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TITLE PAGE

Title

Australian survey of current practice and guideline use in adult cancer pain assessment and management: Perspectives of oncologists.

Running title

Australian current practice in cancer pain

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ABSTRACT

Aims

Cancer pain continues to be undertreated in up to half of cases, despite the availability of evidence-based guidelines. This study aimed to:

1. Identify barriers and facilitators to adult cancer pain assessment and management as perceived by Australian health professionals;
2. Establish the perceived need for new Australian guidelines and implementation strategy;
3. Identify which guidelines are used;
4. Identify barriers and facilitators to guideline use.

This article focuses on the perceptions of responding oncologists.

Methods

A cross-sectional survey was administered online. Invitations were circulated via peak bodies and clinical leaders. Comments were coded independently by two researchers.

Results

76 oncologists self-reported high concordance with evidence-based recommendations, except validated pain scales. Perceived barriers to pain management included insufficient non-pharmacological interventions, access to and coordination between services, and time. Only 22% of respondents reported using pain guidelines. The Australian *Therapeutic Guidelines - Palliative Care* and US *National Comprehensive Cancer Network Clinical Practice Guidelines in Oncology – Adult Cancer Pain* were the most widely used. Perceived barriers to guideline use included lack of access, awareness and any single standard. Respondents were generally supportive of new Australian guidelines and especially an implementation strategy.

Conclusion

Barriers to evidence-based practice and guideline use identified by our survey might be addressed via a clinical pathway that gives step-by-step guidance on evidence-based practice along with a framework for evaluation. Particular attention should be paid to promoting use of validated scales, patient education and non-pharmacological interventions, training of an appropriately skilled workforce, and improving care coordination. Challenges are discussed.

KEY WORDS

Cancer, pain, guidelines, clinical oncology

MANUSCRIPT

Introduction

Pain is experienced by 30-75% of people with cancer and is under-treated in up to half of patients (1-5). Research suggests that failure to manage pain is due to barriers at all levels (i.e. patient, caregiver, health professional and healthcare system) (6-17). Research suggests that implementation of evidence-based clinical practice guidelines for pain can improve the processes of care and patient outcomes (10). A systematic review identified three models that have demonstrated efficacy at least to some degree: institutional models, which provide policies and procedures for regular pain assessment and standardisation of pain treatment; clinical pathways, which provide step-by-step guidance on optimal sequencing and timing of assessment and management; and expert consultation. The reviewers concluded that a clinical pathway combined with a consultation model may be optimal for supporting the most important features of pain assessment and management, namely patient education, an interdisciplinary approach and continuity of care.

In Australia, pain in people with cancer has been identified as an important area for improvement by both the National Institute of Clinical Studies (NICS) and the Cancer Institute New South Wales (NSW) (18, 19). The recently launched Australian National Pain Strategy has six major goals including, 'timely access to best-practice, evidence-based assessment and care' (20). The Pain Strategy was developed in 2010 at a National Pain Summit and included input from a *Cancer Pain and Palliative Care Working Group*. This Group concluded that a primary objective should be promotion of guidelines and systems to ensure adequate assessment and management of cancer pain. But more data are needed to guide selection of appropriate strategies. To date, Australian studies examining barriers to cancer pain assessment and management have focused on the perceptions of patients and caregivers (21-23). These surveys identified patient and caregiver barriers in the form of misconceptions about opioids, perceived lack of control, poor management expertise, and barriers to communication. A better understanding of barriers and facilitators from the perspectives of Australian health professionals is needed to inform promotion of evidence-based practice.

The aims of the current study were to:

1. Inform understanding of barriers and facilitators to adult cancer pain assessment and management in various Australian clinical practice settings from the perspectives of different disciplines;
2. Establish the level of support for new Australian guidelines and associated implementation strategy;
3. Find out which guidelines for adult cancer pain are used by different disciplines in various Australian settings; and

4. Inform understanding of barriers and facilitators to adult cancer pain guideline use in order to develop a strategy for improving evidence-based practice.

