The Small House Model to Support Older Adults in Long-Term Care
Disclaimer: The information in this document is intended to help Canadian health care decision-makers, health care professionals, health systems leaders, and policy-makers make well-informed decisions and thereby improve the quality of health care services. While patients and others may access this document, the document is made available for informational purposes only and no representations or warranties are made with respect to its fitness for any particular purpose. The information in this document should not be used as a substitute for professional medical advice or as a substitute for the application of clinical judgment in respect of the care of a particular patient or other professional judgment in any decision-making process. The Canadian Agency for Drugs and Technologies in Health (CADTH) does not endorse any information, drugs, therapies, treatments, products, processes, or services.

While care has been taken to ensure that the information prepared by CADTH in this document is accurate, complete, and up to date as at the applicable date the material was first published by CADTH, CADTH does not make any guarantees to that effect. CADTH does not guarantee and is not responsible for the quality, currency, propriety, accuracy, or reasonableness of any statements, information, or conclusions contained in any third-party materials used in preparing this document. The views and opinions of third parties published in this document do not necessarily state or reflect those of CADTH.

CADTH is not responsible for any errors, omissions, injury, loss, or damage arising from or relating to the use (or misuse) of any information, statements, or conclusions contained in or implied by the contents of this document or any of the source materials.

This document may contain links to third-party websites. CADTH does not have control over the content of such sites. Use of third-party sites is governed by the third-party website owners’ own terms and conditions set out for such sites. CADTH does not make any guarantee with respect to any information contained on such third-party sites and CADTH is not responsible for any injury, loss, or damage suffered as a result of using such third-party sites. CADTH has no responsibility for the collection, use, and disclosure of personal information by third-party sites.

Subject to the aforementioned limitations, the views expressed herein are those of CADTH and do not necessarily represent the views of Canada’s federal, provincial, or territorial governments or any third-party supplier of information.

This document is prepared and intended for use in the context of the Canadian health care system. The use of this document outside of Canada is done so at the user’s own risk.

This disclaimer and any questions or matters of any nature arising from or relating to the content or use (or misuse) of this document will be governed by and interpreted in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein, and all proceedings shall be subject to the exclusive jurisdiction of the courts of the Province of Ontario, Canada.

The copyright and other intellectual property rights in this document are owned by CADTH and its licensors. These rights are protected by the Canadian Copyright Act and other national and international laws and agreements. Users are permitted to make copies of this document for non-commercial purposes only, provided it is not modified when reproduced and appropriate credit is given to CADTH and its licensors.

About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada’s health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.

Funding: CADTH receives funding from Canada’s federal, provincial, and territorial governments, with the exception of Quebec.

Questions or requests for information about this report can be directed to Requests@CADTH.ca
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUD</td>
<td>Australian Dollar</td>
</tr>
<tr>
<td>CADTH</td>
<td>Canadian Agency for Drugs and Technologies in Health</td>
</tr>
<tr>
<td>COVID-19</td>
<td>Coronavirus disease</td>
</tr>
<tr>
<td>ES</td>
<td>Environmental Scans</td>
</tr>
<tr>
<td>LTC</td>
<td>Long-Term Care</td>
</tr>
<tr>
<td>MeSH</td>
<td>Medical Subject Headings</td>
</tr>
<tr>
<td>QoL</td>
<td>Quality of Life</td>
</tr>
<tr>
<td>USD</td>
<td>United States Dollar</td>
</tr>
</tbody>
</table>
Key Messages

- The small house model of long-term care (LTC) is identified internationally by several model names. While some differences exist between the characteristics of these models (e.g., number of residents, degree of resident freedom, facility design, etc.), there are three recurring components: the establishment of functional units with a small group of residents; replication of familiar domestic routines; and implementation of some form of de-centralized staff.

- The key philosophic difference between the small house model and traditional LTC model is the heavy focus on person-centered care. This approach to care in the small house model is firmly rooted in freedom of choice and autonomy for the residents.

- Small household models eliminate the strict delineation of roles; staff at all levels are included in the decision-making process. Self-managed and universal work teams are prominent features of the small house model. Front-line staff with strong interpersonal skills are essential for successful implementation.

- No strong trend emerges from the literature with respect to the impact of the small house model on resident-centered outcomes, when compared to more traditional models of LTC. This is likely due to lack of consistency with respect to which outcomes are measured, and variability among the small house models themselves.

