Tobacco Use & Heart Disease: Responding to the Challenge!

Andrew Pipe, CM, MD  Chief, Division of Prevention & Rehabilitation
Important Disclosures

In the past I have received research and educational support from, and/or served as a consultant to:

PFIZER
GSK
JOHNSON & JOHNSON
Educational Objectives:

Discuss how tobacco use compromises heart health

Explain role of family health providers in preventing cardiovascular disease

Explain the “Ottawa Model for Smoking Cessation” and how it can be integrated into family healthcare settings
Acknowledgements
**Smoking Rates - Canada**

<table>
<thead>
<tr>
<th></th>
<th>Daily</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>16%</td>
<td>21%</td>
</tr>
<tr>
<td>Female</td>
<td>11%</td>
<td>14%</td>
</tr>
</tbody>
</table>

**Ottawa**

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<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Male</td>
<td>10%</td>
<td>16%</td>
</tr>
<tr>
<td>Female</td>
<td>8%</td>
<td>13%</td>
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</tbody>
</table>
Current Smokers – U.S.A.

Adults: 19%
Men: 21%
Women: 18%

2010 National Health Interview Survey (NHIS), CDC
Pathophysiology of Smoking and CVD

Mainstream
- Active
- Tar Phase
- Lung Deposits
  - Free Radicals from Smoke
  - Endogenous Free Radicals?
  - Activation: Monocytes, Neutrophils, Platelets, T-Cells
  - Oxidative Stress
  - Cytokines
  - NO Generation or Bioavailability
  - Vasomotor Dysfunction
  - Clotting
  - Leukocyte Platelet Action
  - Lipid Peroxidation
  - Adhesion & Inflammation
  - Smooth Muscle Proliferation
  - Genetic Predisposition & CV Risk Factors

Sidestream
- Passive
- Gas Phase

Initiation & Progression

Smoking

- Stimulates atherogenesis
- Stimulates endothelial inflammation
- Impairs flow-mediated arterial dilatation
- Affects platelet aggregation
- Decreases fibrinolysis
- Increases carboxyhemoglobin levels...

Precipitates acute cardiovascular events!
INTERHEART: Odds of MI & Smoking Rate

Lancet. 2004;364:937-52
Smoking Cessation

“The Most Important CVD Intervention!”

Cessation as the Priority in CVD Prevention:

“Stopping smoking...may have a greater effect on reducing the risk of mortality among patients with CHD who smoke than the effect of any other intervention or treatment.”

Critchley JA, Capewell S JAMA;2003;290:86-97
People who quit smoking after a heart attack or cardiac surgery reduce their risk of death by 36%.

Cochrane Database of Systematic Reviews 2003;4:CD003041
Each year large numbers of smokers are admitted to Canadian hospitals ... most commonly, no attempt is made to assist them with smoking cessation during the course of their hospital stay ... and re-admission rates are high.
Effect of intensive smoking cessation treatment on hospital admissions


No. at Risk
Usual Care 100 80 62 48 26
Intensive 107 84 74 56 36

“...overall cardiologists are less committed to assist their patients with smoking cessation when compared with the management of other risk factors.”

Aboyans V, Thomas D, Lacroix P. *Curr Opin Cardiol* 2010;25:469-477
Hypertensive smokers have a worse cardiovascular risk profile than non-smokers in spite of treatment.

Blood Pressure 2005;14:144-150
Smoking diminishes benefits of statins

61% higher risk of events for smokers compared with nonsmokers treated with statins for secondary prevention

Smoking cessation is as effective or more effective at reducing mortality as beta-blockers or ACE inhibitors.

J Am Coll Cardiol 2001;37:1677-82
“It is time for cardiologists to be less passive about their patients’ smoking cessation…”

Lancet 2009;373(9667):867
Smokers don’t require more information... or a lecture.

They want help.
Pharmacotherapy

3 “Generations”

NRT
bupropion
varenicline

“All smokers trying to quit, except in the presence of special circumstances, should receive pharmacotherapy for smoking cessation.”
Nicotine Replacement Therapy

- Rationale
- Products
  - The ‘Patch’
  - Chewing Pieces
  - Lozenges
  - Nicotine Inhaler
- Advantages
- Shortcomings
“The safety of nicotine-replacement therapy in cardiovascular disease patients is supported by data from randomized trials, efficacy studies, observational data and physiologic studies.”

Joseph AM, Fu, *Progress in Cardiovascular Diseases* 2003;45:429-441
"The use of NRT is not associated with any increase in the risk of myocardial infarction, stroke, or death."

