Inquiry into Service and Treatment Options for People with Cancer

Briefing paper: Multidisciplinary Care

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Introduction

Cancer has been reported to affect nearly one third of the Australian population at some stage in their lives (1). The number of newly diagnosed cancers and those living with cancer is increasing steadily (1). In Australia it is estimated that cancer will affect one in three males and one in four females before they reach seventy five years of age (1), (2). Cancer is not one disease but rather is a diverse group of diseases characterised by the proliferation and spread of abnormal cells, which cannot be regulated by normal cellular mechanisms and thus grow in an uncontrolled manner (2). These abnormal cells may then invade and destroy surrounding tissue and spread (metastasise) to distant parts of the body via the circulatory or lymphatic system. Cancer can develop from most types of cells, with each cancer having its own pattern of behaviour and metastasis (2).

The realisation that cancer is a systemic disease has brought about a revolution in diagnosis and treatment. Advances in molecular biology have increased the understanding of how the individual characteristics of cancer patients can help determine prognosis (3), and more importantly, guide treatment strategies. Harnessing such novel therapies requires an individualised approach to both diagnosis and treatment since these novel therapies act by targeting specific systemic appearances at the cellular level. In order to effectively treat cancer it is thus intuitive that it is essential to reach a definite diagnosis and obtain accurate staging (4). However, advances in the evaluation and treatment options for patients with cancer are changing at an ever increasing rate.

The modern clinician is faced with a huge variety of methods to image tumours, biopsy masses, stage cancers and ultimately decide upon a choice of treatment (5). Treatment options ranging from neoadjuvant therapy, regional therapy, organ preservation, limb salvage, tissue reconstruction, postoperative adjuvant chemotherapy, biotherapy and radiation therapy (5) all require complex decisions based upon multimodal evidence gained at the diagnosis and staging ('work up') phase. In addition to evaluating the vast array of evidence obtained from extensive multimodal 'work up', in reaching a final decision clinicians must also be fully conversant with the evidence regarding the efficacy, limitations and regimen of the range of therapeutic strategies that may present for each individual patient. The modern decision making process is further complicated by the existence of an increasingly sophisticated patient population, having higher expectations from the medical establishment (5) and requiring clinical decisions to be evidence-based. Thus, the sum of the many complexities existing in the conundrum that is treatment of patients with cancer have led to arguments for a multidisciplinary approach.

In a nutshell, the argument is based on the premise that because both the ‘work up’ and the act of choosing a therapeutic strategy require multimodal evidence, a multidisciplinary approach to decision making is most appropriate so that expertise in all relevant fields is duly exercised during this critical stage.

The aim of this briefing paper is to present a review of the evidence regarding the efficacy of the multidisciplinary care (MDC) approach as it applies to cancer. Firstly, the international literature will be reviewed followed by published reports and guidelines so as to outline the evidence for and current application of MDC. Next, evidence relating to MDC within an Australian context will be presented. Finally a brief overview of the efficacy, benefits and cost-effectiveness of psychosocial support for cancer will be provided.

The evidence for a multidisciplinary approach to cancer treatment

Evidence that an MDC approach to the care of patients with cancer may improve cancer treatment comes from three main sources. Firstly, evidence reported in original research; secondly, evidence reported in published review articles, position papers and editorials and; thirdly, evidence reported in independent reports and clinical guidelines that combine analyses of original research with the opinion of specialists and policy makers in the field.

1. *Evidence reported in original research studies*

In this section the published research studies are analysed according to the broad theme of the evidence which they supply so that the depth, or lack thereof, of evidence surrounding a particular theme can be elucidated.

A number of studies report better outcomes in terms of reduced mortality and improved quality of life using an MDC approach in the treatment of women with breast cancer (6), (7), (8), (9). In a study by Sainsbury et al (6) the variation in outcome (5 year survival) of 12,861 cancer patients treated in Yorkshire, UK across surgeons was assessed. In this study a clear relationship was established between surgeon caseload and survival with a threshold for better outcome of 30 new patients per year. In addition, the authors found that the use of multiple therapies was an important explanatory factor for the differences between survival curves for individual surgeons. The authors suggested that the increased rate of use of multiple therapies may relate to an MDC approach, concluding that MDC may afford greater survival.

Similarly a study by Gillis at al (7) also found that in a geographically defined population the survival advantage of specialist care was 9% better at five years and 8% better at 10 years. The authors suggested that the benefit associated with care provided by specialists may be due to the use of a full range of therapeutic options. In this study, specialist interest in breast cancer (the definition used of specialist care for the study) was characterised by the setting up of dedicated breast clinics, having a defined association with pathologists and oncologists, and organising and facilitating clinical trails ie practicing MDC.

Management by a multidisciplinary care team has also been proposed as responsible for increased survival in women with ovarian cancer (10). Junor et al conducted a retrospective study of all 533 cases of ovarian cancer registered in Scotland in 1987 finding that after adjustment for age, stage of disease, pathology, degree of differentiation and presence of ascites, survival improved when patients were managed by an MDC team.

A significant improvement in three-year disease-free survival and local control has also been reported for patients with soft tissue sarcomas treated using MDC at a hospital in Finland (11). Outcomes for patients referred to MDC between 1987 and 1993 were compared both with previously published results from the hospital in which the group was established, and population-based Finish data.

Gabel et al (8) undertook a case control study of the effect of an MDC approach (one-stop-shop) on patient satisfaction. The authors found that compared to a traditional sequential consultation approach (at the same facility), the MDC approach both increased patient satisfaction and reduced the time between diagnosis and treatment. The authors concluded that in addition to potentially increasing survival an MDC approach may have psychologic benefits to the patients. In a separate study looking at patient satisfaction and psychosocial issues by Frost et al (12). Satisfaction with health, healthcare, physical and psychosocial adjustment in women who received a standard medical-oncology consultation in the hospital was compared with that of women who received their consultation as part of a multidisciplinary out-patient clinic. The authors found that women in the multidisciplinary out-patient clinic group reported significantly higher levels of physical function and satisfaction with their health, physician and nursing care than women in the hospital group. The authors concluded that an MDC approach has positive physical and psychosocial benefits to the patient.

An Australian study undertaken by the National Breast Cancer Centre's Specialist Breast Nurse Project Team examined the feasibility, implementation, acceptability and impact of an evidence-based specialist breast care nurse (SBN) model of MDC. In this case control study primary data were collected from four Australian breast cancer treatment centres over a 12 month period about the provision of care and patient needs via prospective logs and structured interviews. The cases were women who received the SBN intervention, while controls were women treated prior to the intervention period. In addition, health professionals were interviewed regarding their experience with and perceptions of the SBN model. The study demonstrated that an SBN model is both feasible and acceptable within Australia. The findings indicated that both the women and treatment team felt that centres providing SBN care were preferable to those that did not. Specifically the treatment team believed that the SBN model facilitated a more cohesive method of service delivery and better resource utilisation. The study also reported that the SBN model played an important role in providing information about clinical trials and encouraged participation. Further, the study showed that SBNs were able to identify up to 72% of women experiencing depression or anxiety problems, comparing favourably with rates of detection of psychological disturbance by other clinicians.

There is also some evidence suggesting that an MDC approach leads to both a wider range of, more appropriate and evidence-based, treatment options. In a study by Chang et al (13) undertaken in the US, treatment recommendations received by women during single or sequential consultations were compared with a second opinion provided by a multidisciplinary panel. The authors found that for 43% of the women (32 patients), the treatment recommended by the multidisciplinary panel both substantially differed from that recommended by the individuals' physicians and was more likely to concur with internationally accepted standards. The authors concluded that there was strong evidence that an MDC approach was clinically important for patients as it facilitated the consideration of a full range of treatment options. One reason proposed for the objective benefit afforded by an MDC approach was that MDC facilitates consensus based decision making. This is in contrast to conventional sequential consultations where independent opinions are offered, often without consensus. The importance of a team-management style was also reported by Kim and Toge (3) who compared an MDC approach with a traditional individual approach finding that multidisciplinary conferences in which medical oncologists, surgeons, radiologists, and staff from related disciplines all take part are helpful and more effective than sequestered referrals to a similar mix of specialists.

A retrospective audit of the management of thyroid cancer patients in a large teaching hospital in the UK found that inadequate surgery and failure to administer radioiodine therapy were less common in patients managed in an MDC setting than in patients managed by individual clinicians (14). The specialist MDC clinic involved joint management of patients by specialists (including surgeons, endocrinologists and oncologists) with an interest in the disease.

A survey of the opinions of non-radiologist clinicians regarding the active participation by abdominal radiologists in a multidisciplinary gastrointestinal cancer clinic in the US revealed that radiologist participation was highly regarded (15). Specific benefits cited in the survey included improved interpretation, more efficient use of non-radiologist clinician time and improved rapport between radiologists and non-radiologists. In addition, non-radiologist clinicians believed that patient care was improved.

An American study (16) examined the use, and effects on treatment choice, of a preoperative radiation oncology consultation in 1188 women aged over 64 years of age with primary breast cancer. In this study preoperative consultation with a radiation oncologist (an MDC approach) was associated with greater use of breast conserving surgery including radiation in accordance with the NIH Consensus Panel's recommendation that breast conserving surgery with radiation therapy is the preferred treatment choice for women with early-stage breast carcinoma. The authors suggest failure to utilise an MDC approach may translate to missed opportunities to provide women with the most complete information about treatment options and may lead to treatment contrary to recommended guidelines. In addition, the authors suggest that women's use of MDC services may influence their treatment choices, raising important questions regarding how the information women receive affects these choices.

Howard et al (17) reported on the patterns of referral, management and survival of men with prostate cancer registered in the Scottish Cancer Registry between 1988 and 1993. The audit revealed considerable inconsistencies in the management of prostate cancer in Scotland with referral being idiosyncratic. Specifically, the study found that only a small proportion of patients saw an oncologist for their primary treatment and that in most cases there was inadequate staging. The authors conclude that given the controversy in management of this disease, a multidisciplinary approach, proper staging and documentation is essential.

A three year National Multidisciplinary Care Demonstration project was designed to provide information about the process, impact, acceptability and cost of the provision of MDC for women with breast cancer at three multi-facility sites in Australia (9). The results of this study will be described in detail in the section on MDC in Australia; however, a key finding of the project was that MDC afforded significant improvements in evidence-based practice, which was expected to have flow on effects to outcome.

There is also some evidence suggesting that management of patients by multidisciplinary teams may increase recruitment into clinical trials (18), (19). In a study from Scotland, women with breast cancer seen by a specialist surgeon and those referred to an oncologist were significantly more likely to enter clinical trials. Women seen by surgeons with a high caseload or referred to an oncologist were approximately seven times and three times, respectively, more likely to enter a clinical trial (18). In the US, an investigation of patient accrual into National Cancer Institute-sponsored cancer treatment trials found that the number of oncologists and the presence of a hospital with an approved cancer program were both significantly associated with increased patient accrual into clinical trials (19). The benefit of MDC is also recognised by the American College of Surgeons Commission on Cancer which requires, among other things, hospitals to have a multidisciplinary cancer committee prior to approval of cancer programs.

Limited literature is available regarding the cost of MDC. However, a cost–outcomes analysis of care for melanoma patients at a multidisciplinary melanoma clinic in the US has suggested that MDC may reduce healthcare costs (20). The analysis evaluated whether coordinated multidisciplinary melanoma care that follows evidence-based, consensus-approved clinical practice guidelines in a large academic medical centre could provide a more efficient alternative to traditional community-based strategies with clinical outcomes that were at least equivalent. The study found that patients treated in the multidisciplinary clinic would save a third-party payer approximately US$1600 per patient when compared with a similar group treated in the community. Surgical morbidity, length of hospitalisation and long-term survival of the multidisciplinary clinic patients were similar to those reported in the literature. The cost discrepancy identified was reported to be a direct result of differences in the utilisation patterns of health care resources (20).

