

Our vision is a world where all care homes are great places to live, die, visit and work.

Improving health and healthcare

This updated research briefing paper was written by Genevieve Thompson and based on a review of the literature on quality of life in care homes, undertaken by the National Care Research and Development Forum in 2006¹, which was later updated by a review of reviews (2006-2016), undertaken by the My Home Life team. *My Home Life* is an international programme of work aimed at promoting the quality of life for those who are living, dying, visiting, or working in care homes for older people.

Overall, research on improving health and healthcare seems to reflect many of the findings of the original review (NCHRD, 2007). Post 2007, new evidence suggests:

- The health and health care needs of care home residents is increasingly complex (Le Reste et al., 2013);
- Oral health issues have garnered increased attention as a quality of life and quality of care need in this population (Hoben et al., 2017; Wang, Huang, Chou, & Yu, 2015);

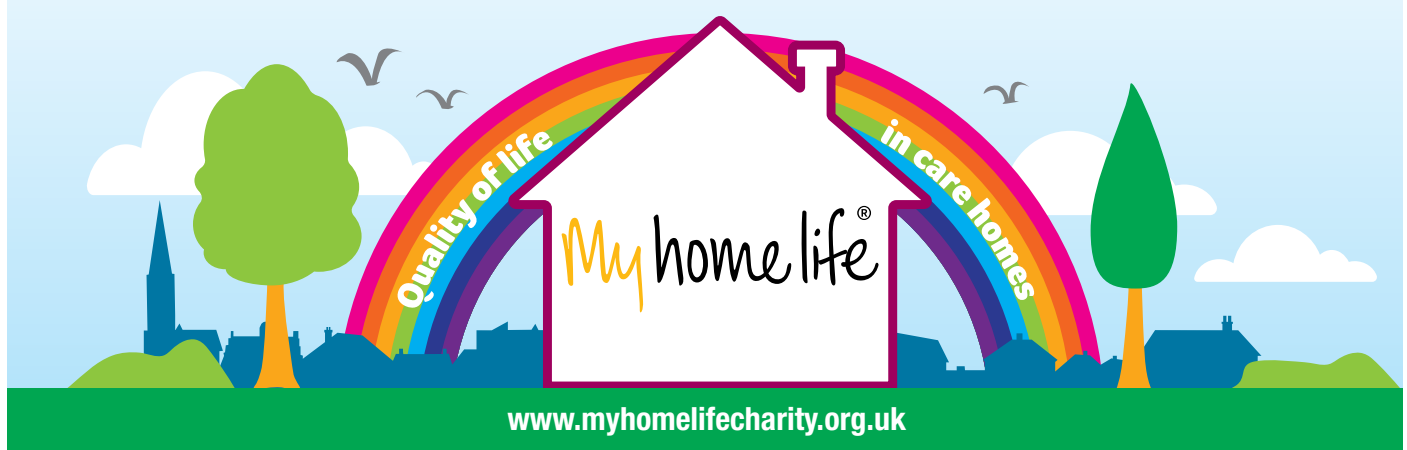
- Diabetes management continues to be a significant challenge for care home residents (Garcia & Brown, 2011; Sinclair, 2011)
- As a function of the limited medical service available to many care home residents and complex care needs, transfer to Emergency Departments is often the most expeditious way to ensure medical care (Dwyer, Stoelwinder, Gabbe, & Lowthian, 2015);
- Whilst there is a lack of robust research on which to evaluate interventions for managing the health needs of care home residents, an individualized approach appears most efficacious (e.g., Jutkowitz et al., 2016).

Introduction

Health is a fundamental and integral part of quality of life and poor-health or disability can compromise its achievement. While many older people enjoy relatively good health, most living in care homes require considerable supports to maintain health and quality of life. The gradual designation of long-term care services from 'health' to 'social' care masks the fact that many

residents have substantial healthcare needs, most of which will require support from outside services such as doctors, pharmacist, therapists, and specialist nurses.

Since the last review, the health and healthcare needs of older care home residents remain considerable. For example, heart failure is one chronic condition that affects a significant number of care home residents, with prevalence rates reported to range from 15-45%,



¹NCHR&D Forum (2007) *My Home Life: Quality of life in care homes – Literature review*, London: *Help the Aged*.

which is higher than that of the general population aged 65 years and older (Daamen, Schols, Jaarsma, & Hamers, 2010). Care home residents are at greater risk of developing delirium (González-Gil, 2016) and many are reported to have sensory impairments such as vision changes that may impact quality of life (Bédard, Kergoat, Kergoat, & Leclerc, 2015). Since the initial review, there has been an increased consideration of the impact of health needs on the whole person. An example of this is an examination of the elements of intimacy and sexuality in persons with dementia living in care homes. In their review, Roelofs et al., (2015) identified a range of intimate and sexual behaviors (e.g., love and caring; romance and romantic relationships; eroticism) expressed by care home residents and the knowledge and attitudes towards sexuality reported by care providers. In general, care home staff had fairly open and positive attitudes towards sexuality yet this was highly variable based on worker attitudes and resident characteristics. Ensuring that resident perspectives are solicited and that their experience is captured in defining what constitutes their quality of life is key to ensuring whole person care (Milne, 2011).

This chapter highlights the major health issues of older persons living in care homes and provides a summary of the latest research into healthcare services available to them.

The priority healthcare needs of older care home residents

In the ensuing decade since the last review, there has been a significant discourse on the increasing complexity of care needs of care home residents and recognition of the contribution of frailty and multi-morbidity underlying this complexity. A challenge has stemmed from a lack of consensus concerning the definition of multi-morbidity and its subsequent operationalization. The European General Practice Research Network published a comprehensive definition of multi-morbidity following a systematic review of the literature (Le Reste et al.,

2013). Defined as any combination of chronic disease with at least one other disease (acute or chronic) or biopsychosocial factor (associated or not) or somatic risk factor, multi-morbidity is recognized as leading to an increased disability, quality of life or frailty.

