1-1-2011

The palliative care interdisciplinary team: Where is the community pharmacist?

Moira O'Connor
Curtin University

Judith Pugh
Edith Cowan University

Moyez Jiwa
Curtin University

Jeff Hughes
Curtin University

Colleen Fisher
University of Western Australia

10.1089/jpm.2010.0369
This is an Author's Accepted Manuscript of: O'Connor, M., Pugh, J. D., Jiwa, M., Hughes, J., & Fisher, C. (2011). The palliative care interdisciplinary team: Where is the community pharmacist?. Journal of Palliative Medicine, 14(1), 7-11. Available here

JOURNAL OF PALLIATIVE MEDICINE
Volume 14, Number 1, 2011

DOI: 10.1089/jpm.2010.0369

The Palliative Care Interdisciplinary Team: Where Is the Community Pharmacist?

Moira O'Connor, B.A.(Hons), M.Sc., Ph.D.,[1] Judith Pugh, PostgradDipEd, B.A., PostgradDipCurricEdTech, M.Ed., Ph.D.,[2] Moyez Jiwa, M.A., M.D., MRCGP, FRACGP,[3] Jeff Hughes, BPharm, Grad Dip Pharm, MPharm, Ph.D.,[4] and Colleen Fisher, B.A.(Hons), Ph.D.[5]

Abstract

Palliative care emphasizes an interdisciplinary approach to care to improve quality of life and relieve symptoms. Palliative care is provided in many ways; in hospices, hospital units, and the community. However, the greatest proportion of palliative care is in the community. In hospice and palliative care units in hospitals, clinical pharmacists are part of the interdisciplinary team and work closely with other health care professionals. Their expertise in the therapeutic use of medications is highly regarded, particularly as many palliative care patients have complex medication regimens, involving off-label or off-license prescribing that increases their risk for drug-related problems. However, this active involvement in the palliative care team is not reflected in the community setting, despite the community pharmacist being one of the most accessible professionals in the community, and visiting a community pharmacist is convenient for most people, even those who have limited access to private or public transport. This may be due to a general lack of understanding of skills and knowledge that particular health professionals bring to the interdisciplinary team, a lack of rigorous research supporting the necessity for the community pharmacist's involvement in the team, or it could be due to professional tensions. If these barriers can be overcome, community pharmacists are well positioned to become active members of the community palliative care interdisciplinary team and respond to the palliative care needs of patients with whom they often have a primary relationship.

The interdisciplinary team approach is central to the philosophy and practice of palliative care.[1,2] In hospice and palliative care units in hospitals clinical pharmacists are part of this interdisciplinary team and work closely with other health care professionals to provide pharmaceutical care to detect, prevent, and resolve medication-related problems.[3–5] Clinical pharmacists in these settings routinely undertake patient assessments, systematic medication reviews, patient counselling at discharge and follow-up, home visits, and participate in palliative care clinics.[4,6] Their expertise in the therapeutic use of medications is important to patient care, particularly as many palliative care patients have complex medication regimens, often involving off-label or off-license prescribing that increases their risk for medication-related problems.[7] However, this involvement in the palliative care team does not occur in the community and community pharmacists are not perceived as active or valued members of community-based palliative health care teams.[8] Interestingly, Gilbar and Stefaniuk[4] highlight that the *Oxford Textbook of Palliative Medicine*[9] has only three sentences related to pharmacists in its chapter on the palliative care interdisciplinary team. This limited information describes the pharmacist as a resource and support for the physician rather than an independent contributor to the team.

Certainly, community pharmacists are an underutilized resource in community-based palliative care. This may be due to a general lack of understanding of skills and knowledge that particular health professionals bring to the interdisciplinary team,[10] a lack of rigorous research supporting the necessity for the community pharmacist's involvement in the team,[4] or it could be due to professional tensions. Gilbert[11] describes this tension and competition between the medical profession and pharmacists in South Africa as physicians protecting their right to make decisions about their patients' medications. Further support for professional tension is offered by Montgomery et al.[12] who report that a major barrier in the implementation of a pharmaceutical care service in the United Kingdom was the difficulty of involving doctors in referring patients.

