



**TITLE: Campus of Care Models for Adults with Disabilities and Seniors: A Review of Clinical Benefits and Harms and Cost-Effectiveness**

**DATE:** 29 February 2012

## **CONTEXT AND POLICY ISSUES**

Integration of continuing care services has been proposed as a means to improve the quality of care and the efficiency of resource use required for the health and social care of the elderly.<sup>1</sup> One such model is the campus of care, which consists of a cluster of buildings located on the same parcel of land, and provides a full array of continuing care accommodation and care options. This model may minimize the need for seniors to move to a new physical location as they transition from independent living to supportive living or long-term care, however transitions between levels of care within the campus model may still be perceived as disempowering by residents.<sup>2</sup>

The purpose of the report is to review the clinical and cost effectiveness of the campus of care model to help inform policy decisions regarding the delivery of continuing care services.

## **RESEARCH QUESTIONS**

1. What are the benefits and harms of campus of care health service models for patients and the health system?
2. What is the cost-effectiveness of campus of care models?
3. What are the public and private costs of campus of care models?

## **KEY MESSAGE**

Clinical and economic studies comparing the benefits, harms, costs and cost-effectiveness of campus of care models with usual continuing care, are lacking.

*Disclaimer:* The Rapid Response Service is an information service for those involved in planning and providing health care in Canada. Rapid responses are based on a limited literature search and are not comprehensive, systematic reviews. The intent is to provide a list of sources and a summary of the best evidence on the topic that CADTH could identify using all reasonable efforts within the time allowed. Rapid responses should be considered along with other types of information and health care considerations. The information included in this response is not intended to replace professional medical advice, nor should it be construed as a recommendation for or against the use of a particular health technology. Readers are also cautioned that a lack of good quality evidence does not necessarily mean a lack of effectiveness particularly in the case of new and emerging health technologies, for which little information can be found, but which may in future prove to be effective. While CADTH has taken care in the preparation of the report to ensure that its contents are accurate, complete and up to date, CADTH does not make any guarantee to that effect. CADTH is not liable for any loss or damages resulting from use of the information in the report.

*Copyright:* This report contains CADTH copyright material. It may be copied and used for non-commercial purposes, provided that attribution is given to CADTH.

*Links:* This report may contain links to other information available on the websites of third parties on the Internet. CADTH does not have control over the content of such sites. Use of third party sites is governed by the owners' own terms and conditions.

## METHODS

### Literature Search Strategy

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 major international health technology agencies, as well as a focused Internet search. No methodological filters were applied to limit retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2002 and February 2, 2012.

### Selection Criteria and Methods

One reviewer screened the titles and abstracts of the retrieved publications and evaluated the full-text publications for the final article selection, according to the selection criteria presented in Table 1.

**Table 1: Selection Criteria**

<b>Population</b>	Seniors Adults with disabilities
<b>Intervention</b>	Campus of care models*
<b>Comparator</b>	Standard of care or status quo
<b>Outcomes</b>	Q1: Quality of life, clinical benefit, clinical harm, clinical outcomes, patient satisfaction Q2: Cost-effectiveness Q3: Public and private costs
<b>Study Designs</b>	HTAs, systematic reviews, meta-analyses, RCTs, non-randomized studies, economic evaluations

\* The literature search included the following: housing for the elderly; multilevel or integrated or continuum or continuing care; retirement village; campus care model.  
HTAs=health technology assessments; RCTs=randomized controlled trials

### Exclusion Criteria

Studies were excluded if they did not meet the selection criteria, were duplicate publications, or were published prior to 2002.

## SUMMARY OF EVIDENCE

### Quantity of Research Available

A total of 92 articles were identified from the database and grey literature search. Of these, eight articles were selected for full text screening and none met the inclusion criteria. The study selection process is outlined in the flowchart in Appendix 1.

Additional references of potential interest are provided in Appendix 2.

## **CONCLUSIONS AND IMPLICATIONS FOR DECISION OR POLICY MAKING**

No conclusions can be drawn regarding the benefits, harms, costs and cost-effectiveness of campus of care models due to the lack of comparative studies.