Mental health and Psychosocial Well-Being (include depression)

The mental health needs of older adults living in care homes has been documented as complex (Bowman, Whistler, & Ellerby, 2004; Continuing Care Conference, 2006). The prevalence of depression in those living in care homes has been noted to occur in up to 40% of residents (Brown, Lapane, & Luisi, 2002), however, this estimate may be low as the detection of depression has been problematic. Identifying one optimal screening tool for detecting depression in residents has been challenging, however, the Mood Questionnaire, embedded as part of the MDS 3.0 resident assessment protocol currently used in the United States, appears to be the most robust and effective scale (Azulai & Walsh, 2015). Depression has been associated with poorer quality of life in persons living with dementia (Beerens, Zwakhalen, Verbeek, Ruwaard, & Hamers, 2013).

A broad range of interventions have been identified to bolster psychological well-being yet their availability across the sector is highly variable. Interventions available in more well-resourced homes include activity-based therapy (such as music, singing, or dance) (Eells, 2014; Guzmán-García, Hughes, James, & Rochester, 2013), reminiscence and life review (Pinquart & Forstmeier, 2012), validation and multi-sensory stimulation (e.g., Snoezelen) (Bowman et al., 2004). Further evidence suggests that environments that restrict or constrain autonomy contribute to the development of depression (Boyle, 2005). This is significant in light of research noting that of those who commit suicide in care homes, 67% had depression, were male (61.4%), had lived in the facility for less than 1 year (52%), and were experiencing physical decline



(50%), and had experienced significant personal loss (e.g., loss of a spouse; loss of physical or cognitive function; loss of personal dignity or self-esteem; and financial loss). Previous research suggests that staff's rapid identification and treatment of depression and a concerted effort to improve physical health may reduce depression in this population (Mann et al., 2000; Payne et al., 2002).

Dementia

Current estimates by the Alzheimer's Society indicate that nearly three-quarters of people living in care homes have dementia. Most often, people with dementia move into a care home when their needs become either too complex, often the result of worsening behavioral symptoms, safety concerns, or too expensive for them to remain in their own home (Hancock, Woods, Challis, & Orrell, 2006). Wandering occurs in 15-60% of those with dementia and is often cited as a safety concern (Robinson et al., 2007). Strategies to mitigate the disruption of wandering behaviors range from the ethically unacceptable use of restraints, to engaging residents in music and exercise therapies (Robinson et al., 2007). Debate continues on the acceptability of using tracking and tagging devices to monitor care home residents.

Neuropsychiatric symptoms in those with dementia living in care homes present intermittently along the dementia trajectory, and can be classified into five main clusters: agitation, psychosis, mood disorders, psychomotor agitation, and apathy (Wetzels, Zuidema, Jansen, Verhey, & Koopmans, 2010). Some symptoms may actually decline over time such as euphoria, aberrant motor behaviors, depression and anxiety, however there remains a high prevalence of agitation, apathy, irritability and disinhibition throughout the course of the disease. Since these symptoms remain high and have a significant impact on quality of life (Beerens et al., 2013), much of the research in the ensuing decade since the previous review has focused on effective management of distressing symptoms and ways of improving quality of life in care home residents with dementia.

Several reviews have examined the evidence of interventions aimed at decreasing agitation in residents with dementia. While most conclude there is insufficient evidence to strongly endorse one intervention over another, an individualized approach appears most efficacious. For example, Jutkowitz et al., (2016) noted that use of dementia care mapping, person-centered care, emotion-oriented care, and protocols to reduce use of anti-psychotic and other psychotropic medications all reduced agitation and aggression in care home residents. Similarly, Livingston (2014) found that supervised person-centred care along with education in communication skills or modified dementia care mapping reduced agitation. This is again echoed by Brodaty and Burns (2012) who noted that individually provided therapeutic activities such as stimulation, creative activities, cooking, Montessori methods were most effective in improving apathy in those with dementia. Two studies examined the use of gardens and horticultural activities as having potential to improve symptoms of agitation and improve other aspects of resident wellbeing. Both studies (Gonzalez & Kirkevold, 2014; Whear et al., 2014) found positive improvements in behaviors such as agitation, improved sleep and sleep patterns, fewer serious falls, and a reduction in psychotropic meds, when residents had the ability to use sensory gardens (either indoor or outdoor) or participate in horticultural activities. This may relate to the finding by Zimmerman et al (2013) who noted that pleasant sensory stimulation decreased agitation in care home residents.

Diabetes

Diabetes mellitus (DM) is a growing worldwide issue, particularly in those over the age of 80. In older adults, a diagnosis of diabetes can significantly add to the complexity of care and contribute both to high levels of morbidity and disability along with financial burden. In their recent review, Garcia and Brown (2011) calculated the weighted percentage of DM over the 20 included studies to be 18.5% of the sample residents; individual studies report between 8.4% to 53% prevalence of DM.



Residents with DM have on average 7 comorbidities and take an average of 8.52 medications (Garcia & Brown, 2011). Despite the increasing prevalence of diabetes in this setting, diabetes care for residents in care homes consistently fails to meet national and international standards (Garcia & Brown, 2011; Sinclair, 2011). Continued use of outdated practices such as use of restricted diets and sliding scale insulin (Garcia & Brown, 2011), along with a lack of clear policies, audit tools for monitoring diabetes care, and education and training programs for staff in diabetes care contribute to sub-standard care.