We were especially interested in the views of motivated clinicians most likely to drive change (24).

Methods

Design

This study used a cross-sectional online survey design.

Participants

Participants were eligible if they self-identified as a health professional involved in caring for adults with cancer pain in Australia. This article focuses on responses from participants who self-reported their discipline as 'medical oncologist', 'radiation oncologist' or 'surgical oncologist'. Oncologists play a pivotal role in the planning, delivery and coordination of cancer care. Understanding their current practice and attitudes is therefore critical for any efforts aimed at improving pain assessment and management.

Participants were recruited via email invitations and newsletters sent out by peak bodies and other organisations (see Box 1 for those that circulated to oncologists). We also asked Australians clinical leaders in cancer pain to circulate the invitation via their networks. Clinical leaders were identified via the authors' own networks and literature searches on Medline using Medical Subject Heading (MeSH) and keyword searches for 'cancer', 'pain' and 'Australia'.

Procedure

An 'open' online survey was administered via a secure online platform, SurveyMonkey® (<https://www.surveymonkey.com/>). Open online surveys are subject to selection bias because participants self-select, leading to a 'volunteer effect'. In the current study, an over-representation of motivated respondents with experience of, and interest in, guideline use seemed supportive of, rather than disabling to, our aims. Given that uptake of guidelines is low unless specifically promoted, a more representative sample would likely have included only a small proportion of guideline users (10).

Survey questions were developed by an expert panel comprising palliative care physicians, nurses, a medical oncologist and psycho-oncologist. A draft of the survey was circulated for review and comment by staff and postgraduate students at the University of Technology Sydney's (UTS) Faculty of Nursing, Midwifery and Health. The study was approved as 'low risk' by UTS's Human Research Ethics Committee. The survey 'went live' on 30th August 2011 and closed on 30th April 2012. Information about respondents requested in the final version of the survey included discipline and primary workplace location (state/territory, postcode), sector and outreach status. Respondents were asked how routinely their primary workplace implemented each of a list of evidence-based practices identified by Dy et al (2008) (25) and the *Clinical Indicators for Pain Project* funded by the Victorian Department of Health (26). Further questions related to access to specialist palliative care

and pain services; use of and familiarity with guidelines for assessment and management of cancer pain; the need for new Australian guidelines and implementation strategies; and perceptions of barriers and facilitators to best practice and use of guidelines.

Item response options included yes/no, verbal rating scales (e.g. 'strongly agree', 'agree', 'disagree', 'strongly disagree') and comment boxes after every item. Comments were independently coded by two authors (TL, AG) who then met to reach consensus.

Results

Seventy-six oncologists were recruited to the survey. Of these, 48 were medical oncologists, 24 radiation oncologists and four surgical oncologists; one respondent self-identified as both a medical oncologist and hematologist. The samples included four respondents who self-identified as registrars, nine as both oncologists and palliative care physicians, one as both a medical oncologist and pediatric oncologist, and one as both a medical oncologist and pediatric cancer pain specialist. The geographic spread of respondents roughly corresponded to that of the general population (27), with all states and territories represented except the Australian Capital Territory (ACT) (see Table 1). The Australian Health Practitioner Regulation Agency's (AHPRA) annual report indicated that there were 421 medical oncologists and 316 radiation oncologists registered nationwide in 2010-2011 (28). However, membership of professional bodies may more accurately reflect the numbers currently practising. Membership of the Medical Oncology Group of Australia (MOGA) in early 2012 was 312, suggesting our response rate for this discipline might be around 15% (29). No data could be sourced on the number of surgical oncologists practising in Australia.

Table 1 about here.

