difficulty accessing sufficient practical and emotional support during the post-treatment stage. CBRCC is currently analysing the results of nine focus groups and interviews with cancer survivors discussing their post-treatment experiences with the aim of developing a contemporary reference resource. The resource will be utilised by cancer support volunteers to enable clients to have an improved quality of life beyond their cancer diagnosis and treatment. A report is anticipated by mid-March 2006.

Television advertising to increase fruit consumption

Professor Rob Donovan and Dr Owen Carter of CBRCC have recently been awarded \$155,000 over two years by Healthway to investigate using television advertising to increase fruit consumption in Western Australian children. Ms Linda Portsmouth will be using the project to complete a PhD under supervision at CBRCC. The study will explore the public health implications of recent breakthrough research which has established that advertising can change what adult consumers remember about their experience of using a product, without the awareness of the consumer. This advertising effect will be investigated to discover if advertising before consumption can positively enhance children's anticipation of fruit eating, so making them judge these experiences as more enjoyable than they really are.

n CBRC

The effects of anti-smoking advertising, tobacco-related press coverage and tobacco control policies on smoking behaviour.

This study will relate indices of exposure to tobacco control media and policies to change in monthly smoking prevalence. Monthly population survey data from 1979 to 2005, supplied under special arrangement to CBRC by Roy Morgan Research for the five largest Australian media markets, will be analysed to assess changes in smoking prevalence and consumption. The project will add indices of exposure to televised anti-smoking advertising from state and national campaigns and pharmaceutical company advertising for nicotine replacement therapy, as well as exposure to newspaper coverage on tobacco issues and dates of tobacco policy change (tobacco tax, smoke-free laws etc.) The project will then investigate the role of these tobacco control

efforts on changes in smoking over time among the population overall and within population subgroups. The project coordinator for this study is Sarah Durkin.

DCIS management since publication of clinical practice recommendations: surgeons' practices and women's experiences.

Ductal Carcinoma in Situ of the breast (DCIS) now represents 15% of all new cases of breast cancer. Although a benign disease, its diagnosis increases a woman's risk of developing invasive breast cancer and the goal of treatment is prevention of invasive disease. To assist clinicians in making treatment decisions, the National Breast Cancer Centre (NBCC) published a set of eight evidence-based, clinical practice recommendations for the management of DCIS in September 2003. To help women understand a diagnosis of DCIS and to increase their involvement in treatment decisions, NBCC released a consumer guide to DCIS and its treatment in 2004. This project aims to i) examine the impact of clinical practice recommendations for the management of DCIS of the breast on clinical practice by assessing change in practice between 2002/03 (pre recommendations) and 2006/07 (post recommendations release); ii) determine awareness of and attitudes towards the recommendations among surgeons treating DCIS; and iii) among women diagnosed with DCIS in 2006/07 examine their experience of the diagnosis and treatment, their understanding of the prognosis for DCIS and awareness of information resources. This project will be coordinated by Claire Davey and Myee Pruden.

n CHERP

Tobacco investment practices of superannuation funds

Previous research in Australia has demonstrated that community attitudes towards the tobacco industry are highly negative. However, public attitudes towards investments by superannuation organisations in the tobacco industry have never been investigated in an Australian study. It has been argued that one approach to tobacco control involves the economic isolation of the tobacco industry, since any market development by the industry will inevitably result in increased deaths. Superannuation organisations are the biggest investors in Australia, yet little is known about the degree of their involvement in tobacco industry ownership.

The study is being conducted by Dr Raoul Walsh and colleagues in two stages. The first stage surveyed 1,158 NSW residents about their views on the issue of investment in tobacco by superannuation funds. The survey was carried out in November 2004 and revealed that a majority of superannuation fund members object to their fund investing in the tobacco industry. Initial results indicate that 77% of respondents disagreed or strongly disagreed that it is ethical for superannuation funds and life insurance companies to invest in tobacco industry.

The second stage is a survey of medium to large

superannuation funds in relation to their tobacco industry investments. Currently in the final stages of data collection, more than 100 superannuation funds have responded to the survey about their specific investment practices in tobacco and factors which influence decisions about such investments.

n VCRCC

Documenting the experiences of women in the Amazon Heart Changing Gears motorcycle ride

Adventure activities to raise awareness and funds for breast cancer are increasingly common among breast cancer survivors. One recent activity held in Australia was the Amazon Heart Changing Gears motorcycle ride (<http://www.amazonheart.com/>). We used a qualitative methodology to investigate women's psychological and social experience of this event with particular reference to benefit finding, peer support, survivorship and breast cancer identity. All 22 of the young women in the ride chose to participate in the study which included pre and post ride in depth interviews and journaling during the ride. Longer term follow up is also planned. Analysis of preliminary data is underway.

Identification of the psychosocial care needs of people with cancer in regional Queensland (Townsville) using a tiered model of care

Research consistently highlights the disparity in psychosocial support care between urban, and regional and rural areas. In 2006 a three phase project in collaboration with The Townsville Hospital (TTH) and James Cook University will address this issue.

The first phase will assess existing pathways of care, psychosocial care and the unmet supportive care needs and adjustment outcomes of people with cancer treated at TTH. This will identify targets for improvement in the psychosocial care and management of cancer patients at TTH to guide phase two of the project that includes consultative workshops with key stakeholders to identify ways to improve care. Following this a regional model for psychosocial care will be developed and implemented.

The project is due to commence in January 2006, with the implementation of a regional model of psychosocial care to commence in late 2006 and early 2007.

A project to identify future directions for QCF smoking prevention programs for primary school children

Smoking is common among Queensland school students and the risk of initiating smoking dramatically increases with each passing year from 12 to 17 years of age. Ten per cent of students aged 12 -15 years smoke and this figure dramatically increases to 25 per cent for students aged 16-17 years. In addition to this, 49% of Queensland secondary school students have tried smoking and this percentage is higher than the national average. Adolescents caught smoking at school report



that they first tried smoking at a mean of 10 years of age. Prevention programs delivered in middle high school may therefore be too late for preventing smoking in a substantial proportion of students.

In collaboration with The University of Queensland a systematic review of national and international primary school prevention programs will be undertaken in 2006. This project will provide a strong basis for developing a smoking prevention program for Queensland primary schools. Importantly, the project will contribute to the development of a program that represents best practice in the inoculation of children against smoking uptake.

Passive smoking in private places community attitudes project

It is now well established that passive smoking is a direct cause of death and disease, including several types of cancer. Children are particularly vulnerable to passive smoke and exposure can lead to a number of illnesses and diseases in both the unborn and born child. Currently, 40% of Queensland children aged 0-14 live in a home with at least one smoking parent. This exposure to passive smoke results in 21 children under the age of five dying and 380 children under the age of five being hospitalised in Queensland each year.

Significant adverse health effects for both children and adults occur in private places and this area is now considered an emerging issue for tobacco control advocacy programs.

In collaboration with the University of Queensland a Passive Smoking in Private Places Community Attitudes Project will be undertaken in 2006. This project will obtain population based Queensland data on community attitudes and behaviours with regard to passive smoking in private places. This data will inform educational programs, as well as advocacy goals and provide a baseline for ongoing monitoring to further develop these areas.

Pool Cool Pilot Project

Skin cancer is one of the most common cancers in Australia, and it is also one of the most preventable. Few skin cancer prevention programs in outdoor settings, particularly public outdoor swimming pools, have been evaluated in controlled trials.

Because children, families and aquatics staff in Queensland spend many daylight hours exposed to the sun while minimally clothed, sun protection education at swimming sites can significantly affect important preventive behaviours. This study will pilot test the

Pool Cool program (Glanz et al, 2002) intervention that has been successful in the US in improving skin cancer prevention strategies at swimming pools. Pool Cool was designed to encourage sun safety at pools in Hawaii and Massachusetts and to increase environmental supports and policies for skin cancer prevention.

Over the 2005-2006 summer, QCF will be piloting a skin cancer awareness program in collaboration with four swimming pools in Townsville and Brisbane. The main objective of the program is to increase awareness, motivation, and sun protection practices among children aged 5-10 who take swimming lessons, their parents, pool staff (lifeguards, pool managers, and swim instructors) and other pool users, such as families or individuals at free or recreational swims. Specific interventions include: (1) a swim instructor training module; (2) a 10-lesson curriculum on sun safety that is presented by swim instructors as part of their classes; (3) sun protection messages, educational materials, and reminders for children and parents; and (4) provision of environmental supports including policy implementation, sunscreen provision, and signage.

The comparison group for this intervention will be an Active Healthy Living program to promote physical activity and healthy eating.

News

n TCRE

Dr Linda Foreman resigned as Group Executive Research and Development as of 22 December 2005. Professor David Roder has commenced as the new Group Executive Research and Development.

Marianne Hoey and Dr Valerie Sedivy have joined the TCRE team as evaluation officers. Sarah Ellis-Steinborner joined the team as an Administration Officer. TCRE staff attended the Third Australian Tobacco Control Conference in Sydney last November. Three oral presentations and a poster were given.

n CBRCC

New Director

Professor Rob Donovan stepped down as Director of CBRCC in 2005 but continues to work at the centre on a part-time basis on a number of projects. As of October 2005 he was replaced as Director by Professor Peter Howat, formerly the Head of the Department of Health Promotion at the School of Public Health at Curtin University.

3rd Australian Tobacco Control Conference

Two presentations were made by CBRCC staff at the

COSA ANNUAL SCIENTIFIC MEETING 2005

Sandro Porceddu ■ Meeting Convenor  
Email: [Sandro.Porceddu@health.qld.gov.au](mailto:Sandro.Porceddu@health.qld.gov.au)

The 32nd Annual Scientific Meeting (ASM) "Crossing Cancer Boundaries" was held at the Brisbane Convention and Exhibition Centre in November 2005.

The meeting was officially opened by Mr Stephen Robertson, Minister for Health Queensland, and COSA President Dr Stephen Ackland, and received traditional blessing from the Maroochy Barambah, Song-woman and Law-woman of the Turrbal People.

The meeting commenced with an excellent symposium on the Multidisciplinary Approach to Cancer Pain delivered by three of our international speakers. Professor Robert Buckman (Princess Margaret Hospital, Toronto, Canada) gave an entertaining talk on emotion handling which set the standard for the rest of the meeting.

Our invited international and national speakers all made significant contributions to the scientific component of the ASM. A record number of abstracts for poster and oral presentations were received resulting in a total of 100 posters and 81 presentations being accepted by the scientific committee. This resulted in high quality presentations, reflected by the significant media exposure received during the meeting. COSA ASM presentations featured in 68 media reports with 32 of those directly mentioning the meeting.

The conference was well-supported by industry and registrants, with 12 major sponsors, 29 exhibitors and over 600 three-day and single-day registrations resulting in a positive financial outcome.

There were a number of new initiatives at this meeting including accepted abstracts being published in the Asia-Pacific Journal of Clinical Oncology, the conference dinner was included in the registration fee which was a resounding success with nearly 440 attending and enjoying the entertainment provided by our Master of Ceremonies Stephen Ackland and the dance band.

A new award, The Tom Reeve Oration Award for Leadership in Cancer Care, was announced with the inaugural recipient being Emeritus Professor Tom Reeve

AC CBE. Many delegates chose to stay for the presentation on Friday afternoon, an indication of the esteem in which the cancer community hold Professor Reeve, whose impressive career has spanned 50 years. The Tom Reeve Oration Prize for Leadership in Cancer Care will be awarded each year, recognising a national or international leader in cancer management who has made significant contributions over a long period towards cancer care through research, clinical leadership and/or community service.



COSA President, Steve Ackland presents Emeritus Professor Tom Reeve with his award.

Congratulations to all our prize winners:

- n Best Oral Presentation – Suzanne Steginga
- n Best Abstract – Jeanette Vardy
- n Best Proffered – David Ball
- n Best Poster – Nicole Reeve
- n Student Prize – Jill Larsen

This year's COSA/MOGA Cancer Achievement Award, sponsored by Pierre Fabre, was awarded to Professor Ray Lowenthal.

I would like to acknowledge the great support provided by Margaret McJannett, Ruth Lilian, the local organising committee, The Cancer Council Australia, Queensland Cancer Fund, the American Society of Clinical Oncology and COSA Council.

We now look forward to the 33rd COSA ASM in Melbourne, to be held in conjunction with the Australian Health and Medical Research Congress, led by Sanchia Aranda and her team.