- Literature exploring the Canadian experience with small house models is limited. The majority of identified studies used data from the United States or European jurisdictions, potentially limiting its generalizability to the Canadian context.

Context

The LTC industry has experienced a global ‘culture change’ movement over the past 25 years. This culture change, driven by concerns over quality of care, lack of personalization in the operational procedures, and strictures on life for the residents in the traditional approach to LTC, has been accelerated by the recent COVID-19 crises, where more than 59% of Canadian deaths have been residents of LTC facilities. Through this movement, several alternative models of care have emerged to replace the traditional approach that utilized an institutional, medical model. Common themes of culture change models include: individualized care; creating home-like environments; promoting close relationships among staff, residents, families and communities; empowering staff to respond to resident needs and work collaboratively with management to make decisions about care; and the continuous improvement of quality. Canada’s population is rapidly aging, the proportion of residents over 65-years is expected increase by over 60% in the next 20 years, and the proportion of those over the age of 75 is expected to double. In light of this demographic shift, several jurisdictions are intensifying their efforts to evaluate the existing approach to care and identify areas for improvement. The ‘small house model’ has been proposed as a potential solution to what are seen as the current pitfalls of traditional LTC facilities. While there are several specific names by which the small house model is referred, briefly these all incorporate the common themes of culture change mentioned through a specific built design, functional units with fewer residents, and a person-centered approach to care. This ES is being conducted to help inform such decision-making in Canadian jurisdictions regarding the adoption of the ‘small house’ model.

Through a review of the literature, this ES aims to gather and synthesize information of the small house model. This includes both Canadian and international examples where the model has either been implemented or is being considered, as well as, comparisons of the small house to the traditional model.

Objectives

The key objectives of the Environmental Scan are as follows:

1. Identify examples of the small house model of LTC implemented in Canada and internationally and describe their key characteristics, including overall design, number of residents per home, philosophy and approach to care, services provided, staffing level, and funding approach.

2. Summarize the key differences between the small house model and the traditional model of large LTC facilities, including benefits and disadvantages associated with these models.
3. Summarize the main outcomes associated with the small house model for residents.

4. Summarize the key issues, challenges, and lessons learned in implementation of the small house model in Canada and internationally.

Methods
This ES was informed by a limited literature search.

Table 1: Components for Literature Screening and Information Gathering

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Older adults who require LTC</td>
</tr>
<tr>
<td>Intervention</td>
<td>‘Small house’ model of LTC</td>
</tr>
<tr>
<td>Settings</td>
<td>Residential LTC</td>
</tr>
<tr>
<td>Types of Information</td>
<td>Literature Search</td>
</tr>
</tbody>
</table>

LTC = long term care

Literature Search
A limited literature search was conducted by an information specialist on key resources including MEDLINE, Embase, CINAHL, the Cochrane Database of Systematic Reviews, the international HTA database, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine’s MeSH (Medical Subject Headings), and keywords. The main search concepts were models of care and LTC homes. No filters were applied to limit the retrieval by study type. The search was also limited to English language documents published between Jan 1, 2016 and Oct 1, 2021.

Screening and Study Selection
One author independently screened 643 titles and abstracts for eligibility according to the inclusion criteria outlined in Table 1. Articles that were published in a language other than English were excluded. Study selection focused on identifying literature describing any of the ‘small house’ models of LTC. The ‘small house’ model of LTC is identified internationally by several model names. Accordingly, no exclusions were made on the basis of ‘small house’ model type. Literature regarding any adult population requiring LTC was included; literature regarding LTC facilities for children was excluded. Literature on more traditional models of LTC was also excluded, unless it provided comparison with the ‘small house’ model of care. No exclusions were made on the basis of study design or jurisdiction. Ultimately, 70 publications were included. These publications reported information that was relevant to at least one of seven domains that characterizes the ‘small house’ model: design, philosophy, organizational structure, funding, resident outcomes, staff outcomes, or model implementation. Many publications reported information across multiple domains. Among the included publications, six separate ‘small house’ models of care were identified. However, nearly half of the publications did not provide information on one specific model, but rather referred to the ‘small house’ model more generally (see Table 2 below).