[1]WA Centre for Cancer and Palliative Care and Curtin Health Innovation Research Institute, [4]School of Pharmacy and Curtin Health Innovation Research Institute, Curtin University, Perth, Western Australia, Australia.
[2]School of Nursing, Midwifery and Postgraduate Medicine, Edith Cowan University, Perth, Western Australia, Australia.
[3]Curtin Health Innovation Research Institute, Curtin University, Perth, Western Australia, Australia.
[5]School of Population Health, University of Western Australia, Crawley, Western Australia, Australia.

The Pharmacy Guild of Australia (the Guild) has initiated steps to enhance the role of community pharmacists in palliative care in Australia in order to improve the medication management of palliative care patients and patient outcomes. Although not forming the basis of their substantive work, community pharmacists are well-suited to respond to the palliative care needs of clients, especially as they often have a primary relationship with families. With extra training community pharmacists could, potentially, take on a patient-centerd role; contribute to palliative care patients' self-care with regard to prescription medications, and over-the-counter medicines; provide prescribing advice to general practitioners (GPs); and facilitate continuity of patient care between health care settings.[7] Further roles could include improving adherence to prescribed drug regimens, minimizing adverse drug interactions (adverse events), and providing support to the patient and family over the course of the illness.[8,13] The community pharmacist, therefore, is well-positioned to be an active member of the community palliative care interdisciplinary team.

Context

In Australia, palliative care services are provided in designated palliative care units such as hospices, in dedicated and nondedicated palliative care beds in acute hospitals, and in the community[14,15] where palliative care patients receive care in their own home or other community living facilities such as aged care facilities.[16] This reflects the shift in health care provision from hospital-based care to "hospital in the home,"[17] which has been supported by family and community primary health care professionals for some time in Australia[18] and underpins the impetus for the Guild's initiative to increase the role of the community pharmacist in palliative care. Patients in the community may move in and out of other settings at different times during the course of their illness but the majority of care is in the community. Ninety percent of patient care in the final year of life occurs at home,[19] with many people moving to an inpatient setting only in the final days of their life. Ill children, in particular, prefer to remain at home whenever possible, and parents need ongoing interdisciplinary support throughout their child's illness trajectory.[20,21]

Dying at home has been identified as the preferred care option for approximately 58% of people[21] but less than a third of adults actually die at home.[23,24] Predictors for home death in palliative care patients is associated with the availability of one or more carers, the patient's and carer's desire for death at home and, importantly for the argument presented in this paper, the availability of skilled primary care support in the community.[25–27]

Certainly, providing in-home care for people at the end of life offers a number of benefits, most importantly maintaining quality of life and a sense of control over one's illness.[28] Community care can also offer significant economic benefits, with economic modelling suggesting that end-of-life care provided in a home setting is a cost-effective method of service delivery.[29] However, community care delivery has become increasingly complex, with more patients receiving comprehensive care in the home setting. As a result, much of the burden of caring is managed in the community, with the greatest burden falling to primary caregivers to provide care that may be complex and time consuming.[30,31]

An additional contextual factor is the strong impetus for palliative care to be instigated at the time of diagnosis of a life-threatening illness[32] and to continue over the course of the illness.[33] Thus, researchers and practitioners are considering approaches other than the medical model of care, which is focused on the terminal stage of illness. For instance, Salau, Rumbold, and Young[34] draw upon public health approaches and recommend a palliative care approach that builds the capacity of local communities in supporting people living with chronic illness nearing end of life. Given that community pharmacies are recognized as stable delivery points for health care services in their local communities, such an approach would provide an ideal context for community pharmacists to contribute to community-based palliative care.

In Australia the provision of care in the community is complicated by two key factors. First, the capacity of GPs to provide care is already stretched; there is an insufficient number of GPs, particularly in rural and remote areas, and GPs are working fewer hours. GPs are also caring for an increasing number of patients with chronic diseases (often multiple morbidities) with complex care needs.[35] Second, a declining death rate and increasing life expectancy for both sexes[36] contribute to an aging population, which is increasingly characterized by multimorbidity.[14,37] Twelve-and-a-half percent of people were aged over sixty-five years in 2001 and it is estimated that this will rise to 25% by 2052.[38] Inevitably, the number of people with chronic and/or life-threatening diseases will increase and, as a result, so will the number of patients requiring palliative care. The resulting demand on primary care will be marked, giving further support to enhancing the role of the community pharmacist in palliative care.

