Abstract
Behavioural Supports Ontario (BSO) was launched to enhance the healthcare services for Ontario’s seniors, their caregivers and families living and coping with responsive behaviours associated with dementia and other neurological conditions. The implementation of the program varied across and within the local health integration networks (LHINs). By 2015, there were three BSO models operating within the long-term care (LTC) home sector: in-home BSO teams, a mobile team that serves multiple LTC homes within a sub-area of a LHIN and a LHIN-wide mobile team that provides services to all homes. A survey was undertaken to identify the differences among the BSO models of care in relation to care planning, collaboration and team building and home-level resident outcomes. We found that three years after implementation, LTC staff reported that the in-home BSO model out-performs the mobile team across all key measures. There is a role for mobile teams to provide expertise and sharing of best practices across the regions, but future policy and funding should focus on supporting the development of in-home BSO teams.

Background
Behavioural Supports Ontario (BSO) began in 2010 to enhance the healthcare services for Ontario’s seniors, their caregivers and families living and coping with responsive behaviours associated with dementia, mental illness and other neurological conditions. Responsive behaviours are actions, words and gestures that are often intentional, that express something important about their personal, social or physical environment. At times, these behaviours can be aggressive, which can cause distress to the residents and those around them. It can often be difficult to identify the triggers and meaning of these behaviours, which is why BSO teams are important to providing quality care to seniors living with dementia.

BSO provides services to individuals living in long-term care (LTC) homes, independent living settings and acute care environments. This article is focused on the BSO supports implemented in LTC, where more than 46% of the 100,000-plus residents cared for each year exhibit responsive behaviours or are at risk (CIHI 2015).

The province initially invested $40 million to support this initiative across Ontario. There was wide variation in the way the funds were allocated, based on demographic and population health statistics related to the over 65 and “at risk” population in each local health integration network (LHIN). Each LHIN determined its own implementation of the BSO program and rolled-out different models, training and support for BSO staff, and focused on different partnerships among health service providers and community agencies.
By 2015, three distinct BSO models were operating within the LTC sector:

1. In-home BSO teams are where a team of one or two BSO staff, typically a registered nurse (RN) or registered practical nurse (RPN) and a personal support worker (PSW), works on-site and is dedicated to the residents of one LTC home.
2. A sub-LHIN mobile team model is where multiple LTC homes within a LHIN sub-area are served by one BSO team that travels to homes to provide service.
3. A mobile team model is where the team is located in one LTC home but serves all LTC homes across the LHIN.

The Ontario Long-Term Care Association conducted a survey in 2015 to identify any differences (or not) among the three BSO models of care in relation to key aspects of care, including care planning and provision, collaboration and team building and home-level resident outcomes. An analysis was also conducted to compare homes with in-home BSO teams against homes with mobile BSO teams on restraints, antipsychotics and aggressive behaviour metrics to determine if there are any significant differences among the groups.

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**Methodology**

The Ontario Long-Term Care Association conducted a voluntary survey between May 19 and June 1, 2015, using a 5-point Likert scale measuring agreement/disagreement with statements related to aspects of care, and yes/no responses to impact statements related to admission and management of responsive and chronic mental health behaviours. All 440 LTC homes that belong to the Association were invited to complete the online survey. There was a response rate of 59% (259 homes), indicating significant interest in BSO teams and the results of this survey.

The survey outlined the three BSO funding models and respondents were asked to identify the funding model applied to their home:

1. Funding was provided directly to the LTC home for RN, RPN and PSW teams. Fifty percent of the sample homes (125) are identified as BSO Model 1, also described as in-home teams.
2. Funding was provided to a sub-LHIN area for multiple homes to create and share a mobile staffing of an RN, an RPN or/and a PSW hosted by a LTC home to serve the homes in the sub-region. Thirteen percent of the sample homes (32) are identified as BSO Model 2, also described as mobile teams that serve a sub-LHIN area.
3. Funding was provided to a single LTC home to create a single mobile team to serve all LTC homes across the LHIN. Thirty-eight percent of the sample homes (96) are identified as BSO Model 3, also described as mobile teams that serve an entire LHIN.