Table 2: Types of ‘Small House’ Model Identified

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of Publications Providing Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butterfly</td>
<td>10</td>
</tr>
<tr>
<td>Clustered Domestic</td>
<td>3</td>
</tr>
<tr>
<td>Dementia Village</td>
<td>4</td>
</tr>
</tbody>
</table>
The Small House Model for Long Term Care

Green Care Farm
Green House
Shared Housing Agreement
Small House†

† - Includes publications that did not report about a specific small house model, but rather reported from a generic perspective such as small-scale, house-like, household, small house

Synthesis Approach

Findings from the literature search were summarized narratively. When summarizing the key characteristics of the small house approach outlined in Objective 1, relevant findings were separated based on naturally occurring categories of information (i.e., design, philosophy, organizational structure, and funding). Findings related to subsequent study objectives were grouped similarly, for consistency. As noted, the included literature referred to a variety of ‘small house’ models of care; the term ‘small house’ model was used throughout this ES for consistency. Individual models are named specifically in stand-out instances.

Findings

Objective 1 – Key Characteristics

The ‘small house’ model for LTC emerged from the ‘culture change movement’ in the LTC industry.1 This movement seeks the transition of LTC homes away from an institutionalized, medical model to one modelled on a caring and compassionate living environment. The overarching goals of the small-house model are: to eliminate the institutional character of LTC homes; to encourage social interactions between care staff and residents; and to promote resident participation in daily living activities. The small house model aims to do this through careful consideration of the built design and philosophy of approach to care.4-7 Key aspects of the general ‘small house’ model approach – with respect to design, philosophy, organizational structure, and funding – are discussed below.

As noted earlier, six separate ‘small house’ models of care were identified. There are few differentiating characteristics among these models. As a whole they are all focused on a small number of residents living within a functional unit that strives to provide person-centered care to an aged population of residents. Notably, the Dementia Village and Butterfly models exclusively serve residents with dementia. In the instances of Green House and Butterfly homes, utilization of the model name is dependent upon paying a fee to an accrediting organization rather than enacting structural or operational practices that significantly deviate from other non-registered facilities.8,9 Uniquely, Dementia Villages and Green Care Farms set out to re-create living on a fully integrated societal level rather than just a house-level.10-12

<table>
<thead>
<tr>
<th>Model</th>
<th>Jurisdiction of Implementation*</th>
<th>Number of Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butterfly</td>
<td>United Kingdom, Canada</td>
<td>8–12</td>
</tr>
<tr>
<td>Clustered Domestic</td>
<td>Australia</td>
<td>≤16</td>
</tr>
<tr>
<td>Dementia Village</td>
<td>Netherlands</td>
<td>6–8</td>
</tr>
<tr>
<td>Green Care Farm</td>
<td>Netherlands</td>
<td>6–8</td>
</tr>
<tr>
<td>Green House</td>
<td>United States</td>
<td>10–12</td>
</tr>
<tr>
<td>Shared Housing Agreement</td>
<td>Germany</td>
<td>6–10</td>
</tr>
</tbody>
</table>
DESIGN

The common design tenet amongst the models is a residential ambiance including private bedrooms and bathrooms, with common kitchen and living spaces contained in a unit that houses a small number of residents. While the target number of residents varies between specific small house models and individual homes (see Table 3 above), publications reported resident counts from five to 20.

More resolved features of the small house model include a compact floor plan and layout; lack of long corridors; inconspicuous placement and out-of-sight storage for staff work areas (e.g., nursing stations), medical supplies and equipment; and the use of personal furnishings and décor choices in private resident bedrooms. To further mimic a residential atmosphere, lighting, visual, tactile and acoustic stimuli are to be considered.

Another recommended feature of the small house models is access to outdoor spaces. These may be as diverse as having access to the required land and resources to perform agricultural activities, as demonstrated by the ‘Green Farm’ and ‘Dementia Villages’ models; to outdoor patios that may be adjacent to a cottage-style residence; to rooftop terraces on multi-story facilities. In instances where outdoor access is not possible, it is recommended that windows facing the outdoors and plentiful natural light should be incorporated. Finally, these LTC facilities are commonly embedded within existing residential neighborhoods amongst houses, parks, schools, shopping etc., to affirm that residents are still valued members of society.

While these additional characteristics support the residential-like character of the small house model, often practical restraints such as space or budgets may dictate what design aspects are ultimately implemented. For example, the renovation of larger traditional homes may maintain a layout with a corridor, or new builds may utilize multi-story buildings that limit access to outdoor space for residential units located on higher floors.

