



Guelph Family Health Team

Our Best Foot Forward:

Setting the Standard for Evidence Based Multi-Disciplinary
Approach for Foot Care Management

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Disclosure of Commercial Support

- **This program has not received financial support.**
- **This program has not received in-kind support**
- **Potential for conflict(s) of interest:**
 - No Conflicts of Interest
- **Relationships with commercial interests:**
 - No Commercial Support

What is Foot Care?

- Toe nail clippings
- Esthetical work
- Pampering
- Nail Polish
- Foot Soaks



The following is the reality of a foot care clinic....



Reality!

Why do you Care?

LHIN: 2006-2011

- 618/10,000 adults with diabetes had 1 hospital visit for skin/ soft tissue infection or foot ulcer in Ontario
- 74/10,000 adults with diabetes had amputation of lower extremity in Ontario
- 30% of patients with amputation died within 1 year
- 69% did not survive past 5 years

Across Canada: 2011-2012

- **2066 amputations** as a result of complications from foot wounds in adult patients with diabetes.

Note: highest prevalence of wounds occurred in age group of 65-74

Cost: 2008

Treatment of a chronic wound: \$10,376/ patient

Treatment of an acute wound: \$11,840/ patient

Average time to closure of an acute wound with no complications: 165 days

Prevention: 85% of diabetic foot amputations with early screening

LHIN results

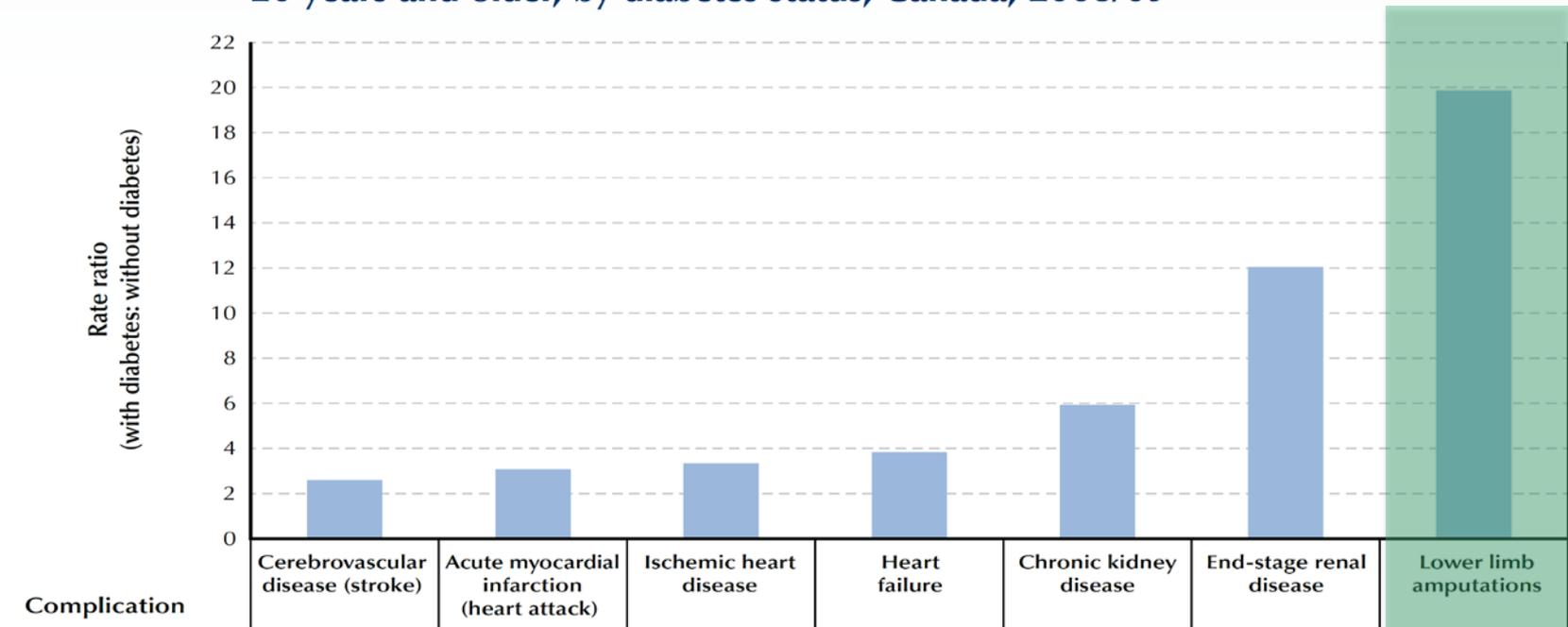
Table 13.3: Number and rate (per 100,000) of hospitalizations for common infection, skin/soft tissue infection or amputation among Ontarians with diabetes, by LHIN, 2009/10 and 2010/11

LHIN	2009/10			2010/11			2011/12			Trend
	#	Rate per 100,000		#	Rate per 100,000		#	Rate per 100,000		
		Crude	Age-adjusted*		Crude	Age-adjusted*		Crude	Age-adjusted*	
Erie St. Clair	1,755	3,654	3,469	1,973	3,850	3,631	2,108	3,881	3,644	▲
South West	2,367	3,742	3,495	2,832	4,167	3,887	3,054	4,235	3,941	▲
Waterloo Wellington	1,346	3,165	3,072	1,490	3,216	3,107	1,574	3,171	3,040	▼
HNHB	3,933	4,051	3,778	4,326	4,166	3,884	4,532	4,137	3,798	▲
Central West	1,588	2,527	3,008	1,851	2,699	3,167	1,989	2,690	3,096	▲
Mississauga Halton	1,855	2,577	2,680	2,110	2,689	2,766	2,308	2,746	2,790	▲
Toronto Central	2,635	3,512	3,238	2,901	3,621	3,344	3,064	3,614	3,310	▲
Central	3,096	2,673	2,569	3,387	2,713	2,595	3,665	2,740	2,609	▲
Central East	3,440	2,871	2,837	3,721	2,894	2,837	4,114	3,009	2,924	▲
South East	1,272	3,534	3,349	1,453	3,756	3,560	1,578	3,827	3,609	▲
Champlain	2,799	3,583	3,478	3,175	3,788	3,651	3,390	3,811	3,648	▲
North Simcoe Muskoka	1,179	4,174	4,012	1,234	4,065	3,862	1,373	4,240	4,013	▲
North East	2,057	4,074	4,033	2,296	4,265	4,179	2,562	4,514	4,359	▲
North West	1,209	6,087	6,252	1,252	5,900	6,028	1,378	6,109	6,197	▼
LHIN unknown	57	-	-	49	-	-	61	-	-	
ONTARIO	30,588	3,355	3,268	34,050	3,475	3,368	36,750	3,525	3,390	▲