2. *Evidence from published review articles, position papers and editorials*

Rather than by the theme of the evidence, as in the previous section, literature contained in this section has been analysed in date order so as to allow each commentary to be situated within the context of the evolution of opinion regarding the MDC approach to patients with cancer.

In 1993 a report by August et al (21) appeared in the Journal of Surgical Oncology detailing the experiences of the authors at the University of Michigan Breast Care Center (BCC). The BCC was established in 1985 to provide comprehensive, multidisciplinary diagnosis and treatment of benign and malignant breast disease. Using a database to generate information on all patients seen in the BCC between 1 February 1985 and 31 December 1991, the authors reviewed and profiled outpatient, inpatient, clinical and consultative activities; referral patterns; and BCC educational and academic activities. The authors suggest that an MDC approach to patient care can be clinically, academic, financially, and academically superior and productive. They report that establishment of the BCC resulted in a fivefold increase in breast care related activity, with over half the patients treated for breast cancer receiving breast conserving therapy. They also report that the BCC provided a unique educational function and that enrolment in clinical trials increased dramatically following its introduction.

In 1996 a review article appeared in the Lancet (22), reviewing the evidence of the benefits of specialised cancer care. The review was prompted by the then recent publication of recommendations for cancer care provided in a report by Calman and Hine for the Expert Advisory Group on Cancer to the Chief Medical Officer of England and Wales (23). The ‘Calman-Hine’ report recommended that cancer centres, cancer units and a network involving care for the treatment of cancer patients in the UK would improve outcomes. The authors of this review support the proposition of the report, that there is strong evidence to suggest that some aspects of specialisation (training, caseload and the formation of multidisciplinary teams) improves outcomes. However, the authors disagree with the implication suggested that such specialised care cannot be successfully delivered by a network of district hospitals linked to main general or teaching hospitals. The authors cite studies which support their argument that a network of specialised services in district general hospitals can achieve good outcomes. Rather, the authors suggest that it is the protocols, clinical guidelines and relationship with larger centres that are important as part of the essential infrastructure rather than the siting of services per se.

In 1998 a guest editorial was published in the Journal of Surgical Oncology entitled, ‘Multidisciplinary Cancer Clinics: Their Time Has Come’ (5). In addition to putting forward the case for multidisciplinary cancer clinics and MDC in general, this editorial presents evidence of the potential cost effectiveness of MDC. The author presents additional data from the Multidisciplinary Melanoma Clinic (previously cited here (20)), attributing the cost savings observed in the MDC approach to a decreased usage of 'unnecessary' healthcare studies. He argues that, by standardising the evaluation of the patient by evidence-based guidelines, the cost of care can be significantly reduced in an MDC setting.

In 2000 an editorial appeared in the Medical Journal of Australia written by Sally Redman and Tom Reeve (24). The authors discuss the implementation of the NHMRC clinical practice guidelines for the management of early breast cancer released in 1995 (25). Using evidence contained in a report by the NHMRC National Breast Cancer Centre (unavailable at this time), they argue that as late as 1999 some aspects of cancer care were still not in line with the guidelines. Specifically they cite the use of tamoxifen in women with oestrogen receptor positive tumours, the recommendation to decrease the rates of testing for distant metastases at the time of diagnosis of early breast cancer; and the recommendation to increase participation in clinical trials, as examples of such deficiencies. The authors emphasise the importance of information about current best practice as key to supporting evidence-based care, stating that 'it enables the best use of scarce resources.' They suggest that there is strong evidence that a multidisciplinary team approach is more likely to result in evidence-based care and better patient outcomes than clinicians working in isolation.

In 2002 a review article appeared in Breast Cancer Research and Treatment by Gabriel Hortobagyi (26) from the Anderson Cancer Center in Houston detailing the many significant advances in the variety of therapies available for the treatment of breast cancer. The article gives a good overview of the complexity of the current choices available in both primary and metastatic breast cancer management. In outlining the choices facing the clinician Hortobagyi comments that 'as the number of effective therapies increases, it becomes increasingly important to be able to select the correct combination or sequence of agents.' With this statement Hortobagyi points to the need for a multidisciplinary approach to therapy.

In 2002, Ko et al (27) conducted a population based survey of lung, prostate, breast and colon cancer patients who were less than three years from diagnosis. The aim of the study was to gain a broader and more detailed understanding of important 'noncancer' issues that may affect outcome. The study evaluated and characterised four separate issues: (i) types and prevalence of specific comorbid diseases, (ii) prevalence of poor health behaviours, (iii) receipt of preventative care services, and (iv) the way the patients currently received health services. Comparisons were made with age-matched controls without cancer. The authors found that the effect of coexistent disease on cancer was substantial, the outcome in terms of mortality, length of stay and postoperative complications being generally worse for those with comorbidities. The authors suggest that is important to risk-stratify patients based on existence and severity of coexisting disease prior to treatment decisions and further, that this suggests a need for a coordination approach (MDC) among providers of cancer care.

In 2003 Debu Tripathy, the President of the American Society of Breast Disease published a review paper entitled ‘Multidisciplinary care for breast cancer: barriers and solutions’ (28). The paper details the increasingly multidisciplinary nature of breast cancer treatment and research, suggesting that several modalities and areas of expertise are critical for optimal patient management. Tripathy states ‘that in many clinical scenarios, numerous specialities are involved including surgical, medical, radiation oncology, radiology, pathology, genetic/risk counselling, gynecology and the psychosocial sciences.’ An example of locally advanced breast cancer is used to demonstrate the superiority of the MDC approach. The multidisciplinary scenario presented is a case of neoadjuvant (preoperative) systemic therapy followed by surgery and radiation therapy. Tripathy points out that such a treatment regimen is commonplace and requires careful imaging, treatment planning and detailed pathologic assessment. In addition, she states ‘…there needs to be clear lines of communication between specialists and coordination of appointments for visits and procedures.’ Tripathy suggests that such an MDC approach to cancer management has a clear advantage to the patient, primarily by improving the opportunities for breast conserving surgery where possible, and secondly allowing tailored therapy based on the individual’s tumour biology and sensitivity / response to therapy to be undertaken.

In 2003 a paper by Buchholz et al (29) reviewed the issues surrounding the increasingly common practice of neoadjuvant (preoperative) chemotherapy for treatment of breast cancer. The authors discuss the therapeutic advantages of this treatment option which are in essence (i) that in up to 80% of cases a substantial reduction in the size of the primary tumour and lymph node metastases have been observed, increasing the probability that breast-conserving surgery can be performed; and (ii) that it permits the assessment of response of the primary tumour to a particular chemotherapy regimen allowing the opportunity to ‘cross over’ to a different regimen for an individual patient if there is minimal or no response to the first regimen. The authors report that neoadjuvant chemotherapy does not solely affect medical oncology decisions, but rather it impacts on all disciplines that participate in the management of breast cancer including surgical oncology, breast imaging, breast pathology, and radiation oncology. The authors suggest that it is therefore imperative that clinicians from all these disciplines participate in the decisions regarding treatment sequencing and work together closely to create a multidisciplinary infrastructure.

In 2004 an article was published in ‘Pathology’ discussing the importance of cooperation between surgical oncologists and pathologists in the care of patients with cancer (4). The authors of this position paper make the point that it is essential to reach a definite diagnosis, obtain accurate staging and provide appropriate initial treatment if a patient with cancer is to be treated successfully. The authors propose that the most important aspect of this is close cooperation, including the free exchange of information, between surgical oncologists and pathologists. The authors suggest that the key to successful management of patients with cancer lies in a clear understanding by the surgeon of what the pathologist is actually reporting, and importantly, what remains uncertain. In addition, they state that ‘…as with any successful partnership communication in the opposite direction is also necessary.’ This article makes explicit the enormous value of close cooperation particularly with respect to the ‘clear and free exchange of information.’ This is one of the fundamental aims of an MDC approach, usually facilitated by multidisciplinary case conferences and a team approach.

In 2004 a short commentary appeared in the New Zealand Medical Journal which gave an overview of the evidence for a multidisciplinary team approach to care of patients with breast cancer (30). The author presents the consensus of opinion reported within the clinical guidelines for breast cancer from the UK, Australia and New Zealand, all of which suggest that breast cancer should be managed by multidisciplinary teams. In addition, in this commentary the author states that multidisciplinary breast care units ‘are also cost–effective’ due to a reduction in outpatient visits, reduction in diagnostic and treatment delays, and improved efficiency ie. reducing duplication and administration overheads.

Finally, also in 2004 Jefferies and Chan (31) reported on the experience of the Cancer Services Collaborative program initiated in 1999 in the UK. The authors detail the workings of the multidisciplinary team (MDT), which was endorsed by the program as the main mechanism to ensure ‘truly holistic care for patients,’ and the MDT meetings (case conferences). The authors report that the consensus within the team of healthcare professionals after five years experience of the program was that the holistic MDT meetings were beneficial to patients. The authors suggested the reason for the benefit is that ‘…the shared values, goals and visions that provide the basis for all other decision making in the collaborative practice.’

3. *Evidence reported in independent reports and clinical guidelines*

In this section opinions and evidence presented in independent reports are presented. Firstly reports from the UK are used to follow the process of restructuring cancer services with emphasis on aspects relating to MDC, followed by reports on cancer services from Australia. Finally recommendations documented in published practice guidelines are presented.

3.1 Restructuring cancer services in the UK

The publication of the 'Calman-Hine' report (23) in 1995 marked the first broadly based cancer policy for England and Wales. It defined the principles and structural framework for the delivery of better care for patients with cancer, emphasising the central importance of meeting patients needs. A key aspect of the recommendations was the formation of cancer units and recognition of the importance of inter-disciplinary and collaborative arrangements for the delivery of services. The single most crucial recommendation was that hospital care should be provided by a range of specialists in the disease concerned, working together in site-specific multidisciplinary teams.

The NHS Cancer Plan published in 2000 (32) set out the first ever comprehensive practical strategy to tackle cancer. This was the first time any government had drawn up a major programme of action linking prevention, diagnosis, treatment, care and research. At the time the NHS was proud its cancer services. Research and treatment of children's cancers were among the best in the world. Thanks to the hospice movement and charities there was a strong tradition of palliative care and the NHS breast cancer screening programme was the most comprehensive of any comparable country. However, it was recognised that in too many areas the reality of the cancer services failed to match the level of commitment. As a result of decades of under-investment and outdated practices the survival rates for many of the major cancers lagged behind the rest of Europe. The poor were still far more likely to get cancer than the rich, and their chances of survival were also lower. Furthermore, there were many variations in the quality of care and treatment across the country, leaving cancer patients frustrated by what was termed a 'postcode lottery'. The NHS Plan, published in July 2000, had set out the government's plans for investment and reform across the NHS. The objective being to develop a health service for the 21st century, offering fast, convenient, high quality care, with patients at the centre.

The 'Cancer Plan' set out how these improvements were to be introduced and was a 'practical document.' As had been previously determined by the 'Calman-Hine' report, cancer services were best provided by teams of clinicians (doctors, nurses, radiographers and other specialists) who work together effectively. The focus of the NHS cancer plan was therefore a practical way of facilitating this team working by bringing together staff with the necessary knowledge, skills and experience to ensure high quality diagnosis, treatment and care. The plan also aimed to improve the co-ordination and continuity of care for patients using a similar methodology. The plan focussed on cancer networks as the organisational model for cancer services. These networks sought to bring together health service commissioners (health authorities, primary care groups and trusts) and providers (primary and community care and hospitals), the voluntary sector, and local authorities. Each network was to typically serve a population of around one to two million people.