CROSSING THE BOUNDARIES: A NEW ERA IN CANCER CONSUMER PARTICIPATION

Report to COSA Annual Scientific Meeting, November 2005

Jane Cruickshank ■ Steering Committee, Cancer Voices Australia  
Email: [jane\\_cruickshank@yahoo.com](mailto:jane_cruickshank@yahoo.com)

A consumer forum has preceded the COSA Annual Scientific Meeting (ASM) each year since 2002. The 2005 consumer forum in Brisbane was planned by a group of cancer consumers, supported by the Queensland Cancer

Fund, who developed a program reflecting consumers' interests and quest for knowledge.

Last year, for the first time, the COSA ASM organising committee invited a consumer to report to the

Scientific Meeting about the issues raised at the consumer forum. This is a welcome development, providing an opportunity to bring issues of concern to consumers to the attention of clinicians, researchers and all key stakeholders. Consumers commented favourably on this new arrangement and view it as an important nexus to the clinical and scientific sector. It is a golden opportunity for cross fertilisation, ongoing dialogue and developing collaborative solutions to problems that involve and affect both the professional and consumer community.

## Cancer consumer advocacy in Australia

While still in its infancy, cancer consumer advocacy in Australia has undergone something of a boom in recent years, with leaps in our numbers, capacity and efficacy.

Cancer Voices organisations have been established in NSW, ACT, WA and Victoria in recent years and similar organisations or networks of cancer consumers are developing in each of the other states.

However, many issues of concern to people affected by cancer are national issues, either because they are within the Federal Government's jurisdiction, or because they cross state/territory "boundaries".

At a meeting in October 2005, hosted by The Cancer Council Australia, representatives of all the existing national (cancer type specific) and state/territory cancer consumer organisations agreed on the need for a new organisation capable of representing the common interests of people affected by all types of cancer at a national level. An interim steering committee was formed to progress its development.

The process may seem slow but we have learned that it is essential to have unity of purpose and intent if this organisation is to be sustainable and effective in the long term. We are increasingly hearing calls from the professional and government sector about "being consumer friendly" and "needing consumers' input", but these sentiments are meaningless if we don't have the infrastructure in place to support productive engagement.

## Issues from the forum

More than 110 participants from across Queensland and interstate attended the 2005 consumer forum, hearing presentations and discussing issues related to consumer advocacy, future directions in cancer treatment and supportive care.

In the final sessions, participants were invited to raise questions or issues for attention and reportage to the COSA meeting. Those that were obviously of most concern included:

- n Recognition of the role of full-time carer and carers' needs for support and training.
- n Access to services – particularly referral to support groups and external services as part of service delivery.

- n Inadequacies of the patient transport and accommodation assistance scheme.

- n Concerns of long-term cancer survivors – issues that will predominate as survival rates increase.

- n Underfunding of palliative care – particularly for community based services.

These are issues about which most clinicians would share consumers' concerns. Consumers have identified lots of things that need fixing in the health system, but our doctors and nurses could easily double the list of perceived anomalies! Consumers and clinicians have a dual responsibility to engage in effective dialogue and action, to improve the cancer journey for all who have to travel that rocky road.

## Crossing the boundaries

Our call to action is for greater collaboration at every opportunity, recognising that health professionals are instrumental in the development and delivery of care for people affected by cancer.

Consumers want support to engage with all key decision making bodies, our specific role being to provide trained and appropriate consumer representatives to voice our views and concerns. One of the barriers to engagement is the way we define ourselves as consumers – its meaning is often lost in a kind of bland expansive membership. By definition, a cancer "consumer" representative should be an individual who has personally experienced cancer or cared for someone with cancer. This definition includes health professionals, who can and do get cancer too.

Change can best be achieved in a spirit of cooperation with all the key stakeholders including health professionals, health departments and all those charged with the delivery of cancer services. We all have a unique perspective to bring to the table and consumers would like to do so on an equal basis. It is up to all of us to engage well.

It's time we began crossing those boundaries that we all seem so adept at setting in place, and to seek new ways of engaging with each other, by creating partnerships that will energise the way we think about cancer, and give patients and their families a meaningful avenue for informed decision making. To do this, all cancer organisations with a commitment to consumer involvement should adopt the principles of inclusiveness, reaching out, mutual respect, integrity, affirming diversity and, above all, adding value to the overall cancer journey.

Consumer input is not only desirable – it is essential in a democratic society. Indeed it is our combined efforts that will pay the greatest dividends. It is only by crossing these boundaries that we can achieve our shared goals.

## Australian of the Year award salutes important win in the war against cancer



Professor Ian Frazer's selection as Australian of the Year 2006 recognises that while cancer is an increasingly serious global health issue, scientists can significantly reduce cancer mortality through hard work and innovation.

The President of The Cancer Council Australia, Mrs Judith Roberts AO, said Professor Frazer's development of a vaccine, shown to prevent cervical cancer, could save the 270,000 lives lost to the disease

worldwide each year, especially in developing countries without screening programs. She said The Cancer Council Australia was particularly supportive of the award – not only because it helped to raise the profile of Professor Frazer's groundbreaking work, but also because he was The Cancer Council Australia's Vice President.

"Professor Frazer has worked tirelessly for 20 years on the development of the vaccine, which is shown to be 100 per cent effective in preventing persistent infection or disease associated with the subtypes of human papilloma virus that cause almost all cervical cancers," Mrs Roberts said.

"The fact that Professor Frazer also finds time to make an important contribution as Vice President of The Cancer Council Australia, a not-for-profit, community-based organisation, demonstrates the breadth of his commitment to reducing the impact of cancer."

## GPs to have cancer information for patients at their fingertips

Patients will be able to access comprehensive cancer information directly from their general practitioner with a new series of fact sheets launched by The Cancer Council Australia.

The Cancer Council's CEO, Professor Alan Coates, said GPs were an important source of information for patients who had been diagnosed with cancer or who might have a high cancer risk. "Evidence shows that patients diagnosed with cancer will visit their GP within 24 to 48 hours of diagnosis to get more information," Professor Coates said.

The fact sheets cover three topic areas: lifestyle and reducing your cancer risk, early detection and after diagnosis. The concise one-page fact sheets are designed for doctors to print off during a consultation.

GP Dr Murray Nixon said the facts sheets would provide patients with very useful information from a trusted source. "It's important that patients have something to take home to read in their own time," Dr Nixon said. "When someone has received bad news like a cancer diagnosis, it is very hard for them to take everything in at once. There is also a lot of demand from patients for information about different cancers and how they can reduce their risk, as well wanting information about the different diagnostic tests for cancer."

The Cancer Council facts sheets will be available directly to

doctors using Medical Director clinical software. Medical Director is used by 85%, or around 16,000 computerised general practitioners around Australia. The fact sheets include references to reliable websites and agencies where patients can access more in-depth information.

The fact sheets are also available on The Cancer Council





## Cancer Council welcomes announcement of Cancer Australia advisory council

The Cancer Council Australia has welcomed the recent announcement of the advisory council of the Australian Government's new national cancer agency, Cancer Australia. The announcement follows the appointment in November 2005 of former AMA President, Dr Bill Glasson, as chair of the council.

Chief Executive Officer of The Cancer Council Australia, Professor Alan Coates, said the advisory council featured a good mix of skills and experience and was set to make a valuable contribution to improved cancer control.

Professor Coates said the announcement by the Minister for Health and Ageing, Tony Abbott, was also an encouraging sign that the establishment of Cancer Australia was gathering momentum.

"The advisory council comprises some of Australia's leading cancer clinicians, healthcare administrators and experts in a number of other fields, who together can provide advice from a variety of perspectives on policy

direction and governance," he said.

"National cancer control policy should be informed by professionals who care for people with cancer, by those who have a personal experience of cancer and by individuals with an expert understanding of public policy. The advisory council of Cancer Australia covers those areas at the highest level."

Professor Coates said he was particularly pleased to see a number of appointees linked with The Cancer Council Australia. These include his own successor, Professor Ian Olver, who takes over as Cancer Council CEO in May this year, and three representatives of The Cancer Council's clinical partner, the Clinical Oncological Society of Australia – Professors David Currow, Christobel Saunders and Sanchia Aranda.

"The Government should be applauded for formally seeking advice from fully independent bodies such as The Cancer Council and COSA, which exist exclusively to improve cancer control through support for the general community and for cancer care professionals,"

he said.

## World Cancer Day – My Child Matters

This year 10 million people will be diagnosed with cancer worldwide, with this number expected to reach 15 million by 2020. Cancer causes six million deaths each year, around 12 per cent of deaths worldwide.

World Cancer Day (Feb 4) acknowledged the increasing impact of cancer on people around the world and efforts to improve cancer prevention, treatment and care. The International Union Against Cancer launched a campaign to combat childhood cancer, My Child Matters, promoting early detection and equal access to treatment, particularly in the developing world where childhood cancer rates are higher than in developed countries.

Significant advances have been made in diagnosis and treatment of cancer during the past four decades and the good news is that childhood cancer can largely be cured if detected early. Yet children with cancer who live in developing countries have less than a 50 per cent survival rate, as opposed to 80 per cent for children living in developed countries.

The Cancer Council Australia has called on the Australian Government to recognise cancer control as a regional aid priority. Disparities in cancer mortality rates between people in developed and developing countries are particularly acute among children, with unacceptable numbers dying in poorer nations because of limited access to treatment.

## The Cancer Council Australia Sally Birch Fellowship in Cancer Control

The inaugural Cancer Council Australia Sally Birch Fellowship in Cancer Control has been awarded to Dr David Young from the VicHealth Centre for Tobacco Control.

Dr Young will undertake a project in tobacco control,

## Australia's Biggest Morning Tea is now the World's Biggest Morning Tea

The English cricket team may have taken the Ashes for the first time in over 20 years, but we took their record for the world's largest morning tea!

Last year was a sad one for Aussie cricket fans but The Cancer Council Australia helped avenge some of our bruised pride by taking the Guinness World Record for the largest simultaneous morning tea, a record formally held by the old enemy.

At last year's Australia's Biggest Morning Tea more than 283,000 guests helped to smash the previous mark of 11,760 set by the United Kingdom's Emerging Role of Sheltered Housing Organisation in 2004.

Last year's Australia's Biggest Morning Tea – or should we say the World's Biggest Morning Tea – raised approximately \$7.2 million for cancer research, education programs and support services for those diagnosed with cancer, their families and carers.

On May 25th The Cancer Council will be looking to ensure this record stays where it belongs, right here in the Antipodes, by beating our own record and in doing so ensuring that the English remain a distant second!

But we need the support of the Australian public to make this happen.

"It was only through the hard work of our Australia's Biggest Morning Tea hosts last year that we were able to break the record and raise much needed funds for our cancer related activities. I would like to congratulate them



## 100 Questions and Answers About Cancer Symptoms and Cancer Treatment Side Effects

JF Kelvin and L Tyson

Jones and Bartlett Publishes (2004)

ISBN: 0-7637-2612-5 216 pages plus index

RRP: \$US16.95

This booklet has been written for people with cancer and their families and friends to help them meet the challenges a diagnosis of cancer presents. It has been written by two experienced oncology nurses from Memorial Sloan-Kettering Cancer Centre who aim to provide information and support to help people with cancer and their families/friends navigate their way from initial diagnosis, through treatment and after treatment is completed.

The book is divided into nine sections with detailed questions and answers relating to the following topics:

- n Cancer and cancer treatment
- n Getting information and making decisions
- n Comfort, activity and sleep
- n Blood counts and skin problems
- n Problems with breathing, nutrition, digestion and urination
- n Appearance and sexual issues
- n Neurological problems, fluid retention and blood chemistry
- n Other health-related issues
- n Emotional and social concerns

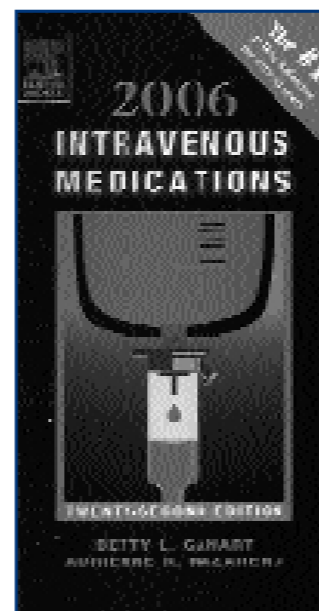
The format of the book is easy to follow and a strength

of the book is that explanations of medical terms are provided in the margin where it was discussed rather than the reader having to refer to the glossary at the back. This booklet is well written and is a great resource for people with cancer and their families and friends.

