## Conflicts of Interest: David Armstrong

**“Quality and Access Issues”**

<table>
<thead>
<tr>
<th>Company</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbott Laboratories</td>
<td>Consulting, Advisory, Speaking, Research Support, Educational Event</td>
</tr>
<tr>
<td>AstraZeneca Canada</td>
<td>Consulting, Advisory, Speaking, Research Support, Educational Event</td>
</tr>
<tr>
<td>Axcan Pharma</td>
<td>Speaking, Educational Event Sponsorship</td>
</tr>
<tr>
<td>Boston Scientific</td>
<td>Educational Event Sponsorship</td>
</tr>
<tr>
<td>ConMed Canada</td>
<td>Educational Event Sponsorship</td>
</tr>
<tr>
<td>Cook Canada</td>
<td>Educational Event Sponsorship</td>
</tr>
<tr>
<td>Janssen</td>
<td>Consulting, Advisory, Research Support, Educational Event Sponsorship</td>
</tr>
<tr>
<td>Olympus Canada</td>
<td>Advisory, Educational Event Sponsorship</td>
</tr>
<tr>
<td>Pentax Medical</td>
<td>Consulting, Advisory, Research Support, Educational Event Sponsorship</td>
</tr>
<tr>
<td>Shire Canada</td>
<td>Advisory, Educational Event Sponsorship</td>
</tr>
<tr>
<td>Takeda Canada</td>
<td>Consulting, Advisory, Speaking, Research Support, Educational Event</td>
</tr>
<tr>
<td>Warner Chilcott\</td>
<td>Speaking, Research Support, Educational Event Sponsorship</td>
</tr>
<tr>
<td>XenoPort Inc.</td>
<td>Consulting, Advisory, Research Support</td>
</tr>
</tbody>
</table>

I shall not be discussing any unapproved or ‘off-label’ use of products
Colonoscopy Quality Overview

- Procedure vs Service delivery
- Attributes of colonoscopy
- Interdependence of quality and access
- Access to colonoscopy
- Key performance indicators
- Practice audit
- Framework to optimise colonoscopy
Colonoscopy Quality – The ‘Scope’

C–GRS

Management

Endoscopy Facility

Diagnostic Imaging
Labaratory
Referring MD
Preparation
Sedation
Anesthesiologist
Endoscopy Aide
Pathology
Information Technology
Nursing
Endoscopy Equipment

Colonoscopy

Procedure
Colonoscopy – Attributes

• Endoscopic examination of the large bowel & distal small bowel (30 to 60 minutes)

• Diagnosis: Visual, Biopsy

• Therapy: Resection, Hemostasis, Dilation

• Colorectal cancer

• Diagnosis: Pre-neoplasia & Advanced neoplasia

• Therapy: Polypectomy, EMR, Hemostasis, Stenting

• Surveillance & Cancer Prevention (polypectomy)

• Diarrhea

• Rectal Bleeding

• Inflammatory Bowel Disease

Endoscopic examination of the distal small bowel (30 to 60 minutes)

Colonoscopy – Attributes

More Than a Screening Tool
Colonoscopy Quality – ‘Issues’

Impaired access impairs quality

Reduced quality reduces access
Canadian Consensus on Wait Times for Digestive Health Care: Statements

A. Patients referred because of a high likelihood of cancer, based on imaging or physical examination, should be seen and, if indicated, endoscoped within two (2) weeks.

B. Patients referred with bright red rectal bleeding should be seen and, if indicated, endoscoped within two (2) months.

C. Patients referred for screening colonoscopy should be seen and, if indicated, endoscoped within six (6) months.

National Median Wait Times
PAGE 4 – 2005

- Wait time: Referral to consultation
  - 66 days [> 9 weeks]
- Wait time: Consultation to procedure
  - 43 days [> 6 weeks]
- Total wait time: Referral to procedure
  - 91 days [13 weeks]

Colonoscopy – Wait Times – 2011
Estimated Numbers Awaiting Colonoscopy

Patient Numbers

<table>
<thead>
<tr>
<th>Region</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC</td>
<td>9905</td>
</tr>
<tr>
<td>AB</td>
<td>8223</td>
</tr>
<tr>
<td>Prairie</td>
<td>18629</td>
</tr>
<tr>
<td>ON</td>
<td>23116</td>
</tr>
<tr>
<td>QC</td>
<td>38209</td>
</tr>
<tr>
<td>Atlantic</td>
<td>5472</td>
</tr>
<tr>
<td>Total</td>
<td>103552</td>
</tr>
</tbody>
</table>