Lowest and highest rates are bolded.

Patients with DM are 20X More Likely to be Hospitalized for Non-traumatic Limb Amputation

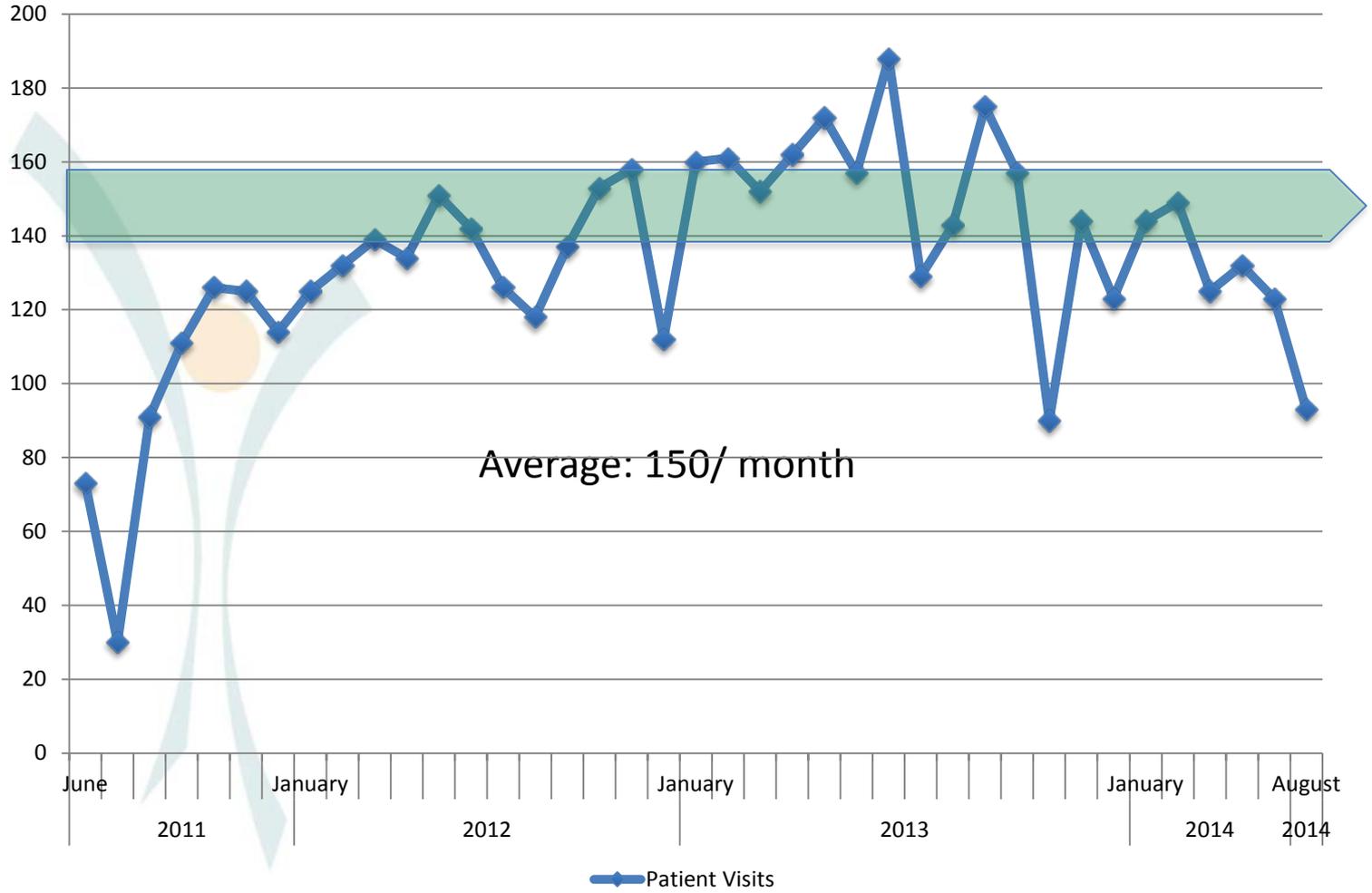
Figure 2-2. Prevalence rate ratios[†] of complications among hospitalized individuals[‡] aged 20 years and older, by diabetes status, Canada, 2008/09