Glennys Stallan

Cancer Care Services

Royal Brisbane & Women's Hospital



## 2006 Intravenous Medications: Twenty-second edition

BL Gahart and AR Nazareno

Published by Elsevier MOSBY (2006)

ISBN: 0-323-02415-7 1276 pages plus index

RRP: \$57.20

This edition of Intravenous Medications marks the thirty-third year of publication. This reference book is designed for use in critical care areas, at the nurse's station, in the office, in public health and home care settings and by students. One of the positive aspects of this reference book is the ease at finding information quickly. It must be remembered that the information in this resource is pertinent only to the intravenous use of these drugs.

The preface and how to use the book are set out well and make it easier to navigate your way around this resource. The index is clear and the book provides a glossary of abbreviations, which may be helpful.

The drugs are set out clearly; I particularly liked the fact that dosages were also given for paediatrics and dose adjustments, also a guide for administration and side effects.

In the appendix there is a section on recommendations for safe handling of cytotoxic drugs, information for patients receiving immunosuppressive agents, toxicity grading criteria and recently approved drugs.

I believe that this reference on intravenous medications would be a worthwhile addition to have as a resource in the clinical areas for nurses and medical staff. My only reservation would be that this edition is quite bulky with very large ring binding and would probably only last until the twenty-third edition is published.

Sue Brooks

The Tweed Heads Hospital, NSW

## 2006 Saunders Nursing Drug Handbook

B Hodgson and R Kizir

Saunders (2005)

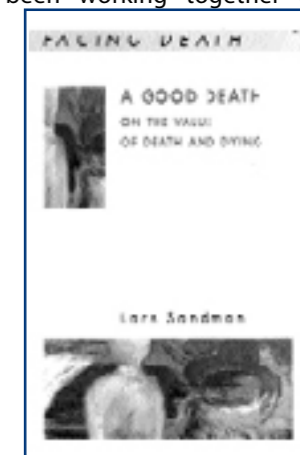
ISBN: 1-4160-2539-1 1238 pages plus index

RRP: \$68.20

This book is authored by an oncology nurse and a pharmacist who have been working together on medication reference guides and drug handbooks since 1981 and therefore have a wealth of experience between them in this field. The book definitely meets the needs of all nurses working in the clinical setting, who are the books intended audience.

The book is easy to navigate, with drugs arranged in alphabetical order using their generic names. At the start of the book there is an IV compatibility chart which is easy to read and interpret. The chart is also part of the book so it will not be lost. This is followed by a list of drugs by disorder and a colour pill atlas. The next section is devoted to drug classification which provides the following details: name, availability, uses, dosage range and side effects. A simple quick reference guide covers classifications of drugs from anaesthetics to vitamins.

The main section of the book is well set out and in a logical order. Each drug has information on its classification, action, pharmacokinetics, uses, precautions including lifespan considerations, interactions (including drug, herbal, food and laboratory values), availability (presentation), administration and handling, indications/routes/dosage, side effects, adverse reactions/toxic effects, nursing considerations. The nursing considerations section is a great prompt for educating patients about their drugs as well as ensuring





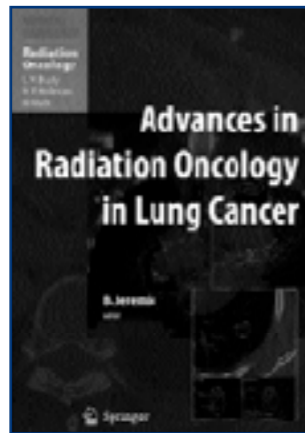
appropriate interventions are in place.

The final section of the book is dedicated to 17 appendix sections covering such items as calculation of doses, equi-analgesic dosing, herbal therapies and interactions, poison antidote chart and techniques of medication administration. The back cover has some commonly used abbreviations and a dangerous abbreviation list. To complete the package the A – Z of drugs is included on a CD-ROM which is also easy to navigate.

The book contains current information that is easy to read and covers a wide range of drugs and interactions. I find the inclusion of herbal interactions a great addition as many clients do use these medications and this allows us to predict any adverse events ahead of time and look at alternatives.

I highly recommend this book to any oncology nurse or medical officer for a concise yet comprehensive overview of current medications, their actions and interactions. This book will be of benefit on a daily basis.

Sue Perrot  
The Townsville Cancer  
Centre  
Townsville Hospital,  
Queensland



## A Good Death: On the Value of Death and Dying

L Sandman  
McGraw Hill/ Open University Press (2004)  
ISBN: 0-335-21411-8 166 pages plus index  
RRP: \$54.95

**Audience:** A Good Death on the Value of Death and Dying is part of a series investigating death in late modern culture. The series editor identifies students of death, dying and bereavement and anyone with an involvement in palliative care research, service delivery and policy development as target audience. However, death occurs in all health care settings and it would be of interest for anyone caring for dying people.

**Purpose:** There are many ideas of what a good death

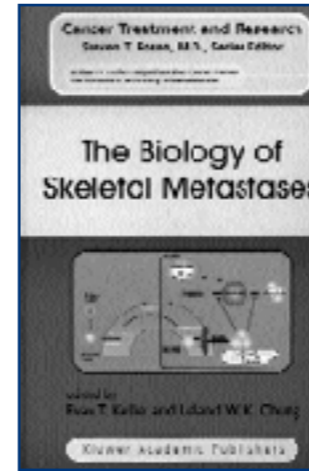
constitutes; some of them play an important normative role in palliative care. This influences the attitude of carers' and care provision towards dying people. Some of the ideas on how a good death can be achieved evolve around a certain mind-set, that one has to make certain preparations or that certain features are necessary in order to achieve a good death. Some examples of normative aspect are that a good death is consistent with patient's former or present values and aims, death should be meaningful, patients should die with dignity and awareness is preferred to denial of death. Good death is also associated with ideas of acceptance, self-controlled death, death without suffering, rituals of death, completion of death, life review and a peaceful death. The fundamental question this books attempts to answer is: if we adopt these ideas, will they do good and benefit people?

**Content:** The text is an abridged and revised version of the author's doctoral dissertation. It is well structured, includes six chapters, the first outlining the underpinning ethics and values. In further chapters the period of dying, global features of death and dying, facing death, preparation to die and the environment of dying and death are discussed.

**Highlights:** The book is academically written, but use of personal language allows for engagement in the detailed arguments and well defined ideas. The detailed attention to definitions and development of ideas provide clarity and depth to the text. In the general health and palliative care literature underpinning values are rarely subject to discussion and reading this book provides an opportunity to examine ones own values and norms about what a good death constitutes.

**Limitations:** The author acknowledges that the choice of ideas on good dying is limited to ideas from a modern Western palliative care context. Although consistent within the context, readers with a different cultural perspective might find some of the theoretical assumptions less convincing.

**Comment:** The central message of the book is that we need to be aware that professional framing of notions of a 'good death' should be carefully considered. Patient centred-ness and respect for autonomy can be eroded by applying professional frameworks without debate and analysis of these underpinning norms and values.



Annette Dahler  
Southern Area Health  
Service, NSW

## Advances in Radiation Oncology in Lung Cancer

B Jeremic (ed)  
Springer (2005)  
ISBN: 3-540-00522-6  
512 pages plus index

RRP: \$US259.00

This handsomely produced and beautifully illustrated book provides a comprehensive overview of recent developments in lung cancer radiation oncology. The editor, Dr Jeremic, has assembled an international pantheon of 79 experts, most of whom are well known as leaders in their fields. It is hard to think of a topic which has not been covered: there are chapters on the radiotherapy of recurrent lung cancer, intraoperative electron beam therapy and the use of heavy particles, in addition to more standard subjects such as radiochemotherapy for locally advanced non-small cell lung cancer and prophylactic cranial irradiation in small cell lung cancer. The editor may have been too inclusive with chapters on surgery, photodynamic therapy and brain toxicity, which are not germane to the book's title. There is a chapter on contemporary issues in staging of lung cancer, which describes staging techniques, but not the TNM classification, which appears in the chapter on surgery. I would have liked to see a critique of the current TNM system as it affects the radiation oncologist's choice of treatment.

The standard of the contributions is variable. The chapter on radiobiology of normal lung and lung tumours is brief. It has a section on testing of tumour proliferative activity, but there is no reference to accelerated repopulation. It also has a section on diagnostic value of FDG PET scanning, which seems strange in a chapter devoted to radiobiology.

While there is a lot of information in this book, there are omissions. The chapter on radiation time, dose and fractionation makes only passing reference to the CHART study, which deserves a far more detailed

analysis. It is also stated in the same chapter that "whether thoracic radiation therapy should be delivered early or late...in the treatment of small cell lung cancer ...remains controversial". The authors then go on to describe a randomised trial which showed a benefit for early radiotherapy, but have not mentioned the systematic review first reported by Fried et al in 2003 which also favours early radiotherapy. In light of this level one evidence, is "early or late" still controversial?

A topic which is truly controversial, in spite of level one evidence, postoperative radiotherapy for completely resected non-small cell lung cancer, is discussed by Haynes and Machtay in detail. The mauling they give the PORT meta analysis (which showed a detriment for postoperative radiotherapy) makes for interesting reading.

There are useful, practical chapters on target volume delineation for both non-small cell lung and small cell lung cancer. It is gratifying to see the Australian target volume delineation protocol, which was developed for use in one of the current Trans Tasman Radiation Oncology Group's studies, being reproduced in full in a chapter on treatment planning by Martel.



With so much information, the practising radiation oncologist is sometimes left wondering how to treat the patient with stage IIIA non-small cell lung cancer who next walks in the door. Should it be CHART? Or chemoradiation? Should the patient have neoadjuvant therapy followed by surgery? Unfortunately books like this do not give the answers and the practitioner has to look to practice guidelines for that kind of information. Nevertheless, I learned a lot from reading this book and can recommend it as a useful reference for those interested in the rapidly evolving radiotherapeutic management of lung cancer. One final quibble: the index, occupying only three pages for a book of this size, is totally inadequate.

David Ball  
Lung Service, Peter MacCallum Cancer Centre, Victoria

## The Biology of Skeletal Metastases

ET Keller and LWK Chung (eds)

Springer-Verlag US (2004)

ISBN: 1-4020-77749-1 339 pages, plus index.

\$US180.00

Several types of cancer, including breast, prostate and lung, have a propensity to metastasise to bone, causing severe morbidity and mortality, for which there are no effective cures. Skeletal complications are also a major problem for haematopoietic malignancies such as multiple myeloma and some lymphomas. In Australia, of the 36,000 people who will die of cancer each year, two-thirds will have skeletal involvement and many will suffer from hypercalcaemia or the debilitating pain caused by spinal cord compression and bone fractures of skeletal disease. Most patients with advanced breast cancer or prostate cancer will experience complications caused by bone metastases. Given that approximately one in ten women will develop breast cancer in their lifetime and a similar number of men will develop prostate cancer, the scale of the problem reveals an urgent need to relieve the suffering of these patients. Current treatments are largely palliative.

The lack of effective therapies stems largely from a lack of understanding of the process of metastasis to bone and is confounded by a paucity of clinically relevant models of bone malignancy. The editors of this book, Doctors Evan Keller and Leland Chung, set out to address these issues by inviting top researchers to write review chapters on their areas of expertise.

Issues that should be covered in a comprehensive review of the topic include the biology of normal bone, the basic biology of metastasis and the interactions between tumour cells and stromal tissues within bone. Molecular events and genes specific to particular types of cancer in bone and potential therapies are also important. Most of these topics are covered in a comprehensive way, with an excellent overview of the process of metastasis to the extent that we understand it today.

Animal models on metastasis to bone are infrequent and imperfect. No transgenic mice that develop spontaneous metastasis to bone yet exist and very few transplantable mouse tumours metastasise spontaneously from their orthotopic site (the mammary gland for breast cancer

or the prostate gland for prostate cancer) to bone. For breast cancer, one transplantable model has been reported but for prostate cancer, the few tumour lines that will colonise bone usually form osteolytic lesions rather than the osteoblastic lesions seen in patients. This topic is reviewed well in the book and reveals the difficulty of studying a process using imperfect animal models.