Current practice in cancer pain assessment and management

In general, respondents (N=72) indicated high levels of implementation of evidence-based standards for cancer pain assessment and management, the exceptions being use of a validated pain scale and routine patient education which were reportedly implemented 'most of the time' or 'always or nearly always' at only 43% and 64% of primary workplaces respectively. Barriers to assessment and management identified by around three-quarters or more (N=69) included difficulty accessing services to enable non-pharmacological management (88%), impact of distance on ability to access pain-related services (80%), lack of coordination across multiple providers (78%) and difficulty accessing interventional pain services (74%). The most commonly endorsed facilitators for improving assessment and management (N=75) was increase in dedicated clinician time (57%) and more patient education (51%), which were alone in being endorsed by half or more of respondents. Lack of time was also the most commonly identified barrier in comments, followed by lack of support from specialist pain and palliative care and community services. Responses from each discipline are summarised in Table 2.

Table 2 about here.

Of 69 respondents, 67% agreed that most patients with cancer pain would benefit from referral to a specialist palliative care (SPC); the corresponding figure for specialist pain service was 23%. SPC was also considered quicker and easier to access, with 74% reporting this to be acceptable compared with 51% for specialist pain services. Where access was less than acceptable, long waiting times were commonly cited as a barrier for both kinds of specialist service, while patient barriers and lack of availability were identified as important barriers for SPC and pain services respectively. Responses relating to SPC are summarised in Table 3 and specialist pain services in Table 4.

Table 3 about here.

Table 4 about here.

Guideline use

More than 80% of 73 respondents agreed there to be a need for new Australian guidelines on cancer pain assessment, pharmacological management and non-pharmacological management, as well as an implementation strategy to inform guideline use in and across different service settings. The latter received the most support, with several respondents leaving comments suggesting that efforts be focused on implementation of existing guidelines rather than development of new ones. Specific topics most frequently considered useful (N=69) were advice on best practice for specific cases of cancer pain (e.g. nociceptive) and inclusion of key performance indicators (95% each) and guidance on assessing patient-identified priorities and inclusion of patient 'action plans' to aid self-management (90% each).

Only 22% (N=17) of respondents reported that a guideline for cancer pain was routinely used in their primary workplace. The *Therapeutic Guideline - Palliative Care* was the most widely used (56%), followed by various institutional guidelines (31%) and the *National Comprehensive Cancer Network (NCCN) (2010): Clinical practice guidelines in oncology - adult cancer pain* (19%). These were also the guidelines most familiar to respondents who did not use a guideline.

Of 14 guideline users, the majority agreed that one or more guideline was working well, that clinical staff adhered to the same pain guideline(s) and that use of pain guideline(s) influenced patient outcomes. Barriers to guideline use identified by respondents in comments included lack of awareness and access to guidelines and lack of a single standard. Several people commented that initiatives aimed at improving implementation were more needed than new guidelines but left no specific advice about what such initiatives should involve.

Responses on guideline use from each discipline are summarised in Table 5.

Table 5 about here.

Discussion

Responses from oncologists to our online survey provide complex new insights for supporting evidence-based practice in cancer pain in Australia. As in studies conducted in other countries (6-17), respondents identified barriers to cancer pain assessment and management at the levels of patient, clinician and healthcare system. But, surprisingly, none of the evidence-based strategies we

suggested for overcoming such barriers received majority support. Similarly, whilst nearly 90% of respondents supported implementation of guidelines for cancer pain in general, less than a quarter reported using pain guidelines themselves. We interpret these conflicting results as follows.

Barriers and facilitators to cancer pain assessment and management

The high levels of evidence-based practice self-reported by respondents supports the supposition that this sample was more proactive regarding pain assessment and management than most (2, 3, 10). The only evidence-based recommendation not routinely implemented in half or more workplaces was use of a validated pain scale. At first glance, this finding seems consistent with perceptions from other countries that inadequate assessment is the most common barrier to effective pain management (14, 16). However, over 90% of our respondents reported that pain assessment was routine in their primary workplaces, presumably through means other than scales in half of cases. Research suggests that health professionals often consider clinical evaluation to be superior to standardized scales in capturing the complexity of individual patient experience (30, 31). Future initiatives should therefore aim to convince cancer specialists that (while no substitute for in-depth, individualized assessment) validated pain scales provide a useful means of screening and evaluating progress over time (32). Given evidence of poorer management of pain in ethnic minorities (4), routine screening via a validated pain scale also guarantees equitable assessment; translated versions may be especially useful where patients are migrants and do not speak the language of their host country.