Pain

The prevalence of pain in care home residents continues to be a significant health concern. Reported to range between 3.7% and 79.5% of care home residents experiencing pain, the high prevalence of pain amongst older adults in care homes has been identified as a global public health issue (Cowan, Roberts, Fitzpatrick, & While, 2003). Musculoskeletal pain is seen as a major contributor to the burden of pain in this population, with prevalence rates of 30% (Smith et al., 2016). A challenge identified in the literature has been the adequate assessment of pain in this population; prevalence rates appear to be influenced by research methods and data sources with higher rates being reported for residents capable of self-report (Drageset, Corbett, Selbaek, & Husebo, 2014; Takai, Yamamoto-Mitani, Okamoto, Koyama, & Honda, 2010). Two tools have been identified with strong psychometric properties for assessing pain in those with dementia: the PAINAD and the PACSLAC (Ellis-Smith et al., 2016). Both tools should be considered when implementing best-practices in pain assessment in care homes.

Experiencing pain leads to a plethora of health concerns including greater limitations in activities of daily living, depression, poor sleep, reduced social engagement, and quality of life (Smith et al., 2016; Takai et al., 2010). Additional consequences include impaired mobility, impaired appetite, impaired memory, impaired bowel and bladder function, and anxiety. In a survey of over

200 individuals aged 65 to 98, the intensity and daily experience of pain were identified as obstacles to participation in physical activities, particularly for the oldest residents.

The literature identifies that a significant number of older adults do not receive adequate interventions to alleviate pain, including pain medications (Drageset et al., 2014; Takai et al., 2010). This is particularly prominent in those with low cognitive status. Herman et al., (2009) propose a model to help guide the basic components that need to be addressed to accomplish quality pain management in care homes. They identify four process modifications that may assist in achieving better resident outcomes including actor modifications (e.g., education for health care providers, residents, families); decision-support (e.g., algorithms or guidelines); treatment modifications (e.g., medication or non-pharmacological interventions); and system modifications (e.g., quality improvement and feedback mechanisms).

Nutrition

The challenge of under-nutrition and more specifically malnutrition continues to be reported as a widespread problem in care homes, the causes of which are complex and multifactorial. In their literature review, Pauly et al., (2007) identify that 40% of institutionalized older persons are malnourished with increasing prevalence in those with increased functional impairment and disability. Emerging evidence also suggest an association between oral health status and malnutrition; those with oral health problems such as chewing difficulties, incomplete dentures or natural teeth, limitations in salivary flow, candidiasis and tongue problems are at higher risk of malnutrition (Van Lancker et al., 2012). Cowan and colleagues (2003) identified several factors that are partly contribute to under-nutrition including physical bodily changes (hearing/vision impairments; swallowing disorders), sensory loss (taste and/or smell), cognitive impairments and other disease specific changes. Medications can reduce appetite or sensory awareness and compromise nutrition. Certain drugs can interact with the absorption and metabolism of nutrients.



Additionally, environmental factors within an organization can impact on food intake such as lack of feeding assistance, lack of food diversity and access, and the quality of the dining experience.

Several review studies have examined interventions to improve the nutritional status of care home residents, particularly for those with cognitive impairment. These studies have examined oral nutrition supplementation, food modifications, mealtime practices/environment modifications, and training and education programs. While Liu et al., (2014) noted moderate evidence to food intake, body weight and body mass index (BMI) with using nutritional supplements in older persons, Abdelhamed and colleagues (2016) noted a lack of quality evidence to state any particular intervention was effective. Abbott et al., (2013) similarly criticized the quality of research studies but found that nutrition outcomes were slightly improved when changes to the environment were made, such as assistance with eating, increased access to food, more food choices/more appealing food and a more stimulating mealtime environment. Instituting training or education programs had a moderate degree of evidence indicating an improved eating time for residents and decreased feeding difficulties in those residents with dementia (Liu et al., 2014). To date, there is no evidence on the benefit (or not) of using enteral feeding for those living with dementia in care homes (Candy, Jones, & Sampson, 2009).

Continence

Incontinence affects nearly three quarters of care home residents (Bowman et al., 2004; Continuing Care Conference, 2006), prompting a call to better understand the factors to promote continence and determine the best evidence to manage incontinence in this population. Urinary incontinence occurs more frequently in those who are frail, experience a significant cognitive impairment and/or mobility issues (Flanagan et al., 2014; Roe et al., 2011). Care home residents who experiencing incontinence without a cognitive impairment, express the belief that incontinence is an inevitable and intractable

consequence of old age (Ostaszkievicz, O'Connell, & Dunning, 2012). Many have low expectations for the incontinence to improve and may conceal their incontinence from care staff due to embarrassment and humiliation (Ostaszkievicz et al., 2012). Regardless of cognitive status, incontinence has dire effects on quality of life (Ostaszkievicz et al., 2012; Roe et al., 2011). Additionally, meticulous skin assessment and management is vital, with evidence that using a pH cleanser and barrier cream being the most effective rather than soap and water in promoting skin health.

Determining the most efficacious means of managing incontinence and promoting continence has been explored in several systematic reviews. Most evidence supports the efficacy of toileting programs (in particular prompted voiding), use of incontinence pads, and prompted voiding plus exercise as the most effective in achieving short-term improvement (Fink, Taylor, Tacklind, Rutks, & Wilt, 2008; Flanagan et al., 2014; Roe, Flanagan, & Maden, 2015). Having dedicated staff to manage incontinence, promote continence, and recognize dehydration in care home residents has also been touted as achieving positive outcomes (Flanagan et al., 2014). The only pharmacological approach to have a small but significant effect on urinary leakage were anticholinergics (Samuelsson et al., 2015).

Falls

Care home residents have a high risk of falling. When a resident experiences a fall or has a fear of falling, negative outcomes ensue including poorer quality of life, anxiety, depression, and limitations to mobility (Lach & Parsons, 2013). Residents of care homes are significantly more likely to sustain a hip fracture following a fall than older people living in their own homes. Residents with functional challenges such as balance and gait impairments, weaker hip and knee strength and mobility issues, along with having a diagnosis of dementia and polypharmacy are at higher risk for falls (Jung, Shin, & Kim, 2014; Lach & Parsons, 2013). These risks can be reduced by introducing a range of measures (Nazarko, 2005; Skelton, 2004). The



most effective interventions for care home residents to reduce the number of falls and number of recurrent falls are multifactorial in nature (Vlaeyen et al., 2015) and include medication review, use of Vitamin D, hip protectors, and balance and strength exercises (Church, Goodall, Norman, & Haas, 2011; Jung et al., 2014; Vlaeyen et al., 2015).