Genes implicated in the process of metastasis to bone, including PTHrP, matrix metalloproteinases, endothelins, type I collagen and MIP-1a are reviewed in detail. Two chapters are dedicated to therapy for bone disease. Bisphosphonates are now widely used in a palliative setting and are the only effective therapy for slowing bone destruction. New treatments, based on inhibiting the RANKL/RANK axis are under development and are mentioned briefly in another chapter. A comprehensive overview of gene therapy for prostate cancer metastasis lists a large number of clinical trials underway, offering hope for effective therapy.

Whilst it is difficult in a book of this size to cover all topics pertinent to bone metastasis, an overview of normal bone biology would have been a valuable addition. This topic is covered in part in the chapter on the contribution of RANK, RANKL and osteoprotegerin to skeletal metastasis, but other aspects on regulation of normal bone are not considered. Also, the major focus of the book is on prostate cancer, possibly reflecting the research interests of the editors.

Overall, this text offers an excellent summary of the state of play of our knowledge of skeletal metastasis, pointing clearly to the difficulties of understanding and treating bone disease.

Robin L Anderson

Cancer Biology Laboratory

Peter MacCallum Cancer Centre

## Breast Cancer: A Practical Guide



## 3rd Edition

OE Silva, S Zurrada (eds)

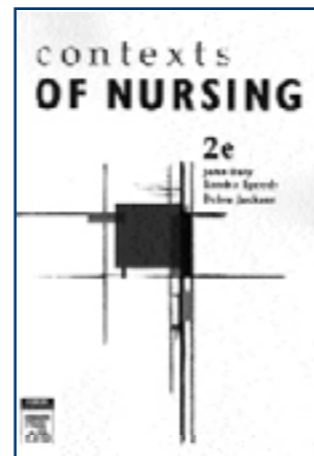
Elsevier Saunders (2005)

ISBN: 0-7020-2744-8 625 pages plus index

RRP: \$95.00

As suggested by the title, this book serves as a very useful 'practical guide' or handbook for all clinicians working in the field, researching or studying the various areas of breast cancer. The style and format is such that the key concepts are emphasised in a very succinct and comprehensive manner, using dot points and underscoring of pertinent words and phrases.

Topics covered include the full spectrum of breast disease with the first chapter providing excellent information on benign disease with descriptions of the common conditions such as cysts and fibroadenomas to less common conditions such as Mondor disease and Harmartomas. Topics in other chapters include an interesting history of breast cancer, followed by topics such as epidemiology, risk factors, screening, imaging studies, evaluation of palpable breast mass and nipple discharge, breast pathology, staging and prognostic factors. Invasive cancer, carcinoma in situ and non-invasive cancer are also discussed and provide



information relating to the various treatment modalities and clinical care across the disease trajectory. The last chapter highlights issues in breast cancer liability which may be more reflective of the American health and legal systems, nevertheless, providing 'food for thought' for the Australian health

professional.

Psychosocial issues in breast cancer are also covered, with insightful information on breast cancer and depression and menopausal symptoms and their management, providing health professionals, in particular breast care nurses, with very useful and up to date information. The discussion of these psychosocial issues highlight the need to focus on supportive as well as clinical care

in order to optimise care for patients along the different stages of the cancer journey.

Unusual presentations are covered in the final section of this book with chapters on Paget's disease, breast cancer and pregnancy and male breast cancer. This is useful as health professionals are often challenged in the care of patients presenting with these features.

A great feature of this text is the manner in which the data and information is quoted and referenced all on the same page – essentially providing the reader with a comprehensive literature review and a synopsis of data from relevant high quality peer-reviewed articles and papers published as recently as 2005. This makes it possible for the reader to further search out a reference with ease if desired.

The book has many excellent contributions from medical experts from the US and Europe. It concludes with three appendices containing information on the national breast cancer support organisations, support groups in the US and a list of charges and costs related to breast cancer treatment in the US and Europe. As such, the Australian reader would find this information locally irrelevant, however the web-based organisations listed can be of global interest.

I have no reservations in recommending this book, as described by the authors, as an excellent 'bedside' reference and compendium of breast cancer information for all health professionals working in, or who may have an interest in this illness.

Tina Griffiths

Peter MacCallum Cancer Centre, Victoria



## Cancer in Context: A Practical Guide to Supportive Care

J Brennan (in collaboration with C Moynihan)

Oxford University Press (2004)

ISBN: 0 19 851525 1 417 pages plus index



RRP:\$100.00

British Clinical Psychologist James Brennan and Research Fellow Clare Moynihan, describe this book as a “textbook of supportive care in oncology” (p vii). The stated purpose of the book is to broaden the field of psychosocial oncology beyond a focus on the usual



psychological indicators of depression and anxiety, to incorporate an understanding of the cancer illness within the sociological context of those affected by it. Much of the research for the book was undertaken during Brennan’s sabbatical at the University of Melbourne.

The target audience of the book is healthcare practitioners, particularly the psychosocial members of the multidisciplinary team; psychiatrists, psychologists and social workers. It aims to improve clinicians’ understanding of the diversity and individuality of the patients in their care, as well as offering suggestions and strategies for responding to their supportive care needs.

It is a substantial volume of seven chapters and two appendices. The chapters cover the Human Context, Personal Context, Other People, Social Context, Clinical Context, Communication and Professional Context. The first of the appendices offers a brief descriptive summary of 21 self-report assessment tools which are commonly used in research studies to measure psychological distress and quality of life. There is a handy reference list to the original sources of these measures. The second appendix is the reproduction of a booklet developed by the author entitled *Managing the Stress of Cancer: A Psychosocial Guide for People with Cancer*. This resource can be copied or adapted for use with patients and their carers, without copyright restriction. It is potentially a useful resource, although similar in form and content to a number of other readily available publications.

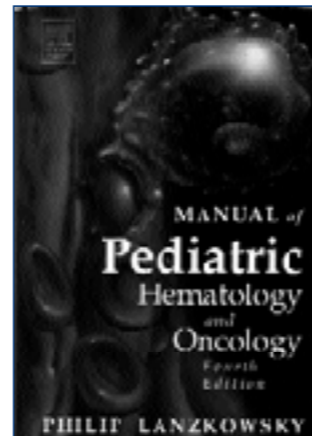
Throughout the book there is an awkward juxtaposition between textbook and practice guide, as the authors attempt to marry their practical suggestions for clinicians with the theoretical underpinnings and evidence for

these suggestions. The chapters contain overlapping information, which is cross-referenced, but nevertheless there is constant repetition, which many readers may find irritating and which detracts from the overall readability and appeal of the book.

The first four chapters each commence with a lengthy sociological discourse as background understanding to the complex manner in which individuals perceive and respond to the diagnosis and treatment of cancer. These somewhat verbose and repetitive introductions are followed, at the end of each sub-section, by concise dot-point summaries of “healthcare implications”, which provide useful ideas and strategies for clinicians to better meet the psychosocial needs of their patients. It is by sifting through these sections that clinicians will find best value from this book. Topics such as talking to children, the relationship between families and the healthcare team, gender and racial differences, and dealing with sexual problems are covered in a thorough and practical way, although there is nothing new here for the experienced clinician. One of the strengths of the book is the extensive reference list at the conclusion of each chapter.

There is thoughtful discussion about marginalised social groups such as homeless people, racial minorities, refugees and asylum seekers. However, some of the suggestions for improving the provision of cancer care to these sub-groups are simply unrealistic in already over-stretched and under-resourced oncology treatment centres. The resources required to establish outreach teams to attend specifically to the needs of the homeless, as one example suggested by the authors, is not likely to be seen as a high priority.

Chapters 5, 6 and 7 move on to the realities of working with patients and their carers in a variety of contexts and settings; it is these chapters which will hold the most appeal for healthcare workers in the front-line of cancer service delivery. There is extensive coverage of the psychosocial stresses associated with all treatment modalities throughout all stages of



the cancer journey and a particularly comprehensive chapter on communication skills. The book concludes with consideration of familiar and challenging issues for professionals: stress and burnout for oncology practitioners, consumer participation in cancer care, complementary therapy and alternative medicine, informed consent and colluding with denial.

Overall, as a textbook, there is useful and relevant information to be gleaned from this volume, particularly for clinicians new to the field and for those with an interest in the sociological perspective. However, as a practice guide, the more concise content, layout and presentation of the various and widely available NHMRC guidelines about specific cancers and psychosocial care make them a preferred source for evidence-based practice in psycho-oncology.

Kim Hobbs  
Westmead Centre for Gynaecological Cancer  
Westmead Hospital, NSW

## Contexts of Nursing (2nd edition)

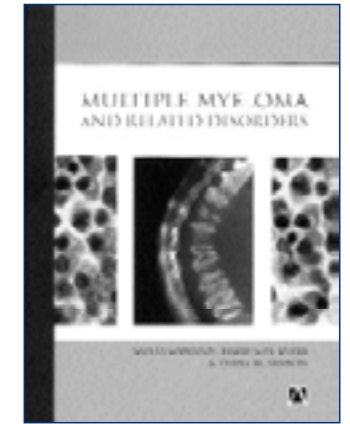
J Daly, S Speedy and D Jackson  
Churchill Livingstone (2006)  
ISBN:0-7295-3746-3 376 pages plus index  
RRP: \$60.00

This popular text, in its second edition after numerous reprints of the first edition, has been updated to encompass current trends in nursing in Australia and New Zealand. Edited and written by a host of eminent nursing academics and theorists, it is aimed at undergraduate nurses in both of these countries. As such, its content (including aspects of nursing history, current technologies, health ethics and law, and the sociocultural and political concerns of the profession) is exhaustive and authoritative and should be the impetus for a great deal of critical reflection on the part of nursing students about to enter the profession. The emphasis on Australian authors and practice contexts may, however, be disconcerting for those readers from New Zealand that the text also purports to target (there is only one jointly authored chapter by two New Zealand contributors in the text).

In terms of structure, the text is consistent and easy to follow. Each chapter contains learning objectives, key

words and four concluding questions for reflection that provide useful topics for tutorial debate. While the relevance of the text to practising oncology nurses (unless they are undertaking an undergraduate degree) is doubtful, the text is highly appropriate for undergraduate baccalaureate programs that aim to promote critical thinking in our future health professionals.

Alexandra McCarthy  
School of Nursing and Midwifery  
Griffith University, Queensland



## Fast Facts: Breast Cancer 3rd Edition

M Baum, H Schipper  
Health Press (2005)  
ISBN: 1-903734-62-2 143 pages plus index  
RRP: \$44.00

When studying English literature at high school, I found a brilliant series of books, called Brody’s Notes. These books enabled me to avoid reading any other books. They gave me the key messages and character developments. This short text offers the same for those looking for an introduction to the key areas of breast cancer. The introduction to the book speaks of choice and consumerism in modern medicine and this book definitely contributes to this area.

The chapters cover epidemiology, risk, pathology and diagnosis and move through treatment options for the various stages or presentations of breast cancer. It finishes off with chapters on follow-up, rehabilitation, clinical trials and looks forward to future trends within the field of breast cancer.

The text is concise and punchy, using diagrams, tables, graphs and colour plates to get the information across in a clear and accessible way. It manages to offer insight into often poorly comprehended areas such as the perception of risk and breast cancer genetics. Even though the book is small it is well referenced and where

it runs out of space within the chapters, it recommends texts and websites for further reading, highlighting in particular the seminal readings related to each chapter.

In conclusion, this book would be an excellent quick-reference text for general practitioners, but also as an introductory text for junior doctors and nurses working



in oncology and surgical areas. It could also be useful for lay people looking for more in-depth knowledge or within the library of support groups: for these populations, a glossary would be a useful addition for future editions.

Post Script: I didn't pass English literature at high school!

Meredith Brien  
Shoalhaven Oncology Day

Centre, NSW

## Hematology – Basic Principles and Practice (4th Edition)

R Hoffman et al.  
Churchill Livingstone (2005)  
ISBN: 0-4430-6628-0 2743 pages plus index  
RRP: \$420.20

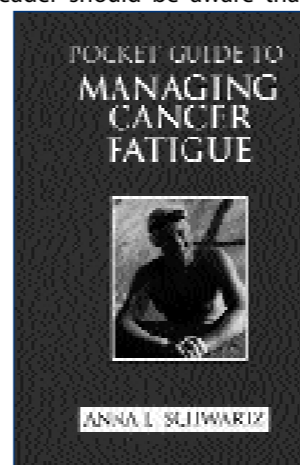
This is an impressive text; both clinically and aesthetically. The book boasts 295 additional contributors and 19 new chapters from the 3rd edition, with excellent colour plates and graphics, which greatly contribute to the understanding of the issues discussed.

