INTRODUCTION

Diabetes is a serious health problem that affects a growing number of Canadians. The population is aging, physical activity is decreasing, rates of obesity are rising, and all are contributing to the prevalence of this chronic condition.

Diabetes is caused by both hereditary and environmental factors. The rate of diabetes has been increasing steadily in Canada over the past decade. Close to 5% (1.3 million people) of Canadians aged 12 and older reported having diabetes in 2005, compared to 3% a decade ago, in 1994/95.1

In Saskatchewan, the diabetes prevalence rate also continues to increase steadily each year. Provincial rates have risen from 29.2 persons per thousand in 1996/1997 to 52.0 persons per thousand in 2004/2005. (Note: Increase is not based solely on prevalence, but also on methodology changes in surveillance.) Trends indicate approximately 4,500 - 5,000 new incidents of diabetes in Saskatchewan each year. Data indicates that in 2004/05, there were approximately 59,000 persons diagnosed and living with diabetes in Saskatchewan. Added to this are an unknown number of persons with undiagnosed diabetes. The prevalence of diabetes and the many costly and complex complications associated with it affect how this chronic condition is managed and have wide spread effects in human, economic and social terms.

Though many serious and costly complications affect individuals with diabetes, such as heart disease, kidney failure and blindness, foot complications take the greatest toll. The diabetic foot is a significant economic problem, especially if amputation results in prolonged hospitalization and rehabilitation. The corresponding cost for the individual include costs associated with cost of care and supplies, indirect costs due to loss of productivity, and loss of quality of life.

Although amputation procedures also occur in persons without diabetes, data analysis shows that the amputation rates for persons with diabetes are much higher than the amputation rate for persons without diabetes as shown below:

<table>
<thead>
<tr>
<th>Amputation Rates for Individuals in Saskatchewan with and without Diabetes, 2004/2005*</th>
<th>People with Diabetes</th>
<th>People without Diabetes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of People</td>
<td>People per 100,000 population with Diabetes</td>
<td>Number of People</td>
</tr>
<tr>
<td>Amputation - above knee</td>
<td>62</td>
<td>105.4</td>
<td>34</td>
</tr>
<tr>
<td>Amputation - below knee</td>
<td>72</td>
<td>122.4</td>
<td>18</td>
</tr>
<tr>
<td>Amputation - foot</td>
<td>88</td>
<td>149.6</td>
<td>19</td>
</tr>
<tr>
<td>Amputation - toe(s)</td>
<td>51</td>
<td>86.7</td>
<td>49</td>
</tr>
</tbody>
</table>

*Rates were determined using the hospital separations and physician services health records
Source: Population Health Branch, EREU
Most amputations relating to diabetes begin with a foot ulcer. Diabetic foot ulcers as a result of neuropathy or ischemia are common. In developed countries, up to 5% of people with diabetes have foot ulcers, and one in every six people with diabetes will have an ulcer during their lifetime.\textsuperscript{2} Foot problems are the most common cause of admission to hospital for people with diabetes.

In most cases, diabetic foot ulcers and amputations can be prevented. A substantial number of studies have indicated that 85% of all diabetes-related lower extremity amputations are preceded by a foot ulcer, and that amputation rates can be reduced by more than 50% with an interdisciplinary team approach (see Appendix 1 for example of interdisciplinary team members), good diabetes control and well informed self care.\textsuperscript{2} There is strong evidence to indicate that foot care is best delivered when it is provided by an interdisciplinary team. This should closely involve the person with diabetes and his or her family, along with health care professionals from different specialties. The prevention and treatment of diabetic foot problems includes the following:

- Annual inspection of the foot
- Identification of the foot at risk
- Education of people with diabetes and healthcare professionals
- Appropriate footwear
- Rapid treatment of all foot problems

Only through an interdisciplinary team approach, addressing the diversity of possible foot problems in people with diabetes, can the desired reduction in amputation rates be achieved.
BACKGROUND

Saskatchewan Health, podiatric staff from Saskatchewan Regional Health Authorities and the Saskatchewan Institute of Applied Science and Technology (SIAST) Nursing Division recently published “Risk Identification of the Foot in Diabetes.” This publication was distributed to all Health Regions for the purpose of teaching health professionals how to assess and categorize risks of the foot for people with diabetes.

In 2004, Saskatchewan Health provided funding for development and implementation of a diabetes foot program. Specifically, Saskatchewan Health requested that the following be developed:

- A standardized interdisciplinary strategy of evaluating wounds;
- Standardized guidelines for effective treatment of the diabetic foot;
- Decision-making tools for clinicians to manage core aspects of foot care in persons with diabetes;
- Evidence-based tools that support clinical decision-making; and
- A template for local adaptation and implementation of a structured system of diabetes foot care.

A small working group listed on page 6 comprised of podiatrists, diabetes educators, wound care nurses, family physicians, vascular surgeon, home care personnel and the Provincial Diabetes Coordinator of Saskatchewan Health was convened in November 2005. The previous work pertaining to the management of diabetic foot ulcers undertaken by the Saskatoon and Regina Qu’Appelle Health Regions, and the wound care guidelines developed by the Saskatchewan Health Quality Council, were utilized in the development of “The Clinical Practice Guidelines for the Prevention and Management of Diabetes Foot Complications”.

These clinical practice guidelines are developed from the references listed in Appendix 11. They are intended to provide evidence-based guidance for general patterns of practice and not to necessarily dictate the care of a particular patient. Although the intent of the guideline developers is to be as comprehensive as possible, they realize that it is, in fact, a work in progress and will require future modification as new knowledge becomes available.

These guidelines are intended for use by all health care professionals for the adult population with diabetes. An interdisciplinary approach should be used for the prevention and management of diabetes foot complications. It is recognized that each health care professional brings a different level of knowledge/expertise to this area.

The goals of this document are to introduce a common vocabulary and consistency of practice for using current evidence and best practice standards found in the literature. This document is meant to assist health professionals in teaching people with diabetes self-care concepts and techniques. These guidelines include: an outline of normal wound healing, possible impediments to the process, and some guidelines for dressing selection; information required for the prevention of diabetic foot complications; materials for use in teaching individuals and their families about diabetic foot.
ulcer/wound management specifics. There is also a series of appendices that contain educational materials for health care providers and for people living with diabetes.

Educational sessions facilitating the implementation of these clinical practice guidelines are recommended. The Diabetes Foot Working Group is currently developing an implementation strategy for these sessions.

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