The Pharmacist in Primary Care

Visiting a pharmacist is convenient for most people, even those who have limited access to private or public transport[39] and around 90% of the population sees a pharmacist at least once every year.[40,41] Community pharmacists are also easier to access than other primary care providers, especially after many GPs' surgeries close[42] and it is not usually necessary to make an appointment to obtain medication or advice. As such, the community pharmacist is likely to encounter palliative care patients and their carers and to be providing medication to patients receiving home-based palliative care.[42] Hence, community pharmacists are well-positioned to provide locally based primary care services.

A number of potential roles for the pharmacist in the general primary care arena have been developed and evaluated (including involvement in managing chronic conditions).[43,44] This expansion of the community pharmacist's role has been a focus of interest internationally since the 1990s when an editorial in the *British Medical Journal* outlined the advantages of greater integration of community pharmacists into the primary health care team. Research findings strongly suggest that pharmacists' health knowledge is underused.[41] In response, the Department of Health (DoH)[45] in the United Kingdom introduced a program for pharmaceutical public health. This DoH report highlights the pharmacist's role in supporting people with long-term chronic and acute health conditions. The pharmacist's potential contribution includes providing information regarding the effective use of medicines and medication management, support for self-managed

care, and disease specific care management information and strategies. The report emphasizes working in partnership with other health care professionals and community leaders and the necessity for community pharmacists to be part of interdisciplinary care teams.

The Australian Government Department of Health and Ageing (DoHA) and the Guild recognize that with training and support community pharmacists can have an expanded role in helping patients self-manage chronic conditions and/or improve their medication use. Since 2000, the Guild and the DoHA have initiated pilot programs to determine the feasibility of rolling out targeted pharmacy disease management services in community pharmacies across Australia.[46,47] These services are intended to complement management by the patient's GP and other health care professionals. However, we must be mindful that, despite the successful involvement of the community pharmacist in the primary care team, palliative care is a specialized field and there are additional barriers to be overcome to enable community pharmacists to become actively involved in the palliative care area.

Barriers to Community Pharmacists Playing a Role in the Palliative Care Interdisciplinary Team

Community pharmacists wanting to provide targeted pharmaceutical care for palliative care patients face several barriers. A remuneration-based supply service does not favor the delivery of relatively time-intensive pharmaceutical care.[48–50] Moreover, in Australia, community pharmacists are not among the allied health professionals eligible to join an interdisciplinary team in providing services to patients with chronic conditions and complex care needs on referral from their GP. Patient care is managed and reimbursed under an Enhanced Primary Care (EPC) plan, a GP Management Plan, and Team Care Arrangements.[51,52] As such, tension between the business side of community pharmacies and a public health model is likely if community pharmacists cannot derive adequate financial remuneration for providing palliative care-related services (fee-for-service that depends upon patients' willingness to pay) or reimbursement (with broader eligibility criteria and a viable payment structure).

Community pharmacists will also require continuing professional education (CPE) if they are to provide pharmaceutical care for palliative care patients confidently.[13] It is not uncommon to find that community pharmacists dispensing medications for patients of home-based palliative care programs are unfamiliar with nonformulary or uncommon palliative care medications.[53] Additionally, pharmacists' misconceptions about opiate use in patient populations reported in the literature have implications for community-based palliative care. For example, Joranson and Gilson[54] found that Wisconsin pharmacists' views on addiction, drug abuse, and diversion interfered with their dispensing of valid prescriptions for opioid pain medications to patients with chronic cancer and those with noncancer pain, with or without history of opioid abuse, in long-term care facilities, hospitals, and outpatient clinics. This restricted patients' access to pain relief medicines and jeopardized their pain management. Community pharmacists from urban and rural communities in a small study in Australia reported that they deliver palliative cancer care services only infrequently and consequently lacked knowledge in this area.[40] The five palliative care topics respondents most wanted to learn about in an educational program were: management of cancer pain; management of nonpain symptoms or side effects; drug interactions with palliative cancer treatments; risk factors, presentation, treatments, and prognosis of common cancers; and the principles of palliative care. A study conducted in Japan found that community pharmacists prioritized a need for skills to communicate effectively with patients and carers.[8]