The book is divided into 162 chapters, which are grouped into nine sections. These parts build from the cellular and molecular basis of haematology, through immunology and the biology of haematopoiesis and the disorders caused by its dysfunction. Latter sections are devoted to transfusion, transplantation medicine and haemostasis and thrombosis. Each part builds through a series of chapters, developing the themes and by including function, dysfunction and the management of that dysfunction within each section reduces the need to reintroduce the subject

in each chapter. The text also contains information on wider multidisciplinary care issues, with chapters on nutritional and psychological aspects of haematological illness, as well as brief chapters on palliative care and late effects issues caused by both the disease and its treatment.

The foreword from Professor Sir David Weatherall states this is a textbook for haematologists; but in its organisation and presentation it is truly accessible to all levels of clinician in the field of haematology. The introductory passages to each chapter provide clear and concise overviews, which are supported with explanatory text boxes, tables and diagrams throughout. The usefulness of this text is further demonstrated by the inclusion of practical clinical elements such as the management of transfusion reactions, pain and nausea management and technical insights into bone marrow aspiration and slide preparation. There is a whole, but rather brief chapter on intravenous device management, which includes a rather scant paragraph on the management of the extravasation of vesicant chemotherapy agents. This latter chapter appears a little out of place, peculiarly the details of acceptable bacteraemia rates and the correct antiseptic cleaning solutions to use!

The back cover blurb suggests that this text will enable the clinician to "keep pace with today's advances" and "encompasses everything you need to know in this fast changing field" and by and large, I think this book lives up to this hype. The editors do, however, acknowledge the possible limitations of a book which is published every five years in meeting these claims by providing weekly online updates to the electronic format. I do feel that some subjects are covered in far greater depth than others and the reader should be aware that the more brief chapters, which cover elements of multidisciplinary care are perhaps provided to contribute to a general overview of the management of haematological illness rather than being comprehensive in themselves.



In conclusion, I think this book would provide an extremely valuable resource in the library of any haematology/oncology department, particularly for its ability to provide useful information to a wide range of practitioners, from students to consultant haematologists.

Bill Jansens  
Shoalhaven Oncology Day Care, NSW

## Manual of Paediatric Haematology and Oncology 4th Edition

P Lanzkowsky  
Elsevier Academic Press (2005)  
ISBN: 0-12-088524-7 806 pages plus index  
RRP: \$263.45

This book provides an excellent, concise up-to-date source of basic medical information on both malignant and non-malignant paediatric haematology and oncology.



The haematological content covers topics such as classification and diagnosis of anaemia in childhood, anaemia during the neonatal period, iron deficiency anaemia, megaloblastic anaemia and haemolytic anaemia. There is a chapter on haematological manifestations of systemic illness, bone marrow failure and polycythemia. Disorders of the white blood cells, disorders of platelets and disorders of coagulation also have separate chapters.

Each of the common paediatric oncological conditions have stand alone chapters. Each condition is described under headings including incidence, pathology, immunophenotypic features, genetics, clinical features, anatomic site, diagnosis, staging, prognosis and treatment modalities. This format is user friendly and makes finding specific information associated with each disease very easy.

Clinical trials from the Children's Oncology Group (COG) of the United States form the basis of the chemotherapy treatment protocols described throughout the text. As

most of the paediatric oncology treatment centres in Australia and New Zealand are now members of COG this means that this information is highly applicable to practice.

Suggested readings are located at the end of each chapter. These reading are particularly useful for some of the less common paediatric malignancies such as juvenile myelomonocytic leukaemia, myelodysplastic syndromes and myeloproliferative disorders. The inclusion of a chapter on miscellaneous tumours and histiocytosis syndromes is also useful and often neglected in many texts.

The chapter on Late Effects utilises a body system approach and lists potential late effects associated with each treatment modality. Unfortunately the psychosocial impact of cancer on the child does not rate a mention.

The chapter on supportive care and management of oncological emergencies focuses on medical management and provides a good basis for the development of nursing management strategies. Specific topics in the supportive care section include management of infectious complications, prophylactic antibiotics, blood component therapy, haemopoietic growth factors, prevention of organ toxicity, pain management, management of nausea and vomiting and nutritional support. One of the most disappointing aspects of the book is that psychosocial support gets five lines in the entire text and does not have any suggested readings.

This edition includes significant revision of the chapters on disorders of white cells, lymphoproliferative disorders, myeloproliferative disorders, myelodysplastic syndromes and bone marrow failure. The chapter on disorders of coagulation has been totally re-written to incorporate the extensive advances in thrombosis management.

The language used throughout makes the book a useful reference for all health professionals. This is further enhanced by the use of tables, algorithms and flow diagrams which are used extensively throughout the text to summarise investigation and management strategies.

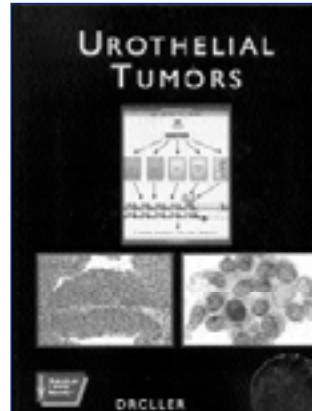
This book would be an excellent reference text for all health professionals involved in the care and medical management of a child with a haematological or



oncological condition.

Linda Ewing  
Haematology/Oncology Unit  
Mater Children's Hospital, Queensland

## Multiple Myeloma and Related Disorders



G Gahrton, B Durie and  
D Samson  
Arnold (2004)  
ISBN: 0-340-81010-6 451  
pages plus index  
RRP: £125.00

In the broader spectrum of  
cancers, even in the group  
of blood and bone marrow

cancers, myeloma is a rare cancer. This 466 page hard-cover disease-specific book would ideally be suited to haematology or medical oncology specialists-in-training. Those working in haematology would recognise the significant recent advances in our knowledge of the nature of myeloma and its treatments (notably targeted therapies, as demonstrated by the recent PBS listing in Australia of Thalidomide, staking its mark as a standard therapy for recurrent disease).

Consistent with the backgrounds of the editors, the contributors bring reputable international perspectives to the range of content within the text, including researchers, scientists and clinicians from the UK, the US, Europe and Australia.

The text contains very logically-organised content, with particularly detailed and well presented chapters that include abundant diagrams, tables, images and key

## Australia and New Zealand

Date	Name of Meeting	Place	Secretariat
<b>2006</b>			
<b>March</b>			
23-27	XVIII Symposium Neuroradiologicum of the World Federal of Neuroradiological Societies (WFNRS)	Adelaide SA	World Federation of Neuroradiological Societies (WFNRS) South Australia Tel: +61 8 820 44405 Fax: +61 8 837 41731 Email: <a href="mailto:michael.sage@fmc.sa.gov.au">michael.sage@fmc.sa.gov.au</a> Web: <a href="http://www.snr2006.sa.gov.au">www.snr2006.sa.gov.au</a>
<b>May</b>			
14-17	Australasian College of Dermatologists 39th Annual Scientific Meeting	Melbourne VIC	Australasian College of Dermatologists PO Box 2065 Boronia Park NSW 2111 Tel: +61 2 9879 6177 Fax: +61 2 9816 1174 Email: <a href="mailto:admin@dermcoll.asn.au">admin@dermcoll.asn.au</a> Web: <a href="http://www.dercoll.asn.au">www.dercoll.asn.au</a>
<b>July</b>			
12-14	Royal College of Nursing Australia National Conference	Cairns QLD	Royal College of Nursing Australia PO Box 219 Deakin West ACT 2600 Tel: +61 2 6283 3400 Fax: +61 2 6282 3565 Email: <a href="mailto:nicole@rcna.org.au">nicole@rcna.org.au</a> Web: <a href="http://www.rcna.org.au">www.rcna.org.au</a>
14-15	Cancer Nurses Society Of Australia 9th Winter Congress	Adelaide SA	Pharma Events Tel: +61 2 9280 0577 Fax: +6 1 2 9280 0533 Email: <a href="mailto:conferences@pharmaevents.com.au">conferences@pharmaevents.com.au</a> Web: <a href="http://www.cnsa.org.au">www.cnsa.org.au</a>
<b>August</b>			
9-12	Medical Oncology Group Australia Annual Scientific Meeting	Sanctuary Cove QLD	Pharma Events Tel: +61 2 9280 0577 Fax: +61 2 9280 0533 Email: <a href="mailto:moga@pharmaevents.com.au">moga@pharmaevents.com.au</a>
<b>September</b>			
3-9	ACCORD Workshop – A Workshop in Effective Clinical Trials Design	Sunshine Coast QLD	The Australia and Asia Pacific Clinical Oncology Research Development (ACCORD) Workshop Level 6, 52 Phillip Street Sydney NSW 2000 Tel: +61 2 8247 6207 Fax: +61 2 9247 3022 Email: <a href="mailto:mog@racp.edu.au">mog@racp.edu.au</a>
<b>October</b>			
26-29	RANZCR 57th Annual Scientific Meeting	Christchurch NZ	Royal Australian and New Zealand College of Radiologists (RANZCR) Tel: +61 2 9268 9777 Fax: +61 2 9268 9799 Web: <a href="http://www.ranzcr.edu.au">www.ranzcr.edu.au</a>
<b>November</b>			
29 Nov – 1 Dec	33rd Clinical Oncological Society of Australia Annual Scientific Meeting	Melbourne VIC	ASN Events Tel: +61 3 9863 7867 Web: <a href="http://www.cosa.org.au">www.cosa.org.au</a> Email: <a href="mailto:congress@asnevents.net.au">congress@asnevents.net.au</a>

## INTERNATIONAL

Date	Name of Meeting	Place	Secretariat
<b>2006</b>			
<b>March</b>			
27 Feb – 1 Mar	Proteogenomics for Diagnosis, Imaging and Therapy of Cancer	California United States	Sidney Kinnel Cancer Center Conference Dr. Alebrt Deisseroth or Dr. Jan Schnitzer 7916 Convoy Court 92111-1212 San Diego Tel: +1 858 565 9921 Fax: +1 858 565 9954 E-mail: <a href="mailto:skcc@pcmisandiego.com">skcc@pcmisandiego.com</a> Web: <a href="http://www.skcc.org/SKCC_conf_06.html">www.skcc.org/SKCC_conf_06.html</a>
2-3	The Role of Endoscopy in The Management of Gastrointestinal Neoplasia	Stresa Italy	European School of Oncology (ESO) Milano, Italy Tel: + 39 2 8546 451 Fax: + 39 2 8546 4545 Email: <a href="mailto:conferences@esonology.org">conferences@esonology.org</a> Web: <a href="http://www.cancerworld.org/eso">www.cancerworld.org/eso</a>
3-4	Therapeutic Advances in the Treatment of Gastrointestinal Malignancies	Arizona United States	The Center for Biomedical Continuing Education Zack Lentz 1707 Market Place, #350 75063 Irving Tel: +001 214 260-9024 Fax: +001 214 260-0408 Email: <a href="mailto:zlenz@thebce.com">zlenz@thebce.com</a> Web: <a href="http://www.thebce.com/home.asp">http://www.thebce.com/home.asp</a>
4-8	2006 Annual Meeting on Women's Cancer	New Orleans United States	Society of Gynecologic Oncologists (SGO) SGO Chicago Headquarters Office 401 North Michigan Avenue 60611 Chicago Tel: +1 312 321 4099 Fax: +1 312 673 6959 E-mail: <a href="mailto:sgo@sgo.org">sgo@sgo.org</a> Web: <a href="http://www.sgo.org/meetings/2006Annual/">www.sgo.org/meetings/2006Annual/</a>
8	North American Conference on UV, Vitamin D and Health	Toronto Canada	Canadian Cancer Society Heather Logan 10 Alcorn Avenue, Suite 200 M4V3B1 Toronto Tel: +011 416 934-5658 Fax: +011 416 961-4189 E-mail: <a href="mailto:hlogan@cancer.ca">hlogan@cancer.ca</a> Web: <a href="http://www.cancer.ca/ccs/internet/niw_splash/0%2C%2C3172%2C00.html">www.cancer.ca/ccs/internet/niw_splash/0%2C%2C3172%2C00.html</a>
8-9	Collaborating in Cancer Research	Cardiff United Kingdom	Wales Cancer Institute Miss J Price c/o Wales Cancer Bank Cardiff Medicentre Heath Park Cardiff CF144U Cardiff Tel: +44 (0)29 20682108 Fax: +44 (0)29 20682101 E-mail: <a href="mailto:info@collaboratingincancerresearch.com">info@collaboratingincancerresearch.com</a> Web: <a href="http://www.collaboratingincancerresearch.com/">www.collaboratingincancerresearch.com/</a>
10-12	3rd Annual Winter Lung Cancer Conference	Florida United States	The Center for Biomedical Continuing Education Megan Ollinger 1707 Market Place Blvd., Ste. 370 75063 Irving Tel: +01 972 929 1900 Fax: +01 972 929 1901 E-mail: <a href="mailto:info@thebce.com">info@thebce.com</a> Web: <a href="http://www.thebce.com/currentactivities.asp">www.thebce.com/currentactivities.asp</a>