Following 1997, the policy context for cancer services in the UK had changed. In 2001 cancer was viewed as the top priority and new resources had been committed to its treatment and care. In England, there was a Cancer Action Team; a National Cancer Director; and a National Cancer Plan, proposing national standards. The Cancer Services Collaborative, covering all of England, had also been set up to develop good local practice. Guidance on clinical standards had also been issued on a regular basis. In Wales, an expert advisory committee was set up following the ‘Calman-Hine’ report, publishing its own report (the Cameron Report) in 1997 establishing the way forward. In addition, a National Health Plan, which emphasised a commitment to further develop and improve cancer services, including minimum standards for the care of common cancers, was commissioned.

While the ‘Calman-Hine’ report provided an important impetus in setting the agenda for the development of cancer services, it contained no central plan for implementing its proposals and provided no resources for this task. Due to the devolved nature of NHS management across the UK, each English region and Wales subsequently went on to develop its own strategy and approach. The ‘NHS Cancer Care in England and Wales’ report published in 2001 (33) examined the variation in the way that cancer services were delivered and organised, and assessed if the aims of the cancer plan had been realised, especially with regard to providing patient-centred care.

Key findings from the report with respect to multidisciplinary care were:

- Most patients felt the diagnosis of cancer had been given sensitively, but some had poor experiences; they welcomed the involvement of a specialist nurse at the time of diagnosis, but these were in short supply for many types of cancer.

- The GPs’ ability to discuss the diagnosis and prognosis with patients was found to be hampered by lack of information from consultants, thus restricting continuity of care.
- Despite growing specialisation in cancer, and sub-specialisation among surgeons, many patients were still being operated on by non specialists. While the majority of medical and clinical oncologists saw patients with more than one type of cancer, some were generalists.
- Only about half of all patients with cancer received some chemotherapy, varying with both the type of cancer and the practice of individual consultants.
- Multidisciplinary teams, comprising of lead surgeons or physicians with other doctors and specialist nurses, were becoming increasingly the norm. However, there was still considerable progress to be made in arrangements for some types of common cancer. Some teams did not meet frequently and did not involve all relevant staff. In addition communication with others outside the team, such as GPs or district nurses, was often a problem.
- Many trusts did not have agreed policies for the management of many cancers and, where policies did exist, it was unclear whether they were followed because the practice was not audited.
- The services of psychologists or counsellors for patients with cancer were found to be in limited supply.
- Cancer networks, intended to achieve more co-ordinated planning and common treatment standards in an area, were well established across England and Wales. There was evidence of close cooperation between clinicians in some networks, but service managers tended to operate more traditionally.
- Overall the process of designating cancer centres and units was found to have been difficult, with the criteria used variable across the English regions and Wales.

The report concluded that many key recommendations of the ‘Calman-Hine’ report had not been fully implemented. Specifically, from the patient point of view, there remained poor communication and failure to plan care in a systematic way between the different professionals involved. Many patients also still lacked access to specialist nurses. Failures were also identified in the wider system culminating in patients not always receiving the best treatment or care. Striking variations in provision of care both across geographical areas and between patients with different types of cancer were still apparent. The report concluded that formal policies and plans were not enough to ensure patient-centred services were realised; rather a change in the attitudes and behaviour of those working with patients was also required.

As part of the modernisation program in the NHS the Cancer Services Collaborative (CSC) was set up. This was one of several initiatives, including clinical governance that formed parallel approaches to improving quality of and access to NHS health services (34). The goal of the CSC was to improve the experience and outcome of care for people with suspected or diagnosed cancer by improving the way care was delivered. In phase 1, the CSC comprised nine cancer networks. Each network received £500,000 to run up to five tumour-specific projects to improve services for patients with bowel, breast, lung, ovarian and prostate cancer over a period of eighteen months. The program began in October 1999 and ended in March 2001. Phase 2 of the initiative was aimed at promoting the routine implementation of multidisciplinary teams. To facilitate this, the CSC produced a series of tumour-specific guides including a guide to working in a multidisciplinary team.

Three years later a comprehensive progress report was published (35) setting out the progress made on cancer to date. The report was undertaken by the NHS Modernisation Board, which was set up to advise the Secretary of State for Health and his ministerial team on implementing the 'NHS Plan'. It consisted of a group of senior health and social care professionals, frontline staff, managers and patient representatives who met with the Secretary of State every three months to discuss progress and guide priorities. The report indicated that the implementation of national guidance and standards in cancer had lead to the wider availability of specialist multi-disciplinary teams, which had succeeded in effectively delivering co-ordinated care across organisational boundaries. The investigation found that one third of all cancer teams were engaged in the work of the CSC, and that the CSC had been effective in reducing waiting times and improving the experience and outcomes for patients by optimising delivery systems across the whole care pathway. Due to the success of the approach a key objective reported for the future was to ensure that the CSC modernisation approach became part of routine practice for all cancer teams in all cancer networks.

3.2 Reports on cancer services in Australia

In 1996 cancer control was identified as one of six National Health Priority Areas. The following year saw the publication of the National Health Priority Areas report (2). This report outlined basic strategies for change across the continuum of care for cancer control in Australia. The report focussed on six specific cancers that represented the major concern in all States and Territories where it was thought significant gains could be achieved through prevention and control. Opportunities for cancer control in Australia were presented based on 'a framework for change' which included strengthening clinical best practice and introducing MDC. The report highlighted the importance of the development of evidence-based practice guidelines, to define and encourage best practice and promote consistent use of the most efficient and effective approaches to cancer prevention and treatment. The report also highlighted the role of MDC in cancer treatment recognising that multidisciplinary teams were being increasingly seen as 'state of the art'. The extent of advocacy for MDC was reported to be a reflection of an increasingly widespread belief that patients would benefit if processes ensuring patients were treated by specialists from several disciplines were in place. However, the report recommended that further investigation was required to identify the cancers and stages of illness in which patients were most likely to benefit from MDC.

In mid 1998 the Cancer Strategies Group (CSG), a sub-committee of the National Health Priority Action Council, was formed to establish a National Cancer Control Plan as part of the priority setting process. A working group of the CSG was then convened to prepare an action plan, starting with the 21 priority areas previously identified by the National Cancer Control Initiative. The report, 'Priorities for Action in Cancer Control' published in 2001 (36) recommended 13 priority actions which could be implemented to address important needs in cancer control. With regard to treatment of cancer, the report recommended 'reorganising breast cancer management to ensure seamless continuity of care from screening, or first presentation with symptoms, to diagnosis, treatment and follow-up care'. Specifically the report recognised that '…multidisciplinary models were fundamental to providing best care in breast cancer.' However, the report acknowledged that as yet little was known about the application of MDC principles in the Australian context, including their costs or how they could be improved. The report detailed several initiatives which addressed some of the issues surrounding MDC in Australia and suggested that such initiatives should be coordinated to avoid duplication and to ensure the best use was made of the information from them at a national level. With regard to ovarian and lung cancer the report recommended 'improving outcomes from ovarian and lung cancer by ensuring that all people with these cancers are assessed at a multidisciplinary specialist centre as soon as possible after diagnosis.' Stating that '…there is evidence that a coordinated team approach to the diagnosis and treatment of lung cancer achieves higher rates of potentially curative resection.' The report also cited the United Kingdom National Health Service evidence-based guidance on improving outcomes in lung cancer which recommended that 'all patients with lung cancer should be assessed and managed by specialist multi-professional teams'. The report acknowledged that while such teams existed in most major centres where cancer was treated in Australia, there were no guidelines promoting referral to them and no systems in place prompting, or facilitating, referral when lung cancer was suspected.

The report found a similar position existed for ovarian cancer, citing evidence from observational studies that had consistently found significant improvement in the stage-adjusted survival of women with ovarian cancer when a gynaecologist rather than a general surgeon managed them. The report went on to allude to data which showed that survival increased with care from a gynaecological oncologist compared with that from a general gynaecologist. The report suggested that this advantage was probably due to a reduction in residual disease afforded by an increased chance of optimal chemotherapy with expert care, especially in stage III disease (the most common and also most serious stage). However, the report found that as with lung cancer, at the time there were no Australian guidelines for the treatment of ovarian cancer and no systems in place that would prompt or facilitate referral of women with ovarian cancer for expert care. The report went on to suggest that the Australian guidelines, under development at the time, for the management of lung and ovarian cancer should be completed as soon as possible and that steps taken should be maximise their implementation.

With regard to support for cancer patients, the report found that there was some evidence that the provision of specialist breast care nurses as part of an MDC approach improved information provision and reduced psychological problems in women with breast cancer. The report recommended ‘improving the psychosocial care of women with breast cancer through provision of breast care nurses’. Suggesting that if successful, the national approach developed for breast care nurses should be used as a model for other cancers. The report noted that the concept had already been extended to prostate care nurses in Victoria and that melanoma care nurses had been practising in Australia for over 25 years, indicating the wider applicability of the model. The report went on to describe the health benefits and costs of provision of access to breast care nurses for all women with breast cancer stating that marginal analysis had indicated a cost effectiveness ratio of $935 per Disability Adjusted Life Year (DALY) saved, for an annual gain of 5,188 DALYs per year. The total annual cost was estimated to be approximately $5 million. However, it was noted that in the economic analysis no allowance was made for possible cost offsets from savings in clinician time or broader health system offsets due to early intervention for women diagnosed with anxiety or depression.

With regard to equity, the report suggested that care provided by breast care nurses was unlikely to worsen any existing inequalities for breast cancer patients, proposing that such care may allow groups with special needs to receive better care. The report notes however, that giving women access to breast care nurses in rural and remote areas while feasible, would be somewhat more expensive, and may require different models of care, such as delivery by Aboriginal Health Workers. As for acceptability, the report states that breast care nurses have been found to be acceptable both to women with breast cancer and health practitioners who treat breast cancer. In addition, due to the small cost, in absolute terms, of provision of breast cancer nurses the report suggests that this would be acceptable to funding bodies.

The report also suggested that due to the high proportion of people diagnosed with cancer experiencing severe psychosocial problems such as anxiety and depression, psychologists or other appropriately trained health professionals should be included in multidisciplinary care teams. Analysis of the cost-effectiveness of introducing short-term cognitive behavioural therapy and longer-term supportive psychotherapy, suggested that this intervention would produce an important reduction in psychosocial disability at moderate cost ($5,292 per DALY saved). The report noted that the feasibility of this intervention would depend on its acceptability to patients and health practitioners and the availability of psychologists or other appropriately trained health professionals. A phased implementation of this intervention was proposed by way of initial pilot and feasibility study followed by progressive capacity building.

In 2002 a report entitled ‘optimising cancer care in Australia’ (1) was produced under the auspices of the Clinical Oncological Society of Australia (COSA), The Cancer Council Australia (TCCA) and the National Cancer Control Initiative (NCCI). The purpose of the report was to provide a distilled overview of the views of a broad cross-section of Australian consumers and cancer care providers as to how integrated cancer care could be achieved. The report was borne out of concerns about stories of frustrations caused by the inability to access appropriate and timely care, fragmented management and lack of ongoing support along the cancer journey. The underlying ideology behind the report was that by implementing changes that are known to improve the way treatment is delivered and to empower those who are living with cancer to take control of their lives, the quality of life for both cancer patients and their carers would be greatly improved.

The report was based on views of consumers, practitioners and representatives of organisations who were interviewed, published evidence and international reforms. Matters which were found to stand out from the consultations and research as being key areas that needed to be considered for change included:

1. Models of cancer care:
    - multidisciplinary or not?
    - the volume-outcome relationship (is there a need to move to fewer centres seeing larger numbers of patients?)