Oral Health

Poor oral health in older adults living in care homes is a universally recognized issue. Poor oral health is associated with higher risk of infectious respiratory disease, cardiovascular disease, malnutrition, altered speech, tooth loss and decay, and decreased quality of life (Hoben et al., 2017; Wang, Huang, Chou, & Yu, 2015). A number of significant barriers to daily oral healthcare provision have been identified including lack of oral health education for care providers, the low priority and value placed on oral health, provider attitudes, resistive behaviors displayed by residents (particularly those with dementia), and limited oral health resources and policies (Hoben et al., 2017; Miegel & Wachtel, 2009). In their systematic review and meta-analysis, Wang et al., (2015) found limited evidence that oral health education for care providers to be effective in improving the oral health of older adults in care homes. Strategies need to take a multi-faceted approach to improving oral health, including the appointment of oral care 'champions', development of accredited and accessible oral health education programs, and a positive culture may result in improved oral health outcomes (Miegel & Wachtel, 2009).

Medications

Having robust and reliable measures to assess the palliative care needs of care home residents is vital to ensure needs are adequately captured and therefore, appropriately intervened. In their review of comprehensive geriatric assessments (CGAs) for care home residents receiving palliative care, Hermans et al., (2014) concluded that the interRAI Palliative Care

instrument was the most comprehensive in assessing and evaluating the needs and preferences of care home residents receiving palliative care. The McMaster Quality of Life Scale received the second highest scores for covering nine of the 13 domains for a palliative approach in residential aged care according to the Australian Government Department of Health and Aging.

Medications

Nearly a decade ago, the Commission for Social Care Inspection (2006) identified that nearly half of care homes (representing an estimated 200,000 residents) failed to meet national minimum standards for how prescription medications for the treatment of serious and other illnesses are provided to older persons. Some of these errors include people being given the wrong medication, someone else's medication, the wrong dose of medication or no medication at all. In others, it may be sub-optimal prescribing of medications for indicated conditions such as Warafin for those with atrial fibrillation and post-stroke (Neidecker, Patel, Nelson, & Reardon, 2012). Alldred et al., (2016) examined interventions to optimize prescribing for older persons in care homes as a means of addressing some of the issues and found the most promising practice was that of medication reviews. A medication review can lead to the identification and resolution of medication-related problems and an improvement in medication appropriateness for care home residents. None of the prescribing interventions noted a reduction in adverse drug events, mortality, quality of life, hospital admission or cost savings. Further work on developing a medication-related quality of care indicator set identified 25 indicators across five domains which encompasses being prescribed the most appropriate medication for a person's primary illness, access to services, strategies for detecting and monitoring adverse events, and policies and procedures advising best-practices for medication use in care homes (Hillen, Vitty, & Caughey, 2015).



Pressure Ulcers

Pressure ulcers pose a significant health challenge to those living in care homes. While not all pressure ulcers are preventable, incontinence-associated dermatitis and its ensuing etiology (urinary incontinence, fecal incontinence, double incontinence and moisture) have been noted to be likely associated with pressure ulcer development (Beeckman, Van Lancker, Van Hecke, & Verhaeghe, 2014). One of the more frequently used tools in clinical practice to evaluate pressure ulcer risk is the Braden scale, yet limited evidence exists as to its validity in the context of long-term care. In their study, Wilchesky and Lungu (2015) note a questionable benefit of the Braden scale due to low specificity and positive predictive value in care home residents. While having a validated screening tool is important, a more broad based approach to risk assessment and prevention may be warranted in this population since most care home residents have high risk of pressure ulcer development. To this end, Pagan and colleagues (2015) provides 11 practice recommendations for the implementation of pressure injury programs including conducting a pre-assessment to determine readiness for practice change, implementation of continuous quality improvement programs, used of evidence-based programs, allow for sufficient time for the program to be established, engage all relevant stakeholders, use of multiple program interventions, use of staff incentives, use project teams/champions, engage expert external mentors, and make pressure programs part of compulsory staff training. These recommendations overcome the barriers to the prevention and treatment of pressure ulcers (Palma & Vallejo Sánchez, 2010).

Providing adequate healthcare

There is well documented evidence outlining the substantial health needs of older people living in care homes. Despite this high level of need, there has been a recognition of a wide variation, both at the national and individual care home settings, in service delivery to care

home residents. This inequity manifests in many ways, such as residents paying for services that may be freely available to those in hospital or home, limited access to specialist clinicians and GPs, and a lack of coordinated and integrated information systems or databases (Barodawala, Kesavan, & Young, 2001; Glendinning, Jacobs, Alborz, & Hann, 2002; Jacobs, 2003; Jacobs & Rummery, 2002; O’Dea, Kerrison, & Pollock, 2000). As there have been limited reviews of reviews conducted in the area of service provision, only those where reviews have been conducted have been updated.

Primary care nursing and specialist nursing

For older adults living in care homes without nurses, any nursing needs that residents have are the responsibility of the primary health care nursing services. Consulted for a variety of clinical problems such as continence promotion, pressure ulcer prevention and care, and palliative care, Goodman et al., (2003) found that district nurse contact was variable and unpredictable. District nurses indicated that there was often a lack of consensus about their role and appropriateness of referrals. More recently, a study examining the use of advance practice nurses (APNs) within care homes concluded that APNs improve or reduce decline in many health status indicators including depression, urinary incontinence, pressure ulcers, aggressive behaviors and reduce the use of restraints with residents (Donald et al., 2013). The positive impact of APNs mainly emerged through their leading staff education and consultation to support improvements in resident outcomes.