PHILOSOPHY

Small house models strive to provide resident-centered or resident-directed care; the central theme in this approach is maximizing the freedom of choice for, and autonomy of, the resident. The model eschews the rigid routines and instead favours flexibility that allows, and encourages, residents to engage in their daily living activities at will. Resident input is solicited as much as possible so that discussions around preferences occur. For example, residents of small-house models have the freedom to choose their own waking, bathing, eating and sleeping schedules. They are afforded the opportunity to make their own dietary choices and participate in meal planning. Spontaneity is also encouraged with respect to the types and timings of social activities available to residents. The model fosters the development of strong personal relationships between residents and caregivers, which in turn, re-enforces the ideal of person-centered care.

ORGANIZATIONAL STRUCTURE

The small house model aims to provide a holistic approach to care including housekeeping, dietary and clinical services. The medical and clinical services intend to match those provided by traditional care facilities; however, there is some indication that providing complex medical care within a setting designed to drive relationships and home-like care may be difficult.

Some models provide additional ancillary services outside of just person-centered care and medical support. The ‘Dementia Villages’ of the Netherlands aim to re-create an entire cross-section of Dutch society. In these villages, resident cottages are placed amongst an assortment of other business such as markets, cafés, salons, and movie theaters, for example. Residents, their families and other visitors can all utilize these services. Like Dementia Villages, Green Care Farms offer a more vertically integrated approach to care with the establishment of agricultural operations that involve residents in crop production.
The caregiving staff of small house models are expected to provide living support over and above any health-related responsibilities (e.g., cooking, cleaning, grocery ordering, social engagement, etc.). While the profile of staff include the usual positions: nurses, nursing assistants, house keepers and cooks, staff are typically cross-trained so that each is capable of executing a range of tasks. The exact staffing levels vary between the different facilities and locations and are influenced by: the total number of residents in a home unit; the resident acuity; and, any prevailing industry regulations.

**FUNDING**

Most publications that discussed the funding of the small house model were based in the United States. These residents were usually privately-funded, however, Medicaid programs provided at least partial funding for some residents. One study reported daily rates of $246 to $495 USD for accommodations in a small house facility.

**Objective 2 – Key differences compared to the traditional model**

The small house model differs from the traditional large-scale model in terms of built design, number of residents, philosophy of care, organizational structure and resident outcomes. Differences concerning the design, resident number and philosophy of care are summarized below. Differences with respect to ‘resident outcomes’ are described under Objective 3.

**DESIGN**

The physical design is arguably the most distinct difference between the models—small house models strive to create a home-like setting complete with house layout and features, while the traditional model more closely resembles a clinical institution. As a specific example, one qualitative study conducted in Belgium investigated the effect of architectural design of the small house model on residents and staff. Residents reported having easier access to all areas, increased movement and more pleasant social dynamics due to the compact design of the small house model. Staff reported this design created a more relaxed and pleasant atmosphere, and that the compactness and fewer residents made it easier to manage their job (i.e., more flexibility, less stress, less hasty). However, the closed unit and few number of people to interact can also create a sense of isolation for residents or aggravate conflict. For example, it can be more difficult for disagreeing residents to avoid each other. Additionally, staff have reported an increased emotional demand while working in the small house model. Relationships between staff and residents may become so strong that new staff members have difficulties gaining acceptance amongst the residents.

**PHILOSOPHY**

The key philosophic difference between the small house model and traditional LTC model is the heavy focus on person-centered care. Traditionally, LTC has followed an institutional-centered approach to care with a well-defined hierarchy and entrenched protocols. Person-centered care is firmly rooted in freedom of choice and autonomy for the residents. Therefore, the prescriptive routines are mostly removed, and residents become an empowered and active participant in their own care routines. However, the degree of freedom must be carefully balanced with the needs of staff, safety, as well as the practical, logistical and operational constraints of running a complex facility. For example, outdoor access frequently requires some degree of staff supervision. Since the ratio of residents to staff is always greater than one, there may be instances where a resident’s choice for outdoor activities creates a safety concern for themselves or other residents. As another example, a mixed methods, cross-sectional study that interviewed staff at a Green House home described a situation where the lack of set scheduling caused inefficient use (i.e., wasted time) of highly-skilled staff resources like clinical therapists. Finally, the lack of dietary planning in one small household home caused food budget overruns due to inefficiency and waste.

An additional consideration of complete resident empowerment in the small model is eliciting a proportional response from individual residents. Disparities between personality strengths, trust levels and willingness to vocalize one’s opinion may lead to some residents feeling ostracized while feeling that others over powered the household.

