

# Evidence *in* Context

Issue: Agitation and Aggression in LTC  
Residents with Dementia  
Released: November 2014

Health research — synthesized and contextualized for use in Newfoundland & Labrador

## Agitation and Aggression in Long-Term Care Residents with Dementia in Newfoundland and Labrador

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Newfoundland & Labrador Centre for

**APPLIED  
HEALTH  
RESEARCH**

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# About This Report

## About NLCAHR

The Newfoundland and Labrador Centre for Applied Health Research, established in 1999, contributes to the effectiveness of the health and community services system of the province and the physical, social, and psychological well-being of the population. NLCAHR accomplishes this mandate by building capacity in applied health research, supporting high quality research, and fostering more effective use of research evidence by decision makers and policy makers in the province's health system.

## About the Contextualized Health Research Synthesis Program

In 2007, NLCAHR launched the Contextualized Health Research Synthesis Program (CHRSP) to provide research evidence that would help guide decision makers in the provincial health system on issues of pressing interest to Newfoundland and Labrador. Instead of conducting original research, CHRSP analyzes findings from high level research already conducted in the subject area, such as systematic reviews, meta-analyses and health technology assessments. Findings are then synthesized and subjected to a systematic process of contextualization: they are analyzed in terms of their applicability to the conditions and capacities of the unique context of Newfoundland and Labrador. Our contextual analysis includes assessing the specific forms an issue may take in this province as well as the applicability of any proposed solutions and methods to

locally available resources, infrastructure, human resources, cultural conditions and financial capacities. CHRSP uses a combination of external experts and local networks to carry out and contextualize the research synthesis and to facilitate the uptake of the results by research users. CHRSP focuses on three types of projects: health services/ health policy projects, health technology assessment (HTA) projects, and projects that combine the two to examine processes for the organization or delivery of care involving a health technology.

## Who Should Read This Report?

This report provides a synthesis of the relevant research-based evidence on preventing and managing agitation and aggression in long term care residents with dementia in Newfoundland and Labrador. This report is intended to inform and assist decision makers in Newfoundland and Labrador's four Regional Health Authorities and its Department of Health and Community Services. The findings of our synthesis are based on an international search of the literature and may also be applicable to other countries, but are specifically interpreted for the context of Newfoundland and Labrador.

Decision makers from other jurisdictions, especially those with similar potential clients, geography and resources, may also find the content helpful. The report includes explanations of research terms and technical language; as such, there is no need to have a specialized medical or health background in order to understand its content.

# The Research Team

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# Acronyms

<b>AMSTAR</b>	Assessment of Multiple Systematic Reviews
<b>BPSD</b>	Behavioural and Psychological Symptoms of Dementia
<b>CFHI</b>	Canadian Foundation for Healthcare Improvement
<b>CHRSP</b>	Contextualized Health Research Synthesis Program
<b>CIHI</b>	Canadian Institute for Health Information
<b>DCM</b>	Dementia Care Mapping
<b>DHCS</b>	Department of Health and Community Services (Government of Newfoundland and Labrador)
<b>GPA</b>	Gentle Persuasive Approach
<b>LPN</b>	Licensed Practical Nurse
<b>LTC</b>	Long Term Care
<b>PCA</b>	Personal Care Attendant
<b>PCB</b>	Person-Centred Bathing
<b>PIECES</b>	Physical, Intellectual, Emotional, Capabilities, Environment, and Social care model
<b>RAI/MDS</b>	Resident Assessment Instrument/Minimum Data Set
<b>RCT</b>	Randomized Controlled Trial
<b>RHA</b>	Regional Health Authority
<b>RN</b>	Registered Nurse
<b>SCU</b>	Special Care Unit
<b>VIPS</b>	valuing people with dementia (V), individualized care (I), understanding the world from the patient’s perspective (P) and providing a social environment that supports the needs of the patient (S)
<b>VPM</b>	VIPS Practice Model

# Glossary

<b>AMSTAR</b>	Assessment of Multiple Systematic Reviews: an 11-item instrument used to assess the methodological rigor of systematic reviews.
<b>Long-Term Care</b>	Facilities that provide living accommodation for people who require on-site delivery of 24-hour, seven-days-a-week, supervised care, including: professional health services; personal care services; and services such as meals, laundry, and housekeeping.
<b>Primary Research</b>	Research that involves the collection and analysis of data from actual participants, as opposed to the combination of such research (i.e., higher level studies) or secondary analyses of previously collected data.
<b>Randomized Controlled Trial</b>	A type of primary research in which participants are randomized with regard to treatment, with the objective of eliminating confounding factors that may exist among the participants.
<b>Systematic Review</b>	A literature review that tries to identify, select, appraise, and synthesize published and unpublished research evidence relevant to some specific research question.

## The Research Question

*“Other than use of physical restraints or prescription of psychotropic medications, what interventions, strategies, and/or practices have proven effective in preventing and managing agitation and aggression in long term care residents with dementia?”*



## Background

In the fall of 2012, the Newfoundland and Labrador Department of Health and Community Services (DHCS) and its four Regional Health Authorities (RHAs) formally asked the Contextualized Health Research Synthesis Program (CHRSP) to identify and evaluate the best available research-based evidence on the management of aggression in long-term care (LTC) residents with dementia. Though this topic was initially suggested by officials at Eastern Health, consultations with the province’s other RHAs and with the DHCS revealed that this was a high-priority issue across the province.

CHRSP personnel assembled a project team that included officials from Eastern Health and two other RHAs. Dr. Neena Chappell, Canada Research Chair in Social Gerontology and Professor of Sociology at the University of Victoria, agreed to serve as Academic Team Leader for the project.

In their initial description of the topic, Eastern Health officials framed the issue as follows:

*“Aggression in residents with dementia poses both safety and quality care issues for all stakeholders in LTC (i.e., resident, family, nursing, allied health, etc.)... By understanding what triggers aggression and the strategies and interventions that work best to reduce aggression, we can achieve and maintain a safer environment for residents and staff in LTC.”*

At the first project meeting, team members decided that the scope of the requested synthesis should be broadened to include evidence on prevention and management of two closely-linked behavioural and psychological symptoms of dementia (BPSD): agitation and aggression. At the same time, because moderate-to-severe dementia is far more prevalent in nursing homes than in other seniors’ care settings, the team decided to restrict the focus of the synthesis to LTC, rather than including personal care homes or assisted living facilities.



# Synthesis of the Evidence

Our synthesis is based primarily on evidence from 25 systematic literature reviews published between February 2009 and March 2014. To supplement the review evidence, we also conducted a search for randomized controlled trials (RCTs) published too recently to have been eligible for inclusion in any of our selected reviews. On this basis, we retrieved six RCTs published between January 2013 and March 2014. Descriptions of our inclusion criteria, search strategy, article selection, and critical appraisal of selected articles are contained in the web-based companion document: [www.nlcahr.mun.ca/CHRSP](http://www.nlcahr.mun.ca/CHRSP). This document also includes a table containing details about selected articles.

Our critical appraisal methodology for systematic reviews employed the Assessment of Multiple Systematic Reviews (AMSTAR), a validated measurement tool for evaluating the methodological quality of systematic reviews (1). A higher AMSTAR score can be taken as an indicator that the various stages of the review were conducted appropriately. A low AMSTAR score does not necessarily mean that the review should be discarded, but that less confidence can be placed in its findings and that the review must be examined closely to identify its limitations. In Table 1 below, we provide the AMSTAR scores for the reviews included in the synthesis, ranked from the highest score to the lowest.

