



**TITLE: Nurse Practitioners in Long-Term Care Facilities: Clinical and Cost-Effectiveness and Guidelines**

**DATE:** 1 February 2012

**RESEARCH QUESTIONS**

1. What is the clinical effectiveness of having nurse practitioners in long-term care facilities?
2. What is the cost effectiveness of having nurse practitioners in long-term care facilities?
3. What are the evidence-based guidelines for having nurse practitioners in long-term care facilities?

**KEY MESSAGE**

The evidence identified suggests that the implementation of nurse practitioners in long-term care facilities may result in an increase in family satisfaction and improved health services.

**METHODS**

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2012, Issue 1), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and abbreviated list of major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. The search was also limited to English language documents published between Jan 1, 2007 and Jan 20, 2012. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

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## RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, economic evaluations, and evidence-based guidelines.

One randomized controlled trial and six non-randomized studies were identified regarding the clinical effectiveness of having nurse practitioners in long-term care facilities. No health technology assessments, systematic reviews, meta-analyses, economic evaluations, or evidence-based guidelines were identified. Additional references of potential interest are provided in the appendix.

### OVERALL SUMMARY OF FINDINGS

One randomized controlled trial<sup>1</sup> assessed a multilevel intervention, including monthly on-site consultation from expert gerontological nurses, in order to improve quality of care and resident outcomes in nursing homes. The authors found that the quality of care was improved with the implementation of the intervention, while organizational working conditions, staffing, and costs were not affected.

The six non-randomized studies<sup>2-7</sup> varied in terms of objectives, methods, and results. Overall, the results from the identified studies<sup>2-7</sup> showed evidence that supports the implementation of nurse practitioners in long-term care facilities. A summary of study characteristics and key findings is presented in Table 1.

<b>Table 1: Characteristics and key findings of non-randomized studies</b>		
<b>Author, Date</b>	<b>Objective</b>	<b>Results and Conclusions</b>
Bynum et al. 2011 <sup>2</sup>	Compare two different models, the first model including the use of NPs, of primary care in four different continuing care communities	Residents in the first model had two to three times fewer hospitalizations and ED visits
Liu et al. 2011 <sup>3</sup>	Assess family satisfaction with the care provided by NPs to residents with dementia in nursing homes	Satisfaction was significantly associated with NP family communication, resident comfort, and satisfaction with NP care
Arbon et al. 2009 <sup>4</sup>	Examine the potential role of the NP in aged care residences, communities, and acute care facilities	Strong support was found for the potential of an aged care NP to improve existing health services and delivery of care
Lawrence 2009 <sup>5</sup>	Assess the rates of completion of advanced directives, using two models, the first model including the use of NPs, in long-term care facilities	The first model had consistently, significantly higher advanced directive completion rates than the model without the use of NPs

Klaasen et al. 2009 <sup>6</sup>	Assess resident and family satisfaction, quality of care, and cost-effectiveness concerning the collaborative working relationship between a NP acting as the primary care provider and a physician in a nursing home	The collaborative practice resulted in decreased drug costs and improvements in use, a decrease in transfers to the ED, and an overall increase in family satisfaction with quality of care provided to residents
McAiney et al. 2008 <sup>7</sup>	Examine a model for NPs working in long-term care homes and its impact on staff confidence, preventing hospital admission, and promoting early hospital discharge	Implementation of NPs improved staff confidence, reduced hospital admissions, but had no impact on promotion of early patient discharge

ED=Emergency Department; NP=Nurse Practitioner

## REFERENCES SUMMARIZED

### Health Technology Assessments

No literature identified

### Systematic Reviews and Meta-analyses

No literature identified

### Randomized Controlled Trials

1. Rantz MJ, Zwygart-Stauffacher M, Hicks L, Mehr D, Flesner M, Petroski GF, et al. Randomized multilevel intervention to improve outcomes of residents in nursing homes in need of improvement. *J Am Med Dir Assoc.* 2012 Jan;13(1):60-8.  
[PubMed: PM21816681](#)

### Non-Randomized Studies

2. Bynum JP, Andrews A, Sharp S, McCollough D, Wennberg JE. Fewer hospitalizations result when primary care is highly integrated into a continuing care retirement community. *Health Aff (Millwood).* 2011 May;30(5):975-84.  
[PubMed: PM21555482](#)
3. Liu LM, Guarino AJ, Lopez RP. Family Satisfaction With Care Provided by Nurse practitioners to Nursing Home Residents With Dementia at the End of Life. *Clin Nurs Res.* 2011 Dec 27.  
[PubMed: PM22203088](#)
4. Arbon P, Bail K, Eggert M, Gardner A, Hogan S, Phillips C, et al. Reporting a research project on the potential of aged care nurse practitioners in the Australian Capital Territory. *J Clin Nurs.* 2009 Jan;18(2):255-62.  
[PubMed: PM18800993](#)
5. Lawrence JF. The advance directive prevalence in long-term care: a comparison of relationships between a nurse practitioner healthcare model and a traditional healthcare model. *J Am Acad Nurse Pract.* 2009 Mar;21(3):179-85.  
[PubMed: PM19302695](#)
6. Klaasen K, Lamont L, Krishnan P. Setting a new standard of care in nursing homes. *Can Nurse.* 2009 Nov;105(9):24-30.  
[PubMed: PM19998690](#)
7. McAiney CA, Haughton D, Jennings J, Farr D, Hillier L, Morden P. A unique practice model for Nurse Practitioners in long-term care homes. *J Adv Nurs.* 2008 Jun;62(5):562-71.  
[PubMed: PM18489449](#)