**ORGANIZATIONAL STRUCTURE**
To support a shift to person-centered care, the small household model has had to re-envision the organizational structure of LTC.\textsuperscript{9,10,29,30} Traditionally, homes installed a management hierarchy with set protocols and well-defined roles for individual staff members. Decision making was exclusively management-led. In one instance, staff described the traditional LTC model as too restrictive and anti-ethical to the care of the residents.\textsuperscript{22}

Small household models eliminate the strict delineation of roles; staff at all levels are included in the decision-making process.\textsuperscript{30,36} Staff in the small house model have reported having more job autonomy and feeling more empowered; more flexibility with less time pressure to complete their job;\textsuperscript{7,27,34} and, a significantly lower workload and job demands compared to caregivers in traditional model.\textsuperscript{29,30,34,37,38} However, whether this translates to higher job satisfaction and lower turnover for small model staff is inconclusive as some studies report better outcomes for the small model while others did not identify a significant difference.\textsuperscript{34,39,40} From the single study that reported on wages, conducted in the United States, wages did not differ significantly between a Green House model and a comparator traditional home.\textsuperscript{31}

While the small homes are staffed with the same assortment of caregivers (i.e., job descriptors), numerous studies reported that a higher proportion of staff-hours in the smaller homes tended to be from those in positions requiring less formal training (i.e., a higher proportion of certified nursing assistants, as opposed to registered nurses, providing care).\textsuperscript{13,31,41,42} However, this difference did not seem to negatively impact level or quality of care. Indeed, one study reported that small house model staff: outperformed staff from larger homes; spent 3x to 6x more time in personal care situations; and spent significantly more time in task-oriented interactions than traditional home staff.\textsuperscript{25}

**FUNDING**

Nearly all identified studies that discussed funding were US-based. One study reporting on financial differences indicated that resident rates were cheaper in the traditional homes than ‘Green House’ comparators [average of $7,588 (range: $5,100–$12,020) compared to $7,958 (range: $5,100–$15,060) USD].\textsuperscript{4} ‘Green Houses’ had more private paying residents [58.6% (range: 15–90) compared to 44.2% (range: 20–77)] with a smaller percentage receiving Medicaid [40.7% (range: 0–78) compared to 54.0% (range: 23–75)].\textsuperscript{4} One study that investigated the impact of a small model adoption on Medicaid spending found a decrease of $509 USD per quarter in homes that had adopted a ‘Green House’ model. This difference was caused in part to the fewer number of skilled-nursing-days and lower acute hospital spending reported by the ‘Green Houses’.\textsuperscript{41} Overall, Medicaid Part A annual spending decreased by $7,746 per resident in the ‘Green House’, but this decrease did not occur in one specific area of Medicaid spending and was partially the result of an increase in costs at the comparator traditional home.\textsuperscript{41} The reduction in operational costs was further supported by another study that determined ‘Green Houses’ are $80 USD less per bed-day due to the flattened hierarchical organization and lower requirement for skilled positions.\textsuperscript{6}

The only non-US based study reporting on funding compared the operational costs of four clustered domestic living models to a comparator standard model (n = 13) in Australia. This cross-sectional analysis found that unadjusted crude costs between the models was similar, but after adjusting for resident characteristics and differences between the individual homes, the clustered domestic living model was significantly lower (-$14 270 AUD per annum, or -16%) than the standard model.\textsuperscript{14}

While it is expected that the build costs for the small model homes are higher due to the larger footprint and required area,\textsuperscript{32,43} an Australia publication reported the cost is comparable to that of traditional larger home when presented as a ratio of gross foot area.\textsuperscript{44} One opinion article originating from Canada champions the use of small house models in future LTC development, claiming that operational costs are lower and projects currently under construction in Manitoba have half the costs of traditional home builds. However, this article provides no references or specific details (e.g., actual dollar values, breakdown of costs, reasons for cost differentials, etc.).\textsuperscript{45}

**Objective 3 – Outcomes**

A total of 30 publications provided study data or commentary related to resident outcomes. This included qualitative (n = 8),\textsuperscript{6,7,20-22,30,46,47} quantitative (n = 16)\textsuperscript{12-14,16,18,25,42,43,48-55} and mixed (n = 1)\textsuperscript{4} study designs, as well as reviews (n = 5).\textsuperscript{2,10,17,40,56} Interviews with staff were the most common instrument used for the qualitative studies, while the quantitative studies typically used validated quality of life (QoL) instruments. The range of outcomes reported was broad. These outcomes included (but were not limited to)
broad physical, cognitive or behavioural outcomes; falls; hospitalizations or medication consumption; rest-activity rhythms; pacing; and social engagement.