An enhanced role in palliative care requires that community pharmacists have the capacity to provide equipment, including drug administration equipment, and that they stock (or have access to) the full range of palliative care pharmaceuticals.[53] However, retail pharmacists and home care nurses surveyed in Dublin, Ireland, reported that the main problem causing delays for newly referred home care patients was obtaining palliative care drugs, particularly unlicensed drugs.[55] This finding was mirrored in Japan.[8]

Finally, the available research evidence on community pharmacy involvement in primary care generally is inconclusive. Pharmaceutical care interventions may be ineffective or, at the very least, of unknown benefit. In a systematic review, Roughead et al.[56] found that studies generally omit or incompletely capture data on adverse drug events as a measure of clinical outcomes of pharmacy services in the community setting and few studies utilize medication appropriateness as an outcome measure of pharmaceutical care.

Community Pharmacists' Involvement in Palliative Care

Two studies that evaluated care provided by community pharmacists to palliative care patients following training in palliative care provide tentative support for enhancing the role of the community pharmacist in palliative care. The first of these studies was conducted in the United Kingdom over a ten-month period.[42] Community pharmacists developed a therapeutic relationship with patients providing cognitive pharmaceutical services including: assessment, medication reviews, identifying medication-related problems, care planning, and follow-up. An expert multidisciplinary panel found that the pharmaceutical care plans devised by community pharmacists for twenty-five palliative care patients using local pharmacies were likely to be beneficial. Successful outcomes included the implementation of plans, monitoring and updating of these plans, and more frequent discussion with GPs and/or community nurses.

The second study was a 2006-2007 pilot program in San Diego, California involving pharmacists based in a retail ambulatory care (outpatient) setting.[48] These community pharmacists initiated or modified treatment regimens for palliative care clinic patients under a collaborative practice protocol and arranged follow-up appointments with the palliative care service. Most of the pharmacists' medication recommendations in the San Diego program were accepted by the medical professionals. Physicians in this study also reported that the service was useful for managing symptoms such as pain and nausea and that the pharmacists could spend more time providing psychosocial support and managing complex situations than could physicians.

Conclusion and the Way Forward

It is essential that we build upon these tentative findings and move forward with a coherent research agenda as robust,

valid research is sorely lacking. We also need to support this initiative at the systemic level by addressing structural issues such as reimbursement and the provision of clear protocols and policies; at the organizational level by providing guidelines, such as a list of essential stocks, and local resources; and at the individual level by the provision of education and training as well as supporting attitude changes among community pharmacists where necessary. If these initiatives are prioritized, community pharmacists are poised to play a valuable – and essential – role in community-based palliative care. In summary, multilevel support for community pharmacists is needed for pharmacists to take a greater role in community-based palliative care. This can be achieved by addressing barriers such as reimbursement and the lack of education and training.

Acknowledgments

This project was funded by the Australian Government Department of Health and Aging as part of the Fourth Community Pharmacy Agreement Research and Development Program managed by the Pharmacy Guild of Australia.