**Table 1: AMSTAR scores for systematic reviews synthesized in this report**

Review   Year	AMSTAR Score
Declercq 2013	10/11 (91%)
Richter 2012	10/11 (91%)
Mohler 2012	9/11 (82%)
Basu 2010	8/11 (73%)
Forbes 2014	8/11 (73%)
Forrester 2013	8/11 (73%)
Lai 2009	8/11 (73%)
Vink 2011	8/11 (73%)
Whear 2014	8/11 (73%)
Moniz Cook 2012	7/11 (64%)
Zimmerman 2013	7/11 (64%)
Kong 2009	6/11 (55%)
Konno 2013	6/11 (55%)
Liu 2014	6/11 (55%)
Guzman-Garcia 2012	5/11 (45%)
O'Connor 2009	5/11 (45%)
Pieper 2013	5/11 (45%)
Reuther 2012	5/11 (45%)
Enmarker 2011	4/11 (36%)
Fung 2012	4/11 (36%)

Husebo 2011	4/11 (36%)
Kverno 2009	4/11 (36%)
O'Neil 2011	4/11 (36%)
Testad 2014	4/11 (36%)
Bernabei 2013	3/11 (27%)
Skingley 2010	3/11 (27%)

As this table indicates, not all reviews were deemed equal in terms of methodological quality; we took this variability into account when formulating our conclusions. We also took into account the amount of primary research each review covered. In general, we assigned greater weight to larger and higher-quality systematic reviews.

To give readers a sense of how much confidence they can place in the effectiveness of interventions for reducing agitation and aggression, we have categorized the evidence for each of these interventions as:

- promising,
- suggestive, or
- insufficient at present.<sup>1</sup>

When considering these designations, readers should not necessarily conclude that an intervention is generally ineffective or harmful simply because we have characterized the evidence as “insufficient at present.” In the first place, the evidence described below focuses narrowly on two specific outcomes: incidence of aggression and/or incidence of agitation. An intervention that fails to have a measurable impact on these outcomes might nonetheless have a positive effect on other important outcomes, such as patient and worker safety. Furthermore, some of the interventions described below do not appear to demonstrate effectiveness when they are evaluated as stand-alone measures, but they might conceivably yield different results if they were to be tested in combination with other interventions. Finally, researchers are continually adding new findings and insights to the existing body of knowledge on this subject, and interventions that are not presently supported by a great deal of research may very well demonstrate their effectiveness in future research efforts.

To clarify these categories even further:

- Where we have characterized the evidence for a given intervention as **promising**, the reader should not assume that the intervention is guaranteed to work, for there is always a degree of uncertainty around even the most thoroughly-tested interventions. If we describe the evidence for a given intervention as promising, then we feel decision makers can be reasonably confident in the effectiveness of that intervention as a means for reducing the incidence of agitation and/or aggression in LTC residents with dementia.

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<sup>1</sup> In conducting our synthesis, we did not identify any interventions that were found to be harmful or to increase incidence of agitation or aggression.

- If the evidence for an intervention is described as **suggestive**, then it may be worth trying in a long-term care setting, though administrators would be well-advised to carefully evaluate its effect on the observed incidence of agitation and aggression.
- Finally, if the evidence for an intervention is deemed to be **insufficient at present**, then readers should be cautioned against developing an expectation that this intervention will, by itself, yield significant reductions in agitation or aggression.

Table 2 below outlines the evidence categories we used in this report and the criteria for each.

**Table 2: Evidence categories in this report and their criteria**

Evidence Category	Criteria
<b>PROMISING</b>	Evidence for the intervention is supported by one or more high-quality reviews (i.e., AMSTAR score $\geq 8/11$ ) encompassing more than 5 different relevant primary studies (i.e., studies that explicitly measure the effect of the intervention on dementia-related agitation and/or aggression in LTC residents)
<b>SUGGESTIVE</b>	There is partial or qualified evidence to support the intervention, derived from one or more moderate-to-high quality reviews (i.e., AMSTAR score $\geq 4/11$ ) encompassing more than 1 relevant primary study
<b>INSUFFICIENT AT PRESENT</b>	Either there is no moderate-to-high quality review evidence to support the intervention, or the combined reviews include less than or only one relevant primary study

Before proceeding to a detailed examination of the review evidence on each of the interventions we studied, there are a few general observations we can make. In the first place, though this synthesis

*In practice, care providers’ clinical judgment, their familiarity with their residents, and the very nature of the intervention itself will determine whether its function will be preventive, remedial, or both.*

encompasses both the prevention and the management of behavioral disturbances in individuals with dementia, the review literature we identified— and the primary research upon which it is based—did not distinguish sharply between the two. That is to say, it did not clearly specify whether interventions are effective in preventing residents from becoming agitated in the first place, calming them once they did, or both. Much of the relevant primary research measures treatment and comparison group differences at baseline and across multiple time points, and so, in theory, positive results can indicate either a preventive or a remedial effect. In practice, care providers’ clinical judgment, their familiarity with their residents, and the very nature of the intervention itself will determine whether its function will be preventive, remedial, or both. For example, structured group music therapy sessions delivered by

trained professionals are likely to have mostly preventive applications, whereas certain analgesics could conceivably be administered either as a routine preventive measure or as an immediate response to spontaneous outbreaks of agitated or aggressive behaviour. Similarly, person-centred bathing is a method for minimizing residents’ discomfort and agitation during the bathing process, but a care

provider who knew that a particular resident enjoyed taking baths might well offer it in the event that this resident became distressed or experienced pain.

The second observation concerns a methodological problem common to studies conducted in these settings: attention effects. Basu et al. describe the problem this way:

*life in nursing homes is typically so lacking in stimulation that personal attention of any kind relieves anxiety and agitation.... [Therefore], the role of 'attention' as an intervention element may have... a beneficial influence and may, at least in part, explain the success of personalised behavioural modification-related interventions (2, p. 110).*

Likewise, Narme et al. speculate that the positive influence of the musical intervention in their study might actually be attributable to the opportunities it created for socializing and interaction (3), and van der Ploeg et al. found that “even a simple social contact intervention of keeping someone company, that requires no additional training or resources, can assist in settling individuals with high-frequency agitation” (4, p. 573). The clear implication here is that, in the absence of any other intervention, regularly engaging dementia-afflicted LTC residents in some kind of social interaction – however it is structured – is likely to have a positive effect on their mood and behaviour.

## Interventions with promising evidence

### Music

There were three high-quality reviews in our synthesis that evaluated musical interventions: Basu 2010, Vink 2011, and Whear 2014. The bulk of the primary studies reviewed by these three, consistently reported that musical interventions were effective in reducing aggression and agitation among LTC residents, though Vink et al. concluded that “the methodological quality and the reporting of the included studies were too poor to draw any useful conclusions” (5, p. 2). Nevertheless, the finding that music reduces agitation and/or aggression was endorsed by both Basu 2010 and Whear 2014, which together included over fifteen unique and relevant primary studies.

For this reason, we are confident in describing music as a promising intervention.

