Mobile Diabetes Screening Initiative Through the Years

Ellen L Toth, MD

MDSi Wrap Up Meeting,
November 19th, 2014
Communities MDSi Visited
OUTLINE

Why MDSi?

What is / was MDSi?

Was it successful?
Diabetes “epidemic” recognized in 90’s in (Canada and) Aboriginal Communities

• Health Canada: Aboriginal Diabetes Initiative (ADI) – 58 (115), 190, 275 million to 2015
  – Public health approach - awareness
  – Diabetes Walks and T-shirts
  – Community based programming
  – Screening and Treatment?
  – Focus on pregnancy

• Alberta Region: SLICK

• Alberta Health: MDSi

• Alberta Health and U of A / School of Public health: surveillance (NDSS - ADSS)

• 2008: (2nd) Canadian Diabetes Guidelines, 1st Chapter on Diabetes in Aboriginal Peoples
SLICK at a Glance

1. SLICK criteria

2. Information sheet and consent form
   Community staff
   20-30 minutes

3. SLICK survey
   Community staff
   20-30 minutes

4. Data entry
   SLICK staff
   10 minutes

5. Eye testing
   SLICK staff
   15 minutes

6. Lab assessment
   Community staff
   15 minutes

7. Clinical assessment
   Community staff
   20 minutes

8. Eye pictures
   SLICK staff
   45-60 minutes

9. Report collection and education
   SLICK staff
   10 minutes
Mobile Diabetes Screening Initiative:

“... provide resources for screening for diabetes and its complications in Aboriginal off-reserve and remote Alberta communities”

(part of the 10 year Alberta Diabetes Strategy, 2003)
Was there an epidemic / is there an epidemic?

<table>
<thead>
<tr>
<th>Year</th>
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Source: AH division of surveillance
www.ahw.gov.ab.ca/IHDA_Retrieval/
The epidemic

Population growth

Case finding

Behaviours

Environment

Genetics

Pregnancy: Diabetes begets diabetes

Diabetes

Modified from Engelgau
OUTLINE

Why MDSi

What is / was MDSi?

Was it successful?
KNOWNS and UNKNOWNS

**MDSi**

**KNOWNNS:**
- have diabetes
- visits take longer
- need foot and eye exams

**UNKNOWNNS:**
screen for risk of diabetes and cardiovascular risk

20% 80%
## Summary of community visits

<table>
<thead>
<tr>
<th>Client Community</th>
<th>Number of Screening Visits</th>
<th>Number of Unique Clients</th>
<th>Number of Community Visits</th>
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<tbody>
<tr>
<td>Anzac</td>
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<td>95</td>
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<tr>
<td>Bent Arrow</td>
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<td>Buffalo Lake</td>
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<td>Conklin</td>
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<td>East Prairie</td>
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<td>Edson</td>
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<td>Elizabeth</td>
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<td>Ft. Vermilion</td>
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<td>Gift Lake</td>
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<td>232</td>
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<td>Grande Cache</td>
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<td>206</td>
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<td>Grande Prairie</td>
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<td>Hinton</td>
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<td>Kikino</td>
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<td>La Crete</td>
<td>1070</td>
<td>574</td>
<td>19</td>
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<tr>
<td>Lac La Biche</td>
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<td>146</td>
<td>7</td>
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<tr>
<td>Marlboro</td>
<td>100</td>
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<td>Mountain Cree</td>
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<td>Paddle Prairie</td>
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<td>Peavine</td>
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<td>Peerless Lake</td>
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<td>Trout Lake</td>
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<td>Wabasca</td>
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<td>Wildwood</td>
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<tr>
<td>Other</td>
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<td><strong>TOTAL:</strong></td>
<td><strong>9219</strong></td>
<td><strong>4633</strong></td>
<td><strong>285</strong></td>
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</tbody>
</table>
Visit counts by year
Average visits per day by fiscal year

Fiscal Year = Apr 1 – Mar 31
IN SUMMARY, SIGNIFICANT ACTIVITY, WAS IT SUCCESSFUL?

Results?

Worth While?

Value for money?

Academic activity?

Was diabetes prevented??
Emerging Longitudinal Trends in Health Indicators for Rural Residents Participating in a Diabetes and Cardiovascular Screening Program in Northern Alberta, Canada

Kelli Ralph-Campbell, Richard T. Oster, Tracy Connor, and Ellen L. Toth

Abstract

Background. Geographic isolation, poverty, and loss of culture/tradition contribute to “epidemic” rates of diabetes amongst indigenous Canadians.

The Mobile Diabetes Screening Initiative travels to rural indigenous and other remote communities in Alberta to screen for diabetes and cardiovascular risk.

We sought to examine risk factors longitudinally.

Methods. Clinical and anthropometric measurements were undertaken for 809 adults (aged 20–91) between November 2003 and December 2009. For those who had more than one MDSi visit, trend estimates (actual changes) were calculated for body mass index (BMI), weight, waist circumference, hemoglobin A1c (A1c), total cholesterol, and blood pressure.