Health Promotion

With the high level of chronic, multi-comorbidities experienced by older care home residents, a focus on health promotion has the potential to improve resident well-being. As described by McBride (2000) health promotion is ‘the active and purposeful bringing about of necessary challenges, marshalling required resources, and carrying out whatever activities are necessary to develop, sustain, and increase healthy



functioning' (p.18). Activities such as physical activity, adequate sleep, nutrition, stress management, safety and medication management hold promise for health promotion within this population.

As in the original review, there continues to be strong evidence for the effectiveness of physical activity in stemming the decline in resident ADL function (Crocker et al., 2013; Forster, Lambley, & Young, 2010; Littbrand, Stenvall, & Rosendahl, 2011) and providing improvements to mobility. The dose of physical activity that achieves the greatest benefit appears to be using trained staff to provide residents with thrice weekly sessions for 30-45 minutes using simple and inexpensive equipment (Shakeel, Newhouse, Malik, & Heckman, 2015), or weight-bearing exercises (Littbrand et al., 2011). There is also emerging evidence that ADLs/IADLs may be improved in care home residents using dog-assisted therapy interventions (Cipriani et al., 2013). However, further studies in this area are warranted to determine the best means of delivering this type of intervention (e.g., group versus individual sessions) on outcomes.

The prevalence of sleep disturbances within the care home population is notably high, and includes difficulty initiating sleep, frequent waking, and behavioral changes associated with lack of sleep such as agitation (Koch, Haesler, Tiziani, & Wilson, 2006). In their review, Koch et al., (2006) identify several promising practices for sleep promotion. While cautious in their recommendations, the authors postulate that multidisciplinary strategies aimed at manipulating the care environment such as reducing environmental noise and night-time nursing care along with promotion of daytime activity, may be best in promoting sleep in care home residents.

The safety of residents is a paramount concern of those involved in delivering care within care homes. To this effect, the use of restraints have been touted as an intervention in harm reduction. However, the call to eliminate or reduce restraint use with care home residents has garnered support over the decades.

Much of this stems from the over-reliance on restraints and negative effects on residents including an impact on resident physical and psychological well-being (Hofmann & Hahn, 2014). Those at greatest risk of having a physical restraint applied include males, having a previous fall, wandering or aggressive behavior, and low cognitive functioning. Möhler & Meyer (2015) examined the methods in which recommendations to reduce physical restraint reduction in care homes have been developed. They concluded that many of the current practice guidelines have been developed without adhering to rigorous scientific development and further work in this area is needed.

Whilst infection control, such as influenza immunization or infection prevention are key health promoting activities, no specific infection prevention practices based on cost estimates or cost effectiveness can be recommended (Cohen, Choi, & Stone, 2016).

Emergency Department (ED) Use

In the original review, no studies were examined that explored the use of emergency departments by care home residents. As a function of the limited medical service available to many care home residents and complex care needs, transfer to ED is often the most expeditious way to ensure medical care. These unplanned transfers to EDs, which ranged from 15% to 75% per year (Dwyer, Stoelwinder, Gabbe, & Lowthian, 2015) have been found to result from several resident and organizational factors. The oldest of the residents were found to be least likely to be transferred whereas male residents were significantly more likely to be transferred to ED for care. Residents with poor physical health, such as low body mass index, swallowing difficulties, recent illness, and high level of functional dependence are more likely to be transferred to hospital. Evidence indicates that care home residents present to ED with higher acuity than their community-dwelling counterpart (Dwyer, Gabbe, Stoelwinder, & Lowthian, 2014). Consequently, these factors also are predictive of poorer outcomes following an emergency visit hospital.



In general care home residents experience higher levels of interventions many of which are invasive, adverse clinical consequences such as delirium and mortality.

Conclusions

The review of the literature reviews (2007-2017) found that research on the health and healthcare needs of older adults in care homes has not progressed significantly since the previous review (The National Care Home Research and Development Unit, 2007). Almost every review in the review of the literature determined the research uncovered to be of low quality and has as its main recommendations that future research is needed.