Several of the most commonly identified barriers to assessment and management of cancer pain on our survey concerned health care organization and resource issues. As well as lack of access due to distance or low capacity, perceived barriers related to poor coordination/ integration and limitations in the services available. Lack of coordination between services and communication between health professionals are barriers raised by both clinicians and consumers in the international qualitative literature (33). A clinical pathway that gives precise instructions on how to implement evidence-based care along with a framework for evaluation has potential to address this problem by specifying roles and processes for interdisciplinary approaches to pain management and continuity of care (10). Importantly, this may enhance capacity at centres where specialist expertise is lacking.

Respondents' willingness to refer patients with cancer pain to SPC is reassuring given concerns among Australian palliative care professionals that referrals may be delayed by misconceptions that SPC is appropriate only at the end of life (34). It is also consistent with data from other Australian survey studies where oncologists identified symptom control as the most common reason they referred to SPC (35) and acknowledged the importance of concurrent models of care (36).

Respondents' recognition of the need for greater use of non-pharmacological strategies for cancer pain is consistent with consumer needs expressed in qualitative research (33). In addition to this being the most frequently cited barrier to pain management, several respondents commented on the need for greater support from allied health and psychology, for which funding in Australian cancer centres and reimbursement in community care is inconsistent. Pain is a symptom with complex biobehavioural influences and implications that should be assessed and managed holistically (37). Some contemporary guidelines include recommendations for non-pharmacological management but content is minimal compared to pharmacological. Among the non-pharmacological

strategies available, cognitive-behavioural therapy (CBT) probably has the most substantial evidence base (38).

Of particular concern among barriers identified is lack of time for cancer pain management. Evidence from the international literature suggests that oncologists today generally consider symptom management to be a core responsibility (39), so it seems likely that workforce shortages in Australian oncology (40) are responsible rather than lack of priority. This interpretation – together with the motivated character of our sample - is supported by the fact that most responses to the survey occurred during night-time hours. A clinical pathway has potential to address lack of time by improving efficiency and easing the burden of care on any individual discipline (10).

Barriers identified in relation to opioid misconceptions among patients, caregivers and staff have been widely documented in both the international (17) and Australian (21) literatures, with corresponding calls for related educational strategies. Australia's *NPS Better Choices > Better Health* (formerly known as the National Prescribing Service) employs facilitators to deliver unbiased, evidence-based information to health professionals in the workforce. Best-practice prescription for cancer pain would be a welcome future focus.

It is interesting to note that most of the strategies we listed for improving cancer pain management were endorsed by less than half of respondents, including evidence-based approaches such as patient education (14, 41), clinician training aimed at addressing established shortfalls in knowledge (10, 42) and the change management standard of 'clinical champions' (24). These findings may reflect a 'ceiling effect' regarding current practice in pain management at respondents' primary workplaces, at least as perceived by respondents themselves. The lack of support for training is especially interesting within the context of recent surveys from the United States (US) where cancer care specialists identified content to be limited on pain and palliative care more generally (16, 42). Data are currently lacking on the degree to which cancer pain is covered in Australian medical schools and residencies. A review of programs taught and the extent to which these are compulsory would establish whether pain is receiving due attention as a core competency.

Guideline use

The low usage of guidelines reported by this volunteer sample supports the Australian Cancer Pain and Palliative Care Working Group's conclusion that guidelines have not been widely adopted. Interestingly, this occurred within the context of widespread support for new Australian guidelines and especially an implementation strategy to inform use within and across different service settings. These findings, coupled with the high levels of evidence-based practice, suggest that respondents may have been supporting new guidelines and implementation strategy for health professionals they perceived to be less competent than themselves.

