Selling Diabetes and the Treatment of the Diabetic Foot
Learning Objectives

- Scope of problem of diabetic foot disease
- Marketing Risk and Risk Communication
- Comprehensive Diabetic Foot Exam
- Principles of treatment of DFU's
What Do Diabetics Think About When They Hear “DIABETES”
Diabetes Management

• Treatment based on lifestyle modification/pt education
• Emphasis on medications
• Visits to Family doctor, specialists, DEC’s, pharmacists, dieticians
• Monitoring with labs
• Clinicians financially rewarded if they document this activity
Outcomes

- Diabetes rates in Ontario have gone from 5% in 1995 to 11% in 2006 and predicted to rise to 25% in 2020—Why?
- **OBESITY**
- In February of 2010, obesity overtook smoking as the number 1 preventable cause of cardiovascular disease.
  - 1 in 2 Americans are obese
  - 1 in 4 Canadians are obese
  - *1 in 3 children are obese!*
- Less than 50% of all diabetics in Canada have A1c at target
  - after 10+ years this falls to less than 35%
Conclusions

- With these statistics we must accept the fact that current approach to *pt education has failed*
- We need a *drastic change* in the approach to addressing diabetes and its complications
- Maybe we should be judged/rewarded on *outcomes* as opposed to simply performing the task
“You are what your record says you are.”

Bill Parcells
Marketing Risk

- We have not been successful in convincing pts to change their behaviours
- The case exists for using the term “Malignant Diabetes”
  - Malignant HTN
  - Malignant Hyperthermia
  - Malignant OM
Definitions

- Malignant is a medical term used to describe a severe and progressively worsening disease.
- Metastatic disease is the spread of a disease from one organ or part to another non-adjacent organ or part.
Mortality and DFU

• Moulik et al 2003 137 DFU pts who healed or went on to amputation
  • amputation group 47% 5yr mortality
  • healed DFU group 43% 5yr mortality
• Armstrong, Robbins and Boulton 2007 2432 DFU pts
  • 48% in amputation group
  • 47% in healed group
How does diabetic foot disease compare with other diabetes complications?

- Infected wounds: most common reason for hospital admission
- 1 in 5 leads to lower extremity amputation
- 85% preceded by ulcer

Singh, Armstrong, Lipsky, JAMA, 2005
Rogers, Lavery, Armstrong, JAPMA, 2008
Russo, et al, AHRQ, 2006
Bruno, Diabetes Care, 2003
How much does diabetic foot disease cost?

- 7% DM’s will develop DFU every year
- Cost to system is **over $1B**
- Represents over **33% of total DM treatment costs**

O’Brien, Patrick, Caro, BMC Health Services Research 2003
Rogers, Lavery, Armstrong, JAPMA, 2008
Sendory, Camerota Martens Clinical Therapeutics 1998
Stockl, Vanderplas, Tafesse, Chang Diabetes Care 2004
Prompers et al Diabetologia 2008
Driver, Fabbi, Lavery, Gibbons JAPMA 2010
Relative 5-Year Mortality Rates

- Prostate Ca: 8%
- Breast Ca: 18%
- Hodgkin's Disease: 18%
- Neuropathic Ulcer: 45%
- Amputation: 47%
- Colon Cancer: 48%
- Ischemic Ulcer: 55%
- PAD: 64%
- Lung CA: 86%
- Pancreatic CA: 97%

American Cancer Society. Cancer Facts and Figures, 2000
Moulik, et al, Diabetes Care 2003
Golumb, et al, Circulation, 2006
Office for National Statistics, UK, 2006
Singh, Armstrong, Lipsky, JAMA, 2005
Risk Communication

- Diabetes is a malignant and metastic disease
- **Motivate** patients into the same type of resolve to treat their diabetes that they would have for a diagnosis of cancer
- When was the last time you heard a pt say........
  “I’m a 4 year diabetic foot ulcer survivor!”
Quiz

What do all these people have in common based on what I have just told you?
Treating Diabetic Foot Ulcers

The mainstay of treatment for DFU’s:

1. **Offloading**
2. Frequent Surgical Debridement
3. Advanced Wound Dressings
Diabetic Foot Exam