References

- Abbott, R. A., Whear, R., Thompson-Coon, J., Ukoumunne, O. C., Rogers, M., Bethel, A., Stein, K. (2013). Effectiveness of mealtime interventions on nutritional outcomes for the elderly living in residential care: a systematic review and meta-analysis. *Ageing Research Reviews*, 12(4), 967–981.
- Abdelhamid, A., Bunn, D. K., Copley, M., Cowap, V., Dickinson, A., Howe, A., Hooper, L. (2016). Effectiveness of interventions to indirectly support food and drink intake in people with dementia: systematic review and meta-analysis. *BMC Geriatrics*, 16(1).
- Allred, D., Kennedy, M., Hughes, C., Chen, T., & Miller, P. (2016). Interventions to optimise prescribing for older people in care homes. *Cochrane Database of Systematic Reviews*, (2).
- Azulai, A., & Walsh, C. A. (2015). Screening for geriatric depression in residential care facilities: a systematic narrative review. *Journal of Gerontological Social Work*, 58(1), 20–45.
- Barodawala, S., Kesavan, S., & Young, J. (2001). A survey of physiotherapy and occupational therapy provision in UK nursing homes. *Clinical Rehabilitation*, 15, 607–610.
- Bédard, E., Kergoat, H., Kergoat, M. J., & Leclerc, B. S. (2015). Systematic review of vision-related quality of life questionnaires for older institutionalised seniors with dementia. *Ophthalmic and Physiological Optics*, 35(4), 377–387.
- Beeckun, D., Van Lancker, A., Van Hecke, A., & Verhaeghe, S. (2014). A systematic review and meta-analysis of incontinence-associated dermatitis, incontinence, and moisture as risk factors for pressure ulcer development. *Research in Nursing and Health*, 37(3), 204–218.
- Beerens, H. C., Zwakhalen, S. M. G., Verbeek, H., Ruwaard, D., & Hamers, J. P. H. (2013). Factors associated with quality of life of people with dementia in long-term care facilities: a systematic review. *International Journal of Nursing Studies*, 50(9), 1259–1270.
- Bowman, C., Whistler, J., & Ellerby, M. (2004). A national census of care home residents. *Age and Ageing*, 33, 561–566.
- Boyle, G. (2005). The role of autonomy in explaining mental ill-health and depression among older people in long-term care settings. *Ageing & Society*, 25, 731–748.
- Brodsky, H., & Burns, K. (2012). Nonpharmacological management of apathy in dementia: a systematic review. *American Journal of Geriatric Psychiatry*, 20(7), 549–564.
- Brown, N., Lapane, K., & Luisi, A. (2002). The management of depression in older nursing home residents. *Journal of the American Geriatric Society*, 50, 69–76.
- Candy, B., Jones, L., & Sampson, E. L. (2009). Enteral tube feeding in older people with advanced dementia: Findings from a Cochrane systematic review. *International Journal of Palliative Nursing*, 15(8), 396–404.
- Church, J., Goodall, S., Norman, R., & Haas, M. (2011). An economic evaluation of community and residential aged care falls prevention strategies in NSW. *New South Wales Public Health Bulletin*, 22(4), 60.
- Cipriani, J., Cooper, M., Digiovanni, N. M., Litchkofski, A., Nichols, A. L., & Ramsey, A. (2013). Dog-assisted therapy for residents of long-term care facilities: An evidence-based review with implications for occupational therapy. *Physical and Occupational Therapy in Geriatrics*, 31(3), 214–240.
- Cohen, C. C., Choi, Y. J., & Stone, P. W. (2016). Costs of infection prevention practices in long-term care settings: a systematic review. *Nursing Economics*, 34(1), 16–24.
- Commission for Social Care Inspection. (2006). *Handled with care - managing medication for residents of care homes and children's homes*. London, UK.
- Continuing Care Conference. (2006). *Census of BUPA care home residents launched on 30 June 2006*. London, UK.
- Cowan, D., Roberts, J., Fitzpatrick, J., & While, A. (2003). The need for effective assessment of pain among older people in care homes. *Reviews in Clinical Gerontology*, 13, 335–341.
- Cowan, D., Roberts, J., Fitzpatrick, J., While, A., & Baldwin, J. (2003). Nutritional status of older people on long term care settings: Current status and future directions. *International Journal of Nursing Studies*, 41, 225–237.
- Crocker, T., Young, J., Forster, A., Brown, L., Ozer, S., & Greenwood, D. C. (2013). The effect of physical rehabilitation on activities of daily living in older residents of long-term care facilities: Systematic review with meta-analysis. *Age and Ageing*, 42(6), 682–688.
- Daamen, M. A. M. J., Schols, J. M. G. A., Jaarsma, T., & Hamers, J. P. H. (2010). Prevalence of heart failure in nursing homes: a systematic literature review. *Scandinavian Journal of Caring Sciences*, 24(1), 202–208.
- Donald, F., Martin-Misener, R., Carter, N., Donald, E. E., Kaasalainen, S., Wickson-Griffiths, A., ... Dicenso, A. (2013). A systematic review of the effectiveness of advanced practice nurses in long-term care. *Journal of Advanced Nursing*, 69(10), 2148–2161.
- Drageset, J., Corbett, A., Selbaek, G., & Husebo, B. S. (2014). Cancer-related pain and symptoms among nursing home residents: a systematic review. *Journal of Pain and Symptom Management*, 48(4), 699–710.e1.
- Dwyer, R., Gabbe, B., Stoelwinder, J. U., & Lowthian, J. (2014). A systematic review of outcomes following emergency transfer to hospital for residents of aged care facilities. *Age and Ageing*, 43(6), 759–766.
- Dwyer, R., Stoelwinder, J., Gabbe, B., & Lowthian, J. (2015). Unplanned transfer to emergency departments for frail elderly residents of aged care facilities: a review of patient and organizational factors. *Journal of the American Medical Directors Association*, 16(7), 551–562.