It is of interest here to note recent 'perspectives' published in the *Medical Journal of Australia* which highlight concerns of expert Australian health professionals that guidelines may inhibit critical reasoning and professional independence (43, 44). Whilst we too would defend the 'art' of medicine as practiced by expert clinicians, the evidence suggests that many cancer care professionals are not employing evidence-based practice for pain assessment and management (2, 3). Guidelines are not intended to replace clinical judgement but to act as a prompt for less expert clinicians to ensure that

important steps in assessment and management are not omitted. It should be noted, also, that health professionals are not necessarily the best judges of their own expertise. A recent US survey found medical oncologists to report high levels of competency for managing cancer pain despite serious knowledge gaps identified by more objective assessment (16).

A number of interventions have proven efficacy in changing clinician behavior and could be used to improve uptake of evidence-based practice. However, the magnitude of effect from any single intervention is likely to be small, and flow-on effects on clinical outcomes have been difficult to demonstrate. A recent systematic review identified the most effective interventions for improving quality and safety in healthcare to be clinician-directed audit and feedback cycles, clinical decision support systems, specialty outreach programs, chronic disease management programs, continuing professional education based on interactive small-group case discussions, and patient-mediated clinician reminders (45). Intervention attributes associated with success in promoting uptake of guidelines more specifically included adaptation to local needs, dissemination via an active educational intervention, presentation in easy-to-access/easy-to-use portable formats and implementation using patient-specific reminders. These findings underscore the need to take a concrete, personalised approach to convincing clinicians of the contribution that guidelines can make via a multifaceted approach using techniques that are active rather than passive in the demands they make (e.g. problem-based versus didactic learning) (46).

Unfortunately, evidence for interventions using the above approaches to promote evidence-based practice in pain is limited. Two studies have demonstrated efficacy of clinical audit and feedback for improving nurse adherence to cancer pain guidelines (47, 48). Audit data at a unit level can also be used to provide persuasive evidence for changing processes and systems as well as building a business case for appropriate resources. In non-cancer pain management, two studies have provided evidence for decision support at the point of care, including one that used electronic administration to incorporate patient-specific information to improve opioid therapy (49, 50). The prevalence of smart-phone and tablet technologies offer new opportunities for point of care electronic decision support via devices that are better suited to unobtrusive use outside the consulting room (51).

Finally, guidelines for change management emphasize the need to involve stakeholders at each site to enhance ownership and tailor implementation to local needs and resources (24). For optimal effectiveness, then, any attempt at an Australian clinical pathway should be accompanied by tools for promoting and monitoring uptake and ongoing support within each institution.

Limitations

As already indicated, the most important limitation of this study is that our sample is unlikely to be representative of Australian oncologists more generally. We accepted the likelihood of a volunteer effect on the grounds that we were primarily interested in the views of motivated clinicians likely to drive change. In hindsight, it would have been useful to have asked respondents more explicitly about their willingness to be involved in improving practice via the strategies outlined above. Respondent numbers for each discipline were small, particularly for surgical oncologists. This prohibited meaningful comparison between responses from different disciplines. Data from a further, representative sample would be useful to contextualize our findings within the perceptions of the likely large majority who do not use guidelines and would require substantial incentive to

change practice. Data from hematologists are also needed to supplement those from oncologists described here.

A further limitation relates to the self-reported and *ad hoc* nature of our survey for which we have no evidence of validity and reliability beyond face and content validation by an expert team. While the self-reported nature of our data means that reports of practice cannot be verified, questions were concerned with the frequency of evidence-based practice rather than more subjective self-evaluation of practice quality. The likelihood that respondents answered items according to socially acceptability was reduced by the survey's anonymity. However, the limited support respondents gave to benchmarks and measures for evaluating pain management may reflect a reluctance to advocate practices that would subject their services to greater scrutiny.