### Economic Evaluations

No literature identified

**Guidelines and Recommendations**

No literature identified

**PREPARED BY:**

Canadian Agency for Drugs and Technologies in Health

Tel: 1-866-898-8439

[www.cadth.ca](http://www.cadth.ca)

**APPENDIX – FURTHER INFORMATION:****Non-Randomized Studies (interdisciplinary collaboration and prescribing behavior)**

8. Kaasalainen S, Martin-Misener R, Carter N, Dicenso A, Donald F, Baxter P. The nurse practitioner role in pain management in long-term care. *J Adv Nurs*. 2010 Mar;66(3):542-51.  
[PubMed: PM20423389](#)
9. Donald F, Mohide EA, Dicenso A, Brazil K, Stephenson M, Khtar-Danesh N. Nurse practitioner and physician collaboration in long-term care homes: survey results. *Can J Aging*. 2009 Mar;28(1):77-87.  
[PubMed: PM19860968](#)
10. Kaasalainen S, Dicenso A, Donald FC, Staples E. Optimizing the role of the nurse practitioner to improve pain management in long-term care. *Can J Nurs Res*. 2007 Jun;39(2):14-31.  
[PubMed: PM17679583](#)

**Review Articles**

11. Konetzka RT, Spector W, Limcangco MR. Reducing hospitalizations from long-term care settings. *Med Care Res Rev*. 2008 Feb;65(1):40-66.  
[PubMed: PM17895516](#)
12. Bakerjian D. Care of nursing home residents by advanced practice nurses. A review of the literature. *Res Gerontol Nurs*. 2008 Jul;1(3):177-85.  
[PubMed: PM20077962](#)

**Additional References**

13. Donald F, Martin-Misener R. Understanding the individual, organizational, and system factors influencing the integration of the nurse practitioner role in long term care settings in Canada [Internet]. Toronto: Ryerson University; 2011. [cited 2012 Jan 31]. Available from: <http://www.ryerson.ca/apnltc/pdf/FinalReport.pdf>
14. American Medical Directors Association Ad Hoc Work Group on the Role of the Attending Physician and Advanced Practice Nurse. Collaborative and supervisory relationships between attending physicians and advanced practice nurses in long-term care facilities. *Geriatr Nurs*. 2011 Jan;32(1):7-17.  
[PubMed: PM21295715](#)

Recent years have seen an increased interest and use of advanced practice nurses (APN) in long-term care. Models of best practices of supervision and collaboration have been promulgated by many organizations, but none have specifically addressed how these interactions should occur in the nursing home setting. **In order to better define the role of the attending physician and APN to provide optimal resident care, American Medical Directors Association formed a work group to address collaborative and supervisory relationships in long-term care facilities**

15. Sangster-Gormley E. Nurse practitioner-sensitive outcomes: a summary report 2010 update [Internet]. Halifax: College of Registered Nurses of Nova Scotia; 2010. [cited 2012 Jan 31]. Available from: [http://www.crnns.ca/documents/FINAL\\_Report-NP\\_Sensitive\\_Outcomes\\_12010.pdf](http://www.crnns.ca/documents/FINAL_Report-NP_Sensitive_Outcomes_12010.pdf)
16. A report to the Minister of Health and Long-Term Care on the review of the scope of practice for registered nurses in the extended class (nurse practitioners) [Internet]. Toronto: Health Professions Regulatory Advisory Council; 2008 Mar. [cited 2012 Jan 31]. Available from: <http://www.hprac.org/en/reports/resources/HPRACExtendedClassNurseReportENGMar08.pdf>
17. Registered Nurses' Association of Ontario. Staffing and care standards for long-term care homes [Internet]. Toronto: The Association; 2007 Dec. [cited 2012 Jan 31]. Available from: [http://www.rnao.org/Storage/37/3163\\_RNAO\\_submission\\_to\\_MOHLTC\\_-\\_Staffing\\_and\\_Care\\_Standards\\_in\\_LTC\\_-\\_Dec\\_21\\_20071.pdf](http://www.rnao.org/Storage/37/3163_RNAO_submission_to_MOHLTC_-_Staffing_and_Care_Standards_in_LTC_-_Dec_21_20071.pdf)