- Eells, K. (2014). The use of music and singing to help manage anxiety in older adults. *Mental Health Practice*, 17(5), 10–17.
- Ellis-Smith, C., Evans, C. J., Bone, A. E., Henson, L. A., Dzingina, M., Kane, P. M., ... Daveson, B. A. (2016). Measures to assess commonly experienced symptoms for people with dementia in long-term care settings: a systematic review. *BMC Medicine*, 14(1), 1–12.
- Fink, H. A., Taylor, B. C., Tacklind, J. W., Rutks, I. R., & Wilt, T. J. (2008). Treatment interventions in nursing home residents with urinary incontinence: a systematic review of randomized trials. *Mayo Clinic Proceedings*, 83(12), 1332–1343.
- Flanagan, L., Roe, B., Jack, B., Shaw, C., Williams, K. S., Chung, A., & Barrett, J. (2014). Factors with the management of incontinence and promotion of continence in older people in care homes. *Journal of Advanced Nursing*, 70(3), 476–496.
- Forster, A., Lambley, R., & Young, J. B. (2010). Is physical rehabilitation for older people in long-term care effective? Findings from a systematic review. *Age and Ageing*, 39(2), 169–175.
- Garcia, T. J., & Brown, S. A. (2011). Diabetes management in the nursing home: a systematic review of the literature. *Diabetes Educator*, 37(2), 167–187.
- Glendinning, C., Jacobs, S., Alborz, A., & Hann, M. (2002). A survey of access to medical services in nursing and residential homes in England. *British Journal of General Practice*, 52, 545–558.
- González-Gil, T. (2016). Interventions for preventing delirium in older people in institutional long-term care. *International Journal of Nursing Studies*, 55, 133–134.
- Gonzalez, M. T., & Kirkevold, M. (2014). Benefits of sensory garden and horticultural activities in dementia care: a modified scoping review. *Journal of Clinical Nursing*, 23(19–20), 2698–2715.
- Goodman, C., Woolley, R., & Knight, D. (2003). District nurses' experiences of providing care in residential home settings. *Journal of Clinical Nursing*, 12, 67–76.
- Guzmán-García, A., Hughes, J. C., James, I. A., & Rochester, L. (2013). Dancing as a psychosocial intervention in care homes: a systematic review of the literature. *International Journal of Geriatric Psychiatry*, 28(9), 914–924.
- Hancock, G., Woods, B., Challis, D., & Orrell, M. (2006). The needs of older people with dementia in residential care. *International Journal of Geriatric Psychiatry*, 21(1), 43–49.
- Herman, A. D., Johnson, T. M., Ritchie, C. S., & Parmelee, P. A. (2009). Pain management interventions in the nursing home: a structured review of the literature: Progress in geriatrics. *Journal of the American Geriatrics Society*, 57(7), 1258–1267.
- Hermans, K., De Almeida Mello, J., Spruytte, N., Cohen, J., Van Audenhove, C., & Declercq, A. (2014). A comparative analysis of comprehensive geriatric assessments for nursing home residents receiving palliative care: A systematic review. *Journal of the American Medical Directors Association*, 15(7), 467–476.
- Hillen, J. B., Vitty, A., & Caughey, G. E. (2015). Medication-related quality of care in residential aged care: a systematic review. *Springerplus*, 4, 220.
- Hoben, M., Kent, A., Kobagi, N., Huynh, K. T., Clarke, A., & Yoon, M. N. (2017). Effective strategies to motivate nursing home residents in oral care and to prevent or reduce responsive behaviors to oral care: a systematic review. *PLoS ONE*, 12(6), 1–8.
- Hofmann, H., & Hahn, S. (2014). Characteristics of nursing home residents and physical restraint: a systematic literature review. *Journal of Clinical Nursing*, 23(21–22), 3012–3024.
- Jacobs, S. (2003). Addressing the problems associated with general practitioners' workload in nursing and residential homes: Findings from a qualitative study. *British Journal of General Practice*, 53, 113–119.
- Jacobs, S., & Rummery, K. (2002). Nursing homes in England and their capacity to provide rehabilitation and intermediate care services. *Social Policy & Administration*, 36(7), 735–752.
- Jung, D., Shin, S., & Kim, H. (2014). A fall prevention guideline for older adults living in long-term care facilities. *International Nursing Review*, 61(4), 525–533.
- Jutkowitz, E., Brasure, M., Fuchs, E., Shippee, T., Kane, R. A., Fink, H. A., ... Kane, R. L. (2016). Care-delivery interventions to manage agitation and aggression in dementia nursing home and assisted living residents: a systematic review and meta-analysis. *Journal of the American Geriatrics Society*, 64(3), 477–488.
- Koch, S., Haesler, E., Tiziani, A., & Wilson, J. (2006). Effectiveness of sleep management strategies for residents of aged care facilities: Findings of a systematic review. *Journal of Clinical Nursing*, 15(10), 1267–1275.
- Lach, H. W., & Parsons, J. L. (2013). Impact of fear of falling in long term care: An integrative review. *Journal of the American Medical Directors Association*, 14(8), 573–577.
- Le Reste, J. Y., Nabbe, P., Manceau, B., Lygidakis, C., Doerr, C., Lingner, H., ... Lietard, C. (2013). The European General Practice Research Network presents a comprehensive definition of multimorbidity in family medicine and long term care, following a systematic review of relevant literature. *Journal of the American Medical Directors Association*, 14(5), 319–325.
- Littbrand, H., Stenvall, M., & Rosendahl, E. (2011). Applicability and effects of physical exercise on physical and cognitive functions and activities of daily living among people with dementia: a systematic review. *American Journal of Physical Medicine and Rehabilitation*, 90(6), 495–518.
- Liu, W., Cheon, J., & Thomas, S. A. (2014). Interventions on mealtime difficulties in older adults with dementia: a systematic review. *International Journal of Nursing Studies*, 51(1), 14–27.