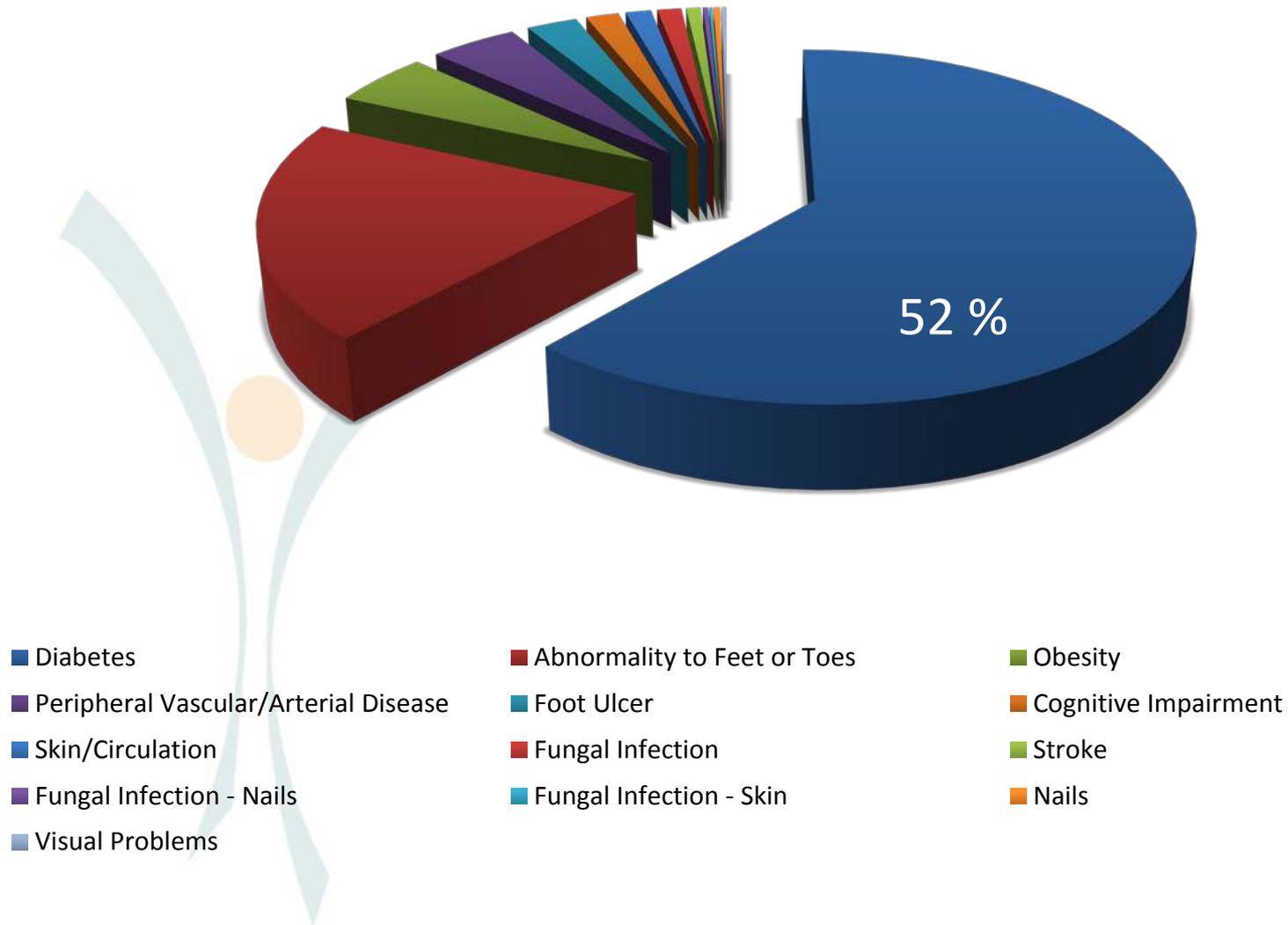
[†] Rate ratios based on rates age-standardized to the 1991 Canadian population.

[‡] A person with diabetes hospitalized with more than one complication was counted once in each category, except for cases of acute myocardial infarction, where regardless of multiple counts in the acute myocardial infarction category, the individual was counted only once under the broader ischemic heart disease category.

Foot care clinic Patient Visits



FOOT Care clinic Visits by diagnosis



Who is at Risk?

- Patients with diabetes
- Patients with vascular insufficiency (PVD)
- Patients with arterial disease (PAD)
- Patients with sensory neuropathy
- Biomechanical changes to bone structure of feet and pressure points