In addition to the survey, we completed a separate analysis examining key metrics drawn from key administrative databases. Ontario has the largest, longest-running data collection and reporting system in Canada for quality of care information on LTC homes and has been publicly reporting on various dimensions of quality since 2009. These data are used for public reporting on quality indicators by the Canadian Institute for Health Information (CIHI) and Health Quality Ontario (HQO).

We chose to examine two indicators related to safe, effective care: the appropriate use of antipsychotics and the use of physical restraints. High uses of antipsychotics or restraints are associated with increased risks of negative outcomes and issues of poor quality of life and loss of dignity. (HQO 2015) Antipsychotics and physical restraints are sometimes inappropriately used to manage behavioural symptoms associated with Alzheimer’s and other dementias (HQO 2015), which could be more appropriately treated with behavioural management strategies such as those used by BSO.

We also examined the weighted averages of resident scores for the InterRAI Aggressive Behaviours Scale (ABS). We then compared performance trends between homes with in-home and mobile teams between 2012 and 2014. The BSO program was fully implemented provincially in 2012.

The ABS score is a measure of aggressive behaviour based on the occurrence of verbal abuse, physical abuse, socially disruptive behaviour and resistance to care. Scale scores range from 0 to 12, with higher scores indicative of greater frequency and diversity of aggressive behaviour. A score of 1 to 4 on the ABS indicates mild to moderate aggressive behaviour, whereas a score of 5 or more represents the presence of more severe aggression. This scale has been validated against the Cohen Mansfield Agitation Inventory (InterRAI 2015).

We identified three LHINs where in-home BSO programs were implemented (Mississauga Halton, Central West and Waterloo Wellington, with 87 homes total) and five LHINs where mobile BSO programs were implemented (North Simcoe Muskoka, Hamilton Norfolk Haldimand and Brant, Central, Toronto Central and South East, with 235 homes).
Findings

Almost three years after implementation, LTC staff directly involved in ensuring the safety and comfort of residents with dementia have strongly indicated that the “in-home” model outperforms the mobile teams on all key aspects of care (Figure 1), including care planning and provision, collaboration and team building and home-level resident outcomes.

Care planning and provision

More than 80% of the respondents agreed that an in-home BSO team (Model 1) has:

- enabled point-of-care education on successful interventions for care staff;
- supported staff to assess and determine individualized interventions to manage resident behaviours; and
- provided structure for internal support for homes’ behaviour management program.

Fewer than 40% of the respondents agreed that mobile teams (Models 2 and 3) have supported or enabled these functions that support care planning and provision. Fifty-nine percent of the homes with mobile teams within a sub-LHIN area (Model 2) and 43% of the homes with a mobile team that serves an entire LHIN (Model 3) agreed.

Collaboration and team building

The in-home (Model 1) outperforms on all measures related to collaboration when compared with the mobile teams (Models 2 and 3).

Respondents indicated that the in-home BSO teams (Model 1) helped the care team staff to feel more confident about keeping residents safe during daily routines (78%), provided accessible and comprehensive resident assessments that the care team can implement (84%) and sought input from residents and family in completing assessments (89%).

By contrast, respondents reported that mobile teams were significantly less likely to help the care team staff feel confident about keeping residents safe during daily routines (23% for Model 2 and 32% for Model 3). Respondents reported that mobile teams were also less effective with assessments. A smaller number of respondents in homes served by mobile teams reported that the BSO team provided accessible and comprehensive assessments that the residents’ care team can implement (31% for Model 2 and 47% for Model 3). Homes served by mobile BSO teams also reported that fewer teams sought input from residents/families in completing assessments (40% for Model 2 and 57% for Model 3).

Home-level resident outcomes

More than 70% of the respondents reported that in-home BSO teams (Model 1) have helped to better manage residents with chronic mental health problems, helped families better understand challenging and responsive behaviours and contributed to quality improvement, specifically related to improvements in residents’ behaviour. Fewer than 30% of the respondents with mobile teams, either Model 2 or 3, reported a positive impact in these areas.

The use of restraints and the inappropriate use of antipsychotics have been declining in Ontario LTC homes in recent years (CIHI 2015). Based on our analysis, homes with in-home BSO teams have significantly lower rates of both restraint use (Figure 2) and inappropriate antipsychotic use (Figure 3).