Date	Name of Meeting	Place	Secretariat
12-14	International Conference on Stem Cells and Cancer	Heidelberg Germany	German Cancer Research Centre Otmar D. Wiestler Neuenheimer Feld 280 69120 Heidelberg Tel: +0049 6221 422851 or 422163 Fax: +0049 6221 422840 E-mail: <a href="mailto:u.schoettler@dkfz.de">u.schoettler@dkfz.de</a> <a href="mailto:a.proksch@dkfz.de">a.proksch@dkfz.de</a> Web: <a href="http://www.dkfz.de/en/stemcellsandcancer/">www.dkfz.de/en/stemcellsandcancer/</a>
12-15	3rd International Conference on Translational Research and Pre-Clinical Strategies in Radiation Oncology (ICTR2006)	Lugano Switzerland	ICTR2006 Bellinzona, Switzerland Jacques Bernier MD, PD Ravecchia 6504 Bellinzona Tel: +41 79 310 4330 Fax: +41 91 811 8678 Email: <a href="mailto:jacques.bernier@hcuge.ch">jacques.bernier@hcuge.ch</a> Web: <a href="http://www.ios.ch/ictr2006.html">www.ios.ch/ictr2006.html</a>
12-15	10th Congress of Asian Association of Endocrine Surgeons (AsAES)	Hong Kong	University of Hong Kong Medical Centre Department of Surgery Queen Mary Hospital, Pokfulam, Hong Kong Tel: +85 228 18 0232 / 55 4235 Fax: +85 228 18 1186 Email: <a href="mailto:AsAES06@hku.hk">AsAES06@hku.hk</a> Web: <a href="http://www.asaes2006.org/">www.asaes2006.org/</a>
13-14	Imaging in Oncology, 2nd Conference	London United Kingdom	SMi Conferences Ltd James Kennedy The Clove Building Maguire Street SE12NQ London Tel: +44 (0)20 7827 6186 Fax: +44 (0)870 9090 712 Email: <a href="mailto:jkennedy@smi-online.co.uk">jkennedy@smi-online.co.uk</a> Web: <a href="http://www.smi-online.co.uk/">www.smi-online.co.uk/</a>
16-18	4th International Symposium on Targeted Anticancer Therapies	Amsterdam Netherlands	NDDO Oncology Research Foundation and European Society for Medical Oncology (ESMO) c/o TAT2006 Conference Secretariat PO Box 77, 3480 DB Harmelen Tel: +31 348 567 667 Fax: +31 348 446 057 Email: <a href="mailto:congress@nddo.org">congress@nddo.org</a> Web: <a href="http://www.nddo.org">www.nddo.org</a>
21-25	5th European Breast Cancer Conference (EBCC)	Nice France	The Federation of European Cancer Societies (FECS) Brussels, Belgium Tel: +32 2 755 0205 Fax: +32 2 755 0200 Email: <a href="mailto:EBCC5@fecsb.be">EBCC5@fecsb.be</a> Web: <a href="http://www.fecsb.be/conferences/ebcc5">www.fecsb.be/conferences/ebcc5</a>
23-24	7th International Symposium on Diagnosis & Treatment: Head & Neck Skin Cancer	Amsterdam Netherlands	The Netherlands Cancer Institute - Antoni van Leeuwenhoek Hospital Department of Head and Neck Oncology and Surgery - A.J.M. Balm/M.W.M. van den B Plesmanlaan 121 1066 CX Amsterdam Tel: +31 20 512 2550 Fax: +31 20 512 2554 Email: <a href="mailto:kno@nki.nl">kno@nki.nl</a> Web: <a href="http://www.hoofdhdals.nki.nl/7th-skincongres.htm">www.hoofdhdals.nki.nl/7th-skincongres.htm</a>
24-25	Focus on Myeloma and Plasma Cell Disorders	Miami United States	Imedex 70 Technology Drive 30005 Alpharetta Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: <a href="mailto:s.clemmons@imedex.com">s.clemmons@imedex.com</a> Web: <a href="http://www.imedex.com/">http://www.imedex.com/</a>
24-25	4th Annual Atlanta Lung Cancer Symposium	Atlanta United States	Imedex 70 Technology Drive 30005 Alpharetta Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: <a href="mailto:s.clemmons@imedex.com">s.clemmons@imedex.com</a> Web: <a href="http://www.imedex.com/">www.imedex.com/</a>
25-28	Shanghai – Hong Kong International Liver Congress 2006	Shanghai China	International Liver Congress 2006 Pokfulam, Hong Kong Tel: +0 852 281 84300 Fax: +0 852 281 84030



# CALENDAR OF MEETINGS

Date	Name of Meeting	Place	Secretariat Email: <a href="mailto:info@livercongress.org">info@livercongress.org</a> Web: <a href="http://www.livercongress.org">www.livercongress.org</a>
27-29	Prevention and Treatment of Tobacco Related Cancers under the framework of the American Russian Cancer Alliance	Moscow Russia	N.N Blokhin Russian Cancer Research Centre Office of International affairs Moscow, Russia Tel: + 7 95 324 1504 Fax: + 7 95 323 5355 Email: <a href="mailto:info@eso.ru">info@eso.ru</a> Web: <a href="http://www.eso.ru/eng/index.htm">www.eso.ru/eng/index.htm</a>
30-31	4th Internation Conference on Teneage and Young Adult Cancer Medicine	London UK	Teenage Cancer Trust London, UK Tel: + 44 12 2773 3668 Fax: + 44 12 2773 3668 Email: <a href="mailto:sam@greshoff.free-online.co.uk">sam@greshoff.free-online.co.uk</a> Web: <a href="http://www.teenagecancertrust.org/main/healthfacts/tct_2006_conference.pdf">www.teenagecancertrust.org/main/healthfacts/tct_2006_conference.pdf</a>
April			
1-4	European Association for Cancer Research 19th Annual Meeting	Budapest Hungary	Federation of European Cancer Societies Avenue E. Mounier 83 1200 Brussels Tel: +32 2 775 02 05 Fax: +32 2 775 02 00 E-mail: <a href="mailto:FACR19@fecb.be">FACR19@fecb.be</a>
1-5	American Association for Cancer Research (AACR) 97TH Annual Meeting	Washington DC United States	American Association for Cancer Research (AACR) Philadelphia, US Tel: +1 215 440 9300 Fax: +1 215 351 9165 Email: <a href="mailto:meetings@aacr.org">meetings@aacr.org</a> Web: <a href="http://www.aacr.org">www.aacr.org</a>
5-9	The American Society of Breast Surgeons 7th Annual Meeting	Baltimore United States	The American Society of Breast Surgeons Marti Boyer 10440 Little Patuxent Parkway Suite 810 21044 Columbia Tel: 410 992 5470 Fax: 410 992 5472 Email: <a href="mailto:tforte@breastsurgeons.org">tforte@breastsurgeons.org</a> Web: <a href="http://www.breastsurgeons.org/">www.breastsurgeons.org/</a>
8-11	4th International Society of Paediatric Oncology (SIOP) Asia Conference	Shanghai China	Shanghai Children's Medical Center – Dept of Pediatric Hematology-Oncology Shanghai, China Tel: +86 021 5873 2020 Fax: +86 021 5839 3915 Email: <a href="mailto:siop_asia_2006@yahoo.com">siop_asia_2006@yahoo.com</a> Web: <a href="http://www.siop.nl/frameset_achter.asp?p=4">www.siop.nl/frameset_achter.asp?p=4</a>
20-22	5th European Oncology Nursing Society (EONS) Spring Convention	Innsbruck Austria	FECS – 5th EONS Spring Convention Brussels, Belgium Tel: +32 2 775 02 01 Fax: +32 2 775 02 00 Email: <a href="mailto:EONS5@fecb.be">EONS5@fecb.be</a> Web: <a href="http://www.fecb.be/conferences/eons5">www.fecb.be/conferences/eons5</a>
28-29	6th Annual New Strategies in the Breast Cancer Conference	Philadelphia United States	The Center for Biomedical Continuing Education Megan Ollinger 1707 Market Place Blvd., Ste. 370 75063 Irving Tel: +1 972 929 1900 Fax: +1 972 929 1901 Email: <a href="mailto:info@thebce.com">info@thebce.com</a> Web: <a href="http://www.thebce.com/home.asp">www.thebce.com/home.asp</a>
28-30	1st Scientific Conference of Baltic Society for Pediatric Oncology and Hematology	Vilnius Lithuania	UAB CONBALTAS Renata Baublyte Jaksto g 12 LT-011 Vilnius Tel: +370 5 2120003 Fax: +370 5 2120013 Email: <a href="mailto:renata@balticconference.com">renata@balticconference.com</a> Web: <a href="http://www.balticconference.com/bspoh2006/">www.balticconference.com/bspoh2006/</a>
May			
4-7	Oncology Nursing Society (ONS) 2006 Congress	New Orleans United States	Oncology Nursing Society (ONS) Pittsburgh, Pennsylvania, US Tel: +1 866 257 4667/ 1 412 859 6100 Fax: +1 877 369 5497 / 1 412 859 6162 Email: <a href="mailto:customer.service@ons.org">customer.service@ons.org</a> Web: <a href="http://www.ons.org">www.ons.org</a>

# CALENDAR OF MEETINGS

Date	Name of Meeting	Place	Secretariat
6-8	Reasons for Hope Scientific conference	Montreal Canada	Canadian Breast Cancer Research Alliance Susan Wall 1000 - 790 Bay Street M5G 1N8 Toronto Tel: +1 416 596 6598 Fax: +1 416 596 1714 Email: <a href="mailto:swall@cbcra.ca">swall@cbcra.ca</a> Web: <a href="http://www.breast.cancer.ca/language/default.asp?thisUrl=%2FDefault%2Easp">www.breast.cancer.ca/language/default.asp?thisUrl=%2FDefault%2Easp</a>
6-9	NOPHO/NOBOS 2006 Nordic Conference of Paediatric Haematology and Oncology	Tampere Finland	NOPHO/NOBOS 2006 Nordic Conference Secretariat c/o Tampere Conference Service Ltd Tampere Finland Tel: + 358 3 366 4400/311 65571 Email: <a href="mailto:office@tampereconference.fi">office@tampereconference.fi</a> Web: <a href="http://www.tampereconference.fi/nopho-nobos2006/">www.tampereconference.fi/nopho-nobos2006/</a>
6-12	14th Scientific Meeting and Exhibition for Magnetic Resonance in Medicine	Washington United States	International Society for Magnetic Resonance in Medicine, Berkeley, USA Tel: +1 510 841 1899 Fax: +1 510 841 2340 Email: <a href="mailto:info@ismrm.org">info@ismrm.org</a> Web: <a href="http://www.ismrm.org/">www.ismrm.org/</a>
14-17	11TH International Congress on Oral Cancer (ICOOC)	Grado Italy	ORL Dept. – Ospedale Civile de Udine Udine, Italy Tel: +39 432 552 801 Fax: +39 432 554 062 Email: <a href="mailto:piemonte.marco@aoud.sanita.fvg.it">piemonte.marco@aoud.sanita.fvg.it</a> Web: <a href="http://www.icooc2006.nordestcongressi.it">www.icooc2006.nordestcongressi.it</a>
16-17	Diagnostic & Interventional Radiology in Clinical Oncology	Moscow Russia	N.N. BLOKHIN RUSSIAN CANCER RESEARCH CENTER (NNBRCRC) - Office of International Affairs Dr. Somasundaram SUBRAMANIAN M.D. 24, Kashirskoye Shosse 115478 Moscow Tel: +7 095 324 1504 Fax: +7 095 323 5355 Email: <a href="mailto:info@eso.ru">info@eso.ru</a> Web: <a href="http://www.eso.ru/">www.eso.ru/</a>
18-20	Ethics in Oncology	Bled Slovenia	European School of Oncology Rita De Martini Via del Bollo 4 20123 Milan Tel: +39 02 85464527 Fax: +39 02 85464545 Email: <a href="mailto:rdemartini@esoncology.org">rdemartini@esoncology.org</a> Web: <a href="http://www.cancerworld.org/">www.cancerworld.org/</a>
18-20	6th Nordic Mammography Screening Symposium	Copenhagen Denmark	Dept. of Epidemiology-Institute of Public Health University of Copenhagen c/o International Symposium Services Hellerup, Copenhagen, Denmark Tel: +4 570 237 823 Fax: +4 570 237 888 Email: <a href="mailto:mammografi-symposium2006@ics.dk">mammografi-symposium2006@ics.dk</a> Web: <a href="http://www.mammografi-symposium.dk">www.mammografi-symposium.dk</a>
24-26	XIX Annual Meeting of European Musculo-Skeletal Oncology Society (EMSOS)	Moscow Russia	European School of Oncology N.N Blokhin Russian Cancer Research Centre Office of International affairs Moscow, Russia Tel: +7 95 324 1504 Fax: +7 95 323 5355 Email: <a href="mailto:info@eso.ru">info@eso.ru</a> Web: <a href="http://www.eso.ru/eng/index.htm">www.eso.ru/eng/index.htm</a>