Contributing Risk Factors for lower leg and foot complications

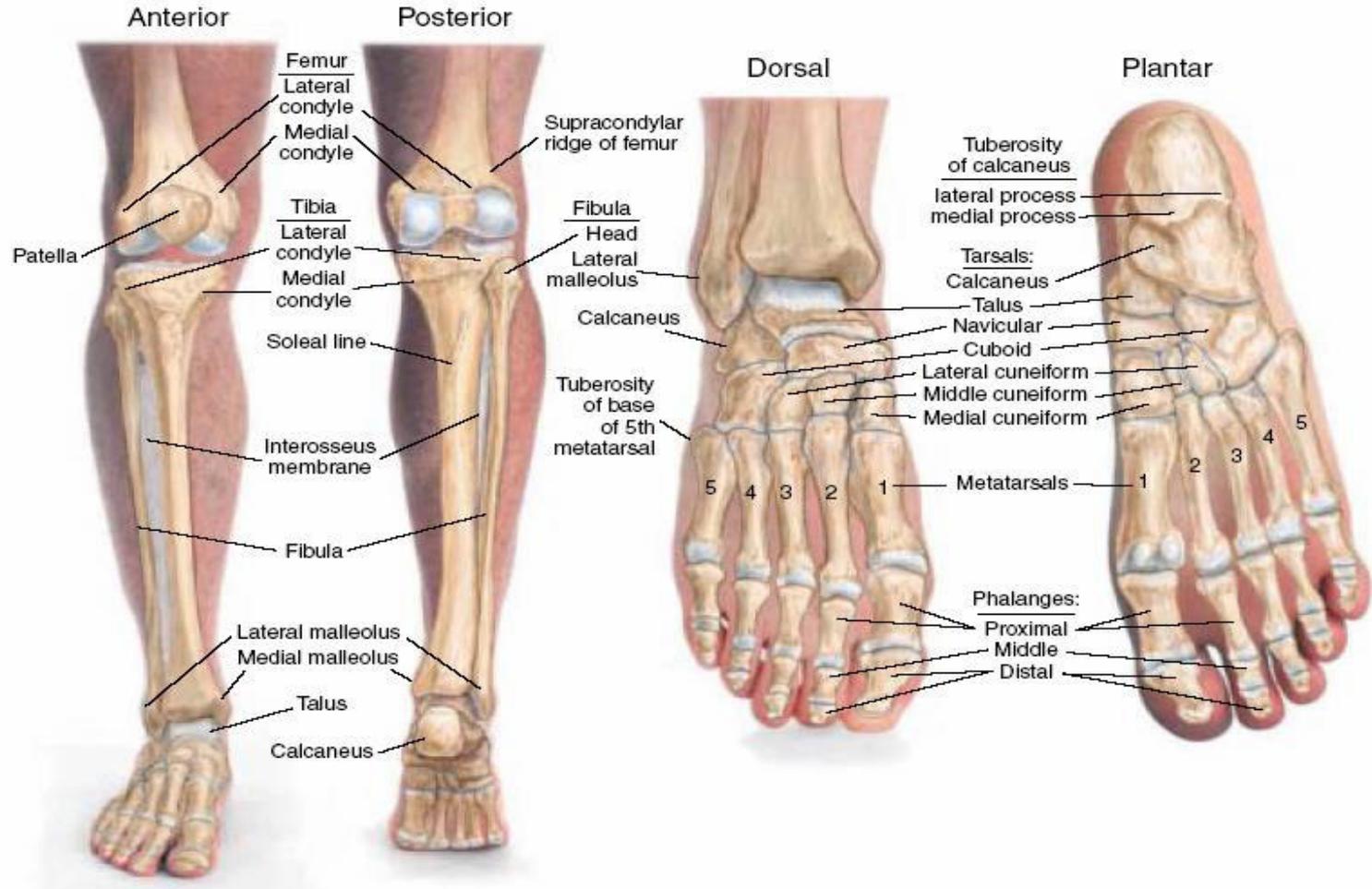
- Lack of exercise
- Uncontrolled blood glucose
- Poor blood pressure control
- Hyperlipidemia
- Smoking
- Poor dietary control
- Poor footwear
- Neuropathic sensory deficits

Below the Knee Assessment

What is assessed during a foot exam?

- Skin and Integument
- Vascular
- Neurological
- Musculoskeletal
- Pain factors
- Shoe gear

Lower Limbs and Feet



What is performed during a Foot Care Visit?

Stabilize foot care issues:

- Thin out or reduce thick nails
- Repair or pack ingrown nails
- Reduce callouses and corns
- Wound care
- Self care and education on foot wear and safety
- Compression therapy education
- Refer to community supports
- Photographic documentation

Standardized Documentation

- 60 second screening: includes monofilament exam
- Canadian Diabetes Association Guidelines 2013
- Canadian Wound Care Association
- RNAO best practice guidelines:
 - 1) Assessment and Management of Foot Ulcers for People with Diabetes
 - 2) Reducing Foot Complications for People with Diabetes

INLOW'S 60-second Diabetic Foot Screen Canadian Association of Wound Care / Association canadienne du soin des plaies