The research describes numerous different ways of using music to improve residents’ behavioural symptoms. Whear et al. reviewed a number of studies in which relaxing music was played during the main meal of the day in order to soothe residents’ agitation during mealtime. Types of music included nature sounds such as bird and whale songs; soft melodies played on string instruments; ‘new world’ compositions; quiet classical music pieces; and other kinds of quiet, peaceful music without sudden changes in tempo or volume. “All of the studies reported positive effects from mealtime music on behavioral symptoms, including physical aggressive and nonaggressive behaviors, verbal agitated

behaviors, hiding/hoarding behaviors, and total [Cohen-Mansfield Agitation Inventory] scores” (6, p. 189). Basu et al. evaluated the effects of both (a) music played in common areas for groups, sometimes in structured therapy sessions, and (b) personally preferred music selected and heard by individual residents. They concluded that both were effective in reducing aggression and agitation. Finally, Testad et al. reported that group music therapy sessions were associated with a significant improvement in agitation relative to comparison groups in three of the six studies in their review, including two of three RCTs; however, they characterize the evidence for this intervention as inconsistent.

*Overall, we conclude that there are a number of promising applications for music as a means of preventing and managing dementia-related behavioural disturbances in the long-term care setting.*

Additionally, three of the six RCTs we retrieved – Narme 2014, Ridder 2013, and Vink 2013 – evaluated different therapeutic uses of music, and these provide further insight into its potential benefits. Narme et al. compared two interactive group interventions – one focused on music and the other on cooking – in a single-site RCT involving 48 nursing home residents with dementia. The authors observed decreases in agitated behaviours after both interventions, but noted that the decreases were stronger following cooking sessions. On this basis they concluded that “other hedonic activities may elicit comparable effects” (3, p. 367) to musical interventions. Likewise, an RCT by Vink et al. involving 77 residents from 6 nursing homes concluded that both music therapy and general recreational day activities led to short-term decreases in agitation, but they discerned no additional beneficial effect of music therapy over general activities

(7). Finally, Ridder et al. conducted a multi-site crossover RCT with 42 nursing- home residents with dementia and found that individual music therapy delivered by a trained professional significantly reduced the severity of agitated behaviours as compared with standard care, though it did not reduce their frequency (8). Overall, we conclude that there are a number of promising applications for music as a means of preventing and managing dementia-related behavioural disturbances in the long-term care setting.

## **Staff Training**

As with music, there were three high-quality reviews in our synthesis that evaluated staff training interventions: Richter 2012, Mohler 2012, and Basu 2010. The bulk of the primary studies reviewed by these three consistently reported that staff training programs had a positive effect on various outcomes related to the management of agitation and aggression in LTC residents with dementia, though Mohler et al. cast doubt on the methodological quality of the studies covered by their review. Mohler et al. evaluated the effect of staff education programs on use of physical restraints in nursing homes and found that only studies of weak quality found a positive effect. More definitively, Basu et al. found that “training programmes directed at carers and/or staff of residential care facilities and those that incorporated some aspects of communication and behavioural management training and/or monitoring/supervision were found to be beneficial in general” (2, p. 112). Likewise, Richter et al. reported that psychosocial interventions consisting chiefly of staff education yielded consistent

reductions in prescription rates for antipsychotic medication among LTC residents. According to these reviewers, “The study with the most complex intervention according to the underlying concept, educational content, number of target groups, and absolute time spent on the intervention as well as the greatest methodological rigor (Fossey 2006) (9) showed an absolute difference between groups of residents with antipsychotic medication of 19.1 percentage points at the end of follow-up after 12 months” (10, p. 14).

A separate team of Cochrane reviewers performed a meta-analysis of two studies – including the above-mentioned Fossey 2006 – on person-centred care interventions in nursing homes<sup>2</sup> and found that staff training based on this care model produced significant reductions in the frequency of agitated behaviours. These reviewers, Moniz-Cook et al., describe person-centred care as follows:

*Person-Centred Care and Dementia Care Mapping originate from theories of person-centred care in dementia (Kitwood 1997) (11) and were underlying constructs used to develop these respective interventions (Chenoweth 2009; Fossey 2006). The latter (Chenoweth 2009) also drew heavily on the theory of behaviour as a function of ‘unmet need’ (Cohen-Mansfield 2007) (12), a notion that is also understood within functional-analysis models of behaviour (Bird 2008; James 2011; Moniz-Cook 2001; Stokes 2000) (13-16). Similarly, one of the earliest studies of behaviour management in care homes (Proctor 1999) (17) appeared to incorporate aspects of person-centred care. The intervention involved staff training about therapeutic activities and goal planning based on the resident’s strengths and abilities; the text documented a case example where social interaction was identified as an unmet need and non-contingent social contact combined with offering toileting care resolved the resident’s repeated requests for the toilet (18, pp. 14-15).*

One of the six very recent RCTs we examined also focused on person-centred approaches and it provided partial support for Moniz-Cook et al.’s finding. Rokstad et al. conducted a cluster RCT that involved 446 residents from 15 different nursing homes and compared two different forms of person-centred care – Dementia Care Mapping (DCM) and the VIPS<sup>3</sup> practice model (VPM) – with a generic training intervention. Neither of the interventions had a significant effect on the primary outcome measure, but the researchers did find that some secondary measures of agitation and behavioural disturbance were reduced in the intervention groups. They also attempted to relate their findings to the earlier research in this field:

*In the two comparable previous studies by Fossey et al. and Chenoweth et al., the intervention groups received substantially more supervision (weekly supervision or regular telephone contact) than any of the intervention groups in our study. However, with the available resources, we consider the methods used in the present study to implement PCC [person-centred care] as more*

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<sup>2</sup> The other was Chenoweth 2009 (45), which was also included in Basu 2010.

<sup>3</sup> ‘VIPS’ stands for “valuing people with dementia (V), individualized care (I), understanding the world from the patient’s perspective (P) and providing a social environment that supports the needs of the patient (S)” (19, p. 341).

*realistic in daily practice. In contrast to the interventions called 'PCC' in the previous studies, the VPM, like DCM, is standardized and replicable. The duration of the study (10 months) strengthens the probability that, in most nursing homes, the effects can be obtained by implementing the models. In our view, both methods are feasible methods to implement PCC in nursing homes (19, p. 350).*

In sum, the effectiveness of staff training for the management of behavioural disturbances in individuals with dementia was confirmed by two high-quality reviews, encompassing over ten relevant primary studies. For this reason, we consider it a promising intervention for use in LTC settings. Training packages based on person-centred care approaches appear to be especially promising.

## **Reducing Inappropriate Use of Anti-Psychotic Medications**

Reduction of inappropriate antipsychotic treatment in older LTC residents with dementia is not an intervention for managing behavioural symptoms, but it is a necessary adjunct to any attempts to increase reliance on non-pharmacological approaches. The highest-rated review in our synthesis was a Cochrane review by Declercq et al. that included seven studies conducted in nursing homes,<sup>4</sup> and it addressed withdrawal of chronic antipsychotic drugs. These reviewers concluded that “older people with dementia and NPS [neuropsychiatric symptoms] using long-term antipsychotics can be withdrawn without detrimental effects on their behavior” (20, p. 21). However, the researchers do express some caveats. Their review indicates that people with more severe BPSD would probably benefit from continuing antipsychotic treatment. They also found that some people with dementia and psychosis or agitation who previously responded well to antipsychotic medication may relapse after discontinuation of these drugs. They recommend that programs for reducing inappropriate use of antipsychotic medications among older nursing home residents should be routinely incorporated into standard clinical practice, especially for residents with mild-to-moderate BPSD.