2. Quality of cancer care:
    - how to ensure patients receive care that is evidence-based, appropriate and comprehensive, and how would we know?
    - the need to develop both quality systems and systems that measure how we are going.
3. Resource issues in cancer care:
    - workforce (shortages, roles, training, communication skills)
    - physical infrastructure (particularly radiotherapy units)
    - accessibility and availability of drugs
    - access (particularly transport to treatment centres).
4. Improving the delivery of cancer care.

The report went on to compare and contrast opinions and utilisation on the two basic models of cancer care operating in Australia. Both were found to occur in the public and private sectors, although it was noted that the integrated multidisciplinary care model (iMDC) was much less common in the private sector. Most commonly used across the board was the traditional model of referral and care, which usually took the form of a GP referring a patient to a specialist (most often a surgeon) who made the diagnosis and conducted the primary intervention, usually removal of part or all of a tumour. The initial specialist may subsequently refer the patient for opinions from other cancer specialists (medical oncologist, radiation oncologist or surgeon) before or after the primary intervention, depending upon there evaluation of the need for further treatment. The report found that private practitioners thought this model worked well, it seemed predominantly because it was the model around which Medicare and the private health insurance system was organised ie. the model from which funding was most easily obtained, (personal communication). Critics of the model said that '…the inherent defect of the traditional model is its dependence upon the primary specialist recognising that further referral is necessary, either before they intervene (with the associated risk of possible loss of income) or afterwards'. It was suggested by its critics that '…the model leads to too many opportunities [for patients] to receive suboptimal therapy'. The report also indicated that consumers were particularly concerned about this risk.

The alternative model of care, the integrated multidisciplinary model (iMDC), was defined as being based on a team approach where the team agree on the precise diagnosis and staging of the disease, the best treatment option for the patient (taking into account the patient's own preferences), and development of a treatment plan. Proponents of the iMDC approach indicated that the rationale for its use was that most people with cancer usually require input from several clinical disciplines to optimise treatment. In addition, it was suggested that while this was most obviously true at the commencement of treatment, the majority of proponents felt it to be equally important through the rehabilitative and palliative phases. Proponents of iMDC thought that an important consequence of the approach was the ability to obtain a clinical consensus about treatment, rather than as is usual in the traditional model each discipline acting unilaterally resulting in poorly coordinated and potentially poorer care. Clinicians were reportedly divided as to how consensus was gained, some advocated multidisciplinary team meetings for all cases, while others advocated adherence to previously agreed protocols when the diagnosis, treatment and outcome for the condition were relatively uniform from case to case.

In the Australian context, the most advanced iMDC models were found to be in children's cancer, gynaecological cancer and head and neck cancer. The case of children's cancer was determined to be 'unique', essentially because all children were treated in children's hospitals and so received 'best practice care'. Whereas it was found that the opportunity for adults with cancer to receive iMDC depended upon where they were treated. It was found that iMDC models were largely restricted to the metropolitan tertiary public hospital setting with models applicable to the private sector and more broadly in the public sector in need of development. It was suggested that the advent of videoconferencing had greatly facilitated multidisciplinary team meetings between remote sites, with the example cited of their routine use to good effect between Darwin and Adelaide. However, it was conceded that there were significant overheads involved in the organisation of team meetings, especially when conducted remotely, citing the example of the duplication of radiographs. However, this author knows that the recent (2003 onwards) routine use of teleradiography and digital imaging in both the public and private sectors is likely to significantly impact on such overheads. The report states that of the common cancers, more was being done to address the need for iMDC in breast cancer than in other cancers. The principles of MDC, stemming from the national demonstration project in breast cancer (to be discussed in a separate section of this briefing), had been recently published in Australia by Luxford and Rainbird (37) at the time of this report. The view expressed by those interviewed was that while these principles were aimed only at breast cancer they were '…the nearest thing to a formal definition of iMDC and should be adopted.'

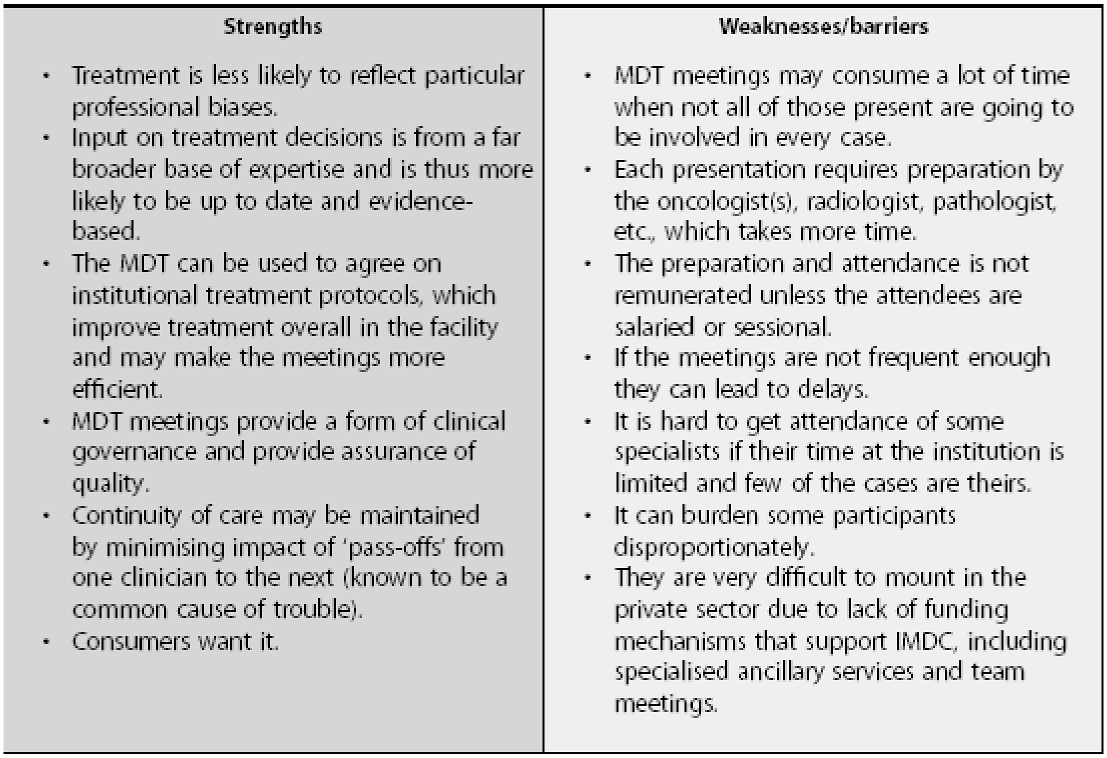
The report commented on the status of iMDC in Australia finding that there were varying views and practices around iMDC and the role of the multidisciplinary team. At the time of the study most of the major cancer centres in the larger capitals had implemented models of iMDC. However, there was evidence of considerable difficulties in providing iMDC in the private sector largely attributable to the funding arrangements for private healthcare. Specifically, there were no appropriate MBS items for the majority of specialists who were integral to an iMDC team, and little or no funding for the specialised ancillary support required, such as therapists, psychologists and counsellors. In addition, when analysing the issue of quality of cancer care the report commented '…that since the Medicare system neither recognises the need for nor rewards subspecialisation the current funding system does not provide a flexible means of delivering cancer care via iMDC.' A recommendation made by the report was that '…consideration be given to ways to enhance the Medicare Benefits Schedule so that it better supports an evidence-based, integrated multidisciplinary approach to cancer care.'

The report found that the essential elements of a multidisciplinary team approach in the Australian context include participation by all the specialists identified in the national guidelines for management of that disease. However, it was recommended that the precise composition of the team on any day would depend upon the point in the disease course that was being considered. For example if palliation was the aim, then the composition would differ from that of a team considering a curative intent. The report found that at a minimum, iMDC requires agreement to treatment protocols/pathways that are evidence-based.

Several difficulties in applying a team based model in Australia were reported including:

- The time that team meetings take and the number of attendees, not all of whom will have a particular role at any given moment.
- The time it takes to prepare presentations to the meetings (greatly facilitated for the specialist when there are resources such as registrars to draw on).
- The greater impact on some specialists who may have to be involved in several such meetings, for example, histopathologists, or who do not see most of the cases presented.
- The difficulty in running an interdisciplinary approach in the private sector due to lack of remuneration in a non-salaried or environment, funding for specialised ancillary care, etc.
- The resources required to convene, conduct and record outcomes of the meetings.

The report generated strengths and weaknesses/barriers to iMDC in the Australian context as reproduced below:



Strengths	Weaknesses/barriers
• Treatment is less likely to reflect particular professional biases. • Input on treatment decisions is from a far broader base of expertise and is thus more likely to be up to date and evidence-based. • The MDT can be used to agree on institutional treatment protocols, which improve treatment overall in the facility and may make the meetings more efficient. • MDT meetings provide a form of clinical governance and provide assurance of quality. • Continuity of care may be maintained by minimising impact of 'pass-offs' from one clinician to the next (known to be a common cause of trouble). • Consumers want it.	• MDT meetings may consume a lot of time when not all of those present are going to be involved in every case. • Each presentation requires preparation by the oncologist(s), radiologist, pathologist, etc., which takes more time. • The preparation and attendance is not remunerated unless the attendees are salaried or sessional. • If the meetings are not frequent enough they can lead to delays. • It is hard to get attendance of some specialists if their time at the institution is limited and few of the cases are theirs. • It can burden some participants disproportionately. • They are very difficult to mount in the private sector due to lack of funding mechanisms that support IMDC, including specialised ancillary services and team meetings.

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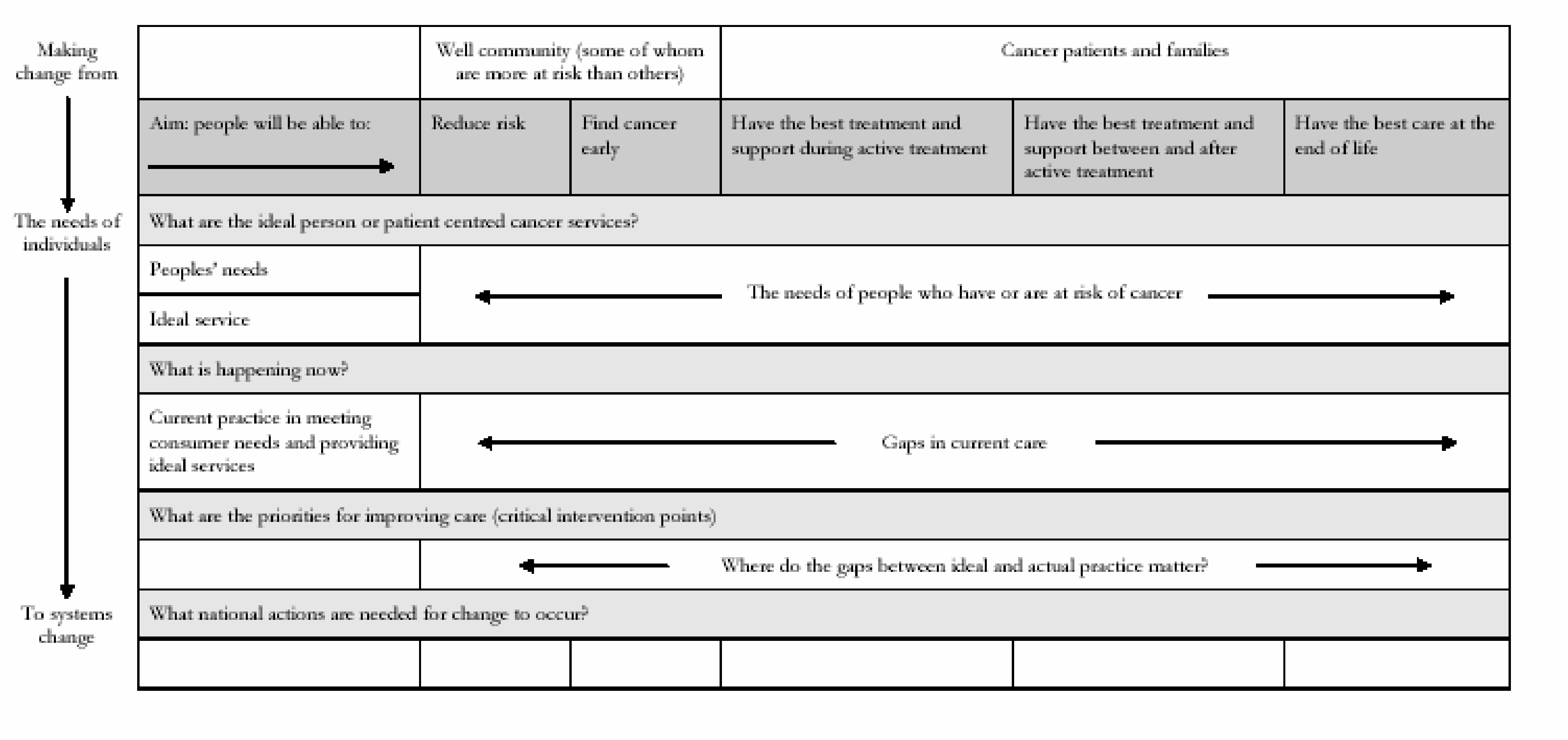
However, the report concluded that there was no alternative to iMDC, 'if one is to ensure treatment does not remain the decision of a single specialist who may, wittingly or unwittingly, rely on their own discipline rather than consider all the alternatives.' The underlying argument being that since cancer is inherently a multidisciplinary activity 'a team approach assures the patient and the organisation that the necessary linkages are made'. The report argues that iMDC is not perfect, but it is better than the alternative, although it was conceded that this argument was not accepted by all professional involved in cancer in Australia. The report also conceded that not every patient requires detailed consideration by an iMDC team citing the example of a simple excision of a melanoma (provided that this is not part of a staging process, in which case iMDC should be available). However, the report argued that the need for iMDC should be determined in accordance with an agreed protocol or authoritative document rather than being the decision of a single clinician.