No obvious trend emerged from the literature with respect to the impact of the small house model on resident-centered outcomes. Some studies reported positive outcomes on resident quality of life (QoL), while others did not note any significant difference either between residents of small and large LTC facilities, or those that transitioned from a traditional to small model.\textsuperscript{18,27,39,51} It is possible that the inconsistency may be the result of the heterogeneity between model designs and operations.\textsuperscript{4,47} While there are guiding principles as to how the model should be implemented, there is no guarantee as to exactly how the principles are interpreted and instituted by a specific LTC facility. Therefore, there can be significant operational disparities between individual small house modeled homes, reducing the generalizability of results from any direct comparison to a traditional model of care, the reported characteristics of which also varied among the included studies.

This finding echoes that of a scoping review by Ausserhofer \textit{et al.}(2016), who concluded although an observed trend in the direction of improvement was present for many performance indicators of QoL, none showed that the small house models were definitively better than larger scale controls (review included 14 studies that compared large scale ‘Eden Alternative’ homes or small house models with a dementia-specific or non-dementia aged population to traditional homes).\textsuperscript{40} When another study partitioned QoL into separate domains, the small house model did typically demonstrate better outcomes with respect to environment, autonomy, and caregiving.\textsuperscript{49} Furthermore, some studies reported that the small house model may slow the decline in physical functioning (e.g., activities of daily living), lead to better mood and behaviours, decrease the amount of psychotropic medication used and a better nutritional intake for residents.\textsuperscript{18,27,39} One difference-in-difference study found that while there was no difference in all-cause or avoidable hospitalizations between the 15 homes that adopted the Green House model and 223 matched traditional LTC homes (that had not adopted the model), there was a 5.5% decline in 30-day re-admissions and a 3.9% decline in avoidable re-admissions in the Green house homes.\textsuperscript{50} Additionally, significantly fewer residents were bedfast, catheterized or had pressure ulcers (in low-risk residents) in the small model.\textsuperscript{50} One publication, using US national data, reported that COVID-19 infections and resulting death rates were lower in the small house facilities than in the larger homes.\textsuperscript{2} Specifically, infection rates were 2x to 9x higher in the traditional models than small house models and deaths due the COVID-19 occurred one-half to one-third as frequently in individuals living in small house models than the larger homes.\textsuperscript{2}

Ausserhofer \textit{et al.} (2016) reported residents of small household facilities were significantly more satisfied with their quality of life and care.\textsuperscript{40} In a qualitative study that directly solicited resident input (one of the few studies that reported from the perspective of the resident), residents preferred the small house model because of the increased freedom to act, move and choose, as well as the social dynamics.\textsuperscript{7} Another study found that residents of ‘Green Houses’ considered the model to be more advantageous for staff response times.\textsuperscript{4} Like residents, family members of those who lived in the facilities consistently expressed a higher satisfaction with the small house model.\textsuperscript{40,49}

Most perceptions of staff on the resident care and quality of life favours the small house model, however, these results may be biased to opinions of staff that choose to continue to work under the model. A study that analyzed the impact of a model shift from large to small house model 21 months after implementation found significant concerns from nursing staff around areas of adequate staff training, re-writing care plans, approach to dining, resident confusion/safety, and the new organizational approach.\textsuperscript{24} However, all nursing staff supported the model through their actions and admitted that the change process took time and that conditions leading to their concerns improved with time.\textsuperscript{24}

**Objective 4 – Issues, Challenges, and Lessons Learned**

**DESIGN**

Operating as a single unit, the small house model loses the operational economies of scale that are realized by larger facilities. To re-capture these efficiencies functioning units are usually built together in clusters with several ‘homes’ located on a single campus.\textsuperscript{10,12,14} In some instances, they are aligned with an adjacent ‘legacy’ home that operates some variation of the traditional model. In both these instances, there is a shared, more economical, use of administrative resources, supply chain logistics and access to specialized care.\textsuperscript{4,9}
One design challenge of the small household is the requirement for a large area of space, ideally in developed neighbourhoods. Access to the necessary land may become cost-prohibitive in some regions.