References

1. O'Connor M, Fisher C, Guilfoyle A: Interdisciplinary teams in palliative care: A critical reflection. Int J Palliat Nurs 2006;12:132–137.
2. World Health Organization. National cancer control programmes: Policies and managerial guidelines [Internet]. 2nd ed. Geneva: World Health Organization; 2002 [cited 2009 Nov 11]. Available from: http://www.who.int/cancer/media/en/408.pdf.
3. Burch PL, Hunter KA: Pharmaceutical care applied to the hospice setting: A cancer pain model. Hosp J 1996;11:55–69.
4. Gilbar P, Stefaniuk K: The role of the pharmacist in palliative care: Results of a survey conducted in Australia and Canada. J Palliat Care 2002;18:287–292.
5. Hanif N: Role of the palliative care unit pharmacist. J Palliat Care 1991;7:35–36.
6. Austwick EA, Brown LC, Goodyear KH, Brooks DJ: Pharmacist's input into a palliative care clinic. Pharm J 2002;268:404–406.
7. Crawford GB: Pharmacists needed as part of the palliative care team. Australian J Pharm 2008;89:24.
8. Ise Y, Morita T, Maehori N, Kutsuwa M, Shiokawa M, Kizawa Y. Role of the community pharmacy in palliative care: A nationwide survey in Japan. J Palliat Med 2010;13:733–737.
9. Doyle D, Hanks GW, MacDonald N, editors: Oxford textbook of palliative medicine. 2nd ed. New York: Oxford University Press; 1998.
10. Bliss J: District nurses' and social workers' understanding of each others' roles. Br J Community Nurs 1998;3:330–336.
11. Gilbert L: Dispensing doctors and prescribing pharmacists: A South African perspective. Soc Sci Med 1998;46:83–95.
12. Montgomery AT, Kalvemark-Sporrong S, Henning M, Tully MP, Kettis-Lindblad A: Implementation of a pharmaceutical care service: Prescriptionists', pharmacists' and doctors' views. Pharm World Sci 2007;29:593–602.
13. Nation RL, Dooley MJ, Marriott JL, Fleming JA, Wein S, Pisasale M, Scott WJ: Improving medication management of palliative care patients: enhancing the role of community pharmacists: volume 2: appendices [Internet]. Melbourne (AU): Monash University; 2005 [cited 2009 Oct 5]. Available from: http://www.guild.org.au/uploadedfiles/Research_and_Development_Grants_Program/Projects/Palliative%20Care%20Project%20Final%20Report%20Appendices%202006.pdf.
14. Australian Institute of Health and Welfare: Australia's health 2008 [Internet]. Canberra: Australian Institute of Health and Welfare; 2008 [cited 2009 Oct 16]. (AIHW cat. no. AUS 99). Available from: http://www.aihw.gov.au/publications/aus/ah08/ah08.pdf.
15. Clinical Oncological Society of Australia; The Cancer Council of Australia; National Cancer Control Initiative: Optimising cancer care in Australia [Internet]. Carlton (AU): National Cancer Control Initiative; 2003 [cited 2009 Oct 7]. Available from: http://www.cosa.org.au/cosa/File/publications/Optim_Cancer_Care.pdf.
16. Australian Institute of Health and Welfare: National palliative care information collection: a way forward for community-based palliative care [Internet]. Canberra: Australian Institute of Health and Welfare; 2004 [cited 2009 Oct 5]. (AIHW cat. no. HWI 77). Available from: http://www.aihw.gov.au/publications/hwi/npcic/npcic.pdf.
17. Health Reform Committee: A healthy future for Western Australians: report of the Health Reform Committee [Internet]. Perth: Western Australia Department of Health; 2004 [cited 2009 Dec 5]. Available from: http://www.health.wa.gov.au/hrit/docs/publications/Final_Report.pdf.
18. Maloney CH, Preston F: An overview of home care for patients with cancer. Oncol Nurs Forum 1992;19:75–80.
19. Hinton J: Can home care maintain an acceptable quality of life for patients with terminal cancer and their relatives? Palliat Med 1994;8:183–196.
20. Monterosso L, Kristjanson LJ, Aoun S, Phillips MB: Supportive and palliative care needs of families of children with life-threatening illnesses in Western Australia: Evidence to guide the development of a palliative care service. Palliat Med 2007;21:689–696.
21. Western Australian Centre for Cancer and Palliative Care: Palliative care in Western Australia: final report December 2005 [Internet]. Perth (AU): Government of Western Australia, Department of Health; 2006 [cited 2009 Dec 5]. Available from: http://www.healthnetworks.health.wa.gov.au/cancer/docs/Pall%20Care%20Report%20Final.pdf.
22. Foreman LM, Hunt RW, Luke CG, Roder DM: Factors predictive of preferred place of death in the general population of South Australia. Palliat Med 2006;20:447–453.
23. Higginson IJ, Sen-Gupta GJ: Place of care in advanced cancer: a qualitative systematic literature review of patient preferences. J Palliat Med 2000;3:287–300.
24. McNamara B, Rosenwax L: Factors affecting place of death in Western Australia. Health Place 2007;13:356–367.
25. Brazil K, Bedard M, Willison K: Factors associated with home death for individuals who receive home support services: A retrospective cohort study. BMC Palliative Care 2002;1:2–8.
26. Cantwell P, Turco S, Brenneis C, Hanson J, Neumann CM, Bruera E: Predictors of home death in palliative care cancer patients. J Palliat Care 2000;16:23–28.
27. Aabom B, Kragstrup J, Vondeling H, Bakketeig LS, Stovring H: Does persistent involvement by the GP improve palliative care at home for end-stage cancer patients? Palliat Med 2006;20:507–512.
28. Peters L, Sellick K: Quality of life of cancer patients receiving inpatient and home-based palliative care. J Adv Nurs 2006;53:524–533.
29. Raphael R, Yves D, Giselle C, Magali M, Odile CM: Cancer treatment at home or in the hospital: What are the costs for