# Interventions with suggestive evidence

## **Animal-Assisted Interventions**

The highest-quality review in our synthesis on animal-assisted interventions was conducted by Basu et al. This review evaluated the effects of both (a) structured dog therapy sessions delivered by trained professionals, and (b) informal dog-assisted activities facilitated by persons without special skills or training. The reviewers concluded that “There was limited evidence to suggest that the use of dogs (pet or therapy) in residential care facilities is associated with a beneficial effect” (2, p. 113). They

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<sup>4</sup> Five of these studies used specific measures of agitation and/or aggression, and the other two used composite measures of the neuropsychiatric symptoms of dementia.

acknowledge that the introduction of dogs lowered residents' agitation in the available primary studies, but they point out that this research is characterized by small sample sizes and weak designs. O'Neil et al. agreed that animal-assisted therapies were supported by only "a very limited body of evidence" (21, p. 24) though they, too, noted that the available studies demonstrate decreases in agitated and disruptive behaviors.

## **Aromatherapy**

Aromatherapy involves the use of pure essential oils from fragrant plants to help relieve health problems and improve quality of life. There were two high quality reviews in our synthesis on aromatherapy – Forrester 2013 and Basu 2010. These reviews surveyed a variety of methods for administering aromatherapy oils, including topical application and diffusion into the air. Both described the findings on this intervention as equivocal and both maintained that there is a need for well-designed, large-scale RCTs in order to draw clear conclusions regarding its effectiveness:

*Some evidence suggests that lavender, lemon balm, or marjoram extracts used in aromatherapy might be beneficial in reducing agitation.... [However], there is limited evidence to justify the therapeutic role of aromatherapy. While the findings are equivocal, there have been few randomised trials adequately powered to detect even a large treatment effect (2, p. 113).*

## **Dance Therapy**

We identified only one systematic review on dancing as a psychosocial intervention in LTC settings: Guzmán-García 2012. Only two articles measuring the effect of dancing on agitation and/or aggression were identified by the reviewers, and both were uncontrolled pilot studies.

*In summary, the evidence-base revealed by this review is small; however, results have linked dancing with positive mood, such as reducing stress and diminishing problematic behaviour for the participants such as agitation. The potential benefits of dance work are inconclusive... (22, p. 923).*

## **Pain Treatment**

We identified two reviews that addressed the effect of pain treatment on LTC residents' dementia-related behavioural symptoms: Pieper 2013 and Husebo 2011. Both studies had similar AMSTAR scores but the larger and more up-to-date of the two is Pieper 2013, and for that reason we gave it more weight when formulating our conclusions. Pieper et al. reviewed five studies on the effectiveness of pain treatment as an intervention for preventing and managing agitation and/or aggression in LTC residents with dementia. One study used an individually tailored and stepwise protocol for the treatment of pain, another deployed advanced illness care teams empowered to provide both pharmacological and non-pharmacological treatments, and the remaining three simply administered fixed dosages of either acetaminophen or opioids to their treatment groups. Pieper et al. described the



strength of this evidence as modest, citing the limited number of studies, their reliance on small samples, and their moderate methodological quality. Nevertheless, these reviewers concluded that targeting residents' pain may be a useful way of limiting behavioural disturbances:

*Overall, our results indicate that pain interventions targeting behaviour... are effective in reducing pain or discomfort and behavioural symptoms such as depression, agitation/aggression and anxiety in dementia. Both fixed and individual dosages of pain medications were effective in reducing challenging or disruptive behaviour in dementia. However, a fixed dosage of analgesics may be less effective, compared to an individually tailored and stepwise approach (23, p. 1052).*

## Personalized Activities

Another kind of behavioral management intervention that has been used in LTC settings involves designing personalized activity schedules for residents with dementia. According to Testad et al., interventions based on personalized activities typically involve “[p]ositive events, pleasant activities, and

*Van der Ploeg et al. observed that both the Montessori and control conditions resulted in significant reductions in agitated behaviour counts compared to baseline...*

creative therapies, such as art and recreational therapies... used to engage individuals with stimuli, which promotes creative expression, a sense of self-efficacy, and well-being” (24, p. 3). These reviewers found that “Four of the six studies (Kovach et al., 2004; Cohen-Mansfield et al., 2007; 2010; 2012) (12,25-27) examining agitation as an outcome reported significant benefit compared to the control condition” (24, p. 11). Though the components of each intervention varied considerably from study to study, Testad et al. described the evidence for personalized activities as strong.

A crossover RCT by van der Ploeg et al. involving 44 residents from nine different facilities provides a more detailed view of an intervention incorporating personalized activities. These researchers studied an intervention based on the Montessori educational system, which was designed to promote engagement in learning. Principles of the Montessori system have been adapted for people with dementia as a means of providing engagement, stimulation, and meaningful activity. In the intervention studied by van der Ploeg et al., trained facilitators selected activities based on discussion with the resident's family about his/her former interests. Typical selections included listening to favorite music, looking at pictures, arranging flowers, planting seeds, and doing puzzles. To control for attention effects, facilitators engaged control group participants in general conversation. Both conditions were delivered for 30 minutes twice weekly. Van der Ploeg et al. observed that both the Montessori and control conditions resulted in significant reductions in agitated behaviour counts compared to baseline, and related their findings to some of the earlier research reviewed by Testad et al.: “Our findings replicate previous studies in the following respects: social contact *per se* reduced agitation compared to baseline situations (Cohen-Mansfield et al., 2007; 2010; Gitlin et al., 2009) (12,26,28) and personalized activities elicited more positive mood and engagement than both baseline and control conditions” (4, p. 573).

## Person-Centred Bathing

As with person-centred care more generally, the assisted bathing method known as person-centred bathing (PCB) treats behavioural symptoms such as aggression as expressions of unmet needs. The goals of PCB are to provide comfort to residents during the bathing process, demonstrate respect for their preferences, and improve interpersonal communication. Practical elements of the approach include covering residents with towels to maintain warmth, using family- or staff- recommended bathing products, and modifying shower spray as requested (29).

Multiple moderate-quality reviews evaluated PCB, though together they encompassed only a very small group of studies. The largest such review, Konno 2013, included five relevant primary studies and concluded as follows:

*The identified quantitative evidence supports using the person-centred showering approach, towel bath [i.e. bed bath]/thermal bath and preferred music of older adults. The qualitative evidence emphasised concepts including safety and retaining a sense of dignity and control of patients, and relevant assessment skills of caregivers (29, p. 125).*

This finding was corroborated by the other reviews that evaluated person-centred bathing.

## Simulated Family Presence

Simulated family presence therapy involves videos or audio recordings of residents' family members telling stories, sharing memories, or performing scripted telephone conversations. Two reviews – O'Connor 2009 and Kverno 2009 – evaluated simulated family presence and both covered the same primary research base, which consisted of only two studies.<sup>5</sup> Both reviews concluded that simulated family presence can be effective in reducing agitation when it is provided and shortly thereafter. It should be noted that this intervention requires that residents have some verbal interactive capacity, which will exclude individuals with the most advanced stage of dementia.

# Interventions not supported at present

## Artificial Light Therapy

Two high-quality reviews surveyed the evidence on various light therapy approaches – Forbes 2014 and Basu 2010. The most common approach employed in the included primary studies involved the use of a light box placed at eye level one metre from the participant, for a duration of one to two hours over periods ranging from ten days to two months. Other approaches involved use of Dawn-Dusk Simulators,

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<sup>5</sup> O'Connor 2009 included a third study, but it was not clear that this study measured either agitation or aggression.

which control halogen lamps placed behind participants' beds, or ceiling-mounted Plexiglass diffusers containing fluorescent tubes. The intent behind these different methods of timed light exposure was to promote the synchronization of internal circadian rhythms with environmental light-dark cycles, and thereby relieve a number of symptoms related to circadian rhythm disorders common in older adults (30).