# CALENDAR OF MEETINGS

Date	Name of Meeting	Place	Secretariat
<b>June</b>			
1-2	Head and Neck Course	Hong Kong	Department of Surgery, University of Hong Kong Medical Centre, Queen Mary Hospital Sassoon Road, Pokfulam Tel: 85 22 818 0232 Fax: 85 22 818 1186 Email: <a href="mailto:HKICC05@hku.hk">HKICC05@hku.hk</a> Web: <a href="http://www.hku.hk/surgery/">www.hku.hk/surgery/</a>
2-6	2006 Annual Meeting – American Society of Clinical Oncology	Atlanta United States	American Society of Clinical Oncology Annie Callender 1900 Duke St Ste 200, 22314 Denver Tel: 1 703 299 0158 Fax: 1 703 299 0255 Email: <a href="mailto:meetings@asco.org">meetings@asco.org</a> Web: <a href="http://www.asco.org/">www.asco.org/</a>
7-9	European Association for Cancer Education (EACE) - 19th Annual Scientific Meeting	Enschede Netherlands	Saxion Hogescholen Inge Geerink Handelskade 75 Postbus 501, 7400AM Deventer Tel: 31 570 663 683 Fax: 31 570 663 611 Email: <a href="mailto:g.g.m.geerink@saxion.nl">g.g.m.geerink@saxion.nl</a> Web: <a href="http://www.eaceonline.com/">www.eaceonline.com/</a>
11-13	2006 Komen Foundation Mission Conference: Many Faces- One Voice (breast cancer)	Washington DC United States	Susan G. Komen Breast Cancer Foundation Dallas, Texas, US Tel: +1 972 701 2127 Fax: +1 972 855 4301 Email: <a href="mailto:drowden@komen.org">drowden@komen.org</a> Web: <a href="http://www.komen.org">www.komen.org</a>
15-16	Familial Cancer - Inside Track Conference	Madrid Spain	European School of Oncology Daniela Mengato - Francesca Marangoni Viale Beatrice d'Este, 37, 20122 Milano Tel: 39 02 8546 451 Fax: 39 02 8546 4545 Email: <a href="mailto:conferences@esoncology.org">conferences@esoncology.org</a> Web: <a href="http://www.cancerworld.org/eso/">www.cancerworld.org/eso/</a>
15-17	6th International Conference on the Adjuvant Therapy of Malignant Melanoma	Stockholm Sweden	Congrex Sweden AB Britt-Marie Bohm P.O. Box 5619, Karlavägen 108, 114 85 Stockholm Tel: 0046 8 459 6600 Fax: 0046 8 661 9125 Email: <a href="mailto:britt-marie.bohm@congrex.se">britt-marie.bohm@congrex.se</a> Web: <a href="http://www.congrex.com/melanoma/">www.congrex.com/melanoma/</a>
15-18	11th Congress of the European Haematology Association (EHA-11)	Amsterdam Netherlands	Eurocongress Conference Management Amsterdam, Netherlands Tel: +31 20 679 3411 Fax: +31 20 673 7306 Email: <a href="mailto:eha@eurcongress.com">eha@eurcongress.com</a> Web: <a href="http://www.ehaweb.org">www.ehaweb.org</a>
18-21	9th Cancer Research UK Beaton International Cancer Conference	Glasgow Scotland	Beaton Institute for Cancer Research Glasgow, United Kingdom Tel: +44 14 1942 0855 Fax: +44 14 1330 6426 Email: <a href="mailto:wheeler@beatson.gla.ac.uk">wheeler@beatson.gla.ac.uk</a> Web: <a href="http://www.beatson.gla.ac.uk/seminars/conference">www.beatson.gla.ac.uk/seminars/conference</a>
<b>html</b>			
25-28	Tumour Vasculature: New Targets and Therapies	Cirencester United Kingdom	British Association for Cancer Research Barbara Cavilla c/o The Institute of Cancer Research, McElwain Laboratories, Cotswold Road SM2 5NG Sutton Tel: +44 20 8722 420 Fax: +44 20 8770 1395 Email: <a href="mailto:bacr@icr.ac.uk">bacr@icr.ac.uk</a> Web: <a href="http://www.bacr.org.uk/">www.bacr.org.uk/</a>
28-1 Jul	3rd World Congress of the International Federation of Head & Neck Oncologic Societies (IFHNOS)	Prague Czech Republic	International Federation of Head & Neck Oncologic Societies (IFHNOS) c/o Guarant International spol.s.r.o Prague, Czech Republic Tel: +420 284 001 444 Fax: +420 284 001 448 Email: <a href="mailto:jan.klozar@lfmotol.cuni.cz">jan.klozar@lfmotol.cuni.cz</a> Web: <a href="http://www.ifhnos2006.cz/">www.ifhnos2006.cz/</a>

# CALENDAR OF MEETINGS

Date	Name of Meeting	Place	Secretariat
28-1 Jul	CARS 2006- Computer Assisted Radiology and Surgery	Osaka Japan	Computer Assisted Radiology and Surgery CARS Conference Office Kuessaberg, Germany Tel: +497 742 922 434 Fax: +497 742 922 438 Email: <a href="mailto:office@cars-int.org">office@cars-int.org</a> Web: <a href="http://www.cars-int.org">www.cars-int.org</a>
28-1 Jul	8th World Congress on Gastrointestinal Cancer	Barcelona Spain	European Society for Medical Oncology (ESMA) c/o Imedex Alpharetta, Georgia, United States Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: <a href="mailto:s.clemmons@imedex.com">s.clemmons@imedex.com</a> Web: <a href="http://www.imedex.com/calendars/gastroenterology.asp">www.imedex.com/calendars/gastroenterology.asp</a>
<b>asp</b>			
<b>July</b>			
1-4	19th Meeting of the European Association for Cancer Research EACR 19	Budapest Hungary	Federation of European Cancer Societies Brussels, Belgium Tel: +32 2 755 0205 Fax: +32 2 775 0200 Email: <a href="mailto:EARC19@feces.be">EARC19@feces.be</a> Web: <a href="http://www.fecf.be/emc.asp?pageld=729&amp;Type=P">www.fecf.be/emc.asp?pageld=729&amp;Type=P</a>
8-12	UICC World Cancer Congress	Washington DC United States	American Cancer Society (ACS) Atlanta, USA Tel: +1 404 417 5998 Fax: +1 404 728 0133 Email: <a href="mailto:secretariat2006@cancer.org">secretariat2006@cancer.org</a> Web: <a href="http://www.worldcancercongress.org">www.worldcancercongress.org</a>
12-13	2006 Centres for Disease Control and Prevention (CDC) Cancer Partners Summit	Washington DC United States	American Cancer Society (ACS) Atlanta, USA Tel: +1 404 417 693 3311 Web: <a href="http://www.cdc.gov/cancer/">www.cdc.gov/cancer/</a>
12-15	13th World Conference on Tobacco OR Health	Washington DC United States	American Cancer Society (ACS) Atlanta, USA Tel: +1 404 417 5998 Fax: +1 404 728 0133 Email: <a href="mailto:secretariat2006@cancer.org">secretariat2006@cancer.org</a> Web: <a href="http://www.13thwctoh.org">www.13thwctoh.org</a>
18-28	International Summer School Oncology for Medical Students	Groningen Netherlands	World Health Organisation (WHO) Collaborating Centre for Cancer Education Groningen, Netherlands Tel: +31 50 3612317 Fax: +31 50 3614873 Email: <a href="mailto:summerschool@isoms.nl">summerschool@isoms.nl</a> Web: <a href="http://www.isoms.nl">www.isoms.nl</a>
27-29	3rd International Breast Cancer Conference	Cancun Mexico	Miller School of Medicine- University of Miami c/o Imedex Alpharetta, Georgia, United States Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: <a href="mailto:s.clemmons@imedex.com">s.clemmons@imedex.com</a> Web: <a href="http://www.imedex.com">www.imedex.com</a>
<b>August</b>			
9-12	31st World Congress of the International Society of Hematology (ISH)	San Juan Puerto Rico	International Society of Hematology (ISH) c/o Imedex Alpharetta, Georgia, United States Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: <a href="mailto:s.clemmons@imedex.com">s.clemmons@imedex.com</a> Web: <a href="http://www.imedex.com">www.imedex.com</a>
17-20	2006 Annual Meeting & Research Workshop on Biology, Prevention and Treatment of Head & Neck Cancer	Chicago United States	American Head & Neck Society Joyce Hasper 11300 West Olympic Boulevard Suite 600 90064 Los Angeles Tel: 310 437 0559 ext. 114 Fax: 310 437 0585 Email: <a href="mailto:Joyce@ahns.info">Joyce@ahns.info</a> Web: <a href="http://www.headandneckcancer.org/">www.headandneckcancer.org/</a>



# CALENDAR OF MEETINGS

Date	Name of Meeting	Place	Secretariat
17-20	American Head & Neck Society Annual Meeting and Research Workshop on the Biology, Prevention and Treatment of Head and Neck Cancer	Chicago United States	American Head & Neck Society Joyce Hasper 11300 West Olympic Boulevard Suite 600 90064 Los Angeles Tel: 310 437 0559 ext. 114 Fax: 310 437 0585 E-mail: <a href="mailto:Joyce@ahns.info">Joyce@ahns.info</a> Web: <a href="http://www.ahns.info/meetings/index.php">www.ahns.info/meetings/index.php</a>
24-26	4th International Conference on Gastroenterological Carcinogenesis	Honolulu Hawaii	The University of Texas M.D. Anderson Cancer Centre Houston, United States Tel: +1 713 792 2222 Fax: +1 713 794 1724 Email: <a href="mailto:register@mdanderson.org">register@mdanderson.org</a> <a href="mailto:ctierney@mdanderson.org">ctierney@mdanderson.org</a> Web: <a href="http://www.manderson.org">www.manderson.org</a>
September			
7-9	International Dermoscopy Course and Conference	Warsaw Poland	Dept. Dermatology CSK MSWiA Dr Lidia Rudnicka, MD, PhD Wolaska 137, 02-507 Warszawa Tel: +48 22 824 22 00 Fax: +48 22 508 14 92 Email: <a href="mailto:lidia.rudnicka@yahoo.com">lidia.rudnicka@yahoo.com</a> Web: <a href="http://www.derm.pl/index.html">www.derm.pl/index.html</a>
13-16	Perspectives in Melanoma X	Amsterdam Netherlands	Imedex 70 Technology Drive, 30005 Alpharetta Tel: +1 770 751 7332 Fax: +1 770 751 7334 E-mail: <a href="mailto:s.clemmons@imedex.com">s.clemmons@imedex.com</a> Web: <a href="http://www.imedex.com">www.imedex.com</a>
13-17	International Congress on Hormonal Steroids/Hormones and Cancer	Athens Greece	Erasmus Conferences Tours & Tracel S.A. Mrs. Penelope Mitrogianni 1, Kolofontos & Evridikis str., 161 21 Athens Tel: +30 210 725 7693 Fax: +30 210 725 7532 Email: <a href="mailto:info@erasmus.gr">info@erasmus.gr</a> Web: <a href="http://www.erasmus.gr/web/pages.asp?lang=2&amp;page=1075">www.erasmus.gr/web/pages.asp?lang=2&amp;page=1075</a>
21-23	2006 Gastrointestinal Oncology Conference	Arlington United States	International Society of Gastrointestinal Oncology (ISGO) Mr. Robert Ross 200 Broadhollow RD, 11747 Melville Tel: +63 1 390 8390 Fax: +63 1 393 5091 Email: <a href="mailto:email@isgio.org">email@isgio.org</a> Web: <a href="http://www.isgio.org/">www.isgio.org/</a>
27-28	European School of Oncology Course (ESO): Skin Melanoma	Istanbul Turkey	European School of Oncology (ESO) Milano Italy Ph: + 39 2 8546 451 Fax: +39 2 8546 4545 Email: <a href="mailto:conferences@esoncology.org">conferences@esoncology.org</a> Web: <a href="http://www.cancerworld.org/eso">www.cancerworld.org/eso</a>
27-Oct 1	14th International Conference on Cancer Nursing	Toronto Canada	International Society of Nurses in Cancer Care (ISNCC) Cheshire, UK Tel: +44 116 270 3309 Fax: +44 116 270 3673 Email: <a href="mailto:conference@isncc.org">conference@isncc.org</a> Web: <a href="http://www.isncc.org">www.isncc.org</a>
29-Oct 3	31st European Society for Medical Oncology (EMSO) Congress	Istanbul Turkey	ESMO Congress Viagnello-Lugano, Switzerland Tel: +41 91 973 1919 Fax: +41 91 973 1918 Email: <a href="mailto:congress@esmo.org">congress@esmo.org</a> Web: <a href="http://www.esmo.org">www.esmo.org</a>