French public health insurance? Findings of a comprehensive-cancer centre. Health Policy 2005;72:141–148.
30. Aoun S: The hardest thing we have ever done: The social impact of caring for terminally ill people in Australia: Full report of the National Inquiry into the Social Impact of Caring for Terminally Ill People [Internet]. Deakin West (AU): Palliative Care Australia; 2004 [cited 2010 May 19]. Available from: www.palliativecare.org.au/Portals/46/The%20hardest%20thing.pdf.
31. Kirk S, Glendinning C: Trends in community care and patient participation: Implications for the roles of informal carers and community nurses in the United Kingdom. J Adv Nurs 1998;28:370–381.
32. World Health Organization: Cancer control: knowledge into action: WHO guide for effective programmes: palliative care [Internet]. Geneva: World Health Organization; 2007 [cited 2009 Nov 11]. Available from: http://whqlibdoc.who.int/publications/2007/9789241547345_eng.pdf.
33. Pieper BB, Dacher JE: Looking backward toward our future: Creating the nexus between community health nursing and palliative care. J N Y State Nurses Assoc 2004;35:20–24.
34. Salau S, Rumbold B, Young B: From concept to care: enabling community care through a health promoting palliative care approach. Contemp Nurse 2007;27:132–140.
35. Britt HC, Miller GC, editors: General practice in Australia, health priorities and policies 1998 to 2008 [Internet]. Canberra: Australian Institute of Health and Welfare; 2009 [cited 2009 Nov 20]. (General practice series; no. 24; cat. no. GEP 24). Available from: http://www.aihw.gov.au/publications/gep/gep-24–10721/gep-24–10721.pdf.
36. World Health Organization: World health statistics 2009 [Internet]. Geneva: World Health Organization; 2009 [cited 2009 Nov 13]. Available from: http://www.who.int/whosis/whostat/EN_WHS09_Full.pdf.
37. Britt HC, Harrison CM, Miller GC, Knox SA: Prevalence and patterns of multimorbidity in Australia. Med J Aust 2008; 189:72–77.
38. Australian Institute of Health and Welfare: Older Australia at a glance 2002. 3rd ed. Canberra: Australian Institute of Health and Welfare; 2002. (AIHW cat. no. AGE 25).
39. Ciardulli LM, Goode J-VR: Using health observances to promote wellness in community pharmacies. J Am Pharm Assoc (Wash) 2003;43:61–68.
40. Hussainy SY, Beattie J, Nation RL, Dooley MJ, Fleming J, Wein S, Pisasale M, Scott WJ, Marriott JL: Palliative care for patients with cancer: What are the educational needs of community pharmacists? Support Care Cancer 2006;14:177–184.
41. Sunderland B, Burrows S, Joyce A, McManus A, Maycock B: Rural pharmacy not delivering on its health promotion potential. Aust J Rural Health 2006;14:116–119.
42. Needham DS, Wong ICK, Campion PD: Evaluation of the effectiveness of UK community pharmacists' interventions in community palliative care. Palliat Med 2002;16:219–225.
43. Hassell K, Whittington Z, Cantrill J, Bates F, Rogers A, Noyce P: Managing demand: Transfer of management of self limiting conditions from general practice to community pharmacies. BMJ 2001;323:146–147.
44. Wermeille J, Bennie M, Brown I, McKnight J: Pharmaceutical care model for patients with type 2 diabetes: Integration of the community pharmacist into the diabetes team: A pilot study. Pharm World Sci 2004;26:18–25.