Both reviews concluded that there is insufficient evidence to justify the use of bright light therapy in dementia:

*No significant evidence was found that light therapy... decreased challenging behaviours, or improved psychiatric symptoms including depression. Indeed the four included trials that examined challenging behaviours (that is agitation) revealed that light therapy was not effective when administered in the morning, afternoon, evening, or all day at [sic] from 10 days to 10 weeks and with treatment lasting up to two years (30, p. 18).*

## Special Care Units

There was a single high-quality review on the effectiveness of Special Care Units (SCUs) for persons with advanced dementia. According to Lai et al., SCUs lack a standard definition, though they are usually situated within nursing homes and commonly include specially trained staff, special programming, and a modified physical environment. Lai et al. noted some small but significant improvements in the intervention groups at 6 and 12 months in agitation outcomes and use of physical restraints, but overall they conclude that the effect of SCU care on these outcomes lacks substantial evidence. Given that the costs of SCUs are commonly higher than for standard nursing home care, these researchers suggest that "it is more important to implement best practice than to provide a specialized care environment" (31, pp. 13-14).

## Staff Case Conferences

There was only a single moderate-quality review on the effect of staff case conferences on LTC residents' challenging behaviour, by Reuther et al. In theory, staff case conferences could help staff identify the special needs of people with dementia and respond with individualized solutions, but the reviewers conclude that "the body of evidence regarding the effect of case conferences is weak, and high-quality studies with longer intervention periods are needed" (32, p. 1902).

# Summary of Review Evidence

The systematic review and RCT evidence included in this synthesis suggests that there are three especially **promising interventions** for preventing and managing agitation and aggression in LTC residents:

- musical interventions,
- staff training, particularly in principles of person-centred care, and
- reducing inappropriate use of antipsychotic medications.

In addition, there appear to be a range of **possibly effective interventions**, including:

- animal-assisted therapy,
- aromatherapy,
- dance therapy,
- pain treatment,
- personalized activity schedules,
- person-centred bathing, and
- simulated family presence therapy.

By contrast, the available review **evidence does not support the effectiveness** of light therapy, SCU care, or staff conferences as stand-alone interventions for reducing behavioural disturbances in LTC residents with dementia. In the next section, we work through these findings and examine their implications for healthcare in Newfoundland and Labrador.

**Table 3: Evidence Categories, Criteria and Interventions in Each Category**

Evidence Category	Criteria	Interventions in this category
<b>PROMISING</b>	Evidence for the intervention is supported by one or more high-quality reviews (i.e., AMSTAR score $\geq 8/11$ ) encompassing more than 5 different relevant primary studies (i.e., studies that explicitly measure the effect of the intervention on dementia-related agitation and/or aggression in LTC residents)	<ul style="list-style-type: none"> <li>• Music</li> <li>• Staff training</li> <li>• Reducing inappropriate use of anti-psychotics</li> </ul>
<b>SUGGESTIVE</b>	There is partial or qualified evidence to support the intervention, derived from one or more moderate-to-high quality reviews (i.e., AMSTAR score $\geq 4/11$ ) encompassing more than 1 relevant primary study	<ul style="list-style-type: none"> <li>• Animal Assisted Intervention</li> <li>• Aromatherapy</li> <li>• Dance Therapy</li> <li>• Pain Treatment</li> <li>• Personalized Activities</li> <li>• Person-Centred Bathing</li> <li>• Simulated Family Presence</li> </ul>
<b>INSUFFICIENT AT PRESENT</b>	Either there is no moderate-to-high quality review evidence to support the intervention, or the combined reviews include less than or only one relevant primary study	<ul style="list-style-type: none"> <li>• Light Therapy</li> <li>• Special Care Units</li> <li>• Staff Case Conferences</li> </ul>

# The Newfoundland and Labrador Context



*Throughout the course of this project, we have tried to identify contextual factors unique to Newfoundland and Labrador that may influence the relevance and applicability of the research-based evidence. This section of the report addresses those contextual factors and is based primarily on consultations with key informants.*

## Contextualization Approach

Our contextual analysis relied heavily on the input of our project team members. In assembling the team, we deliberately sought out persons with extensive professional experience in this subject area as well as practical knowledge of the province’s healthcare system. Each team member participated in a key informant interview, and some also referred us to other knowledgeable people within their organizations. This latter group of key informants comprised regional directors of LTC, nurse practitioners, resident care managers, recreational personnel, nursing faculty, and front-line nursing staff. In total, we interviewed 20 people, including at least one person from each of the province’s four RHAs. Some informants had a background that included scholarly research, but this section of the report is based primarily on their practical experience as clinicians, administrators, educators, and/or decision makers.

In some cases, our interview participants offered suggestions as to how health system planners should make use of the findings generated in the synthesis. We have reported the most relevant of their suggestions in the following sections.

## Client Base

Population aging is occurring all across Canada, but it is especially pronounced in Newfoundland and

*...according to all projected scenarios, Newfoundland and Labrador will have the highest proportion of older adults in Canada by the year 2036.*

Labrador. In 2009, the proportion of persons aged 65 years and over in this province was close to the Canadian average – 14.8% compared to 13.9% in Canada as a whole. At that time, there were four other provinces with a higher proportion of older adults. However, according to all projected scenarios, Newfoundland and Labrador will have the highest proportion of older adults in Canada by the year 2036 – between 30.6% and 32.1% (33). This alone will increase the level of demand for LTC services in the province. Moreover, LTC facilities across the country have experienced a rise in the proportion of residents who require higher levels of care; according to CIHI, 25% of LTC residents in Canada received level III<sup>6</sup> or higher care in 1998, but by 2008 the percentage of residents requiring this level of care had risen to 33% (34). LTC facilities

<sup>6</sup> Level three (III) care is “that required by a person who is chronically ill and/or has a functional disability (physical or mental)” and who “therefore requires a range of therapeutic services, medical management and skilled nursing care plus provision for psychosocial needs” for months or years (46).

in Newfoundland and Labrador experienced the same trend and at present they typically only admit clients requiring level III or IV care. The challenge of caring for LTC residents with dementia, in particular, is certainly nowhere greater than in this province; in 2013-2014, CIHI's Continuing Care Reporting System found that a full 45.5% of LTC residents in participating facilities from this province were rated as severely impaired on the Cognitive Performance Scale (35).<sup>7</sup> To put this in perspective, the Canadian province with the next highest proportion of severely-impaired LTC residents was Saskatchewan, with 36.6%. The average proportion across all provinces and territories that submitted data was 30.8%.

It is perhaps not surprising, then, that antipsychotic medications are administered more frequently in this province's LTC facilities than in similar facilities elsewhere in the country. In 2011-12, the median rate of antipsychotic medication use by Newfoundland and Labrador LTC residents who did *not* have schizophrenia, Huntington's syndrome, or hallucinations was 34% – again, the highest in the country (36). In some of the province's LTC facilities, this proportion approached 50%. It is generally recognized throughout the health system that, while judicious use of antipsychotic medications is an essential component of LTC for some severely-impaired residents, considerable scope remains, nonetheless, for reducing inappropriate use of these medications (37).