**PHILOSOPHY**

A qualitative study investigating the sustainability of culture change in 11 Green House homes found that erosion of the model is common. Frequently, staff revert to practices of the traditional model. It must be noted that while the small house model strives to afford residents freedom of choice and autonomy, 100% free choice is not possible due to safety and practical implications. Interviews with staff on the tensions and resolutions that arose during the shift to a small house model revealed that effective implementation requires a balance between preserving as much individual resident autonomy while ensuring a safe and high quality of care for all residents.

**STAFFING**

Self-managed and universal work teams were prominent features of the small house model and, thus, powerful front-line staff with strong interpersonal skills are needed to contribute to the implementation of and adherence to the model. The model requires that staff be willing to complete a range of interactive and non-interactive tasks and be afforded the autonomy in problem solving to meet resident needs and preferences. Top-down management and decision making have been identified as threats to model adherence. There was less erosion of the model when leadership had a strong buy in and included staff in the discussions and decisions around problem solving and creation of solutions and their implementation. One study identified that key adherence to the model depends on the approach to problem solving. That is, it must be what is defined as a “coached collaborative” or “management-supported” approach, as opposed to “management-led” or hierarchical. Furthermore, the literature indicated that including explicit descriptions of the approach to care in recruitment materials, and increased training, helps to ensure that people with the requisite aptitudes, personalities, and skill fill the caregiver roles.

**THE CANADIAN EXPERIENCE**

In total, the majority of included Canadian publications originated from the body of grey literature. These tended to focus more on characterizing the need for alternative approaches to LTC in Canada and need for novel approaches such as the small house model, rather than reporting on specific operations in place. Additionally, several reports outlined the different approaches to small house models and touched on the feasibility of implementation in a Canadian context. Beyond these generalized reports and publications, several grey literature pieces reported specifically on the Butterfly model. Two of these described the success of the model in Ontario with mention of improved quality of life for residents (e.g., reduced: pain, anti-psychotic drugs, depression and falls) and more empowered and engaged staff. Another report investigated the opinions on the Butterfly model from the perspective of staff, health care professionals and family of residents in Alberta-based homes that had recently transitioned to this model of care for dementia residents. Overall, the interviewees were supportive of the model.

Most of the peer-reviewed publications reported on small house models operating within the United States or the Netherlands. Only two studies provided Canadian-specific information. One study that explored the differences in health and behaviours of residents with dementia at a small model home and a larger LTC facility in British Columbia, found that personalization, familiarity, home likeness, and stimulation were significantly higher in the small house model. These residents also experienced improvements in irritable behaviours, oral health and nutritional conditions; were happy more often; and, less withdrawn. A second publication was a case study that investigated the in-depth daily life of caregivers and residents at a small house modeled facility in Nova Scotia. Through interviews staff identified teamwork, culture of care, regulating risk, the physical environment and staff empowerment as common themes of importance in the new model and highlighted the need to balance risk with resident autonomy.

**Limitations**

This ES is not intended to be a systematic or comprehensive review of the topic of long term care. As no exclusions were made on the basis of study design, the findings are based on a heterogeneous mix of study designs.

Some publications included in the ES specified the researched population as dementia-specific or a mixed population (with residents both with and without dementia), while others did not reference the cognitive ability at all. Furthermore, none of the studies described
the physical abilities or stratified the study population by level of infirmity. This lack of specificity in the research populations may have obscured outcomes that only apply to a sub-group of the aged population.

Heterogeneity in the evidence base is compounded by heterogeneity among the various ‘small house’ models themselves. The literature suggested there can be significant operational disparities between individual small house modeled homes, reducing the extent to which any singular comparison can be made to a traditional model of care. To the extent that the ‘small house’ models are similar, it is important to note that the unified definition of the small house model – person-centred care offered to a small number of residents living within a functioning unit – makes it difficult to dissect the effects of the person-centred care from the fewer residents. It is possible that person-centred care and fewer resident have an unequal impact, or may even be mutually exclusive, on resident outcomes.

Literature from Canadian jurisdictions was limited, particularly with respect to information on funding. Information on funding came primarily from US sources. This limits the extent to which this information can be considered generalizable to a Canadian jurisdiction. The single publication reporting funding data from Australia may offer some comparability to the Canadian context.

