Assessment and management of foot ulcers for people with diabetes: Using evidence to support wound care programs in long-term care

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Article points
1. Over a quarter of residents in long-term care homes have diabetes.
2. In Ontario, legislation requires the development of wound care programs in long-term care homes.
3. The Registered Nurses’ Association of Ontario best practice guideline provides a useful framework for meeting legislation and improving quality of care.

Key words
- Best practice
- Foot ulcer
- Long-term care home

Since the publication of the Canadian Diabetes Association clinical practice guidelines in 1998, the prevalence of diabetes in Ontario has increased steadily in all age groups (Lipscomb and Hux, 2007). In Ontario, about 6% of the adult population have diabetes. Over the next decade an aging population will be responsible for an 8% increase in the number of people diagnosed with diabetes in Ontario (Canadian Diabetes Association, 2009).

In 2012, the Canadian Institute of Health Information (CIHI) reported that people with diabetes comprise 27% of Ontario long-term care (LTC) home residents (CIHI, 2013). It is well recognized that diabetic foot ulcers (DFU) are a significant complication of diabetes (RNAO, 2013). However, the number of residents with DFUs living in Ontario LTC homes is not known. This increase in the prevalence of diabetes, combined with the number of LTC residents living with diabetes, supports the need for LTC homes to focus attention on preventing and managing DFUs. Few people with DFUs receive optimal wound management (Boulton et al, 2004) and those affected suffer from pain, are at increased risk of infections and other serious complications including some form of amputation (RNAO, 2013). Previous DFUs are a strong predictor of future ulcers, and up to 34% of people affected develop another ulcer within one year after healing (Frykberg et al, 2000).

The prevention, assessment and management of DFUs is a specific area of concern for Ontario LTC homes. Understanding the evidence that informs the management of DFUs can influence and support the development of a comprehensive wound care program in LTC.

Wound care program requirements for Ontario long-term care homes
In Ontario, LTC homes are governed by legislation in the Long-Term Care Homes Act, 2007 (LTCHA) which is designed to ensure that people living in LTC receive safe, consistent, high
quality resident-centred care (Government of Ontario, 2010). In 2010, the government initiated enforcement of this legislation that includes specific requirements for wound care programs. Ongoing evaluation and revisions to these programs are monitored through government inspections aimed at supporting the LTC sector in its effort to deliver quality evidence-based care.

The management of diabetic foot ulcers is complex and many factors can impact the success of a LTC home’s wound care program and consequent resident outcomes. Improved outcomes are often dependent upon the appropriate allocation of material and human resources and other factors including the use of evidence-based assessment tools, resident-centred treatment plans and staff knowledge (RNAO, 2013).

Table 1. Alignment among select best practice guideline (BPG) recommendations from the second edition of the Assessment and Management of Foot Ulcers for People with Diabetes, examples of requirements in the Long-Term Care Homes Act and examples of supporting evidence in the BPG.

<table>
<thead>
<tr>
<th>RNAO BPG recommendation and level of evidence (RNAO, 2013)</th>
<th>Examples of regulations made under the Long-Term Care Homes Act (Ontario Regulation 79/10)</th>
<th>Examples from the discussion of evidence (RNAO, 2013)</th>
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<tr>
<td>Recommendation 3.0 Implement a plan of care to mitigate risk factors that can influence wound healing. Level of Evidence: IV</td>
<td>50. (2) Every licensee of a long-term care home shall ensure that … (b) a resident exhibiting altered skin integrity, including skin breakdown, pressure ulcers, skin tears or wounds … (ii) receives immediate treatment and interventions to reduce or relieve pain, promote healing, and prevent infection, as required.</td>
<td>People with diabetes often have a combination of risk factors that may influence the condition of their skin and wounds. Based on a review of the literature, the RNAO BPG expert panel identified risk factors that may affect wound healing. A summary table is provided in the guideline (RNAO, 2013).</td>
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<td>Recommendation 3.2 Redistribute pressure applied to foot ulcer(s) by the use of offloading devices. Level of Evidence: Ia</td>
<td>50. (2) Every licensee of a long-term care home shall ensure that … (c) equipment, supplies, devices and positioning aids are readily available at the home as required to relieve pressure, treat pressure ulcers, skin tears or wounds and promote healing.</td>
<td>Ninety-four percent of diabetic foot ulcers occur at areas of increased pressure (Fleischli et al, 1997). Calluses from repeated friction and contact due to increased plantar pressures can predispose the skin to ulceration. Thus, pressure alleviation is integral to prevent the formation of calluses and to promote ulcer wound healing (RNAO, 2013).</td>
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<td>Recommendation 6.3 Develop processes to facilitate the referral of clients with diabetic foot ulcers to local diabetes resources and healthcare professionals. Level of Evidence: IV</td>
<td>30. (1) 1. There must be a written description of the program that includes its goals and objectives and relevant policies, procedures and protocols and provides for methods to reduce risk and monitor outcomes, including protocols for the referral of residents to specialized resources where required.</td>
<td>Organizations play a pivotal role in advocating and facilitating access to diabetic foot ulcer care services. This role includes advocating for increased availability of and accessibility to diabetic foot ulcer care (RNAO, 2013). Through a retrospective review of the literature, Frykberg (1998) reported a reduction in non-traumatic amputation rates ranging from 58 to 100% after the implementation of an inter-professional approach to foot care.</td>
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The LTCHA specifies the types of resources LTC homes must incorporate into their wound care program to ensure that prevention and management strategies are in place, including features that promote skin integrity, prevent the development of wounds and include evidenced-based interventions. The LTCHA also requires that wound care programs are evaluated on an “ongoing basis and at least, annually and in accordance with evidence-based practices” (Government of Ontario, 2007).