## Care Processes

Against this backdrop, the Western, Central, and Eastern RHAs are participating in the *Reducing Antipsychotic Medication Use in Long Term Care* collaborative organized by the Canadian Foundation for

*Our synthesis of research evidence indicates that programs for reducing inappropriate use of antipsychotic medications among older nursing home residents should be routinely incorporated into standard clinical practice especially for residents with mild-to-moderate BPSD.*

Healthcare Improvement (CFHI). As discussed above, our synthesis of research evidence indicates that programs for reducing inappropriate use of antipsychotic medications among older nursing home residents should be routinely incorporated into standard clinical practice, especially for residents with mild-to-moderate BPSD. To this end, CFHI is providing seed funding and other support to help health authorities all across the country replicate the success of a project originally piloted in the Winnipeg Regional Health Authority. This project was designed to improve the way healthcare providers used resident data to identify situations where non-pharmacological behaviour management approaches might be a safe and effective alternative to drugs. The project drew on data from the Resident Assessment Instrument-Minimum Data Set (RAI-MDS), a tool for gathering resident-specific information, and on the PIECES care model of dementia care. PIECES is a person-centred approach

that involves pinpointing behavioural triggers by assessing residents across six domains – Physical, Intellectual, Emotional, Capabilities, Environment, and Social. By using the RAI-MDS to flag potentially inappropriate antipsychotic medication use, and by using the PIECES model to devise alternative care

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<sup>7</sup> 22 of the 41 residential care facilities in NL – representing 1,991 residents – contributed data to CIHI's Continuing Care Reporting System in 2013-14.

strategies, participating staff members were able to reduce by 27 percent the number of residents taking antipsychotic medication without any increase in behavioural symptoms or a rise in the use of physical restraints (38).

The participating RHAs from this province have seized upon this initiative as an opportunity to evaluate and improve their care processes in LTC, though they are each using the collaborative's resources in different ways, according to their own particular organizational needs and priorities. Western and Central Health are receiving support from CFHI to implement PIECES in selected sites and then evaluate the results. Eastern Health is accelerating efforts it has made over the past year-and-a-half to implement a new BPSD protocol<sup>8</sup> for nursing staff and to improve its in-house capacity for evaluating the protocol's uptake and impact. The Canadian Institute for Health Information (CIHI) compiles facility- and region-level clinical data from RHAs nationwide and reports them every three months, but Eastern

*The CFHI collaborative could potentially confer a number of long-term benefits on the province's network of LTC facilities. Through it, the participating RHAs are... accessing expertise in person-centred care methods that have been used successfully in other parts of Canada.*

Health will use CFHI seed funding to design a system whereby unit-level data will be intercepted before being transmitted to CIHI and will then be fed back to unit staff on a more timely basis. The goal is to better enable units to track their performance and make necessary adjustments. Eastern Health's intention is to develop an evaluation system that can be sustained even after its collaboration with CFHI has concluded.

The CFHI collaborative could potentially confer a number of long-term benefits on the province's network of LTC facilities. Through it, the participating RHAs are building their capacity for planning and evaluating resident care using tools like RAI-MDS and they are accessing expertise in person-centred care methods that have been used successfully in other parts of Canada. They are pooling knowledge and skills that could ultimately be disseminated to other

facilities and worksites throughout the province. This work has also created an opportunity for the different levels of government and other funders to leverage their support for the LTC system by building on initiatives launched under the collaborative's auspices. Many of these initiatives were designed to be self-sustaining, but some may very well require support from other sources if they are to endure or if decision makers wish to implement them more broadly throughout the regions.

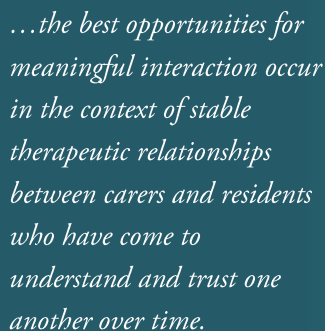
Eastern Health is also currently experimenting with another innovative program, Music & Memory. Music & Memory, Inc., is a U.S.-based non-profit organization that trains nursing home staff in the use of iPods and other digital devices as a delivery mechanism for personalized music playlists, with the aim of "enabl[ing] those struggling with Alzheimer's, dementia and other cognitive and physical challenges to reconnect with the world through music-triggered memories" (39). The reader may recall that our

<sup>8</sup> The BPSD protocol developed by Eastern Health was modeled after a similar protocol used in British Columbia, where it is linked with an electronic medical record system that can be accessed by every physician in the province. Linkage with the electronic medical record means that a resident's BPSD status can be reviewed and tracked in accordance with the protocol anytime he/she consults with a physician.

research evidence synthesis suggests that different kinds of musical interventions can be effective in soothing agitated and/or aggressive LTC residents. The health authority is presently conducting an RCT of Music & Memory involving 60 residents from four different nursing homes, and is hoping to gather preliminary results by the end of 2014. If the results are promising, then this could be another useful tool in the LTC toolkit, and the expertise accrued by Eastern Health during the course of the study could potentially be shared more broadly throughout the province.

## Human Resources

Notwithstanding these investments in innovative care practices, the provincial health care system as a whole faces a number of human resource challenges that have the potential to undermine any attempted improvement in the quality of care provided for LTC residents with moderate to severe dementia. Our evidence synthesis and our key informant interviews both attest to the importance of



*...the best opportunities for meaningful interaction occur in the context of stable therapeutic relationships between carers and residents who have come to understand and trust one another over time.*

meaningful interaction with these residents and the potential benefits of training staff in person-centred care. However, the best opportunities for meaningful interaction occur in the context of stable therapeutic relationships between carers and residents who have come to understand and trust one another over time. Frequent absenteeism, turnover, and employment of casual workers inhibit the development of this kind of rapport, add to residents' disorientation, and prevent staff from achieving the personal familiarity required to identify and meet a resident's particular care needs. An additional consequence is that units are sometimes short-staffed, which can leave workers little time to attend to

anything beyond the most basic care requirements. Likewise, even the most highly-rated person-centred care training intervention will fail to yield maximum benefit unless learned messages are consistently reaffirmed and mechanisms are in place to ensure that staff members take the time to apply the lessons they have learned. The key variable here is time; all the interventions reviewed in this report require significant investments of staff time and, in one way or another, the human resource challenges described here threaten to reduce the amount of staff time that can be devoted to resident care. It is very probable that the health care system's success in resolving these challenges will in large part determine the effectiveness of its attempts to improve the quality of care for LTC residents.

Perhaps the most serious challenge that LTC facilities face is chronic worker absenteeism. A great deal of recent scrutiny has fallen on the volume of sick leave at Eastern Health, the largest of the province's four RHAs; the 2014 report of the Auditor General of Newfoundland and Labrador flagged sick leave at the health authority as a serious concern (40)). Eastern Health has acknowledged the seriousness of the problem, stating in its most recent strategic plan that "in addition to the obvious budgetary considerations, sick leave means the full complement of staff are not always available, which presents challenges as the organization strives to address its other strategic priorities related to quality, safety, access and population health" (41, p. 19). The plan commits the health authority to begin developing and implementing a strategy for reducing sick leave by March 2015.