Results. Among those without diabetes BMI and weight increased, and blood pressure decreased. For those with diabetes significant improvements were seen in all indicators except waist circumference (BMI, A1c, BP and cholesterol).
What happens after community-based screening for diabetes in rural and Indigenous individuals?

Oster RT, Ralph-Campbell K, Connor T, Pick M, Toth EL.

Abstract
Rural individuals (mostly Indigenous) were screened for undiagnosed diabetes and cardiovascular risk.

A subsequent survey showed roughly half engaged in timely follow-up with the health care system.

The Mobile Diabetes Screening Initiative identifies a substantial number of people needing medical attention, who may otherwise be "missed" through conventional healthcare delivery.
Value for money?

• Since implementation in 2004, the Mobile Diabetes Screening initiative (MDSi) has offered mobile screening clinics in 19 different off-reserve Aboriginal communities (8 Métis Settlements and 11 other communities).
• A total of 2458 clients have visited the clinics over just under 300 visit days.
• Per client start-up costs are approximately $165, while ongoing implementation costs are approximately $720 per client. This is less costly than the 2003 reported cost of the federal SLICK program at approximately $915 per client.

MDSi Evaluation, 2007
Howard research and management consulting. Inc.
Worth while?

• In general MDSi has been successful in reaching Métis and remote communities and has created a setting where persons of Aboriginal descent feel comfortable and have started to engage in preventative measures to address diabetes.

• Considering this is a high risk population that are unlikely to access other screening services the MDSi visits should be continued.
IN SUMMARY, SIGNIFICANT ACTIVITY, WAS IT SUCCESSFUL?

Results?

Worth While?

Value for money?

Academic activity?

Was diabetes prevented??
Was there an epidemic / is there an epidemic?

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## Incidence

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<td>463</td>
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<td>2001</td>
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<tr>
<td>2002</td>
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Type 2 Diabetes

Age-adjusted diabetes prevalence and incidence rates for the adult population of Alberta, by ethnicity

Age-adjusted mortality rates for the adult population of Alberta, by ethnicity, sex and diabetes status

Oster et al 2011, CMAJ
The epidemic

Population growth

Case finding

Pregnancy: Diabetes begets diabetes

Genetics

Diabetes

Behaviours

Environment

Modified from Engelgau
OUTLINE

Why MDSi

What is / was MDSi?

Was it successful?
WHAT ABOUT COMPLICATIONS? WERE THEY PREVENTED?

Blindness: no data

Dialysis: probably decreasing

Heart attacks: decreasing in general population, in diabetes… not so much

Strokes: as above

Amputations: decrease in early to mid 90’s.

NO GOOD SPECIFIC MDSi / Aboriginal data. FN data: promised
MDSI, FINAL THOUGHTS

Has been about prevention, not only diabetes but Obesity / Hypertension / Pre-diabetes / Cancer

Addressed all conditions re “lifestyle”

Did not do enough re mental health or self esteem (planned or hoped to...)

Can “Primary Care” do this today in Alberta given existing conditions?
WHY WAS MDSI SUCCESSFUL?

Time spent

People who cared

People who came back year after year

Staff who were knowledgeable about Aboriginal protocol, traditions, culture
MDSI / BRAID over the years

- Kelli Buckreus
- Sharona Supernault
- Norry Kaler
- Terri Gammer
- Donna Prokopczak
- Marion Kuncio
- Patricia Lo
- Mary Pick
- Shannon McEwen
- Jackie Norman
- Charlotte Gladue
- Sophia Ye
- Joanna Dydula
- Adrian Jacobs
- Darren Klassen
- Tracy Connor
- Alison Meikle
- Sandra Cannepotato
- Kari Meneen
- Karie Quinn - Cassell
- Priscilla Lalonde
- Gloria Frazer
- Melanie Legare
- Kristy Lee Nichols
- Joanna Campiou
- Suzanne Poirier
- Agnes Cheng
- Kristin Lee Keith
- Jane Jensen
- Chantelle Daniels
- Virinder Singh
- Davida Reingold
- Ryan McComb
- Rafael Aguilera
- Dale Shekooley
- Joy Myskiw
- Richard Oster
- Dane Milnthrop
- Dan Stafinski
- Gustavo Castillo
- Mindy Kowal
- Andrea McCune
- Tamika Wildcat
- Samantha Bowker
- Troy Young
- Helen Patrie
- Michelle Morrison
- Michelle Hamilton
BRAID over the years

- SLICK (screening and awareness)
- Driftpile Community (BRAID study, CIRCLE)
- Maskwacis (CIRCLE) Also Blood Tribe
- BRAID kids - Driftpile
- MDSi (screening and awareness)
- Pregnancy
- Cultural Continuity
Questions and discussion

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Ellen.toth@ualberta.ca

http://braidresearch.ca