- Livingston, G., Kelly, L., Lewis-Holmes, E., Baio, G., Morris, S., Patel, N., Cooper, C. (2014). A systematic review of the clinical effectiveness and cost-effectiveness of sensory, psychological and behavioural interventions for managing agitation in older adults with dementia. *Health Technology Assessment*, 18(39).
- Mann, A. H., Schneider, J., Mozley, C. G., Levin, E., Blizard, R., Netten, A., Todd, C. (2000). Depression and the response of residential homes to physical health needs. *International Journal of Geriatric Psychiatry*, 15, 2205–1112.
- McBride, A. (2000). Nursing and gerontology. *Journal of Gerontological Nursing*, 26(7), 18–27.
- Miegel, K., & Wachtel, T. (2009). Improving the oral health of older people in long-term residential care: a review of the literature. *International Journal of Older People Nursing*, 4(2), 97–113.
- Milne, A. (2011). Living with dementia in a care home: Capturing the experiences of residents. *Quality in Ageing and Older Adults*, 12(2), 76–85.
- Möhler, R., & Meyer, G. (2015). Development methods of guidelines and documents with recommendations on physical restraint reduction in nursing homes: a systematic review. *BMC Geriatrics*, 15(1), 1–6.
- Nazarko, L. (2005). Reducing the risk of falls among older people. *Nursing & Residential Care*, 7(2), 67–70.
- Neidecker, M., Patel, A. A., Nelson, W. W., & Reardon, G. (2012). Use of warfarin in long-term care: a systematic review. *BMC Geriatrics*, 12, 14.
- O’Dea, G., Kerrison, S., & Pollock, A. (2000). Access to health care in nursing homes: a survey in one English Health Authority. *Health and Social Care in the Community*, 8(3), 180–185.
- Ostaszkiwicz, J., O’Connell, B., & Dunning, T. (2012). Residents’ perspectives on urinary incontinence: a review of literature. *Scandinavian Journal of Caring Sciences*, 26(4), 761–772.
- Pagan, M., Trip, H., Burrell, B., & Gillon, D. (2015). Wound programmes in residential aged care : a systematic review. *Wound Practice & Research*, 23(2), 52–60.
- Palma, M., & Vallejo Sánchez, J. (2010). The management of pressure ulcers in nursing home care. Obstacles and facilitators. *Gerokomos*, 21(3), 108–113.
- Pauly, L., Stehle, P., & Volkert, D. (2007). Nutritional situation of elderly nursing home residents. *Zeitschrift Fur Gerontologie Und Geriatrie*, 40(1), 3–12.
- Payne, J., Sheppard, J., Steinberg, M., Warren, A., Baker, A., Steele, C., Lyketsos, C. (2002). Incidence, prevalence and outcomes of depression of residents in a long-term care facility with dementia. *International Journal of Geriatric Psychiatry*, 17, 247–253.
- Pinquart, M., & Forstmeier, S. (2012). Effects of reminiscence interventions on psychosocial outcomes: a meta-analysis. *Ageing and Mental Health*, 16(5), 541–558.
- Robinson, L., Hutchings, D., Dickinson, H. O., Corner, L., Beyer, F., Finch, T., Bond, J. (2007). Effectiveness and acceptability of non-pharmacological interventions to reduce wandering in dementia: a systematic review. *International Journal of Geriatric Psychiatry*, 22, 9–22.
- Roe, B., Flanagan, L., Jack, B., Barrett, J., Chung, A., Shaw, C., & Williams, K. (2011). Systematic review of the management of incontinence and promotion of continence in older people in care homes: descriptive studies with urinary incontinence as primary focus. *Journal of Advanced Nursing*, 67(2), 228–250.
- Roe, B., Flanagan, L., & Maden, M. (2015). Systematic review of systematic reviews for the management of urinary incontinence and promotion of continence using conservative behavioural approaches in older people in care homes. *Journal of Advanced Nursing*, 71(7), 1464–1483.
- Roelofs, T. S. M., Luijckx, K. G., & Embregts, P. J. C. M. (2015). Intimacy and sexuality of nursing home residents with dementia: a systematic review. *International Psychogeriatrics*, 27(3), 367–384.
- Samuelsson, E., Odeberg, J., Stenzelius, K., Molander, U., Hammarstrom, M., Franzen, K., ... Midlov, P. (2015). Effect of pharmacological treatment for urinary incontinence in the elderly and frail elderly: a systematic review. *Geriatrics & Gerontology International*, 15(5), 521–534.
- Shakeel, S., Newhouse, I., Malik, A., & Heckman, G. (2015). Identifying feasible physical activity programs for long-term care homes in the Ontario context. *Canadian Geriatrics Journal*, 18(2), 73–105.
- Sinclair, A. J. (2011). Good clinical practice guidelines for care home residents with diabetes: An executive summary. *Diabetic Medicine*, 28(7), 772–777.
- Skelton, D. (2004). *Staying upright...Keeping involved, better balance, mobility and quality of life - falls prevention exercises in residential settings*. University of Manchester.
- Smith, T. O., Purdy, R., Latham, S. K., Kingsbury, S. R., Mulley, G., & Conaghan, P. G. (2016). The prevalence, impact and management of musculoskeletal disorders in older people living in care homes: a systematic review. *Rheumatology International*, 36(1), 55–64.
- Takai, Y., Yamamoto-Mitani, N., Okamoto, Y., Koyama, K., & Honda, A. (2010). Literature review of pain prevalence among older residents of nursing homes. *Pain Management Nursing*, 11(4), 209–223.



The National Care Home Research and Development Unit. (2007). *My Home Life: Quality of life in care homes - A Literature Review*. London, UK. Retrieved from <http://www.scie.org.uk/publications/guides/guide15/files/myhomelife-litreview.pdf>

Van Lancker, A., Verhaeghe, S., Van Hecke, A., Vanderwee, K., Goossens, J., & Beeckman, D. (2012). The association between malnutrition and oral health status in elderly in long-term care facilities: a systematic review. *International Journal of Nursing Studies*, 49(12), 1568–1581.

Vlaeyen, E., Coussement, J., Leysens, G., Van Der Elst, E., Delbaere, K., Cambier, D., Milisen, K. (2015). Characteristics and effectiveness of fall prevention programs in nursing homes: a systematic review and meta-analysis of randomized controlled trials. *Journal of the American Geriatrics Society*, 63(2), 211–221.

Wang, T. F., Huang, C. M., Chou, C., & Yu, S. (2015). Effect of oral health education programs for caregivers on oral hygiene of the elderly: a systemic review and meta-analysis. *International Journal of Nursing Studies*, 52(6), 1090–1096.

Wetzels, R., Zuidema, S., Jansen, I., Verhey, F., & Koopmans, R. (2010). Course of neuropsychiatric symptoms in residents with dementia in long-term care institutions: a systematic review. *International Psychogeriatrics*, 22(7), 1040–1053.

Whear, R., Coon, J. T., Bethel, A., Abbott, R., Stein, K., & Garside, R. (2014). What is the impact of using outdoor spaces such as gardens on the physical and mental well-being of those with dementia? A systematic review of quantitative and qualitative evidence. *Journal of the American Medical Directors Association*, 15(10), 697–705.

Wilchesky, M., & Lungu, O. (2015). Predictive and concurrent validity of the Braden scale in long-term care: A meta-analysis. *Wound Repair and Regeneration*, 23(1), 44–56.

Zimmerman, S., Anderson, W. L., Brode, S., Jonas, D., Lux, L., Beeber, A. S., Sloane, P. D. (2013). Systematic review: Effective characteristics of nursing homes and other residential long-term care settings for people with dementia. *Journal of the American Geriatrics Society*, 61(8), 1399–1409.