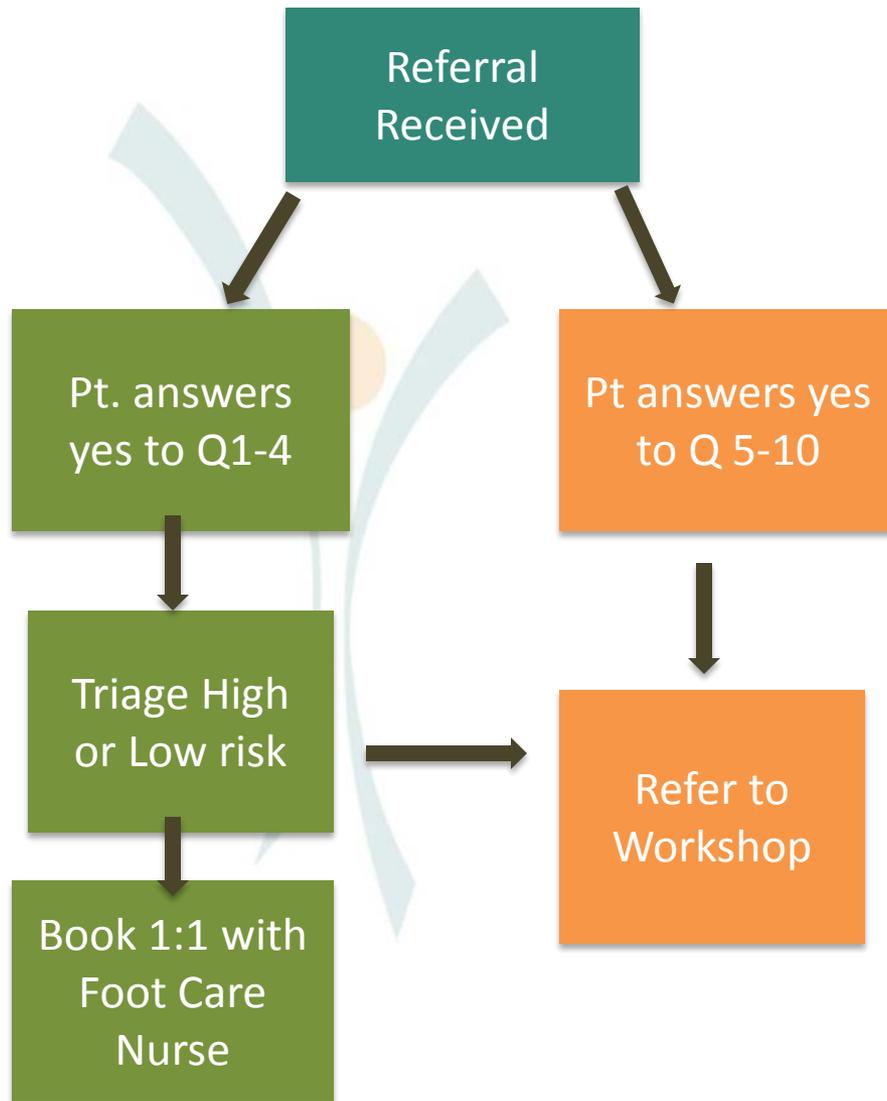
SCREENING TOOL www.cawc.net

Patient Name: _____ Clinician Signature: _____
 ID number: _____ Date: _____

Look – 20 seconds	Score		Care Recommendations
	Left Foot	Right Foot	
1. Skin 0 = intact and healthy 1 = dry with fungus or light callus 2 = heavy callus build up 3 = open ulceration or history of previous ulcer			
2. Nails 0 = well-kept 1 = unkempt and ragged 2 = thick, damaged, or infected			
3. Deformity 0 = no deformity 2 = deformity 4 = amputation			
4. Footwear 0 = appropriate 1 = inappropriate 2 = causing trauma			
Touch – 10 seconds			
5. Temperature – Cold 0 = foot warm 1 = foot is cold			
6. Temperature – Hot 0 = foot is warm 1 = foot is hot			
7. Range of Motion 0 = full range to hallux 1 = hallux limbus 2 = hallux rigidus 3 = hallux amputation			
Assess – 30 seconds			
8. Sensation – Monofilament Testing 0 = 10 sites detected 2 = 7 to 9 sites detected 4 = 0 to 6 sites detected			
9. Sensation – Ask Four Questions: i. Are your feet ever numb? ii. Do they ever tingle? iii. Do they ever burn? iv. Do they ever feel like insects are crawling on them? 0 = no to all questions 2 = yes to any of the questions			
10. Pedal Pulses 0 = present 1 = absent			
11. Dependent Rubor 0 = no 1 = yes			
12. Erythema 0 = no 1 = yes			
Score Totals =			
Screening intervals for foot ulcers and/or limb-threatening complications. Use the highest score from left or right foot. Score = 0 to 6 → recommend screening yearly Score = 7 to 12 → recommend screening every 6 months Score = 13 to 19 → recommend screening every 3 months Score = 20 to 25 → recommend screening every 1 to 3 months			
Comments: _____			

Adapted from Inlow S. A 60 second foot exam for people with diabetes. Wound Care Events 2004/2012/10-11. © CWC 2011 1010

Referral Process to Foot Care Clinic



A prevention service from

Patient's Name: _____ Age: _____

Address: _____

Referring Physician/NP: _____

Practice Site: _____

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FHT Foot Care Cost: \$20

Use this form. Items to assess appropriateness for referral to the Foot Care Specialist

Refer if patient answers "YES" to 2 or more of the following risk factors "	YES	NO
1. Diagnosis of Diabetes, peripheral vascular or arterial disease, stroke, dementia or morbid obesity (BMI>40)		
2. Foot ulcer (a wound that took > 2 weeks to heal)		
3. Age 65 or older with loss of sensation at <u>any</u> one of 4 sites: great toe, first, second and fifth metatarsal heads using 10 gram/5.07 monofilament		
4. Abnormality to feet or toe (example, claw or hammer toes, bunion, bonny prominence, Charcot's foot or joint); observed /or patient self report		
Patient's self assessment		
5. I am able to see or reach the bottom of my feet and do not have support systems in place to perform appropriate foot care and or inspection		
6. I have poor fitting footwear		
7. I check the condition of my feet regularly e.g. asks: How do you know if you a reddened area or problem with your feet? How often do you check your feet?		
8. Do you regularly report foot problems to your health care provider e.g. when you find a wound or a blister on your foot?		
9. Are you on any Anticoagulation or Anti-platelet therapy?		
10. Do you take steps to reduce risk of injury e.g. Do you walk bare feet indoors/ outdoors or check for foreign objects in shoes before wearing them or check water temperature before entering bath, etc.		
"Lower Risk" If you answered NO to items 1-4; you are at "lower risk"	"Higher Risk" If you answered YES to items 1-4; you are at "higher risk"	
If you answered YES to any of 5-10; you would benefit from a self-management health education on the Foot care		

To make a referral, print and give this form to the patient to call and book appointment with the Foot care clinic with Margie Zimmo at 519-837-4444 extension 410.
Location: 21 Surrey Street West, Suite 108, Guelph, Ontario

Adapted from The Advanced Practice Nurse Endocrinology and Metabolism, The Ottawa Hospital, Ottawa, Ontario.
Created June 26, 2009

Group Education

Diabetes Care Guelph – Living with Diabetes

Wellness Matters – Foot Care

- Class Size: 5-8 patients + guests
- Open to: All patients within the community of Guelph
- Length of the class: 2 hours
- How to register: online or via telephone

Foot care Workshop

- Education on general foot care; various foot ailments and biomechanical changes; effects of diabetes on circulation, offloading and foot safety.
- Information provided for community links.
- Registered Kinesiologist discusses the importance of mobility and exercises for optimal foot health.