Finally it was recommended that '…investigation of the incentives required to foster, maintain and evaluate integrated multidisciplinary care in both public and private sectors be undertaken, with a view to widening availability of multidisciplinary care in all settings.'

In October 2002, the Australian Health Ministers' Advisory Council (AHMAC) began development of a series of National Service Improvement Frameworks (NSIFs), to drive improvement in health service delivery for the national health priority chronic conditions, including cancer. The aim of the NSIFs was to identify areas of need throughout the continuum of care. The NSIF for cancer was developed to act as a prototype for the other national health priority chronic diseases. The draft framework shown in figure 1 outlines the level of care Australians with, or at risk of cancer, should expect through the Australian health care system, irrespective of where they live (38).

Identification of the service improvements that would best meet patient needs was an important stage requiring both an understanding of the journey of patients, and an examination of clinical, service and system-level issues. To facilitate this understanding the National Breast Cancer Centre designed a National Survey of Coordinated Care in Breast Cancer (39).

Figure 1 The draft organising framework for the National Service Improvement Framework for Cancer (38)



	Well community (some of whom are more at risk than others)		Cancer patients and families		
Aim: people will be able to: →	Reduce risk	Find cancer early	Have the best treatment and support during active treatment	Have the best treatment and support between and after active treatment	Have the best care at the end of life
What are the ideal person or patient centred cancer services?					
Peoples' needs	← The needs of people who have or are at risk of cancer →				
Ideal service					
What is happening now?					
Current practice in meeting consumer needs and providing ideal services	← Gaps in current care →				
What are the priorities for improving care (critical intervention points)					
	← Where do the gaps between ideal and actual practice matter? →				
What national actions are needed for change to occur?					

To reflect the diversity of health service delivery settings and models of care in Australia, surgeons, medical and radiation oncologists and supportive care professionals from both public and private hospitals in rural and urban locations, and with different breast cancer caseloads were included in the survey. The survey explored the perceptions of healthcare professionals about the care pathway including: their awareness of programs to inform women about early detection programs; referral pathways; availability of local protocols for implementation of evidence-based guidelines; and availability of audit programs. During the survey considerable emphasis was placed on communication between services and shared approaches (MDC). In addition, strategies to provide care that meets the needs of women were also explored.

The results with respect to MDC indicated that the benefits of MDC meetings, in ensuring communication and appropriate referral for patients, were generally accepted by the health professional surveyed. Around half of the healthcare professionals surveyed cited strategies such as multidisciplinary meetings as '…the reason for good communication and smooth referral processes within a hospital or region.' However, the survey highlighted significant differences in the degree to which multidisciplinary meetings were held, with respondents from rural hospitals and those with low caseloads far less likely to hold or participate in multidisciplinary meetings.

The report compared these results with those from a previous survey in 2000 of the same 60 hospitals approached to take part in the current survey, which had indicated that the proportion of hospitals holding regular multidisciplinary care meetings in which some or all new cases of breast cancer were considered was 75% for high-caseload hospitals, 55% for medium-caseload hospitals and 5% for low-caseload hospitals. Unfortunately since only 31 of the original 60 hospitals were represented in the current survey, the results could not be directly compared and it was therefore not possible to tell whether the higher results (high 86%; medium 61%; low 17%) reflected an actual increase since 2000 or were due to sample bias. The report suggested that these results indicate that priority should be given to fostering links to larger specialist groups by rural and low caseload centres.

The report noted that radiation oncologists were less likely to report the occurrence of MDC meetings compared with the other professions surveyed, suggesting that the meetings described by other healthcare professionals may not involve all key professions involved in the care of women with breast cancer. The report made particular note that it had been previously highlighted (36), (9) that funding models did not encourage participation by healthcare professionals in MDC meetings.

Also noted was the previous recommendation that modification of hospital funding models and specialist and general practitioner payment schedules be made to support attendance by all key team members at multidisciplinary meetings (9).

3.3 Excerpts from recommendations in clinical practice and service guidelines regarding MDC

Royal Australian College of Surgeons: Breast Surgery in New Zealand Section, Guidelines for the Surgical Management of Breast Cancer, 1997 (40).

General Principle: Breast cancer is a complex disease requiring the collaboration of a number of health disciplines for its diagnosis, treatment and follow-up.

Guideline 1: Multidisciplinary care involving a close liaison and consultation between appropriate medical practitioners is recommended and leads to consistent and effective management. This can be achieved in a number of different ways.

Key Points: Multidisciplinary management can be achieved by the development of a multi-specialist clinic or by effective liaison within a clinical group which consults and discusses patient problems on a more informal basis. This is an issue which can be particularly difficult for those working away from the main centres. Use of modern technology such as televideo linkage and on-line communication may help to overcome the problems of communication and access to the opinions of professional colleagues for those working in smaller centres. Agreed guidelines are an important basis for consistent multidisciplinary management.

Guideline 2: The diagnostic process for a woman with breast cancer requires the participation of the general practitioner, pathologist and radiologist as well as the surgeon.

Key Points: The general or breast surgeon is the clinician most likely to be referred a woman with possible breast cancer and management is therefore initially by a surgeon. Trained and experienced cytopathologists and histopathologists are essential members of the diagnostic team. Trained and experienced radiologists and medical radiation technologists are also essential members of the diagnostic team. There is some evidence that a specialist breast clinic improves the efficiency of the diagnostic work-up.

Guideline 3: Regular review of patient data by the surgeon, the radiologist and the pathologist is important for decision-making about diagnosis and patient management.

Key Points: Patient review meetings aid clinical decision-making and serve an important educational role. Concerns about the adequacy of clinical information on request forms and unsatisfactory presentation of tissue specimens to the laboratory can be discussed at such meetings. Problems relating to pathology or radiology reports can also be discussed and resolved.

Guideline 4: After the diagnosis of breast cancer has been made, the appropriate involvement of radiation and medical oncologists is an essential part of multidisciplinary management.

Key Points: Radiation therapy and adjuvant systemic therapy have been shown to reduce the incidence of loco-regional and distant recurrence respectively. Radiation and adjuvant chemotherapy should be supervised by oncologists with an interest in breast cancer. There is evidence from the UK of variations in practice between hospitals with regard to important aspects of management. Examples are differences in the use of axillary dissection and in the use of adjuvant chemotherapy in premenopausal node-positive women.

Guideline 5: The inclusion of a nurse with an interest and training in breast cancer in the patient care team has important advantages.

Key Points: The involvement before and after surgery of a breast care nurse has been shown to improve the quality of life of the woman. Specialist nurses have been shown to reduce psychiatric morbidity (Maguire et al 1980). The breast nurse should have a broad knowledge of the diagnostic and treatment process. Training in counselling skills is an important requirement for a breast nurse.

Guideline 6: A multidisciplinary approach to management can lead to improved outcomes.

Key Points: The key issues appear to be better selection of patients for breast conserving surgery and the appropriate use of adjuvant radiation and systemic therapy. There is evidence from the UK that lack of a multidisciplinary approach to breast cancer management adversely affects outcome. The importance of volume of cases treated each year remains controversial and there is no evidence relating to practice in Australia and New Zealand. There is evidence from the UK and Italy linking long-term outcomes with subspecialisation and annual case volumes.

Clinical Comment: The multidisciplinary management of breast cancer can be achieved in a variety of ways depending on the circumstances in a particular centre. This will vary from a formally constituted team that meets together on a regular basis and manages patient care as a group to much less formal arrangements that bring together a range of specialist skills.

The key feature is that consultation should occur between the appropriate group of specialists and that they work within the framework of agreed guidelines.

Recommendation: Breast cancer management should be multidisciplinary and involve consultation and the key speciality groups.

National Health and Medical Research Council & National Breast Cancer Centre: Clinical practice guidelines for the management of early breast cancer, 2nd edition, 2001 (25).

Guideline: The outcome of patients with breast cancer and other cancers is better if they are treated by a clinician who has access to the full range of treatment options in a multidisciplinary setting.

National Institute for Clinical Excellence: Guidance on cancer services: Improving outcomes in breast cancer, 2002. (41).

Multidisciplinary teamwork: Optimal delivery of services requires coordinated work by a multidisciplinary team of people with particular expertise in breast cancer care. The team would include clinicians who have specialised knowledge of each aspect of diagnosis and treatment, and specialised nursing and staff who give support to patients. A lead clinician should be designated who will take responsibility for the work of the team as a whole, communication with patients, implementation of change, and audit.

The core breast team should include the following:

Designated breast surgeon(s): Surgeons should devote at least three sessions a week to breast work. Specialist training should be in accordance with the policy document published by the Breast Surgeons Group of BASO2. Breast surgeons and others who talk to patients should also receive training in communications skills. Breast cancer treatment should not be seen as a normal part of the work of the general surgeon.

Breast care nurse(s): Breast care nurses should work only in breast care and should have appropriate post-registration qualifications. They should be trained in counselling and communication.

Pathologist: A named pathologist with a special interest and training in breast care should attend team meetings. This pathologist should be skilled in breast cancer histology and cytology, or work closely with a cytologist who has particular expertise in this area, and should participate in the National Breast Pathology EQA scheme. The pathologist is likely to have to commit at least three sessions a week to breast work. There must be adequate cover for the absence of the named pathologist.

Radiologist: The radiologist should be qualified as specified in national standards, for example the Quality Assurance Guidelines for the National Health Service Breast Screening Programme in England.

Oncologist: Oncologists should devote at least three sessions per week to breast oncology. Newly appointed oncologists should have at least one year's experience in an established breast unit. Where the oncologist is a medical oncologist (qualified to use chemotherapy but not radiotherapy), a firm link must be established between the core team and the clinical oncologist from the centre to which patients are referred for radiotherapy.

