OHTAC Recommendation

Aging in the Community

September, 2008

OHTAC Ontario Health Technology Advisory Committee

Background

By 2031, more than 1 in 5 people in Ontario is expected to be over the age of 65. Living arrangements can have a large impact on the ability of an elderly individual to remain living independently in the community. Although the majority of seniors in Canada (70.1%) live in an urban area with a population of 50,000 or more, 22.6% live in rural settings that often have less access to community-based services for the elderly. In Ontario, 9% of seniors live in rural areas with moderate, weak, or no metropolitan influence.

Socio-demographic factors such as gender or age as well as increased caregiver burden and lack of social support can lead to the decision for a senior to move to a LTC home. As a result, it is important to consider both medical and social determinants of LTC home admission, as well as the impact of informal and formal caregivers on the decision-making process.

The objective of this analysis was to identify interventions (e.g. devices and programs) that are effective at enabling seniors to live healthily and independently in the community. The scope of this project was determined through a literature search of general predictors of LTC home admission. Ten studies were identified that investigated general predictors of LTC home admission. These studies described several population characteristics that are significantly associated with LTC home admission. Based on these studies, as well as through consultation with experts in the area, 4 key predictors were identified for further research in this area. These were:

1. Falls and fall-related injuries
2. Urinary incontinence
3. Dementia
4. Social Isolation

OHTAC Findings

Falls and Fall-Related Injuries

- High quality evidence indicates that long-term exercise programs in mobile seniors and environmental modifications in the homes of frail elderly will effectively reduce falls in Ontario's elderly population. RR=0.76, 95% CI (0.64-0.91)
- There is moderate quality evidence that a combination of Vitamin D and Calcium is effective in elderly women to help reduce the likelihood of falls. RR=0.83, 95% CI (0.73-0.95)
- The use of outdoor gait stabilizing devices for the mobile elderly in Ontario would reduce falls. RR=0.42, 95% CI (0.26-0.92)
- While psychotropic medication withdrawal could be an effective method for reducing falls, evidence is limited and long-term compliance has been demonstrated to be difficult to achieve. RR=0.34, 95% CI (0.16-0.74)
- Multifactorial interventions in high-risk populations may be effective, however the effect is only marginally significant, and the quality of evidence is low. RR=0.87, 95% CI (0.78-0.97)

Urinary Incontinence

- There is moderate-quality evidence that the following interventions are effective in improving UI in mobile motivated seniors:

- Multicomponent behavioural interventions including a combination of bladder training techniques, PFMT (± biofeedback), education on bladder control strategies and self-monitoring techniques.
- Pelvic floor muscle training alone.
- There is moderate quality evidence that when behavioural interventions are led by NCAs or CNSs in a clinic setting, they are effective in improving UI in seniors.
- There is limited low-quality evidence that prompted voiding may be effective in complex frail seniors with motivated caregivers
- There is insufficient evidence for the following interventions in complex frail seniors with motivated caregivers:
    - Habit retraining
    - Timed voiding

Dementia

Caregiver Interventions for Seniors with Dementia

There is poor quality and inconclusive evidence from randomized controlled trials surrounding the effectiveness and cost-effectiveness of respite care services.
There is moderate to high quality evidence that individual behavioural interventions (≥ 6 sessions), directed at the caregiver (or combined with the patient) are effective in improving psychological health in dementia caregivers.
There is moderate to high quality evidence that multicomponent interventions improve caregiver psychosocial health and may impact rates of institutionalization of dementia patients.

Patient-Directed Interventions

Secondary Prevention:

Physical Exercise

- Physical exercise is effective for improving physical functioning in patients with dementia.

Non-Pharmacologic & Non-Exercise Interventions to Improve Cognitive Functioning

- Previous systematic review indicated that "cognitive training" is not effective in patients with dementia.
- Recent RCT suggests CST (up to 7 weeks) is effective for improving cognitive function and quality of life in patients with dementia.