Outcomes: Patient feedback survey: Rated on a scale of 1-5 (highest), average overall post score of 4.61

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- Foot Care Clinic
- Diabetes Care Guelph – RN, RD, RKin
- Mental Health
- Endocrinologist
- Family Physician
- Nurse Practitioners
- Primary Care Nurse Clinicians
- Pharmacists
- Wellness Matters group education
- Primary Care at Home

Community Links

- Vascular Surgeons
- Orthopedic Surgeons
- Podorthists, Podiatrist/Chiropracist, Orthotists
- CCAC
- Community Hospitals
- Compassionate services – ODSP, Pharmaceutical companies, CDA, ADP funding

Case Study: History

K.W. male age 66

Past Medical Hx:

- HTN, Hyperlipidemia, CAD, MI 2001, CABG 2003, PVD
- COPD, smoker
- CRF, retinopathy – legally blind, neuropathy
- Diabetes type 2

Current Medications:

- ASA 81mg OD
- Crestor 10mg OD
- Januvia 100mg OD
- Plavix 75mg OD
- Vitamin B12 1000mcg
- Levemir 28u qHS
- Novorapid 6u acB 5u acL

Case Study: Wound Care History

February 2013 – stubbed R Hallux (digit 1)

Referred to Foot Care in February 2013 – No Show - Intake visit **April 23, 2013**

Initial Intake with Foot Care:

- Monofilament L 8/8 R 4/8
- Bilateral – cold, no palpable pulses
- R foot – not audible with doppler
- L foot – audible with doppler
- Infection R hallux nail