45. Department of Health (GB): Choosing health through pharmacy: a programme for pharmaceutical public health 2005-2015 [Internet]. London: Department of Health (GB); 2005 [cited 2009 Dec 5]. Available from: http://www.isciii.es/htdocs/pdf/04107496.pdf.
46. Australian Government, Department of Health and Ageing; Pharmacy Guild of Australia: Operations manual: Asthma Pilot Program: Pharmacy Asthma Management Service [Internet]. Canberra: Australian Government, Department of Health and Ageing; 2008 [cited 2009 Dec 8]. Available from: http://www.guild.org.au/uploadedfiles/Professional_Pharmacy_Services/The_Asthma_Pilot_Program/PAMS_operations_manual_Final%20Version%20171108.pdf.
47. Australian Government, Department of Health and Ageing; Pharmacy Guild of Australia: Operations manual: Diabetes Pilot Program: Diabetes Medication Assistance Service [Internet]. Canberra: Australian Government, Department of Health and Ageing; 2008 [cited 2009 Dec 10]. Available from: http://www.guild.org.au/uploadedfiles/Professional_Pharmacy_Services/The_Diabetes_Pilot_Program/DMAS-PRK_1-OperationsManual.pdf.
48. Atayee RS, Best BM, Daniels CE: Development of an ambulatory palliative care pharmacist practice. J Palliat Med 2008;11:1077–1082.
49. Benrimoj SI, Roberts AS: Providing patient care in community pharmacies in Australia. Ann Pharmacother 2005;39:1911–1917.
50. Hawksworth GM, Corlett AJ, Wright DJ, Chrystyn H: Clinical pharmacy interventions by community pharmacists during the dispensing process. Br J Clin Pharmacol 1999;47: 695–700.
51. Australian Government, Department of Health and Ageing: Allied health services under Medicare: fact sheet. Canberra: Australian Government, Department of Health and Ageing; 2009.
52. Medicare Australia: Quick reference guide for allied health professionals: Medicare items 10950-10970 (chronic disease allied health) [Internet]. Canberra: Medicare Australia; 2009 [cited 2009 Nov 23]. Available from: http://www.medicareaustralia.gov.au/provider/business/education/files/2248-quick-reference-guide-for-allied-health-professionals.pdf.
53. Hill RR: Clinical pharmacy services in a home-based palliative care program. Am J Health Syst Pharm 2007;64:806, 808, 810.
54. Joranson DE, Gilson AM: Pharmacists' knowledge and attitudes toward opioid pain medication in relation to federal and state policies. J Am Pharm Assoc 2001;41:213–220.
55. Lucy M, McQuillan R, MacCallion A, Corrigan M, Flynn J, Connaire K: Access to medications in the community by patients in a palliative setting: a system analysis. Palliat Med 2008;22:185–189.
56. Roughead E, Semple S, Vitry A: The value of pharmacist professional services in the community setting: a systematic review of the literature 1990-2002 [Internet]. Adelaide (AU): University of South Australia; 2002 [cited 2009 Oct 16]. Available from: http://beta.guild.org.au/uploadedfiles/Research_and_Development_Grants_Program/Projects/2002–507_fr.pdf.

Address correspondence to:
Moira O'Connor, B.A.(Hons), M.Sc., Ph.D.
WA Centre for Cancer and Palliative Care
Curtin University
GPO Box U1987
Perth
Western Australia 6845
Australia

Email: m.oconnor@curtin.edu.au