Primary Prevention (Delaying the Onset of Dementia):

Physical Exercise

- Long-Term Outcomes
    - Regular leisure time physical activity in midlife is associated with a reduced risk of dementia in later life (mean followup 21 years).
- Short-Term Outcomes
    - Regular physical activity in seniors is associated with a reduced risk of cognitive decline (mean followup 2 years).
    - Regular physical activity in seniors is associated with a reduced risk of dementia (mean followup 6-7 years).

Non-Pharmacologic & Non-Exercise Interventions

- For seniors with good cognitive and physical functioning:
- Evidence that cognitive training for specific functions (memory, reasoning and speed of processing) produces improvements in these specific domains
- Limited inconclusive evidence that cognitive training can offset deterioration in the performance of self-reported IADL scores and performance assessments

Social Isolation

Although effective interventions were identified for social isolation and loneliness in the community dwelling elderly, they were directed at specifically targeted groups and involved only a few of the many potential causes of social isolation. Given the key role that informal caregivers have in supporting the elderly in the community, little is known on how to impact on their social isolation and other burdens imposed on them with their care giving duties. The evidence on technology assisted interventions and their affects on social health and well being of the elderly and their caregivers is limited but increasing demand for home healthcare and the need for efficiencies warrants further exploration. Research efforts in interventions for social isolation in the community dwelling elderly need to be more broadly based in order to develop effective, appropriate and comprehensive strategies for at risk populations.

Overall Conclusions

- There is moderate to high quality evidence that interventions that treat or reduce the risk of falls, urinary incontinence, dementia and social isolation can improve health outcomes in the community-dwelling elderly
- There is moderate to high quality evidence that regular exercise can significantly improve health outcomes in community-dwelling elderly through the primary or secondary prevention of falls, urinary incontinence (PFMT), dementia and social isolation.
- Low quality or limited evidence exists and therefore no conclusions as to the effectiveness of the following interventions in the Ontario senior population can be made:
  - Psychotropic medication withdrawal to prevent falls
  - Multicomponent interventions to prevent falls and fall-related injuries in high risk elderly
  - Gait stabilizing device to prevent outdoor falls
  - Caregiver dependent behavioural techniques for UI (prompted voiding)
  - Rehabilitation for hearing loss (Hearing aids)
  - Respite Care for caregivers of seniors with dementia
  - Cognitive stimulation therapy (CST) for seniors with dementia
  - Cognitive training for seniors with good cognitive function
  - Focus/support group activities for seniors on wait lists for senior apartments

OHTAC Recommendation

General Recommendations

- Exercise Programs:
  - The province engage in high profile health promotion activities to encourage regular exercise for the community-dwelling elderly.
  - The province build on existing strategies and adopt new innovative strategies that promote ease of access to exercise/exercise programs for community-dwelling elderly.

- Caregiver-directed Programs:
  - Given the key role that caregivers play in sustaining elderly living in the community, education, support and relief programs for caregivers (as specified in the MAS systematic review) should be a priority.

Falls and Fall-Related Injuries

In addition to exercise, the following interventions should be made available or promoted for use by community-dwelling elderly:

- Environmental modifications in high risk populations
- Vitamin D + Calcium Supplementation in women
- Use of gait stabilizing device outdoors in mobile elderly

Urinary Incontinence

The province should consider increasing access to nurse continence advisors, possibly through multimodal community-based clinics that offer multicomponent (including PMFT) behavioural interventions.

Dementia

In addition to exercise for the primary and secondary prevention of dementia, the following interventions should be made available for community-dwelling elderly and their caregivers:

Behavioural Management Interventions

- Interventions designed to help the caregiver manage the Behavioural and Psychological Symptoms of Dementia (i.e. agitation, depression, anxiety, sleep disorders)

Multicomponent Interventions

- Interventions encompassing ≥2 supportive interventions that address the complex needs of caregivers (i.e. education + counseling + behavioural management)

Social Isolation

Community-based exercise programs combined with informal opportunities to share information should be made available for community-dwelling elderly