June 21, 2013 – developed R heel ulcer – tight shoes at a wedding; soaking feet

Case Study: June 21 2013

Before care

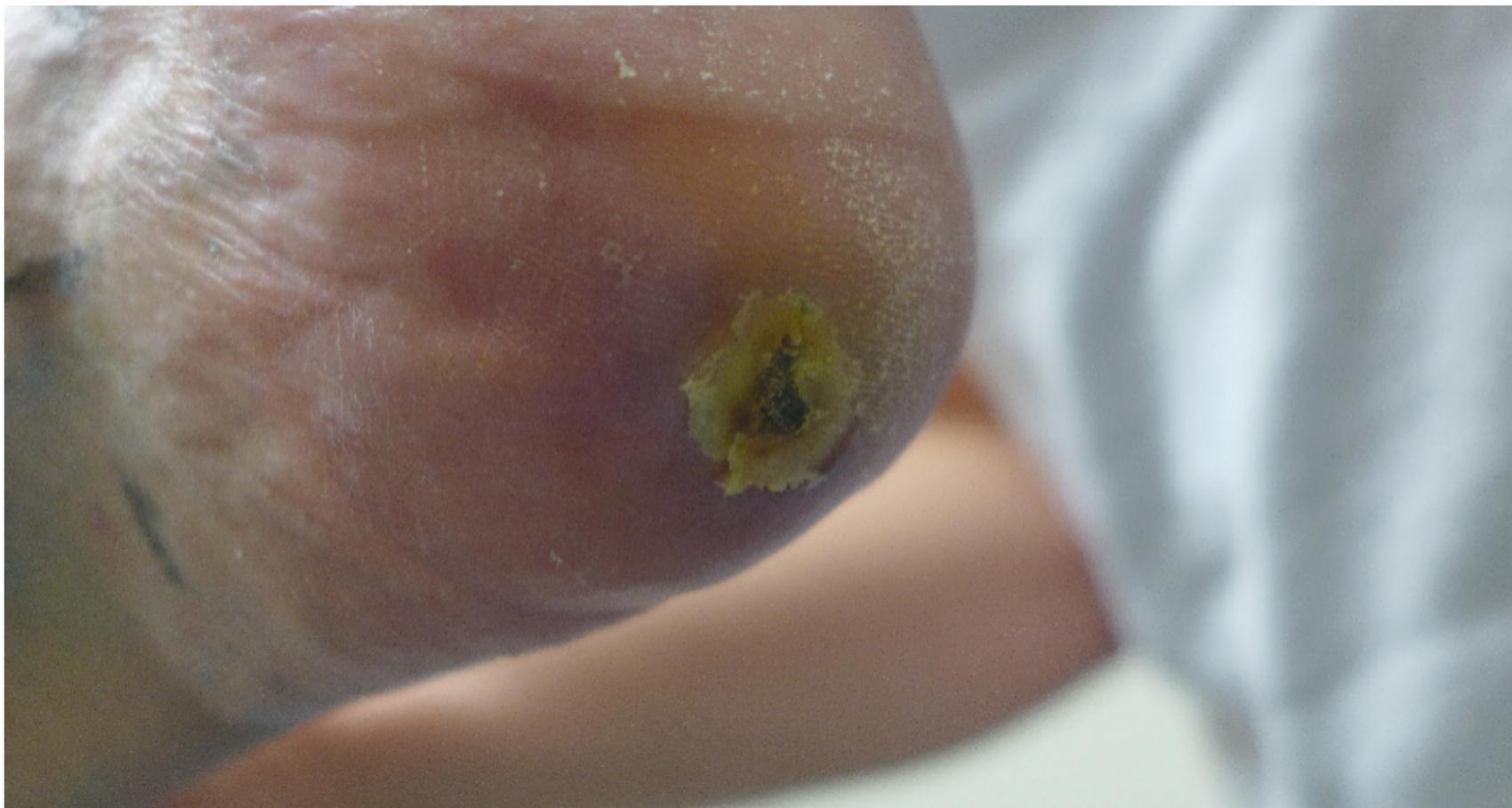


Case Study: June 21 2013

Ulceration due to soaking digit



Case Study: June 21 2013



Case Study: November 20 2013

Right heel



Right hallux nail



Case Study: April 24 2014

- Before

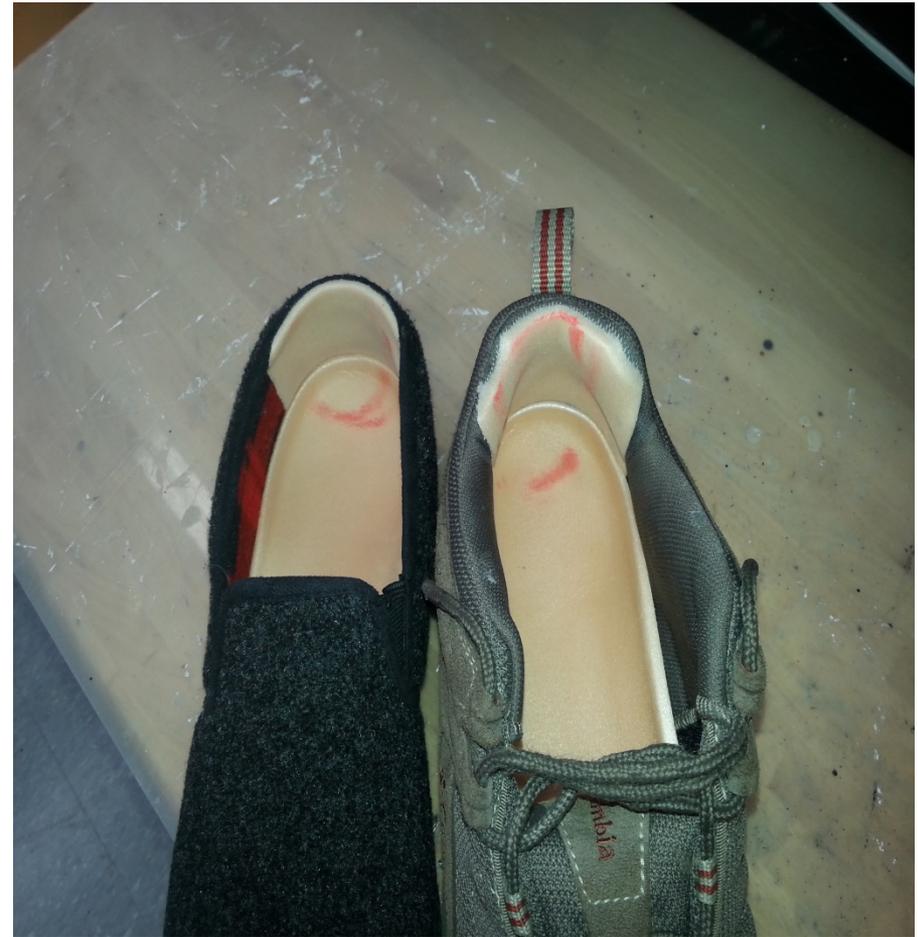


- After

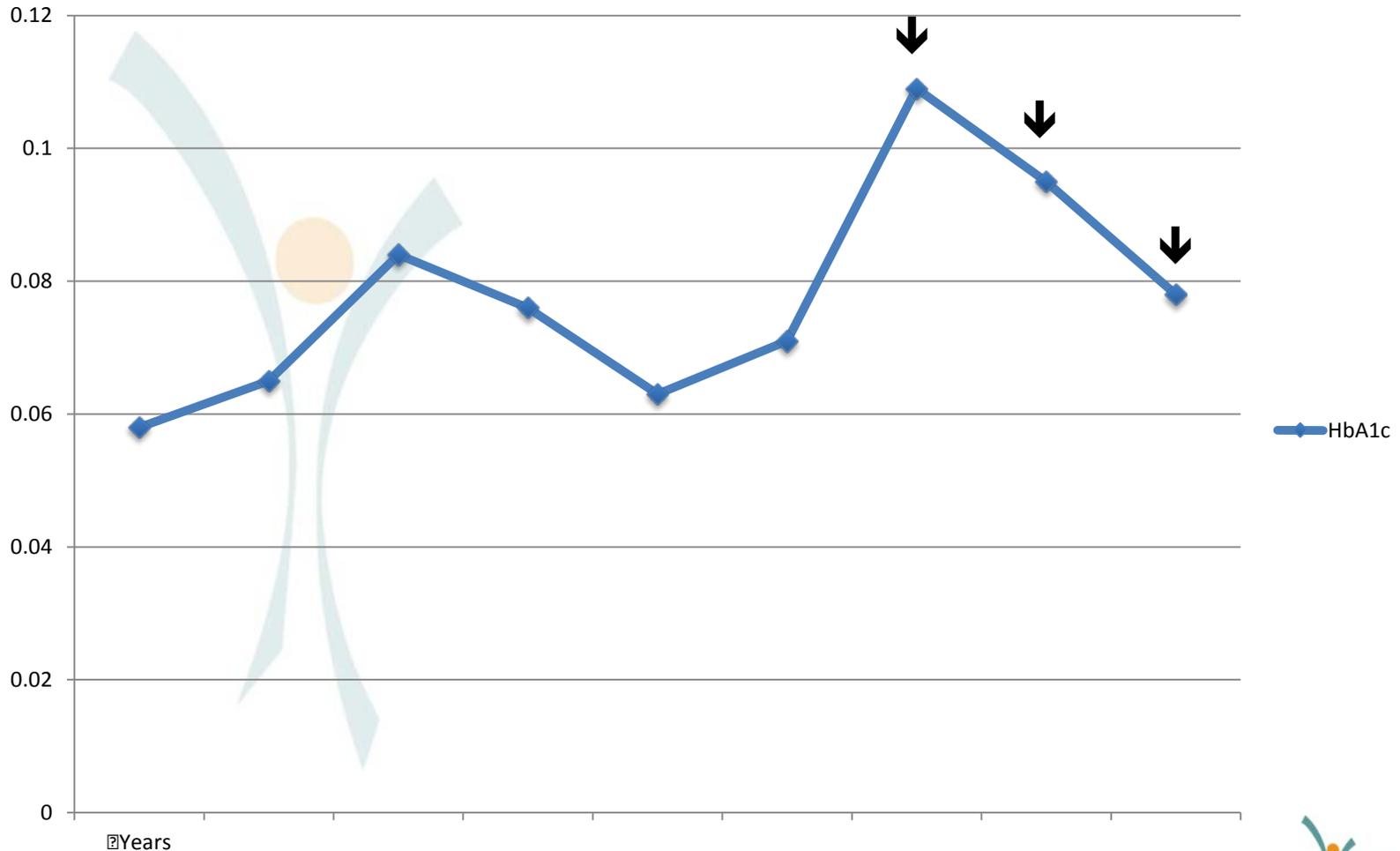


Case Study: Pedorthist Photos

April 25 2014



Case Study: HbA1c (2008-2014)