Co-ordinator: The co-ordinator should take responsibility for organising MDT meetings and should have the authority to ensure that extended team members such as social workers and psychologists are available when required.

Team secretary: The Team secretary will provide clerical support for the MDT, recording all decisions made by the team and communicating appropriate information promptly to all those (such as GPs) who may require it. In smaller teams, the co-ordinator may take the role of team secretary.

Breast Care Teams may also choose to include other individuals to form an extended team (e.g. therapy radiographer, palliative care specialist).

The role of the breast care team: The team as a whole should be responsible for planning care in a seamless way so that each patient receives prompt and appropriate care throughout the process of diagnosis and treatment, up to and including the period when palliation may be needed. The team must maintain close contact with all other professionals who are actively involved in supporting the patient or carrying out the treatment strategy decided by the core team. At any one time, a named member of the team should be the principal clinician to whom the patient relates, e.g. the surgeon in the early stages of the disease, the oncologist during the phase of adjuvant treatment, and the palliative care physician at a late stage. It is important that such arrangements should be explicit and properly understood by patients. Patients should be given information about the members of the team involved in their management.

Anticipated benefits: Teamwork allows for all aspects of care to be given due weight, and enables decisions to be discussed and questioned from a broad base of expert knowledge. In addition, discussion of patient management at multidisciplinary team meetings should ensure that each patient receives consistent information and co-ordinated treatment from all those involved in her care. This will tend to reduce the variation in management and outcomes around the country and in particular, avoid individual “outliers” who may provide sub-optimal care. It will thus increase the chances that each patient will be offered the most effective treatments. Specialists in the management of breast cancer are likely to have higher levels of expertise and skills. Benefits associated with optimal provision of surgery, radiotherapy and chemotherapy are more likely to be realised by this form of organisation. If general surgeons, for whom breast care is not a specialist interest, pass this work to specialist teams, reductions in morbidity and mortality among patients may be anticipated. Higher patient volumes are believed to be associated with: greater accuracy of diagnosis; better quality and more up-to-date surgical treatment; better non-surgical treatment, and; better survival rates.

Australian Cancer Network & National Breast Cancer Centre: Clinical practice guidelines for the management of women with epithelial ovarian cancer, 2004. (42).

Guideline: There is a growing body of evidence to suggest that outcomes for a woman with ovarian cancer are improved if she is referred to be managed under the care of a Multidisciplinary Care team. The ideal situation is for referral of the woman to a centre where all aspects of management, including surgery, pathology review, chemotherapy and on-going psychosocial support are available.

The Australian context: Multidisciplinary care is not uniform across Australia. There may be multiple models which are still acceptable for good practice, depending on the local availability of resources, and external arrangements with larger multidisciplinary care units in the capital cities but the principles of multidisciplinary care should be promoted. The minimum standard, regardless of location, includes the presentation and discussion of individual women's cases at a Multidisciplinary Care meeting, with expert pathology review and input from a gynaecological oncologist. This may take the form of a letter or telemedicine conference and in all cases the outcome of the discussion should be relayed directly to the woman and her referring doctor.

Key points:

- Any member of the multidisciplinary team may, with the woman's approval, become the lead person for on-going communication about her care.
- The involvement of a broad range of staff considering the care plan requirements for each patient will result in a planned approach that takes into consideration all the nuances of the woman, her disease and psychosocial situation.
- The training of the surgeon has an effect on prognosis, especially in early stage disease, where careful staging can determine whether a woman needs additional therapy or not.
- A pathologist with extra training in gynaecological malignancy pathology is an integral member of the multidisciplinary team.
- Better outcomes have been reported for cancer patients who take part in clinical trials.

National Institute for Clinical Excellence: Guidance on cancer services: Improving outcomes in colorectal cancers, 2004 (43).

Recommendation 1: The management of all patients with colorectal cancer should be the responsibility of colorectal cancer multi-disciplinary teams (MDTs). Any patient under the care of a clinician who is not a core member of such an MDT should be promptly referred to an appropriate team when colorectal cancer is suspected. Cancer Networks should make specific arrangements to ensure rapid access to a member of a specialist colorectal cancer MDT for all patients admitted as emergencies to any hospital, at any time. Guidelines should be agreed by all Trusts within each Cancer Network to ensure prompt and efficient referral of every patient suspected or found to have colorectal cancer to a colorectal cancer MDT, and the implementation of these guidelines should be audited.

Recommendation 2: Colorectal cancer MDTs in general hospitals should take responsibility for all patients with cancer of the colon or rectum. Cancer Networks should agree specialisation criteria for members of these teams.

Recommendation 3: Where Trusts already have colorectal cancer MDTs, their composition, mode of operation and functions should be reviewed and refined in line with the recommendations in this section. If more than one colorectal cancer MDT works in a single Trust, all should work to a single protocol. Teams should be merged if they deal with small numbers of patients (fewer than 60 new cases per year) or if core members such as radiologists or oncologists cannot attend meetings regularly. Small hospitals within a single Trust should consider merging their teams.

Recommendation 4: Colorectal cancer MDTs should refer patients with anal cancer to designated teams with expertise in the management of this condition; these teams will work in a limited number of Cancer Centres. Patients who might benefit from resection of liver metastases should also be referred to specialised MDTs, which may in practice be those which have been previously established to provide surgery for patients with pancreatic cancer, except where separate specialist liver resection teams have been established.

Recommendation 5: Colorectal cancer MDTs should consist of a core team of members who have a particular interest and expertise in this area and who will make a commitment to attend a majority of MDT meetings, and associates who are members of an extended team. The extended team should consist of designated individuals who should be available to work with core MDT members when their expertise is required. Where shortage of staff time creates problems with regular MDT attendance, Trusts should examine individual members' commitments and seek to streamline administrative processes to increase efficiency, using methods developed by the Cancer Services Collaborative.

Recommendation 6: At any one time, a named member of the team should be the principal clinician to whom the patient relates, e.g. the surgeon in the early stages of the disease, the oncologist during adjuvant treatment, and oncologist or palliative care physician at later stages. It is important that such arrangements should be explicit and properly understood by patients and their GPs, who should be given information about the members of the team involved in their management.

Recommendation 7: The core team should be responsible for planning care in a seamless way so that each patient receives prompt and appropriate care throughout the process of diagnosis and treatment, including the period when palliation may be needed, until the patient is released from follow-up or dies. One member of this team (either a clinical nurse specialist or the team co-ordinator) must have a system for tracking all patients throughout their illness, including those who are referred to linked MDTs (for example for liver resection) and bringing them back to the core team.

Multidisciplinary cancer care: an Australian perspective

The National Multidisciplinary Care Demonstration Project

In February 2000 a National Multidisciplinary Care Demonstration Project (9) was commenced to investigate a flexible approach to providing MDC for Australian women with breast cancer (44). Breast cancer was chosen as an appropriate model for exploring MDC because:

1. Breast cancer was (and still is) a major cause of mortality and morbidity in Australia.
2. There has been considerable community and professional concern about the management of breast cancer and about whether all women were receiving best care, thus there was already the impetus for change.
3. Many of the international studies examining the impact of MDC had looked at the management of breast cancer and therefore the evidence base for the value of MDC was strongest for breast cancer.
4. The publication of the NHMRC Clinical practice guidelines for the management of early breast cancer in 1995 provided an evidence base for treatment decisions. This was important as the establishment of an effective multidisciplinary team approach was thought, to some extent, to be dependent on agreement about evidence in relation to best practice.
5. A small amount of available data indicated that surgeons recognised the value of MDC at least in urban areas, again making them more susceptible to change.
6. The Federal Government had already funded the development of a discussion paper about MDC in breast cancer and was thus more likely to fund a project based around breast cancer.

Defining MDC in the Australian context was recognised early to be a key outcome of the project because, despite the growing body of evidence that MDC may improve the management of breast cancer, there was no universally accepted model with views differing about how MDC should best be implemented. The project steering committee observed that a number of international cancer centres had established multidisciplinary clinics for women with breast cancer which aimed to deliver a ‘one-stop shop’, providing the opportunity for women newly diagnosed with breast cancer to be seen by appropriate specialists from the various disciplines at the one clinic on the same day. However, in other instances, clinics were found to hold treatment planning meetings that included all relevant specialists in addition to the woman herself. While at other centres the focus appeared to be on providing information and psychosocial support in a multidisciplinary setting to women during their first postoperative consultation.

It was recognised that the application of these models to Australia would be complex due to the mixed model of care for women with breast cancer and other local issues. In the Australian context, following general practice consultation or attendance at BreastScreen Australia for mammography screening, women with early breast cancer were generally referred to a surgeon with the consultation taking place in either a private practice or public, or private, hospital-based clinic. It was suggested that in both the public and private sector, providing there was a setting where clinicians and allied health professionals work together and meet to discuss treatment plans, MDC could be achieved readily. However, it was recognised that those working individually in private practice may be physically isolated from their colleagues, making MDC difficult. In addition, the Australian health care system has the additional challenge of providing equity of access for women who live in rural or remote locations. Since up to 30% of Australian women diagnosed with breast cancer live in rural or remote areas, many without local access to all clinical services, this was thought to constitute an additional barrier to MDC.

Due to the diversity of health service delivery settings and models of care in Australia, the project steering committee realised that it may not be appropriate to have one fixed model of MDC. Whereas in the UK, MDC was often taken to mean that all team members attended MDC meetings prior to clinics each week and that every woman’s case pathology was discussed. It was recognised that this approach may not to be feasible in Australia, where a surgeon may work 2500 kilometres away from a treatment centre, there may not be a clinic or a dedicated breast pathologist. The definition of MDC and models for its implementation therefore required a unique approach within Australia.

The first phase of the project thus necessarily involved the task of developing a set of principles of MDC to guide the project. To establish the principles underpinning a flexible approach to MDC, key elements of care were identified from research and reports and informed by the experience and knowledge of Australian experts. The draft principles were reviewed by clinicians, allied health professionals and consumer representatives. The principles of MDC developed emphasised four key issues:

1. a team approach, involving core disciplines integral to the provision of good care, with input from other specialties as required (where 'core' disciplines are surgery, radiology, medical and radiation oncology, pathology and supportive care)
2. communication among team members regarding treatment planning access to the full therapeutic range for all women, regardless of geographical remoteness or size of institution
3. provision of care in accord with nationally agreed standards
4. involvement of the woman in decisions about her care

The National Multidisciplinary Care Demonstration Project was implemented over three years and investigated the impact, cost and acceptability of implementing MDC for women with breast cancer at three multi-facility sites (Collaborations) across Australia. Collaborations were invited to submit an expression of interest with the final selection made following a rigorous peer-reviewed selection process. A fourth collaboration joined the project following receipt of additional funding. However, one of the main multidisciplinary strategies was not implemented and after 11 months the chief clinical collaborators indicated that it was not feasible to complete the project.

Each of the collaborations nominated locally relevant MDC strategies designed in accord with the principles of MDC. Collaborations were evaluated using a pre–post design over a 21-month period to identify outcomes, barriers, enablers and costs of the strategies implemented, using the principles as criteria. Evaluations were carried out at baseline, during the start-up phase of the study, during implementation, and after implementation of the nominated strategies. Five evaluation tools were used: (i) clinician survey (pre-and post-implementation); (ii) consumer survey (pre-and post-implementation); (iii) clinical audit (pre-and post-implementation); (iv) clinician acceptability survey (post-implementation only); and, (v) activity logs (ongoing throughout project). In addition, analysis of the costs associated with the case conference meeting and other strategies used to implement MDC was performed. It should be emphasised that, while the costing analysis provided valuable information regarding the cost of implementing MDC strategies, it was not a cost-effectiveness study. and no attempt was made to forecast or quantify potential cost benefits to patients, clinicians or services.

