The Guyana International Collaboration Model to Reduce Amputations in Persons with Diabetes

Brian Ostrow MD, FRCSC
Madan Rambaran MBBS, MSc
R. Gary Sibbald MD, FRCPC
Kevin Woo RN, PhD

For the Guyana Diabetic Foot Care Team

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Guyana Diabetic Foot Project

- Guyana, South America
- CIDA funded Project
- $97,640 Government of Canada contribution
- Georgetown Public Hospital Corporation (GPHC) – national referral and teaching hospital
- March 2008 – May 2010
# The Guyana Diabetic Foot Project Model

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<th>Developmental Principles</th>
<th>Clinical Principles</th>
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<td>Collaboration</td>
<td>Evidence-informed</td>
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<td>Sustainability</td>
<td>Interprofessional</td>
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<td>Capacity-building</td>
<td>Patient-centered</td>
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<tr>
<td>Promotes Gender Equity</td>
<td>Holistic Practice</td>
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<td>Educational strategies linked to outcomes</td>
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Person with Type II Diabetes Receiving Comprehensive Patient-Centered Foot Care in Guyana
Caribbean region - highest levels of amputation (Walrond, 2001)

Guyana Diabetes prevalence - 9% (Diabetes Atlas 4th Ed.)

Diabetic foot ulcer - single largest reason for admission to surgical ward GPHC (Ostrow et al. 2008)

42% Inpatients with DFU receive amputation (Neewark, 2007)

Person with Type II Diabetes Receiving Comprehensive Patient-Centered Foot Care in Guyana

EDUCATIONAL STRATEGIES

PARTNERS
Conditions
Pre-Project
Typical Patient

- One amputation
- Second leg now has foot ulcer
- Hospitalized for amputation of the second leg
Canadian Partners
- $97,640 contribution
- $31,050 in-kind
- Wound care experts
- $150,000 in-kind
- Coordinator

Guyana Partners
- All Project activities inside public health system
- GPHC
- A component of National Program
- MoH

International Partners
- Support for communication and travel costs
- PAHO

Partners
- CIDA
- MD
- Nurse
- Chiropodist

Staff, facility, resources
Interprofessional centre in action
Opened July 2008
Assessed and treated 1500 patients to April 2010; over 6000 patient visits
Diabetic Foot Centre

8 KOLs designated and enrolled in IIWCC

Key Opinion Leaders

Interprofessional teams

MD Nurse Rehab

Office

Resources

All Resources made context specific and sustainable

Wound bed paradigm

Vascular

Doppler

Infection

Dermatemp

Pressure

Monofilaments

Plantar Pressure Reducing Devices

Treat Cause

Patient-centered concerns

Wound care products

Debridement

Local wound care

Infection

Moisture Balance

Opened July 2008
Assessed and treated 1500 patients to April 2010; over 6000 patient visits
Pressure Off-loading Standards of Care

In Canada

In Guyana
TV - Your Health, the Nation's Wealth

Public Awareness

SYSTEMS

Capacity Building
- Identified need to target men for screening
- Gender Equity

Outcomes

Sustainable educational capacity
Sustainable clinical capacity
Resource procurement
TV - Your Health, the Nation's Wealth

Public Awareness

systems

Capacity Building

Sustainable educational capacity
Sustainable clinical capacity
Resource procurement

Identified need to target men for screening

Gender Equity

Outcomes

46% REDUCTION IN MAJOR AMPUTATIONS!
## Persons with DM-Related Major Amputations/month GPHC

<table>
<thead>
<tr>
<th>Risk</th>
<th>Months</th>
<th>Mean</th>
<th>Est. St dev</th>
<th>95% CI</th>
<th>Range of true population mean</th>
<th>T test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before DFC</td>
<td>43</td>
<td>7.95</td>
<td>3.99</td>
<td>1.19</td>
<td>6.75</td>
<td>9.15</td>
</tr>
</tbody>
</table>
| After DFC   | 22     | 4.31  | 2.61        | 1.09     | 3.23                          | 5.41   | \( P = 0.0003 \) 

### DM-related Major Amp GPHC 2005-May 2010

- **Before DFC**: Mean # persons-amp/month = 7.95, 95% CI = 6.75 to 9.15
- **After DFC**: Mean # persons-amp/month = 4.31, 95% CI = 3.23 to 5.41

The graph compares the mean number of persons with DM-related major amputations per month before and after the DFC initiative, showing a significant decrease in the post-DFC period.
More admissions
Fewer amputations

<table>
<thead>
<tr>
<th>Year</th>
<th>No of DF admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>203</td>
</tr>
<tr>
<td>2007</td>
<td>259</td>
</tr>
<tr>
<td>2008</td>
<td>272</td>
</tr>
<tr>
<td>2009</td>
<td>347</td>
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The Guyana Diabetic Foot Project:

- used multi-faceted educational strategies
- adapted evidence-informed diabetic foot care practices
- created a sustainable comprehensive diabetes foot care system
- optimized care in a resource-poor setting
- improved diabetic foot outcomes by reducing major amputations despite increased admissions
• This model is being applied and expanded throughout Guyana in a Phase 2 Project

• It may be relevant for other resource-poor countries in the management of the pandemic of type II Diabetes
Thank you