Although there were no significant differences in the restraints indicator in 2012 between the homes with mobile BSO teams and those with in-home teams, they were significantly different by 2014 ($p < 0.05$). Similar results were found for the antipsychotics indicator ($p < 0.05$).

Between 2012 and 2014, homes with in-home BSO teams have reduced aggressive behaviours (with an ABS score of 6 or more) from 7.2% to 5.8%. Whereas, homes that are serviced by mobile teams only showed a decrease from 6.9% to 6.6% in the same period.
Limitations
There are many challenges in using surveys for research because of the potential for bias. We are aware of the real potential for response bias in a membership survey, especially where strong points of view exist regarding the importance of the BSO program to resident quality of life and safety. Testing of survey questions was limited to ensuring clarity and comprehensiveness.

Discussion
Survey respondents strongly indicated that dedicated support for residents with Alzheimer’s and other dementias is necessary to reduce the distress of the residents affected and ensure the safety and comfort of all residents. A review of the literature on effective care and management of behaviours supports the notion that “consistency of care” provides higher-quality care. The impact of adopting practices that support consistency of care can be far-reaching, and have been associated with changing the culture of care from a focus on carrying out custodial tasks to a focus on the individual, with the residents and/or their family integrated into and directing care. “Consistency of care” is a staffing approach supported by research as the best way to maximize opportunities for meaningful interactions between staff and residents, including those with Alzheimer’s and dementia, resulting in greater mutual trust (Chappell et al. 2014). HQO, the government agency tasked with monitoring quality in Ontario, has encouraged the LTC sector to adopt this model of care, as it allows staff to know the residents better and focus on resident preferences and routines, which improves the quality of life of residents and assists in the early detection of emerging health problems (HQO 2014).

The ability of the in-home BSO teams to provide timely assessments and individualized interventions that are effective based on the culture and operations of the home is a major advantage. In-home BSO teams work within the home, so they are able to work flexible hours and vary the timing of their shifts to meet the needs of residents. They are also able to build capacity in the home, so that other staff have the knowledge and skill to manage responsive behaviours. Wait times of more than 10 days were identified by approximately one-quarter of the survey respondents relying on the BSO mobile teams. Generally, mobile teams are only available during weekday and daytime hours, which can be challenging for homes when the responsive behaviour does not occur when the mobile teams are able to provide service to their home.

Our secondary analysis of publicly reported quality indicators and weighted average ABS scores has limitations, owing to the limited number of LHINs and homes analyzed. These data do not consider other potential regional or cultural differences that may be impacting these data. However, it does indicate a potential correlation between the contribution of in-home BSO teams to overall improvements in these quality metrics. The homes included in the sample with an in-home BSO team outperformed, on average, the Ontario-wide result for all three metrics studied. Further studies are required to understand the factors on how in-home BSO teams contribute to the improvement of the publicly reported quality indicators.

Conclusion
Understanding the success factors arising from multi-pronged approaches to the assessment and management of responsive behaviours is fundamental to sustainability of the BSO program.

Almost three years after implementation, LTC staff directly involved in ensuring the safety and comfort of residents with Alzheimer’s and dementia have strongly indicated their experience; in-home BSO teams outperform mobile teams across all key measures related to care planning and provision, collaboration and team building and resident outcomes.

Our further analysis of publicly reported indicators and resident ABS scores in homes with in-home or mobile teams
indicates that in-home teams contribute to overall improvements in the quality metrics of restraints, antipsychotics and weighted average ABS scores.

In the 2016 provincial budget, the government committed another $10 million a year for the next three years for the BSO program. Further study to examine success factors related to both in-home and mobile teams would yield valuable information to guide the scale and spread of the BSO program and ensure that these dollars are spent on the most effective and appropriate model.

References


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The Ontario Long-Term Care Association is the largest association of long-term care (LTC) providers in Ontario and the only association that represents the full mix of LTC operators – private, not-for-profit, charitable and municipal. Our members provide care and accommodation services to over 70,000 residents annually in nearly 440 LTC homes in communities throughout Ontario.