However, it was clear from our interviews that Eastern Health is not the only RHA that struggles at times to maintain quality of care during periods of high worker absenteeism. To the contrary, informants from all regions described this as a challenge and suggested that facilities should work toward achieving greater consistency in staffing assignment. According to Health Quality Ontario – the government agency tasked with monitoring quality in Ontario’s LTC homes – workers who are consistently assigned to the same residents “have the opportunity to provide resident-centred care focused on understanding of preferences and routines, creating comfort and security and supporting early detection of emerging health problems” (42). This organization recommends that LTC homes assign, on average, no more than eight personal care attendants (PCAs) to provide care for each resident over any given one-month period. It further recommends that facilities do whatever is necessary to keep turnover, paid sick hours, and casual PCA hours as low as possible. A thorough analysis of the drivers of worker absenteeism in

*Suffice it to say that there is likely no client population that would be better served by reduced absenteeism and greater consistency in staffing assignments than LTC residents with moderate to severe dementia.*

Newfoundland and Labrador’s LTC facilities would touch on a wide range of factors including working conditions, collective bargaining issues, leave policies, schedule design, and so on. Such an analysis is beyond the scope of this report and would likely require a much broader consensus-building exercise involving the key stakeholder groups – health authorities, unions, and relevant government departments. Suffice it to say that there is likely no client population that would be better served by reduced absenteeism and greater consistency in staffing assignments than LTC residents with moderate to severe dementia.

Another important human resource issue confronting this province’s LTC facilities concerns the mix of providers within care teams and the allocation of work among them. The term “care team” encompasses everyone who interacts with the resident, including nurses, PCAs, support staff, recreation specialists, social workers, and volunteers. Historically, registered nurses (RNs) and licensed practical nurses (LPNs) were responsible for most aspects of LTC residents’ day-to-day care, but many facilities in the province have now adopted – or are in the process of adopting – a staffing model in which PCAs assist residents with activities of daily living. In this newer model LPNs administer medications and treatments, and RNs are responsible for planning and supervising resident care (though in some settings these roles are performed by LPNs). One of the primary goals of the new model is to make optimal use of the skill sets possessed by the different grades of professional nursing staff. Informants noted a number of the model’s advantages: it provides nurses with more time to assess residents and plan their care; it enables each member of the care team to work up to his/her full scope of practice; and it has made it somewhat easier for the health authorities to staff positions involving provision of bedside care. However, the transition to the newer staffing model has also involved some challenges. In order for this kind of team-based approach to be maximally effective, all team members must work together harmoniously to provide seamless resident care. In practice, however, they have not always been able to bridge the educational, social, and experiential differences between them. Some team members have not always understood or appreciated their role within the team; PCAs in particular sometimes feel that their

contributions are not respected, despite the fact that the hardest, most physically demanding tasks generally fall to them. Nurses, too, have expressed some concerns about the allocation of work. Some have observed that PCAs typically have limited formal education<sup>9</sup> and are not subject to any kind of professional standards of practice, and they question the wisdom of entrusting this group with such a large share of the daily responsibility for securing residents' well-being. In general, team functioning is an important issue in LTC because dysfunction within teams can potentially poison the care environment and compromise the quality of resident care. Even residents with severe cognitive deficits can detect this kind of ambient discord and it can easily exacerbate their distress. It also diverts valuable time and attention away from residents, thus compromising teams' ability to deliver truly person-centred care. Informants generally seemed to feel that the management and supervisory skills of those who occupy leadership positions at the unit level are crucial to maintaining the harmonious functioning of care teams.

The differing educational backgrounds of care team members make staff training initiatives all the more important, since these initiatives are often the only means of ensuring that team members have a shared understanding of residents' needs and take a consistent approach to their care. Our evidence synthesis indicates that training in person-centred care can equip staff with the tools needed to safely and effectively manage the challenging behaviours exhibited by residents with dementia. However, person-centred care is an umbrella term that encompasses a wide variety of approaches and techniques, and there is little evidence to suggest that one is superior to any other. Therefore, the particular approach that healthcare providers take appears to matter less than how well they implement it and support its use in practice. To their credit, the RHAs have made significant investments in various kinds of training designed to foster an understanding of these residents' social and sensory experiences, and help staff identify possible antecedents of aggressive or agitated behaviours. In particular, the RHAs have trained large numbers of LTC staff in the Gentle Persuasive Approach (GPA):

*GPA delivers basic understanding of dementia and its relationship with a person's responsive behaviours. Students learn to apply emotional, environmental and interpersonal communication strategies that diffuse challenging behaviours. This learning allows the student to enter a workplace confident of their understanding that each person with dementia is a unique human being, capable of interacting with the outside world... [S]elf-protective techniques, along with the gentle redirection techniques are powerful tools in ensuring that a responsive behavior has a positive outcome for both the caregiver and the person with dementia (43).*

Notwithstanding this demonstrated commitment to training staff in person-centred methods of dementia care, our interviews revealed a number of factors that can potentially undermine even the best-designed training interventions. Even though large numbers of LTC workers in this province have been trained in GPA, not all of the health authorities offer 'refreshers' at periodic intervals after the initial training has been received. Moreover, not all of the health authorities have mechanisms in place

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<sup>9</sup> It should be noted here that RHAs will typically only hire PCAs who have completed a provincially accredited 30 week training course.

for ensuring that staff members consistently apply the techniques learned from their training and are held accountable for failing to do so. In some places this has produced a situation in which staff members attend the mandatory training sessions but often then slide back into old, expedient habits. Informants suggested various ways of encouraging staff to follow through on their training. Delivery of periodic refresher sessions was the most common suggestion, but a number of informants also pointed to the vital role that resident care managers and RNs can play in holding staff accountable. In practical terms, this might involve actively foregrounding behavioral and cognitive issues in daily staff debriefing sessions – which are often dominated by physiological and pharmacological concerns – or using formal employee performance evaluations to grade staff's consistency in applying person-centred techniques like GPA. In general, the RHAs will derive maximum value from their investments in GPA and other forms of person-centred dementia education only if they can achieve a high degree of buy-in from those who occupy leadership positions at the unit level.

## **Infrastructure**

The primary challenge facing the province's LTC infrastructure is the changing nature of its resident population. As noted earlier, the care needs of LTC residents in this province have risen steadily over the past decade, to the point where the majority now require level III care or higher. However, the facilities in which most of them currently reside were designed in an earlier era, for populations requiring levels I and II care. A number of the older facilities are now challenged by the necessity of serving a high-need population they were never designed to accommodate. Table 4 on the following page provides a listing of all 41 sites in the province with LTC beds as of September 2014.