The four sites included in Collaboration 1 were:

- Site a: Urban area, population ~198,000
- Site b: Large rural town, population ~ 30,000
- Site c: Rural town, population ~9,000
- Site d: Rural town, population ~10,000

Organisations involved in the collaboration included one public and two private hospitals in the urban area, three rural district hospitals, an urban radiology clinic, a pathology company, the state cancer council and state breast screening program.

Collaboration 2 comprised five sites distributed over a large geographical area of one state:

- Site a: Urban area, population ~94,000
- Site b: Urban area, population ~119,000
- Site c: Urban area, population ~77,000
- Site d: Rural town, population ~10,500
- Site e: Rural town, population ~20,500

The facilities, organisations and individuals involved in Collaboration 2 were public and private surgeons in all five sites, a regional oncology service, public and private radiologists, pathologists, a regional clinical school, a university school of medicine, hospital-based and community nursing services, the state breast screening program, urban and rural divisions of general practice, and a regional rural health training unit.

Collaboration 3 involved facilities from various regions within one state, including a major metropolitan city and two large rural centres. The three sites included in the collaboration were:

- Site a: Region of a metropolitan city, population ~180,000
- Site b: Rural centre, population ~37,000
- Site c: Rural centre, population ~17,500

The facilities involved in Collaboration 3 included two public hospitals and one private hospital from one region in the city and two hospitals in the rural centres.

Collaboration 4 included two public hospitals in a metropolitan city (Sites a and b) and a public hospital in a rural city (Site c). This collaboration joined the project in December 2000 and was on a staggered timeline relative to the original three collaborations.

A common focus of the strategies nominated by each of the collaborations to improve MDC in their region was multidisciplinary case conference meetings. This strategy was described as regular meetings dedicated to treatment planning where previously none occurred, or the focus of existing meetings was changed to fulfil this remit. In addition, the need to strengthen communication and collaborative links was identified by all collaborations, while increasing the emphasis of, or the introduction of, the role of the breast care nurse was a common strategy.

Key findings reported by clinicians from the three participating collaborations included increases in:

- regular, weekly multidisciplinary meetings dedicated to the planning of treatment for women with breast cancer
- the number of 'core' and 'non-core' team members attending multidisciplinary meetings
- specialist breast care nurses being recognised as a team member involved in managing women with breast cancer
- provision of routine supportive care to women at diagnosis and after treatment
- referral of women with severe anxiety and/or depression to a psychiatrist, with fewer clinicians managing such women on their own

While the overall findings relate to all three collaborations participating in the project, it was noted that in some areas particular strategies were differentially successful. Collaboration 1 reported that general practitioner strategies had been effective, while Collaboration 2 noted a lack of general practitioner attendance despite efforts of collaboration members. Collaboration 1 made significant efforts from the outset of the project to encourage attendance of general practitioners at MDC planning meetings, including holding focus groups with general practitioners and involving the local Divisions of General Practice in identifying suitable meeting attendees. Collaboration 2 corresponded with general practitioners to encourage participation with little impact on attendance. These findings suggested that specific targeted strategies are required to gain support for such strategies.

A key strategy for Collaboration 3 was the appointment of a specialist breast care nurse as a team member, to be involved in MDC planning meetings, coordinate the passage of women from diagnosis through treatment and help identify and facilitate women for appropriate counselling referral. The appointment of the breast care nurse and recognition of this individual as a team member was reflected in the responses from the clinicians at this Collaboration. Of the Collaborations, Collaboration 3 demonstrated the greatest pre- to post-implementation increases in perception that the specialist breast care nurse was involved in the management of women; reporting of the specialist breast care nurse as the nominated team member to provide supportive care for women; and, provision of supportive care to women at the time of diagnosis. In addition, in line with this strategy, an increase in attendance at case conference meetings by supportive care professionals was seen over time. This increase was not only due to attendance by the breast care nurse, a clinical psychologist was also in attendance at some meetings, suggesting that a greater emphasis was placed on psychosocial issues in general following the implementation of MDC strategies at this collaboration.

One of the key benefits of a multidisciplinary approach in the short term which was identified from the results of the project was improved provision of psychosocial support for women with breast cancer. Other improvements, in accord with the principles of MDC, were increased support for women being treated for breast cancer and assistance for women with decision making. Over the course of the study, reported routine provision of supportive care to women at the time of diagnosis increased significantly. At the end of the study, clinicians were found to rely significantly less on their own judgement to manage women experiencing severe anxiety and/or depression and there was a significant increase in the reported referral of such women to a psychiatrist.

A number of findings from the survey of clinicians were also validated by the survey of women. Both before and after the implementation of MDC strategies, women tended to report that the people involved in providing their treatment were working as a well-coordinated team, communicating well with each other and keeping the general practitioner informed. The survey of women also indicated a statistically non-significant increase in the provision of information about the psychosocial impact of breast cancer and practical information about adjusting and coping with the disease. Results from the consumer survey also indicated that a high proportion of women were receiving care in accordance with clinical practice guidelines and believed that a team approach was taken to their care before the implementation of MDC strategies.

Overall, the majority of women surveyed at all three collaborations perceived that their care was being coordinated by a team. For the 7% of women who did not perceive that care was coordinated, qualitative data obtained via the consumer survey provided insight into factors that influence women’s views of their treatment team. In particular, the responses highlighted the importance of clinicians knowing what other people involved in the care of a woman with breast cancer have told the woman about her disease or its treatment. Conflicting information from different specialists or a lack of awareness of other specialists' decisions were also raised as issues. These findings suggested that improving communication among multidisciplinary team members may be one of the most important factors in ensuring women feel that they are receiving care from a coordinated team.

The key achievements, challenges of implementing an MDC strategy and the impact for patients and clinicians reported by each collaboration are detailed below.

Collaboration 1	
Key achievements	The implementation of multidisciplinary strategies. In Site a, where previously no multidisciplinary meetings were held, regular case conference meetings for treatment planning were being held on a weekly basis, with approximately 18 participants representing a range of disciplines including general practitioners. Similarly, a multidisciplinary team had formed in Site c, with the team meeting on a weekly basis for case conferencing. Other achievements reported by the collaboration included: establishment of familial cancer clinics; a survey of nurses regarding the identification of psychosocial concerns for women with breast cancer; and the appointment of a regional breast care nurse (funded through the state health department) to help coordinate the provision of care by breast care nurses from across the region.
Challenges	Some major challenges were encountered including: initial resistance to change from some team members; opposition to the establishment of MDC meetings; technical issues related to establishing videoconferencing links; lack of recognition of the importance of psychosocial issues in multidisciplinary discussion; and lack of understanding of the role of breast care nurses.
Impact	Reported an impact both for women with breast cancer and the clinicians involved in their care including: a perceived increase in treatment options due to the involvement of medical and radiation oncologists at the treatment planning meetings; breast care nurses were now considered part of the team; members of the team were now aware of the woman's circumstances and wishes which encouraged the development of individualised treatment plans. The collaboration reported a shift away from talking about 'cases' to discussing the woman. Team meetings were perceived to be encouraging practice in accordance with clinical practice guidelines and discussion of new research findings. The Chief Clinical Collaborators indicated that clinicians appeared to gain peer support from the meetings, in particular finding it reassuring to be able to discuss complex cases with the team. At a broader level, networks across the region had been improved through meetings to discuss the implementation of the MDC strategies during the Project.
Collaboration 2	
Key achievements	The establishment of regular case presentation multidisciplinary meetings in the three main sites; the development and utilisation of team identifiers, the promotion of interdisciplinary clinical management pathways; attainment of funds to appoint three part-time breast care nurses; and, the establishment of suitable rooms for counselling women with breast cancer following their initial diagnosis.
Challenges	A key challenge related to the large geographical area it encompassed. While initially it had been envisaged that a region-wide multidisciplinary team would be established, it was soon recognised that such an approach was not feasible. Instead, teams were established within the three main sites (Sites a, b and c) and functioned independently of each other. Attempts to overcome the barrier of distance through the use of videoconferencing had mixed success. Other challenges included: the lack of suitably qualified staff across the region, with two resident medical oncology positions unfilled for most of the Project; the redevelopment of the three major public hospitals during the Project timeframe, which caused disruption to meeting venues and availability of videoconferencing facilities; and lack of attendance by general practitioners at the MDC meetings.

Collaboration 2 cont.

Impact	Women with early and advanced breast cancer had benefited from a more streamlined and efficient management pathway, improved communication between all disciplines and an increased awareness among team members of the availability of ‘non-core’ services. The regular multidisciplinary meetings established were believed to have facilitated and strengthened lines of communication between all those involved in caring for women with breast cancer in the region, within both the public and private sectors. Also reported was a raised awareness of the importance of considering patient’s suitability for clinical trials and new insights into the various diagnostic and therapeutic modalities for breast cancer. In addition, team members felt they had enhanced intellectual and practical support. The multidisciplinary meetings were reported to be of educational value to trainee specialists, particularly surgical registrars, who presented cases at the meetings, participated in discussions, interpreted diagnostic images and gained an appreciation of the multidisciplinary model of care. There was also an impact at the facility level. The experience of being part of a multidisciplinary team and the perceived benefits of regular multidisciplinary meetings had inspired some members of Collaboration 2 and other groups within the participating sites to adopt a similar approach for other diseases. By the completion of the Project, additional multidisciplinary meetings had been established in various facilities located within the collaboration region for colorectal cancer, melanoma and respiratory medicine.

Collaboration 3

Key achievements	Primarily associated with the improved coordination and continuity of care provided by the breast care nurse. Previously in the large metropolitan site (Site a), women with breast cancer may have been treated in several facilities with little integration of services. The breast care nurse provided an important focal point for all involved in the management of women with breast cancer and appeared to foster a cohesive approach among the multidisciplinary team members. Continuity of care and psychosocial support provided to women with breast cancer within the collaboration was also enhanced by the breast care nurse’s involvement in the pathway from diagnosis to treatment and then to follow-up. Other reported achievements included: the development of more individualised treatment plans, due to a greater awareness of psychosocial issues; an increase in the involvement of women in making treatment decisions through their enhanced understanding of breast cancer, its treatment and their options; greater consideration of eligibility of women for clinical trials; the establishment of breast cancer support groups; and the strengthening of links between the urban Site a and one of the rural centres, particularly with regard to assisting those women required to travel to the urban site for treatment.
Challenges	Associated with attempts to establish stronger links with the rural centres. The collaboration was unable to establish a direct link between the breast care nurse and one of the rural centres (Site b), primarily because of a reluctance to change long-established care pathways and a lack of support for the project by some clinical staff. Linking surgeons from the rural centres to the multidisciplinary team meetings via video- or teleconferencing was not implemented during the project. Reported challenges encountered in relation to the establishment of the video and/or teleconferencing links included the withdrawal of funding for technical infrastructure, the small number of breast cancer cases from rural centres, and the irregularity and unpredictability of presentation of rural cases by some clinicians. The latter of these issues similarly impacted on ensuring that all cases of breast cancer diagnosed within the collaboration were discussed at the multidisciplinary treatment planning meetings.
Impact	For the women themselves, there appeared to have been improvements in relation to continuity of care, the provision of information regarding treatment, psychosocial support, involvement in the decision-making process, access to specialty care services if required and, for those women from rural centres, improved transition of care for those requiring treatment in the urban site.

While the original application and selection site visits to Collaboration 4 indicated that there was strong support among clinicians to establish multidisciplinary links between the participating sites, despite a range of efforts one of the main multidisciplinary strategies was not implemented and thus after 11 months the chief clinical collaborators indicated that it was not feasible to complete the project.