Conclusion

Barriers to cancer pain assessment and management identified by Australian oncologists in our survey might be addressed by a range of strategies including implementation of a national clinical pathway tailored to individual service settings and increased access to non-pharmacological approaches. Particular attention should be paid to promoting use of validated rating scales in assessment, patient education and non-pharmacological interventions, and improving coordination between different disciplines and services. Further research with representative samples is needed to contextualize results from the online survey reported here.

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Box 1. Organizations that circulated electronic invitations to oncologists to complete the survey

Australasian Lung Cancer Trials Group (ALTG)

Australia and New Zealand Breast Cancer Trials Group (ANZBCTG)

Australia New Zealand Gynaecological Oncology Group (ANZGOG)

Australian and New Zealand Melanoma Trials Group (ANZMTG)

Australian and New Zealand Urogenital and Prostate Cancer Trials Group (ANZUP)

Australasian Sarcoma Study Group (ASSG)

Cancer Services Networks National Demonstration Program (CanNET) Northern Territory

Clinical Oncological Society of Australia (COSA)

Cooperative Trials Group for Neuro-Oncology (COGNO)

Medical Oncology Group of Australia (MOGA)

Primary Care Collaborative Cancer Clinical Trials Group (PC4)

Royal Australasian and New Zealand College of Radiologists – Radiation Oncology Section (RANZCR)

Trans-Tasman Radiation Oncology Group (TROG)

Table 1. Sample characteristics

State/territory (% Australian population)†	Med Onc (N=48) %	Rad Onc (N=24) %	Surg Onc (N=4) %	Total (N=76) %
NSW (32.3)	33	33	0	31
VIC (24.9)	25	17	100	25
QLD (20.2)	19	25	0	20
SA (7.3)	10	4	0	6
WA (10.4)	8	0	0	6
TAS (2.3)	4	8	0	5
NT (1.0)	0	8	0	3
ACT (1.6)	0	0	0	0
Sector				
Public practice	60	65	50	61
Private practice	10	10	25	23
Public hospital	29	25	25	14
Outreach clinic				
Yes	31	35	50	32

†Based on demographic data from the Australian Bureau of Statistics (27)

Table 2. Responses to questions on current practice in assessment and management of cancer pain

Question (Response)	Discipline			
	Med Onc (N=46) %	Rad Onc (N=22) %	Surg Onc (N=4) %	Total (N=72) %
How routinely does each of these practices takes place at your primary workplace? † (Most of the time/always or nearly always)				
Use of breakthrough opioids in cancer patients receiving long-acting opioids	100	95	100	99
Use of bowel regimens in cancer patients receiving opioids	98	91	100	96
Regular pain assessment in cancer patients	98	91	100	96
Routine assessment of pain in new cancer patients	93	86	100	91
Scheduled pain medication for severe pain	91	86	100	90
Follow-up of pain management for cancer patients	93	86	50	88
Continuity of opioid doses across health care settings	83	77	100	82
Routine pain education for cancer patients	67	59	50	64
Use of a validated pain scale to assess cancer pain	50	32	25	43
How much of a barrier is each of the following at your primary workplace? (somewhat of a barrier/very substantial barrier)	Med Onc (N=43) %	Rad Onc (N=22) %	Surg Onc (N=4) %	Total (N=69) %
Difficulty accessing services that enable non-pharmacological management of cancer pain	84	95	100	88
Impact of distance on ability to access pain-related services for patients	77	82	100	80
Lack of coordination across multiple providers	74	86	75	78
Difficulty accessing interventional pain services	74	73	75	74
Lack of benchmarks to assess improvement in quality of pain management over time	60	77	75	66
Lack of regular case reviews to critically discuss and evaluate pain assessment and management	58	73	100	65
Difficulty keeping abreast of advances from research	58	73	75	64
Challenges posed by comorbidities	49	91	75	64
Inadequate remuneration for time spent (e.g. on multidisciplinary meetings)	67	59	50	63
Difficulty accessing transport services for patients requiring management for cancer pain	60	64	75	62
Inability to access ongoing data on pain and quality of life to monitor progress and outcomes	51	73	100	61