N = 33,247

“We can’t commence smoking cessation treatment at the time of hospitalization ... particularly in cardiac patients.”
# UOHI Smoking Cessation Programme

## Use of NRT in the Cardiac Setting

<table>
<thead>
<tr>
<th></th>
<th>Smoking Patients</th>
<th>NRT</th>
<th>Male NRT</th>
<th>Female NRT</th>
<th>ACS</th>
<th>% ACS NRT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-2005</td>
<td>1,016 (23%)</td>
<td>194 (19%)</td>
<td>149 (20%)</td>
<td>45 (17%)</td>
<td>176</td>
<td>68 (39%)</td>
</tr>
<tr>
<td>2005-2006</td>
<td>1,489 (44%)</td>
<td>657 (46%)</td>
<td>477 (46%)</td>
<td>180 (41%)</td>
<td>501</td>
<td>318 (63%)</td>
</tr>
<tr>
<td>2006-2007</td>
<td>1,065 (60%)</td>
<td>638 (60%)</td>
<td>453 (60%)</td>
<td>185 (60%)</td>
<td>342</td>
<td>240 (70%)</td>
</tr>
</tbody>
</table>
2 Fundamental Principles

*Treat smoking cessation in exactly the same way that you would manage any other CVD risk factor.*

*Manage smoking cessation medications in the same way that you would manage other cardiac medications.*
Standard Orders

1 pack a day  21 mg + and Inhaler

2 packs a day  42 mg + and Inhaler

3 packs a day  further titration prn

In every case recognize the need for titration
Cessation & The Hospital

Large numbers of smokers
Relevance of smoking to admission
Increased motivation to quit
Availability of staff
Opportunity for systematic approach
Availability of Pharmacotherapy
Treatment of withdrawal
Can arrange follow-up
Influence community practice
The Ottawa Model
“The Ottawa Model”

Identification
Documentation
Counseling
Pharmacotherapy
Long-term follow-up

Reid RD, Pipe AL, Quinlan B. *Can J Cardiol* 2006;22:775-780
In-Patient Cessation Programme

More than 1,500 smokers identified annually

Counseling provided to 1,470 (98%)

~15% increase in mid-term cessation rates

35% → ~50% absolute cessation rate
HISTORY AND SUCCESS

University of Ottawa Heart Institute (2002)

INPATIENT
Hospital Settings (2006)

OUTPATIENT
Specialty Clinics (2008-2010)

PRIMARY CARE
Pilot Program (2009-10)

PRIMARY CARE
Expansion Project (2010-13)
Transforming Professional Practice Systematically Successfully
What we know…

70% of smokers want to quit

44% will attempt to quit each year

4-7% will be successful

THE CHALLENGE

We are not intervening with smokers at optimal rates

- Better at asking and advising (40%-57\%)\textsuperscript{2}

- Not as good at intervening with smokers (<20\%)\textsuperscript{3}

THE APPROACH

• **Based on**... evidence-based, best-practice guidelines

• **Used by**... providers from both inpatient and outpatient settings in over 85 healthcare environments across Canada

• **Success with**... systematizing the identification, treatment and support of smokers, and with significantly improving the number of long-term quitters
TOBACCO CONTROL PROTOCOL
A Team-Based Approach

Ask and Document (30 secs)
√ Nurse or Receptionist

Advise & Refer (2 mins)
√ Physician/NP

Act (20 mins)
√ Nurse/NP/Pharmacist/MD

Follow-up Support (UOHI)
√ Smoker’s Follow-up Program
“Have you used any form of tobacco in the past 7 days?”

“Have you used any form of tobacco in the past 6 months?”

System for Identifying Smoking Status of all Patients
ASSESS READINESS TO QUIT

“Are you willing to work with me to set a quit date in the near future?”

- Not Ready → Provide Self-Help
- Ready → Develop Quit Plan
SMOKER’S FOLLOW-UP PROGRAM

Integrated Voice Recognition (IVR)
Ottawa Model’s Automated Telephone Follow-up

Interactive Voice Response Technology

 Patients receive 8 automated telephone calls post-discharge 3, 14, 30; every month x 6 months
A 15% increase in the number of quit attempts and 10% increase in smoking abstinence among smokers who were ready to quit was documented as part of the Ottawa Model for Smoking Cessation Pilot Program.
WORKING TOGETHER TO HELP PATIENTS QUIT
Society Position Paper

Smoking Cessation and the Cardiovascular Specialist: Canadian Cardiovascular Society Position Paper

Andrew L. Pipe, MD, a Mark J. Eisenberg, MD, b Anil Gupta, MD, c Robert D. Reid, PhD, a
Neville G. Suskin, MD, d and James A. Stone, MD e

Therefore, it is important for cardiovascular specialists to be as familiar with the initiation of smoking cessation pharmacotherapy as they are with the pharmacologic management of hypertension and hyperlipidemia. 11

In light of this clinical and scientific evidence, it is the view of the Canadian Cardiovascular Society that all patients in every medical setting—private office, outpatient clinic, or hospital—should have their smoking status identified and documented and be offered specific assistance in initiating a cessation attempt.
The provision of unambiguous, non-judgemental advice regarding the importance of cessation and the offer of specific assistance with the initiation of a smoking cessation attempt should be seen as a fundamental responsibility of any clinicians who see smokers in their practice.

The role of the specialist in delivering specific advice in this regard may itself result in enhanced rates of cessation. All cardiovascular specialists should be familiar with the principles and practice of smoking cessation.

*Canadian Journal of Cardiology 2011;27:132-137*
“Assistance with smoking cessation is the responsibility of every clinician who sees smokers.”
Transforming ...

Institutional Practices

Professional Behaviours

Patient Care
THE FOURTH ANNUAL OTTAWA CONFERENCE

STATE OF THE ART CLINICAL APPROACHES TO SMOKING CESSATION

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