Conclusions

Complementing this Environmental Scan, CADTH prepared a Horizon Scanning report\(^{11}\) and position statement\(^{61}\) pertaining to Dementia Villages, and a Rapid Response report pertaining to home-like models in long-term care\(^{15}\) all in 2019. These reports is available free of charge on the CADTH website. An update to this report is due for publication in early 2022.

This ES utilized a literature review to identify publications reporting on the small house model of LTC. Specifically, the full text from 70 peer-reviewed journal articles and grey literature pieces were reviewed. These publications reported one or more features of the small house model including: design, philosophy of care, resident outcomes and implementation, or provided comparisons to the traditional LTC model. Many publications reported information on multiple features. Among the included publications, six distinct ‘small house’ models of care were identified, including: Butterfly, Clustered Domestic, Dementia Village, Green Care Farm, Green House, and Shared Housing Arrangement. However, nearly half of the publications did not provide information on one specific model, but rather referred to the ‘small house’ model more generally.

Key Characteristics

The common design tenet amongst the models is a residential ambiance including private bedrooms and bathrooms with common kitchen and living spaces contained in a unit that typically houses 6 to 16 people. These homes strive to provide residents with person-centered care and offer freedom of choice and autonomy for the residents. Prescriptive routines and schedules are avoided in favour or a more flexible approach to care that encourages residents to be meaningfully engaged in, and take ownership of, their care. Caregivers provide a holistic style of care including housekeeping, dietary and clinical services. Therefore, staff are cross trained in a range of tasks so that they may provide living support over and above any health-related activities. Some specific models such as the Dementia Villages or Green Care Farms offer additional unique services like on site cafes and salons or agricultural activities. Most funding information was presented from the United States’ experience with the ‘Green House’ model where residents are usually privately funded.

Key Differences Compared to the Traditional Model

The small house model differs from the traditional LTC facilities with respect to design, philosophy of care, organizational structure and, possibly, funding. They have fewer residents living in a home-like setting as opposed to an institutional environment. Likewise, the institution-centered approach to care is shifted to a resident-centered approach. To support the shift to person-centered care, the small house model has re-invented the organizational structure of LTC. Hierarchies and management-led decisions are replaced with amalgamated job descriptions and a team approach to problem solving and decision making. While the staff profile of small house still includes an assortment of staff skill levels (e.g., registered nurses and nurse assistants), these models tend to have a higher proportion of lesser skilled staff-hours. Based on international examples, there is some evidence that the small house models could be less costly to operate than the traditional LTC facilities and, that based as a ratio of gross foot area, may have a comparable build cost.
Outcomes

The literature addressing small house resident outcomes is inconsistent. Some studies reported improvements in resident quality of life and quality of care while others did not identify any significant differences between the small house model and traditional approach. It is possible that the inconsistent results stem from the heterogeneity between model designs and operations, or that outcomes are dependent of the physical capabilities, cognitive abilities, or acuity level of the residents.

Issues, Challenges and Lessons Learned

The small house model is frequently implemented adjacent to a larger facility. Alternatively, the small house units are built in clusters with several units established on a campus. This allows for shared use of administrative resources, supply chain logistics and access to specialized care. Erosion of the small house model is common. A strong buy in from leadership; self-managed, universal work teams; frontline staff with strong interpersonal skills and leadership characteristics; and a coached collaborative approach decision making are all key factors in a successful and enduring implementation of the model. While there were many publications suggesting the model be implemented in Canadian jurisdictions, four reported on examples currently in operation—one each in Alberta, BC, Nova Scotia and Ontario. Two of these, the BC and Nova Scotia examples, were peer reviewed studies.

Final Remarks

This ES identified a lack of peer-reviewed evidence – particularly in a Canadian-specific context. While there are instances of the ‘small house’ model being implemented in Canadian jurisdictions, the paucity and the heterogeneity of evidence limits the extent to which one may conclude that these facilities have achieved the purported benefits such as improved clinical or QoL outcomes for residents. However, the publications largely indicate that residents are more satisfied and prefer the small house model. The lack of evidence even more apparent when evaluating the cost-effectiveness and funding mechanism for such facilities as none of the publications provided specific evidence regarding the construction or operational costs of the small house model in Canada. Publications from Canadian jurisdictions with experience with these models could help support decision-making across the country.
References


8. Long-Term Care Homes & Services - Interim General Manager. Review of Dementia Care Models. City of Toronto; 2019.