Difficulty accessing acute pain services	58	68	25	59
Limited expertise in the assessment and management of cancer pain	39	41	75	42
Difficulty accessing palliative care services	21	27	75	26
What would improve cancer pain assessment and management at your primary workplace? (Tick as many as apply)	Med Onc (N=46) %	Rad Onc (N=22) %	Surg Onc (N=4) %	Total (N=75) %
Increase in dedicated clinician time	65	50	0	57
More patient education	56	45	25	51
More caregiver education	48	41	25	45
More training and access to information on pain assessment and management	37	55	50	43
A more multidisciplinary approach	35	55	25	41
One or more clinical champion(s)	35	32	25	33
New mechanisms for evaluating outcomes	9	5	0	7
Unsure	4	9	25	7
Policy changes	4	5	0	4

†Evidence-based standards for cancer pain assessment and management called for by Dy et al (2008) (25) and the "Clinical Indicators for Pain" project funded by the Victorian Department of Health (26)

Table 3. Responses to questions regarding specialist PALLIATIVE CARE service involvement in cancer pain assessment and management

Question (Response)	Discipline			
	Med Onc (N=43) %	Rad Onc (N=22) %	Surg Onc (N=4) %	Total (N=69) %
What proportion of patients with cancer pain would benefit from referral to a specialist PALLIATIVE CARE service for assessment and management? (Most/all or nearly all)	70	59	75	67
In your area health service, how quickly and easily can a specialist PALLIATIVE CARE service typically be accessed for assessment and management of cancer pain? (Access is of acceptable speed and ease)	74	77	50	74
How often is referral to a specialist PALLIATIVE CARE service for assessment and management of cancer pain delayed for the following reasons? (Most of the time/always or nearly always)	Med Onc (N=11) %	Rad Onc (N=4) %	Surg Onc (N=2) %	Total (N=17) %
Delays are due to patients themselves (e.g. because they fear perceived side effects or addictiveness of treatment)	18	50	0	23
Long waiting time	18	25	0	17
Difficulty accessing patient transport	0	50	0	12
Difficult/complex referral processes	9	0	0	6
Difficulty selecting which patients should be referred	0	25	0	6
Lack of coordination between services	0	25	0	6
Need for patients to travel to tertiary centres	0	25	0	6
Lack of available specialist services	0	0	0	0
Lack of knowledge of available services	0	0	0	0

Table 4. Responses to questions regarding specialist PAIN service involvement in cancer pain assessment and management

Question (Response)	Discipline			
	Med Onc (N=43) %	Rad Onc (N=22) %	Surg Onc (N=4) %	Total (N=69) %
What proportion of patients with cancer pain would benefit from referral to a specialist PAIN service for assessment and management? (Most/all or nearly all)	21	27	25	23
In your area health service, how quickly and easily can a specialist PAIN service typically be accessed for assessment and management of cancer pain? (Access is of acceptable speed and ease)	56	45	25	51
How often is referral to a specialist PAIN service for assessment and management of cancer pain delayed for the following reasons? (Most of the time/always or nearly always)	Med Onc (N=16) %	Rad Onc (N=10) %	Surg Onc (N=3) %	Total (N=29) %
Long waiting time	50	60	0	48
Lack of available specialist services	44	40	25	41
Lack of coordination between services	25	30	0	24
Need for patients to travel to tertiary centres	12	30	25	20
Difficult/complex referral processes	2	30	0	11
Difficulty accessing patient transport	0	30	0	10
Delays are due to patients themselves (e.g. because they fear perceived side effects or addictiveness of treatment)	0	20	0	7
Lack of knowledge of available services	1	0	0	1
Difficulty selecting which patients should be referred	0	0	0	0

Table 5. Responses to questions on guidelines for assessing and managing cancer pain