Using evidence to support program enhancement

The second edition of the Assessment and Management of Foot Ulcers for People with Diabetes (RNAO, 2013) best practice guideline (BPG) provides the evidence needed by LTC homes to meet LTCHA expectations. The BPG contains a summary of evidence-based recommendations, in the areas of practice, education, organization and policy. Inter-professional teams can use this guideline to find evidence-based recommendations and resources that inform program development and revision.

The evidence that informs the recommendations in the guideline can be used to support resident care decisions, enhance practitioner knowledge and assist organizations with system improvements.

Recommendations from the second edition of the Assessment and Management of Foot Ulcers for People with Diabetes BPG align with specific requirements of the LTCHA. Evidence supporting the recommendations provides credible information that informs the development of a comprehensive wound care program. Table 1 illustrates the alignment among select BPG recommendations, examples of wound care program requirements from the regulations of the LTCHA, and examples of supporting evidence from the BPG.

Support for the implementation of evidence-based practice in LTC

Support for the implementation of the second edition of the Assessment and Management of Foot Ulcers for People with Diabetes (RNAO, 2013) BPG is available through: the RNAO Council of the Federation educational webinars, a health education fact sheet, Best Practice Champion® workshops, the second edition of the RNAO Toolkit: Implementation of Best Practice Guidelines (RNAO, 2012), annual Wound Care Institutes, and engagement with the RNAO LTC Best Practices Program.

The Council of the Federation, comprised of Canada’s premiers and territorial leaders, endorsed the adoption of the second edition of the Assessment and Management of Foot Ulcers for People with Diabetes (RNAO, 2013) BPG to promote evidence-based care on a national level. A series of national webinars have been offered to support the dissemination of relevant information and experience regarding the implementation of the BPG.

A health education fact sheet, Managing Foot Ulcers in People with Diabetes (RNAO, 2013) is a supplement to the BPG. It provides information to increase client knowledge and involvement in health-care decisions. Nurses and other health-care professionals can use the fact sheet as part of client education programs.

Best Practice Champion® workshops, available in Ontario, introduce participants to RNAO BPGs and the second edition of the RNAO Toolkit: Implementation of Best Practice Guidelines (Toolkit) (RNAO, 2012). Champions learn how to assess their organization’s
readiness for guideline implementation, engage stakeholders and develop an implementation plan. The Toolkit is a free online resource that assist inter-professional teams in planning, implementing and evaluating guideline implementation. The RNAO Wound Care Institute provides an opportunity for nurses and other health professionals to learn about best practices through interaction with experts, case studies and hands-on workshops.

In 2012, RNAO formed an online Wound Care Community of Practice (COP) to provide a forum for LTC nurses who are past participants to build on knowledge gained at the institute. The COP is a provincial forum for debate and sharing among nurses as a way to gain knowledge in guideline implementation. In addition to the Wound Care COP, all LTC homes across the province are invited to participate in webcasts on topics relevant to wound care management in LTC.

The LTC Best Practices Program is a key support that assists Ontario LTC homes to use RNAO’s evidence-based resources. To facilitate BPG implementation, RNAO LTC Best Practice Co-ordinators work directly with these homes to enhance the quality of care for residents and create a culture of evidence-based practice through capacity building and integration of BPGs in practice. This program is funded by the Government of Ontario.

Implications

LTC homes implementing the second edition of the Assessment and Management of Foot Ulcers for People with Diabetes BPG can use the recommendations and supporting evidence within the guideline to inform resident care decisions and develop and revise their wound care program.

This has significant implications in two ways. At the clinical level, integrating the BPG into practice provides healthcare professionals with the information needed to provide resident-centred, evidence-based care that reduces risks and can result in improved outcomes for residents with DFUs.

At the organizational level, the evidence, tools and resources in the BPG combined with support for implementation, assists LTC homes to develop, monitor and evaluate their wound care program and meet legislated requirements.

Jointly, these efforts are designed to improve the quality of care and outcomes for residents in Ontario LTC homes.


Canadian Institute of Health Information (2013) When a Nursing Home is Home: How do Canadian Nursing Homes Measure up on Quality? Canadian Institute of Health Information, Ottawa


Registered Nurses’ Association of Ontario (2013) Assessment and Management of Foot Ulcers for People with Diabetes (2nd edn). RNAO, Toronto