### **PREPARED BY:**

Canadian Agency for Drugs and Technologies in Health

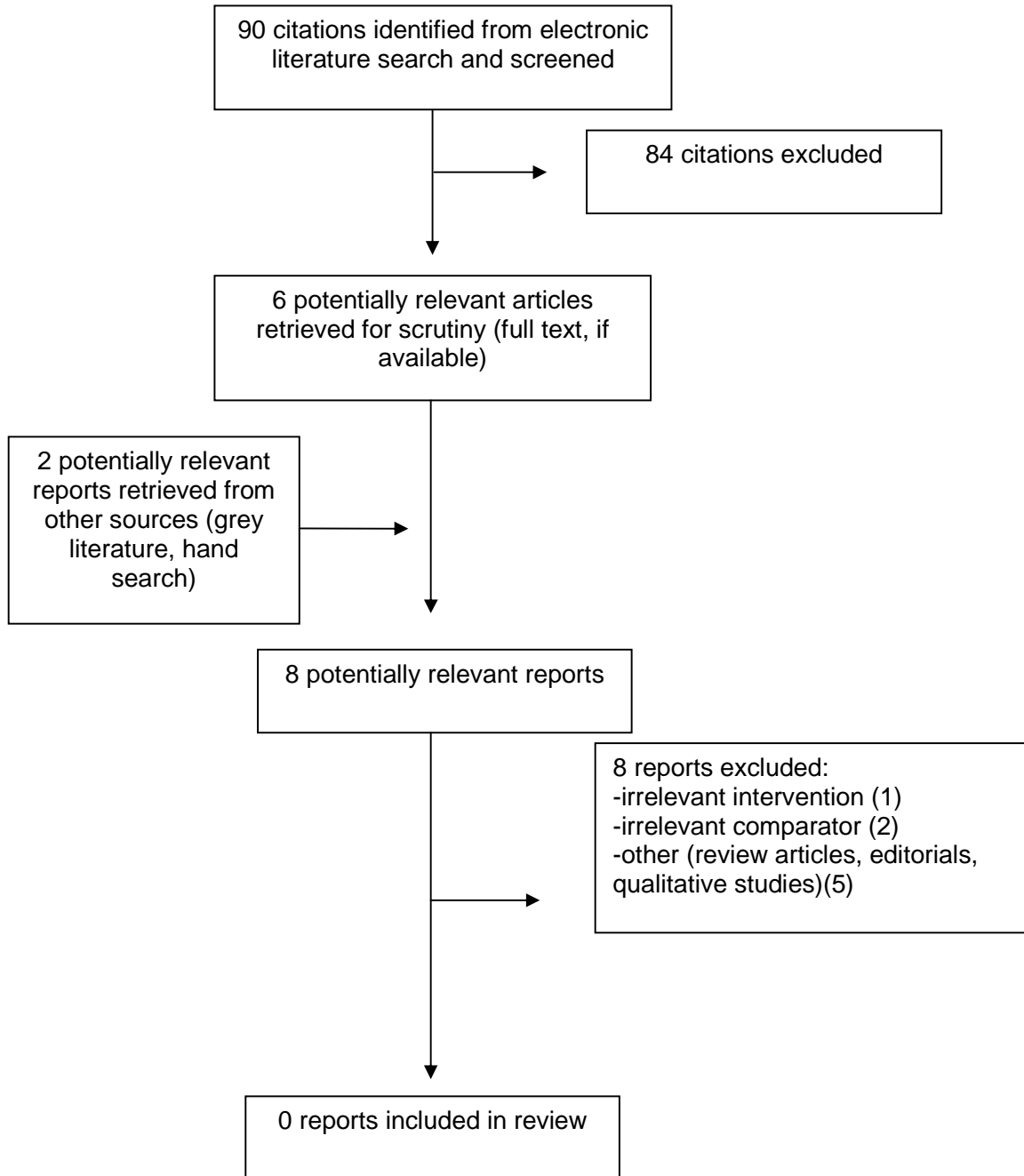
Tel: 1-866-898-8439

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

## REFERENCES

1. MacAdam M. Frameworks of integrated care for the elderly: a systematic review [Internet]. Ottawa: Canadian Research Policy Networks; 2008. [cited 2012 Feb 2]. Available from: [http://www.cprn.org/documents/49813\\_EN.pdf](http://www.cprn.org/documents/49813_EN.pdf)
2. Shippee TP. "But I am not moving": residents' perspectives on transitions within a continuing care retirement community. *Gerontologist*. 2009 Jun;49(3):418-27.