Question (Response)	Discipline			
	Med Onc (N=46) %	Rad Onc (N=23) %	Surg Onc (N=4) %	Total (N=73) %
What level of need do you think there is for the following? (Some need/urgent need)				
Implementation strategy to inform use of existing guidelines in and across different service settings	89	87	100	89
An Australian guideline for pharmacological management of cancer pain	89	87	50	86
An Australian guideline for non-pharmacological management of cancer pain	85	87	50	84
An Australian guideline for assessing cancer pain	85	78	75	82
In a new Australian implementation strategy for guidelines on cancer pain, how useful would the following be? (Somewhat/very useful)	Med Onc (N=43) %	Rad Onc (N=22) %	Surg Onc (N=4) %	Total (N=69) %
Advice on best practice for specific cases of cancer pain (e.g. nociceptive)	95	95	100	95
Inclusion of key performance indicators	60	82	50	95
Guidance on assessing patient-identified priorities	88	95	100	91
Inclusion of patient 'action plans' to aid self-management	91	91	100	91
Patient version of implementation strategy	81	91	75	84
Templates for taking case histories and identifying patient-identified priorities	77	91	75	81
Guidance on roles for each discipline	74	86	75	78
One or more guideline routinely used in primary workplace?	Med Onc (N=48) %	Rad Onc (N=24) %	Surg Onc (N=4) %	Total (N=76) %
Yes	29	12	0	22
Which specific guideline(s) used routinely in primary workplace †	Med Onc (N=14) %	Rad Onc (N=2) %	Surg Onc (N=0) %	Total (N=16) %
(Australian) Palliative Care Expert Group (2010): Therapeutic guidelines - Palliative Care. Version 3	64	0	NA	56
Institutional or departmental guideline(s)	36	0	NA	31
National Comprehensive Cancer Network (2010): Clinical practice guidelines in Oncology - adult cancer pain	7	100	NA	19
American Society of Anaesthesiology (2006): Practice guidelines for cancer pain management - a report by the American Anaesthesiology task force on pain management,	7	0	NA	6

cancer pain section				
National Institutes of Health (2002): Symptom management in cancer: pain, depression and fatigue	0	50	NA	6
NHMRC Acute Pain Guidelines	7	0	NA	6
European Society for Medical Oncology (2007): Minimum clinical recommendations for the management of cancer pain	7	0	NA	0
Perceptions about guideline use (Agree/strongly agree)	Med Onc (N=12) %	Rad Onc (N=2) %	Surg Onc (N=0) %	Total (N=14) %
One or more guideline working well	92	100	NA	93
Clinical staff at my primary workplace adhere to the same pain guideline(s)	83	50	NA	78
Use of pain guideline(s) at my primary workplace influence(s) patient outcomes	67	100	NA	72
There are adequate resources at my primary workplace to provide care according to one or more pain guideline(s)	33	100	NA	43
My service endorses use of one or more particular pain guideline(s)	33	100	NA	43

† Respondents were asked to select from guidelines identified via a systematic review by Pigni et al. (2010) (50) and to specify any additional guidelines used. The following guidelines have been omitted from the table because no respondents used them: American Geriatrics Society (2002): The management of persistent pain in older persons; American Pain Society (2005): Guidelines for the management of cancer pain in adults and children; European Association for Palliative Care (2001): Morphine and alternative opioids in cancer pain; the EAPC recommendations; Joint Commission on Accreditation of Healthcare Organisations (2001): Pain - current understanding of assessment, management and treatments; MD Anderson Cancer Center (2003): Cancer pain; National Health and Medical Research Council (NHMRC) (2006): Guidelines for a palliative approach in residential aged care; National Institutes of Health (2002): Symptom management in cancer: pain, depression and fatigue; Quality Improvement Scotland (2004): The management of pain in patients with cancer; Scottish Intercollegiate Guidelines Network (2008): Control of pain in patients with cancer; Singapore Ministry of Health (2003): Cancer pain; Texas Council (2005): Guidelines for treatment of cancer pain; American Geriatrics Society (2002): The management of persistent pain in older persons.