The main multidisciplinary strategy nominated by Collaboration 4 was the establishment of collaboration-wide multidisciplinary meetings with participation of relevant clinicians and health care providers from each of the three key sites. It was intended that these collaboration wide meetings would be preceded by the development of multidisciplinary clinics at sites within the collaboration in which they did not already exist. Once the multidisciplinary clinics were established, it was anticipated that videoconference links between Sites a and c would commence, with the introduction of the second urban site (Site b) to follow.

At the termination of its involvement in the project it was noted that Collaboration 4 had achieved an expansion of existing meetings and established multidisciplinary treatment meetings at Sites a and b. While some initial barriers to sustaining the new meeting at Site b were encountered and continual reminders to clinical staff were necessary, over the period of the project the meeting gradually developed into a forum for review of all women with breast cancer treated by Site b.

At Site c two, monthly multidisciplinary meetings were already being held prior to the start of the project attended by the same clinicians. One of the main issues reported by the collaboration was that a number of clinicians at Site c did not see any benefit in adding what they perceived to be ‘another meeting’ to already functioning meetings. Other issues appeared to relate to confidentiality and privilege, with some clinicians expressing concern about the potential legal implications within their state of discussing patients in an open forum such as a multidisciplinary meeting.

The report suggests that two key factors appeared to have contributed to collaboration 4 being unable to successfully implement its nominated strategies. Firstly, it became apparent that despite verbal and written assurance of support for the project throughout the collaboration prior to start up, some clinicians were not fully supportive of the undertaking. Secondly, in the regional town Site c, where there were only a few clinicians active in the breast cancer field, linking into meetings at other sites was considered an unnecessary undertaking in an already busy working week. The clinicians could not perceive any further benefits either for themselves or for their patients. While there was a historical link between Sites a and c for medical training purposes, it was reported that the local facilities at Site c were able to provide most services for women with breast cancer, with those women who required radiotherapy tending to go to another city outside the collaboration region for treatment. The report suggests that this indicates that for urban and rural multidisciplinary links to work the potential benefit of such links to clinicians and to patients needs to be apparent from the outset.

In the final report seven recommendations were offered regarding MDC in the Australian context based on the findings of the project as detailed below:

1. The principles of multidisciplinary care developed to guide and evaluate strategy implementation were a useful and valid framework.

Recommendation 1: That the principles of multidisciplinary care developed for breast cancer be used as the basis for developing similar frameworks for other cancers and other chronic diseases requiring multidisciplinary input.

2. Successful and sustainable multidisciplinary case conferencing requires a minimum set of conditions.

Recommendation 2: That a brief user-friendly guide for establishment, preparation and support for multidisciplinary meetings be developed for use by health service providers.

3. There are a number of incentives for clinicians and the health system to participate in multidisciplinary care.

Recommendation 3: That the National Cancer Plan and National Service Improvement Frameworks should explicitly quantify efficiency dividends for institutions and service improvement implications for patients in order to promote the benefits of multidisciplinary care.

4. The Project demonstrated benefits of MDC for women undergoing treatment for breast cancer in the Australian context.

Recommendation 4: That clinical outcome studies to establish the benefits of multidisciplinary care for patients with other cancers and chronic diseases, such as diabetes, within the Australian health care system be encouraged in order to provide an evidence base for broader implementation of multidisciplinary care.

5. A principal conclusion to be drawn from this Project is that the presence of a breast care nurse in a multidisciplinary team is beneficial both for the women and the clinicians.

Recommendation 5: That the role and effectiveness of breast care nurses is supported at all levels by: informing health service providers of the benefits of the breast care nurse role in the provision of multidisciplinary care; promoting the adoption of the core competencies currently being developed by the National Breast Cancer Centre for the breast care nurse role, to nurse training programs nationally; and, providing opportunities for nurses caring for women with breast cancer to access specialist training to support that role.

6. Barriers encountered in the implementation of MDC strategies included resistance to change; lack of time, resources and clinical staff; and the challenge of covering large geographical areas.

Recommendation 6: That the establishment and maintenance of multidisciplinary care meetings must be adequately and explicitly resourced by health service providers. Affordability would be enhanced with broader application to other cancers and chronic diseases to amortise infrastructure costs. Areas in which generalisation is already occurring should be studied.

7. The project illuminated aspects of the cost of implementing MDC as follows:
    i. The cost of implementing MDC strategies is dependent on the level of multidisciplinary initiatives already in place at a facility. Costs being higher for newly established strategies compared with adaptation of existing strategies.
    ii. Significant personal time is needed to implement new strategies such as treatment planning meetings. While this does not represent a direct cost to the health service, it should be considered in models of MDC.
    iii. The cost of staff attendance at case conference and educational meetings is dependent on the number and type of attendees and the length and frequency of meetings.
    iv. The average cost per meeting and per case presented at case conference meetings tends to decrease as meetings became better established.
    v. The use of existing facilities, such as hospital meeting rooms and equipment from other groups reduces the overall cost.

vi. While travel and accommodation costs can be reduced using video/teleconferencing, the technology set-up and associated costs, and difficulties in finding mutually acceptable meeting times may be barriers to the use of such technology.

Recommendation 7: That hospital funding models and specialist and general practitioner payment schedules should be modified to support the implementation of multidisciplinary care strategies, given their broad application across a number of chronic diseases.

Sustainability of multidisciplinary cancer care in Australia

The Sustainability of Multidisciplinary Cancer Care Study (45) was conducted by the National Breast Cancer Centre in early 2004 to explore the sustainability of changes resulting from strategies implemented during the National Multidisciplinary Care Demonstration Project (9). During the demonstration project, locally relevant strategies to implement or improve the provision of multidisciplinary care (MDC) for women with breast cancer were trialled. The objectives of this study were to explore, via in-depth, semi-structured qualitative telephone interviews, the sustainability of the changes previously reported and to examine any further developments and flow-on-effects which may have occurred.

The study found that the majority of changes resulting from strategies implemented during the demonstration project were sustained in all three collaborations. At follow-up, all MDC case conference meetings established during the demonstration project continued to be held, and interview participants noted improvements in the meetings at most hospital sites. Breast care nurses (BCNs) continued to be employed in all three collaborations, and additional strategies to improve psychosocial care had also been sustained. However, some strategies were either not sustained or were considered likely to lapse, for example; links between urban and rural hospital sites to provide MDC had deteriorated in one collaboration, and in another, the regional BCN position and MDC meetings were threatened by a funding reduction due to occur in June 2004.

Flow-on effects of the MDC strategies into the management of patients with other cancers or other chronic diseases were apparent in two of the three collaborations. Cultural changes across health care services, such as improved communication between disciplines and acceptance of shared clinical decision-making, were other indirect outcomes of MDC strategies implemented during the demonstration project.

Exploration of the factors that contributed to the sustainability of strategies demonstrated the importance of:

1. allocating dedicated funds and personnel to maintain, support and improve MDC strategies.
2. ensuring MDC case conference meetings are held routinely, so that meeting preparation and participation become habitual for participants.
3. ensuring that MDC team members recognise the MDC strategies to be beneficial for patients and/or themselves.
4. encouraging commitment to participation in MDC case conference meetings by participants, through demonstration of the benefits.
5. enlisting a 'champion' (usually a well-respected clinical opinion leader) to drive the MDC strategies, particularly in the early stages, although this also needs to be supported by team ownership to ensure sustainability in the longer term.
6. developing contingency plans to allow for changes in personnel and organisational structure.

A selection of quotes from the interviews conducted is included below.

"we've seen a transition from the presentation of 'a case of breast cancer' with a lot of technical detail, to the presentation of 'a woman with breast cancer', with background details about who this woman is, what's going on in her life, what her desires might be, and how that might impact decision making…"

"now people don't want to miss a meeting … it would take a lot to threaten the sustainability of the meetings …"

"there's now substantially more trust, less fear of critical comment (in the MDC meetings) … people now bring in cases of difficult decisions and review very critically what's gone on in the past and what should go on in the future …"

"people who had unusual patterns of practice have normalised them… (now) treatment is much more aligned to guidelines …"

"there would certainly be a very strong commitment from the (clinicians)… there's huge commitment, I just don't think that anybody would let (the meetings) slip …"

"the team is absolutely committed to those meetings now and sees them as valuable …"

"(the meetings) will continue because they are very much a part of (the clinicians') practice – the team is dependent upon the meetings for decision-making …"

"there's no doubt that there has been a flow-on to other diseases, there's been more acceptance of multidisciplinary input into the treatment of other cancers …"

“(the clinicians) have been exposed (to MDC), some of them because they do some breast (cases), and others indirectly… (they think) ‘hey this process works and although it takes a bit of time, if you make it work for you it’s quite efficient’…”

“the team has formed a relationship outside the meeting – a much closer relationship and a lot more trust. Many dialogues go on around patient care but also around structural issues in health that have been facilitated by the interaction of the team meetings ...”

“we all belong to one team…a new tribe … it’s facilitated all sorts of communication …”

“I think (MDC) is really driving itself … (the clinicians) want to see (MDC) work – they see the benefit of it, they will state that openly, and I think they enjoy coming to the meetings …”

“we built a lot of trust across the private-public interface – before it was a barrier, and now it is an interface …”

“the benefits (of the meetings) have just been absolutely incalculable to us…mutual learning experiences, mutual communication pathways, they have spread into all our activities throughout the hospital …”

Psychosocial support

In 1996 Professor D Kissane and Ms Susan Burke of the Centre for Palliative Care in Melbourne published an extensive review of the published and unpublished literature regarding the provision of psychosocial support by members of the treatment team to women with breast cancer and to cancer patients in general(46).

The review identified a large number of different psychosocial interventions including specialist nurse counselling, provision of tapes of key interviews communicating prognostic and treatment information, supportive psychotherapy provided by the surgeon, behavioural therapies (relaxation, imagery, biofeedback), educational/informational interventions, and pain management techniques. In general, all psychosocial interventions aimed to facilitate adjustment and reduce mood disturbance brought about by various aspects of the patient’s illness and treatment. These included the shock of diagnosis, coping with physical changes in body appearance and functioning, dealing with side-effects such as anticipatory nausea, vomiting and fatigue, easing grief, anxiety and depression, and coming to terms with both progressive illness and approaching death. Some interventions were specifically aimed at reducing pain in women with advanced cancer.

The authors found that counselling interventions were effective in reducing mood disturbance, particularly anxiety and depression, and in facilitating psychiatric referrals when appropriate. Behavioural therapies were beneficial in reducing anxiety related to radiotherapy, anticipatory nausea and vomiting related to chemotherapy treatments with high emetogenic potential, and pain. In the palliative care setting, quality of life was improved among patients receiving specialist home care nursing.

In light of these findings, the authors offered a number of recommendations about the provision of psychological, social and spiritual care by members of the treatment team. Key recommendations included the development of the role of a specialist breast cancer nurse both pre and post surgery to support women, communication skills training for all members of the treatment team, and specific behavioural treatments to alleviate symptom distress during adjuvant chemotherapy and radiotherapy.

With regards to the cost of psychosocial support, a trial of program budgeting and marginal analysis (PBMA) (47) was undertaken by Associate Professor Rob Carter et al to assist cancer control planning in Australia. This study found that when interventions were ranked in to a league table based on the basis of degree of dominance and net cost per DALY, psychosocial care provided by breast care nurses ranked fourth, while psychosocial care performed by psychologists ranked fifth. While both these rankings were not as good as primary preventions programs, the authors found that they were both ranked as good as screening and ahead of therapeutic interventions (personal communication). The cost-effectiveness of breast care nurse provision of psychosocial care was estimated by the study as being $935 (455,1745) per DALY, while the cost-effectiveness of psychologist care was found to be $529 (1612, 5453) per DALY.

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