# CALENDAR OF MEETINGS

Date	Name of Meeting	Place	Secretariat
October			
8-11	NCRI Cancer Conference	Birmingham United Kingdom	NCRI Conference Secretariat Ms Sharon Vanloo P.O. Box 49709 61 Lincoln's Inn Fields WC2A 3 London Tel: +44 (0)20 7269 3420 Fax: +44 (0)20 7061 6004 Email: <a href="mailto:ncriconference@ncri.org.uk">ncriconference@ncri.org.uk</a> Web: <a href="http://www.ncri.org.uk/conference/">www.ncri.org.uk/conference/</a>
8-12	European Society for Therapeutic Radiology and Oncology (ESTRO 25)	Leipzig Germany	European Society for therapeutic Radiology and Oncology (ESTRO) Brussels, Belgium Tel: +32 2 775 9340 Fax: +32 2 779 5494 Email: <a href="mailto:info@estro.be">info@estro.be</a> Web: <a href="http://www.estro.be/estro/Index.html">www.estro.be/estro/Index.html</a>
8-12	International Conference of Immunogenomics and Immunomics	Budapest Hungary	Diamond Congress - International Conference of Immunogenomics and Immunomics Zoltan Prohaszka P.O.Box 48 , H-1255 Budapest Tel: +36 1 212 9351 Fax: +36 1 212 9351 Email: <a href="mailto:prohoz@kut.sote.hu">prohoz@kut.sote.hu</a> Web: <a href="http://www.bcii2006.org/">www.bcii2006.org/</a>
14-16	5th European Conference: Perspectives in Breast Cancer	Amsterdam Netherlands	Imedex 70 Technology Drive 30005 Alpharetta Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: <a href="mailto:s.clemmons@imedex.com">s.clemmons@imedex.com</a> Web: <a href="http://www.imedex.com/">www.imedex.com/</a>
14-18	11th Biennial International Gynaecological Cancer Society Meeting	California United States	International Gynaecological Cancer Society Geneva, Switzerland Tel: +41 22 908 0488 Fax: +41 22 732 2850 Email: <a href="mailto:igcs-11@kenes-com">igcs-11@kenes-com</a> Web: <a href="http://www.igcs.org">www.igcs.org</a> <a href="http://www.kenes.com/igs-11/">www.kenes.com/igs-11/</a>
18-21	8th World Congress of Psycho-Oncology	Venice Italy	International Psycho-Oncology Society Charlottesville, USA Tel: +1 434 293 5350 Fax: +1 434 977 1856 Email: <a href="mailto:info@ipos-society.org">info@ipos-society.org</a> Web: <a href="http://www.ipos2006.it">www.ipos2006.it</a>
19-21	Lymphoma & Myeloma 2006	New York United States	Imedex 70 Technology Drive 30005 Alpharetta Tel: +1 770 751 7332 Fax: +1 770 751 7334 Email: <a href="mailto:s.clemmons@imedex.com">s.clemmons@imedex.com</a> Web: <a href="http://www.imedex.com/">www.imedex.com/</a>
29-Nov 2	1st International Congress on Childhood Cancer (ICCC 2006)	Tehran Iran	Cancer Institute Research Center MAHAK Childhood Cancer Hospital Oshon BLVD, Darabad Tehran, I. R. of Iran 19575-566 Tehran c/o Alireza Mosavi-jarrahi Tel: +98 21 22481010 Fax: +98 21 22481011 E-mail: <a href="mailto:rmosavi@yahoo.com">rmosavi@yahoo.com</a> Web: <a href="http://www.crc.tums.ac.ir/En/home.asp">www.crc.tums.ac.ir/En/home.asp</a>

# CALENDAR OF MEETINGS

Date	Name of Meeting	Place	Secretariat
<b>November</b>			
2-4 TRM	7th Meeting of the International Society of Geriatric Oncology (SIOG)	The Hague Netherlands	SIOG - International Society of Geriatric Oncology - by T. Romanyk Gevers Deynootweg 62 2586BN The Hague Tel: +31 70 3318444 Fax: +31 70 3318442 Email: <a href="mailto:tatjana.romanyk@trm-oncology.com">tatjana.romanyk@trm-oncology.com</a> Web: <a href="http://www.cancerworld.org/siog/">www.cancerworld.org/siog/</a>
5-8	3rd Asian Pacific Organization for Cancer Prevention (APOCP) General Assembly Conference: "Empowering Cancer Prevention in the Asia Pacific"	Bangkok Thailand	3rd Asian Pacific Organization for Cancer Prevention (APOCP) Nagoya, Japan Tel: +66 1 809 7664 Fax: +66 2 955 9986 Email: <a href="mailto:ktajima@aichi-cc.jp">ktajima@aichi-cc.jp</a> Web: <a href="http://www.apocp.org">www.apocp.org</a>
5-9	48th American Society for Therapeutic Radiology and Oncology (ASTRO) Annual Meeting	Philadelphia United States	American Society for Therapeutic Radiology and Oncology (ASTRO) Fairfax, Virginia, United States Tel: +1 703 227 0170/502 1550 Fax: +1 703 502 7852 Email: <a href="mailto:meetings@astro.org">meetings@astro.org</a> Web: <a href="http://www.astro.org/">www.astro.org/</a>
5-10	XVIII FIGO World Congress of Gynecology and Obstetrics	Kuala Lumpur Malaysia	AOS Conventions and Events Sdn Bhd Kuala Lumpur, Malaysia Tel: +60 3 4252 9100 Fax: +60 3 4257 1133 Email: <a href="mailto:consec@figo2006kl.com">consec@figo2006kl.com</a> Web: <a href="http://www.figo2006kl.com">www.figo2006kl.com</a>
7-10	18th EORTC-NCI-AARC Symposium on Molecular Targets and Cancer Therapeutics	Prague Czech Republic	Federation of European Cancer Societies (FECS) Brussels, Belgium Tel: +32 2 775 0201 Fax: +32 2 775 0200 Email: <a href="mailto:ENA2006@fec.be">ENA2006@fec.be</a> Web: <a href="http://www.fec.be">www.fec.be</a>
9	American Society for Therapeutic Radiology and Oncology (ASTRO) Annual Meeting	Philadelphia United States	American Society for Therapeutic Radiology and Oncology (ASTRO) 12500 Fair Lakes Circle Suite 375 22033 Fairfax Tel: +1 703 227 0170/502 1550 Fax: +1 703 502 7852 Email: <a href="mailto:meetings@astro.org">meetings@astro.org</a> Web: <a href="http://www.astro.org/">www.astro.org/</a>
9-10	Satellite Meeting "Modeling for Detection of Environmental Carcinogens and Modifying Agents in the Asian Pacific"	Chiang Mai Thailand	Asia Pacific Organization for Cancer Prevention (APOCP) Division of Epidemiology and Prevention, Aichi Cancer Center, Research Institute 1-1 Kanokoden, Chikusa-ku, 467-86 Nagoya Tel: +66 1 809 7664 Fax: +66 2 955 9986 Email: <a href="mailto:ktajima@aichi-cc.jp">ktajima@aichi-cc.jp</a> Web: <a href="http://www.apocp.org/">www.apocp.org/</a>
9-11	2006 ONS Nurse Practitioner Conference	Pittsburgh United States	Oncology Nursing Society (ONS) 125 Enterprise Drive 15275- Pittsburgh, Pennsylvania, USA Tel: +1 866 257 4667 /+1 412 859 6100 Fax: +1 877 369 5497 /+1 412 859 6162 Email: <a href="mailto:customer.service@ons.org">customer.service@ons.org</a> Web: <a href="http://www.ons.org/">www.ons.org/</a>
10-12	ONS 2006 Institutes of Learning	Pittsburgh United States	Oncology Nursing Society (ONS) 125 Enterprise Drive 15275- Pittsburgh, Pennsylvania, USA Tel: +1 866 257 4667 /+1 412 859 6100 Fax: +1 877 369 5497 /+1 412 859 6162 Email: <a href="mailto:customer.service@ons.org">customer.service@ons.org</a> Web: <a href="http://www.ons.org/">www.ons.org/</a>

# CALENDAR OF MEETINGS

Date	Name of Meeting	Place	Secretariat
21-22	Cancer World Conference on Improving Cancer Services	Brussels Belgium	European School of Oncology Mariarita Cassese Viale Beatrice d'Este 37 20122 Milan Tel: +0039 02 8546 4522 Fax: +0039 02 8546 4545 Email: <a href="mailto:mcassese@esoncology.org">mcassese@esoncology.org</a> Web: <a href="http://www.cancerworld.org/">www.cancerworld.org/</a>
29-Dec 2	13th Congress of the European Society of Surgical Oncology (ESSO 2006)	Venice Italy	ESSO 2006 Conference secretariat – Federation of European Cancer Societies (FECS) Brussels, Belgium Tel: +32 2 775 0205 Fax: +32 2 775 0200 Email: <a href="mailto:ESSO2006@fec.be">ESSO2006@fec.be</a> Web: <a href="http://www.fec.be/emc.asp?pageld=719&amp;Type=P">www.fec.be/emc.asp?pageld=719&amp;Type=P</a>
<b>December</b>			
10-14	VI International Meeting on Cancer Induced Bone Disease	Texas United States	The Cancer and Bone Society Conference Secretariat 2025 M Street, NW, Suite 800 20036 Washington Tel: +1 202 367-1138 Fax: +1 202 367-2138 Email: <a href="mailto:info@cancerandbonesociety.org">info@cancerandbonesociety.org</a> Web: <a href="http://www.cancerandbonesociety.org/">www.cancerandbonesociety.org/</a>
12	The American Society of Hematology 48th Annual Meeting and Exposition	Florida United States	American Society of Haematology - ASH 1900 M Street, NW Suite 200 20036- Washington DC Tel: +1 202 857 1118 Fax: +1 202 857 1164 Email: <a href="mailto:ash@hematology.org">ash@hematology.org</a> Web: <a href="http://www.hematology.org/meetings/2005/index">www.hematology.org/meetings/2005/index</a>
<a href="#">cfm</a>			



## 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

### CEO

Professor A Coates AM, MD, FRACP, AStat

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## 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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### MEMBERSHIP

Further information about COSA and membership applications are available from:  
[www.cosa.org.au](http://www.cosa.org.au) or [cosa@cancer.org.au](mailto:cosa@cancer.org.au)

Membership fees for 2006

Ordinary Members: \$160  
Associate Members: \$100  
(includes GST)

### INTEREST GROUPS

ANZ Children's Haematology and Oncology  
Breast Oncology  
Cancer Nurses Society of Australia  
Cancer Research  
Clinical Research Professionals  
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