Appendix 1: Selection of Included Studies



## Appendix 2: Additional Reports

*Comparative studies of two different campus of care models*

**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](#)

Meeting the medical and social needs of elderly people is likely to be costly, disruptive, and at odds with personal preferences if efforts to do so are not well coordinated. We compared two different models of primary care in four different continuing care retirement communities. In the first model, used in one community, the physicians and two part-time nurse practitioners delivered clinical care only at that site, covered all settings within it, and provided all after-hours coverage. In the second model, used in three communities, on-site primary care physician hours were limited; the same physicians also had independent practices outside the retirement community; and after-hours calls were covered by all members of the practices, including physicians who did not practice on site. We found that residents in the first model had two to three times fewer hospitalizations and emergency department visits. Only 5 percent of those who died did so in a hospital, compared to 15 percent at the other sites and 27 percent nationally. These findings provide insight into what is possible when medical care is highly integrated into a residential retirement setting.

**Young Y, Inamdar S, Hannan EL. Comparison study on functional outcomes and perceived quality of life between all-inclusive and fee-for-service continuing care retirement communities. *J Am Med Dir Assoc*. 2010 May;11(4):257-62.**

[PubMed: PM20439045](#)

**OBJECTIVE:** To examine the associations between 2 types of continuing care retirement communities' (CCRC) residents regarding physical function and perceived quality of life. **METHODS:** Cross-sectional study (n=406). Eligibility criteria include age 65 years or older, residents of independent living units, and intact cognition (MMSE $\geq$ 24). All-inclusive CCRCs provide unlimited access to home health services and nursing home care as needed in return for the entry and monthly fee. Fee-for-service CCRCs offer home health and nursing home services at a full fee-for-service rate. Outcomes were functional status (ADLs and IADLs) and perceived quality of life. Multivariate regressions were used to examine the associations between residents of different types of CCRCs on selected outcomes while adjusting for covariates. **RESULTS:** The all-inclusive CCRC sample was more likely to be married (53.8% versus 33.4%;  $P < .001$ ), with more years of education (17.9 versus 14.4;  $P < .0001$ ), and had few physician visits in the previous year in comparison to the FFS CCRC sample. Multivariate results indicate that the FFS group had worse ADL (beta=0.95;  $P=.0003$ ), IADL (beta=0.57;  $P=.02$ ) function than the all-inclusive group. There was no significant difference in perceived quality of life scores between the 2 groups. **CONCLUSIONS:** Residents of both CCRCs reported equally good quality of life scores. Residents of the all-inclusive CCRC seem to have had better ADL and IADL function than the FFS CCRC residents. Prepaid home health services and nursing home care in the all-inclusive CCRC may facilitate ADL and IADL functional independence.

*Descriptive report on an in-home support program as part of a campus of care model*

**Lum JM, Aikens A. From Denmark to Deep River: integrating care in small and rural communities in Ontario. Healthc Pap. 2009;10(1):50-7.**

[PubMed: PM20057217](#)

Integrating community-based health and social care for older persons is said to help individuals maintain high levels of independence, well-being and quality of life and contribute to health systems sustainability by moderating the demand for costly emergency services and inappropriate hospital care. Rural settings, however, pose challenges distinct from those in urban areas. Using North Renfrew Long-Term Care Services as a case study, this paper discusses the principles and practices of a small, rural community service agency located in Renfrew County, Ontario, that provides to its scattered populations a range of services across the care continuum. Services include community support programs, supportive housing and long-term care beds as well as an innovative 24-Hour Flexible In-Home Support Pilot program adapted from the ground breaking "night patrol" system in Denmark.

*Qualitative study on campus of care community*

**Shippee TP. "But I am not moving": residents' perspectives on transitions within a continuing care retirement community. Gerontologist. 2009 Jun;49(3):418-27.**

[PubMed: PM19372143](#)

**PURPOSE:** This article investigates how continuing care retirement community (CCRC) residents define transitions between levels of care. Although older adults move to CCRCs to "age in place," moving between levels of care is often stressful. More than half a million older adults live in CCRCs, with numbers continually increasing; yet, no studies address transitions between levels of care in these communities. **DESIGN AND METHODS:** I completed 23 months of live-in observation and conducted 35 face-to-face in-depth interviews with CCRC residents across 3 levels of care. I performed a thematic analysis of observation notes and interview transcripts. **RESULTS:** Residents perceived transitions as both disempowering and final. They discussed decreases in social networks that occurred after such moves. Resident-maintained social boundaries exacerbated these challenges. **IMPLICATIONS:** Although the transition to institutional living is one of the most important events in older persons' lives, transitions within CCRCs also are consequential especially because they are coupled with declining functional ability. These findings may inform policy for retirement facilities on topics such as increasing privacy, challenging social boundaries, and educating residents to prepare them for transitions.