Case Study: Progress One Year later

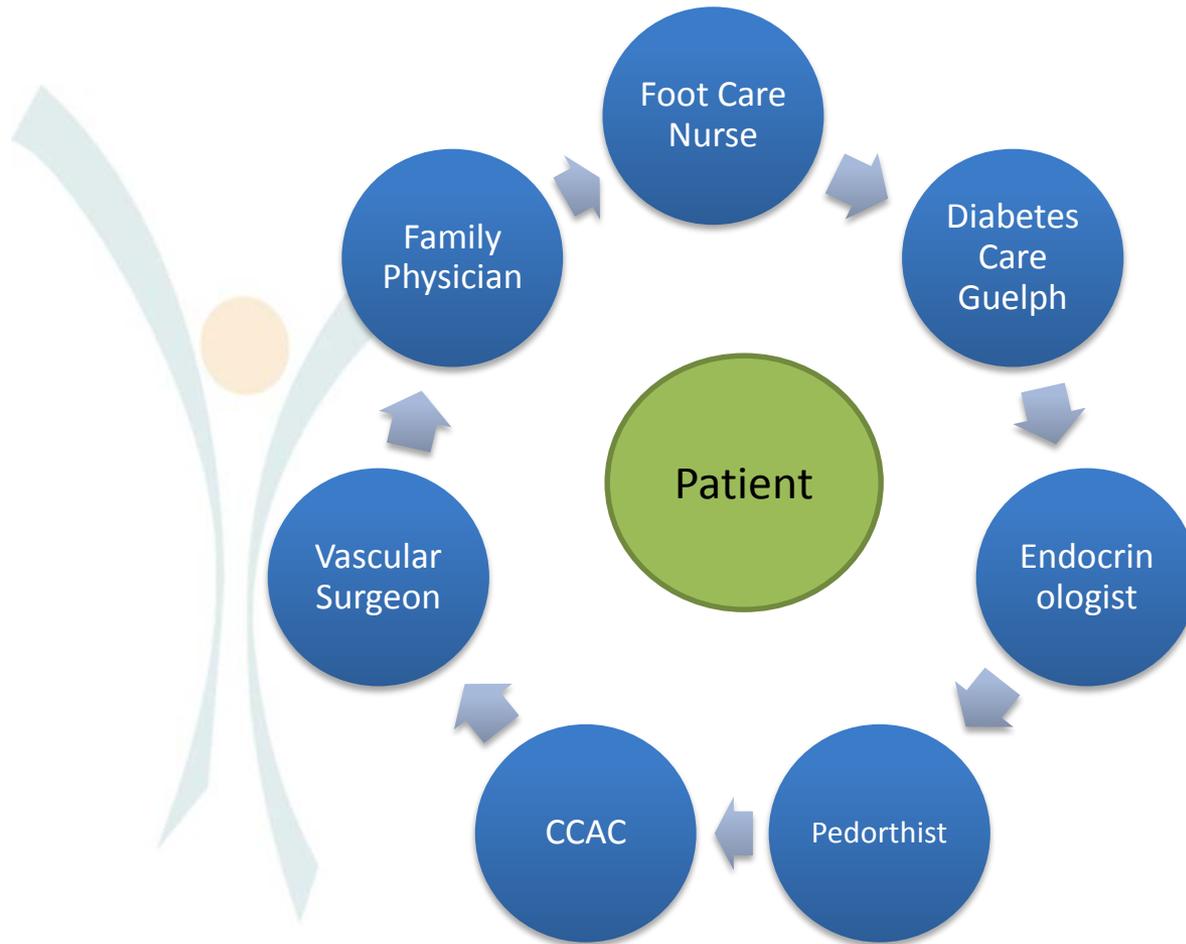
Right heel



Right hallux nail



Circle of Care



Challenges/ Obstacles

- Photographs
- Lack of knowledge in new Foot care standards
- Treatment Guidelines through CNO, CWCA, Diabetes Canada
- ODSP or OW
- Foot care myths
- Patient compliance

Future Plans

- Expand foot care clinic to include more wound care management
- FHT Feet pilot program at DCG
- Continue to develop relationships within community

FHT Feet

Purpose: To pilot a packaged program (standardized and branded tools, patient educational materials and provider training) within Diabetes Care Guelph with the goal of providing consistent and quality care in the prevention and management of foot complications.

Components:

Implementing the RNAO Best Practice Guideline: Reducing Foot Complications for People with Diabetes

Standardized documentation

Standardized screening methods

Education materials for both patients and providers

Pilot Group: Patients with diabetes currently attending Diabetes Care Guelph

Timeline: 6 months

Future Plans: Roll out this program to FHT staff working within the physician offices.

Outcome Measures:

Quantitative: Diabetes Care Guelph custom form, 60sec screening tool

Qualitative: patient feedback surveys

References

- Canadian Diabetes Association Clinical Practice Guidelines Expert Committee. Canadian Diabetes Association 2013 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada. Can J Diabetes 2013; 37(suppl 1): S1-S212.
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- Diabetes in Toronto ICES Atlas, Booth, G, Glazier, R. et al., November 2007.
- Canadian Institute for Health Information. (August 2013). Compromised wounds in Canada. Retrieved Sept 5, 2014 from www.cihi.ca



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THANK YOU!