- **Look**
- **Touch**
- **Assess**

### INLOW’S 60-second Diabetic Foot Screen

#### Screening Tool

<table>
<thead>
<tr>
<th>Patient Name:</th>
<th>Clinician Signature:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Look — 20 seconds</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Score</strong></td>
<td>Left Foot</td>
<td>Right Foot</td>
</tr>
<tr>
<td>1. Skin</td>
<td></td>
<td></td>
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<tr>
<td>0 = intact and healthy</td>
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<tr>
<td>1 = dry with fungus or light callus</td>
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<td></td>
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<tr>
<td>2 = heavy callus, boil, or ulcer</td>
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<td></td>
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<td>3 = open ulceration or history of previous ulcer</td>
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<tr>
<td>2. Nails</td>
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<tr>
<td>0 = well-kept</td>
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<tr>
<td>1 = unkempt and ragged</td>
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<td></td>
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<tr>
<td>2 = thick, damaged, or infected</td>
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<tr>
<td>3. Deformity</td>
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<tr>
<td>0 = no deformity</td>
<td></td>
<td></td>
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<tr>
<td>1 = mild deformity</td>
<td></td>
<td></td>
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<tr>
<td>2 = major deformity</td>
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<tr>
<td>4. Footwear</td>
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<tr>
<td>0 = no deformity</td>
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<tr>
<td>1 = inappropriate</td>
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<tr>
<td>2 = causing trauma</td>
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<tr>
<td><strong>Touch — 10 seconds</strong></td>
<td>Left Foot</td>
<td>Right Foot</td>
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<tr>
<td>5. Temperature — Cold</td>
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<tr>
<td>0 = foot warm</td>
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<tr>
<td>1 = foot is cold</td>
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<tr>
<td>6. Temperature — Hot</td>
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<tr>
<td>0 = foot is warm</td>
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<td></td>
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<tr>
<td>1 = foot is hot</td>
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<tr>
<td>7. Range of Motion</td>
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<tr>
<td>0 = full range to halluc</td>
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<tr>
<td>1 = halluc limitus</td>
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<tr>
<td>2 = halluc radieus</td>
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<tr>
<td>3 = halluc amputation</td>
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<tr>
<td><strong>Assess — 30 seconds</strong></td>
<td>Left Foot</td>
<td>Right Foot</td>
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<td>8. Sensation — Monofilament Testing</td>
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<tr>
<td>0 = 10 sites detected</td>
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<td>1 = 7 to 9 sites detected</td>
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<td>4 = 0 to 6 sites detected</td>
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<td>9. Sensation — Ask Four Questions:</td>
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<tr>
<td>i. Are your feet ever numb?</td>
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<td>ii. Do they ever tingle?</td>
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<td>iii. Do they ever burn?</td>
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<td>iv. Do they ever feel like insects are crawling on them?</td>
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<tr>
<td>0 = no to all questions</td>
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<tr>
<td>2 = yes to any of the questions</td>
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<td>10. Pedal Pulses</td>
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<tr>
<td>0 = present</td>
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<tr>
<td>1 = absent</td>
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<td>11. Dependent Rubor</td>
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<tr>
<td>0 = no</td>
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<tr>
<td>1 = yes</td>
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<tr>
<td>12. Erythema</td>
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<tr>
<td>0 = no</td>
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<tr>
<td>1 = yes</td>
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<tr>
<td><strong>Score Totals</strong></td>
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</tbody>
</table>

Screening intervals for foot ulcers and/or limb-threatening complications. Use the highest score from left or right foot. Screening intervals may vary based on clinical judgment and individual patient factors.

- Score = 0 to 1: recommend screening monthly
- Score = 2 to 5: recommend screening every 6 months
- Score = 6 to 10: recommend screening every 3 months
- Score = 11 to 15: recommend screening every 3 to 6 months
- Score = 16 to 20: recommend screening every 6 to 12 months

Inlow’s 60-second diabetic foot screen has been shown to have content validity.
Offloading

- 2010 Consensus Guidelines for the Treatment of the Diabetic Foot
  - Total contact casting (TCC) was the “gold standard”
  - 80% healed within 6-8 weeks
Total Contact Casting

26 months Hx

TCC

6 weeks

2 weeks
Removable Cast Walkers

- Work almost as well as TCC
  - only if the pt wears it
    - Armstrong et al found that pts only wore the RCW 25% of the time
- logical approach is to make it irremovable
Removable Cast Walker

Add Coban

iTCC
Offloading Scooters

RAMM Turning Leg Caddy

Forward Mobility Voyager Seated Scooter
The Blister
Limb Threatening Wound
Dry Skin
Neglect
The Ingrown Toenail
Prevention

- Never going barefoot either in the house or out
- Looking at the feet every day
- Moisturizing the feet every day
- Proper footwear
- Orthotics

These simple steps reduce ulceration/amputation rate by 85%
Learning Objectives

- Scope of problem of diabetic foot disease
- Marketing Risk and Risk Communication
  - selling the notion that diabetes is a malignant disease
- Principles of treatment of DFU's
TMI Team