**Table 4: Facilities and Long-Term Care Beds in Newfoundland and Labrador**

FACILITY NAME	# of LONG-TERM CARE BEDS
<b>1678 LTC Beds in Eastern Regional Health Authority↓</b>	
1. Waterford Hospital	50
2. Caribou Memorial Veteran’s Pavilion	(Veterans Affairs Canada) 56
3. Dr. Walter Templeman Health Centre (Bell Island)	15
4. US Memorial Health Centre (St. Lawrence)	40
5. Placentia Health Centre/Lions Manor	75
6. Bonavista Peninsula Health Centre	12
7. The Salvation Army Glenbrook Lodge (St. John’s)*	104
8. St. Patrick’s Mercy Home (St. John’s)*	210
9. Saint Luke’s Home (St. John’s)*	117
10. The Agnes Pratt Home (St. John’s)*	134
11. Masonic Park Nursing (St. John’s)*	40
12. The Hoyles-Escasoni Complex (St. John’s)*	375
13. Chancellor Park (St. John’s)*	70
14. Harbour Lodge Nursing Home (Carbonear)*	83
15. Interfaith Citizens Home (Carbonear)*	53
16. Pentecostal Seniors Citizens Home (Clarke’s Beach)*	69
17. Golden Heights Manor (Bonavista)*	70
18. Blue Crest Nursing Home (Grand Bank)*	61
19. Dr. Albert O’Mahoney Memorial Manor (Clarenville)*	44
<b>519 LTC Beds in Central Regional Health Authority↓†</b>	
20. A.M. Guy Memorial Health Centre (Buchans)	18
21. Brookfield Bonnews Health Care Centre	45
22. Fogo Island Health Centre	9
23. Notre Dame Bay Memorial Health Centre (Twillingate)	32
24. Connaigre Peninsula Health Centre (Harbour Breton)	12
25. Baie Verte Peninsula Health Centre	18
26. Green Bay Health Centre/Valley Vista Senior Citizens Home (Springdale)	77
27. Dr. Hugh Twomey Health Centre (Botwood)	79
28. Lakeside Homes (Gander)*	102
29. Carmelite House (Grand Falls-Windsor)*	64
30. North Haven Manor (Lewisporte)* (includes 12 Protective Community Residences)	63
<b>474 LTC Beds in Western Regional Health Authority↓</b>	
31. Dr. Charles L. LeGrow Health Centre (Port aux Basques)	30
32. Calder Health Centre (Burgeio)	18
33. Bonne Bay Health Centre (Norris Point)	14
34. Rufus Guincharde Health Centre (Port Saunders)	22
35. Corner Brook Long Term Care Home*	236
36. Protective Community Residences (Corner Brook)*^	40
37. Bay St. George Long Term Care Centre (Stephenville Crossing)*	114
<b>117 LTC Beds in Labrador-Grenfell Regional Health Authority↓</b>	
38. Captain William Jackman Memorial Hospital (Labrador City)	6
39. Labrador South Health Centre (Forteau)	14
40. New Long Term Care Home (Happy Valley-Goose Bay)*	50
41. John M. Gray Health Centre (St. Anthony)*	47
<b>TOTAL LTC BEDS IN NEWFOUNDLAND AND LABRADOR</b>	<b>2,788</b>

\*designated as a long-term care home

† number of long term care beds in Central Health includes respite and palliative care beds

^ these residences provide enhanced assisted living to individuals with mild to moderate dementia

Recognizing the need for upgraded LTC infrastructure, the provincial government has made substantial investments in new facility construction and expansion over the past five years. “System Sustainability” is one of the five priority directions in its LTC and Community Support Services Strategy, and to achieve it the government has committed to ensuring an adequate supply of LTC beds to meet present and future population needs, even as it creates new home, rehabilitation, and community residential options (44). To this end, the government has constructed new LTC facilities in Clarenville, Corner Brook, Happy Valley-Goose Bay, and Lewisporte. A 461-bed replacement for the Hoyles Escasoni complex is scheduled to open in St. John’s in September 2014, and new facilities are presently under construction in Carbonear, Corner Brook, and Bonavista.

*...the government has committed to ensuring an adequate supply of LTC beds to meet present and future population needs, even as it creates new home, rehabilitation, and community residential options.*

Construction of these facilities has created an opportunity for planners to think about the ways that the physical environment affects residents with dementia, and import innovative design features into the spaces where residents live and recreate themselves. Compared to the facilities they replaced, the newer homes have more spacious units, fewer residents per unit, a greater number of private rooms and semi-private bathrooms, and wide, circular walkways. This extra space and privacy has reduced the potential for the kinds of conflict that occurred in the older, more crowded environments where residents frequently bumped into one another and struggled to carve out private spaces of their own. The circular walkways have also eliminated much of the confusion and agitation that residents experienced when they came to the end of long, narrow corridors and encountered a locked door. In terms of visual appearance, designers have tried to reproduce the kinds of home-like living and bathing areas commonly found in private residences, as opposed to the sterile institutional aesthetic that characterized older facilities and often contributed to residents’ discomfort and disorientation. The newer homes are better lit and have more sources of natural light. But perhaps the most important feature of the newer generation of LTC homes is their improved access to secured outdoor spaces. Our informants felt strongly that the inability to simply go outside was a major driver of agitation, and that regular access to fresh air, green space, and ambient outdoor sounds were essential for residents’ emotional and psychological well-being. Recognizing this, the Central Regional Health Authority is now in the process of constructing a ‘wander garden’ for residents of the Baie Verte Peninsula Health Centre. The garden’s design will reflect the rural lifestyle of residents, and will include such features as a stage, a root cellar, a chicken coop, and foliage natural to the area.

These very welcome developments invite the question of what will happen with the existing stock of LTC facilities that are not yet targeted for replacement. Many of these structures have the same sorts of problems that afflicted the facilities recently replaced in Corner Brook, Happy Valley-Goose Bay, and elsewhere – units with 35 or more residents, rooms with multiple beds, narrow corridors terminating in a locked door, limited access to the outdoors, and a general lack of tranquil space. Where possible, alterations have been made to existing facilities; for example, the provincial government has recently funded improvements to end-of-life care in current homes, and the Western Regional Health Authority

has redesigned the spa rooms in its facilities using private donations. But in other cases essential structural changes have been more difficult to effect. Creating home, rehabilitation, and community residential alternatives – as the provincial government has pledged to do – is undoubtedly a wise direction to take, but there will likely be no slackening of demand for LTC services in the years to come. That being the case, decision makers would be well-advised to continue building on the improvements that have been made to the province’s LTC infrastructure in recent years.

## Considerations for Decision Makers



*The considerations we have listed below are based on the synthesis findings as refracted through the professional perspectives of the clinicians, administrators, and decision makers on the project team, all of whom currently work within the provincial health system. Given the nature of our methodology and the limitations of the evidence available for our synthesis, we cannot strongly recommend any particular programs, services, or interventions. Instead, readers should regard the items that follow as considerations that decision*

*makers may wish to bear in mind as they contemplate the local relevance and applicability of the research-based evidence synthesized in the first part of this report. These considerations are not listed in any particular order.*

- 1) Collaborative research projects like the CFHI-sponsored *Reducing Antipsychotic Medication Use in Long Term Care* create opportunities for funders to maximize the impact of their support for LTC by building on initiatives that have already been started; such initiatives may require additional support if they are to be sustained beyond project timelines or if decision makers wish to implement them more broadly throughout the province.
- 2) In order to maximize their benefit to the entire provincial network of LTC facilities, innovative care practices adopted in one region – such as Music & Memory in the Eastern Region, or the PIECES program in the Western and Central regions – could be disseminated to other regions and facilities, particularly those with fewer research and development capabilities.
- 3) The ability of the healthcare system to deliver high-quality person-centred care for LTC residents with dementia will likely depend in large part on the success with which it is able to resolve the various human resources challenges it faces.
- 4) There is likely no client population that would be better served by reduced worker absenteeism and greater consistency in staffing assignments than LTC residents with moderate to severe dementia; frequent absenteeism inhibits the development of rapport between carers and residents, adds to

residents' disorientation, and prevents staff from achieving the personal familiarity required to identify and meet a resident's particular care needs.

- 5) The management and supervisory skills of those who occupy leadership positions at the unit level are crucial to ensuring that team members from different professional backgrounds work together harmoniously to provide seamless resident care.
- 6) By regularly reaffirming learned messages and ensuring that staff members actively follow through on their training, unit-level leaders can play a vital role in the success of person-centred care staff training interventions.
- 7) Decision makers would be well-advised to continue building on recent improvements to the province's aging LTC infrastructure; many existing facilities are challenged by the necessity of serving a high-need population they were never designed to accommodate.

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