Barua B et al. Waiting Your Turn. Fraser Institute 2011
GI Endoscopy – 2004-5 & 2008-9
Procedure volumes: Canada

Canadian Institutes for Health Information (CIHI) National Physician Database
http://www.cihi.ca - Armstrong D & Khanna SS. Can J Gastroenterol 2012 (Abstract)
Colonoscopy – Appropriateness

EPAGE: European Panel of Appropriateness of Gastrointestinal Endoscopy

- **EPAGE I**: 60.5% (375/619) Not appropriate
- **EPAGE II**: 29.3% (185/619) Not appropriate

Arguello L et al. Gastrointest Endosc 2012;75:138-145
Canadian Association of Gastroenterology consensus guidelines on safety and quality indicators in endoscopy

David Armstrong MB BChir1, Alan Barkun MDCM2, Ron Bridges MD3, Rose Carter LLB (Hons)4, Chris de Gara MB MS5, Catherine Dubé MD3, Robert Enns MD6, Roger Hollingsworth MD7, Donald MacIntosh MD6, Mark Borgaonkar MD3, Sylviane Forget MD10, Grigoris Leontiadis MD1, Jonathan Meddings MD11, Peter Cotton MD12, Ernst J Kuipers MD12, Roland Valori MD14; on behalf of the Canadian Association of Gastroenterology Safety and Quality Indicators in Endoscopy Consensus Group.

BACKGROUND: Increasing use of gastrointestinal endoscopy, particularly for colorectal cancer screening, and increasing emphasis on health care quality, highlight the need for clearly defined, evidence-based processes to support quality improvement in endoscopy.

OBJECTIVE: To identify processes and indicators of quality and safety relevant to high-quality endoscopy service delivery.

METHODS: A multidisciplinary group of 35 voting participants developed

Les lignes directrices consensuelles de l'Association canadienne de gastroentérologie sur les indicateurs de sécurité et de qualité en endoscopie

HISTORIQUE: L'utilisation croissante de l'endoscopie gastro-intestinale, notamment dans le cadre du dépistage du cancer colorectal, et l'accent grandissant mis sur la qualité des soins mettent en lumière la nécessité d'établir des processus probants clairement définis pour évaluer l'amélioration de la qualité en endoscopie.

OBJECTIF: Déterminer les processus et les indicateurs de qualité et de sécurité pertinents pour la prestation de services d'endoscopie de qualité.

MÉTHODOLOGIE: Un groupe multidisciplinaire de 35 participants ont élaboré des approches de recommandations et des indi...
Endoscopic procedures are performed for an appropriate, clearly documented indication, consistent with current, evidence-based guidelines.

 Explicit documentation of indication

Evidence: Low / Very Low

Recommendation: Do It – 97%

Endoscopists should regularly review their endoscopic practice and outcome data with the aim of continuous professional development.

- **Endoscopists’ ‘Report Card’ – Practice Audit**

- Evidence: Low / Very Low

- Recommendation: Do It – 94%

Practice Audit Program Principles

Point-of-Care Data Input

Data Transmission

Website Database

Data Analysis

Website Presentation

Data Review

Reflection on Practice

Change in Practice
QPE: Colonoscopy Practice Audit

- Quality & Safety Indicators Recorded
  - ‘Key Performance Indicators’
    - Wait times
    - Indication (Reason)
    - Time since last colonoscopy
    - Patient age
    - Procedure time (start, cecum, end)
    - Preparation quality (Ottawa)
    - Biopsy
    - Polypectomy
    - Immediate complications
    - Sedation used

http://cag.medicalconsensus.org

Faigel DO, Cotton PB. OMED Endoscopy 2009;41:1069–1074
### My Summary Data

**Number of Colonoscopies: 25**

You have entered data on 25 colonoscopies. Currently, the national database contains information from 1385 colonoscopies, performed by 69 participating physicians.

#### Wait Times: Patient (Days)

<table>
<thead>
<tr>
<th>From Referal to Consultation</th>
<th>Mean</th>
<th>+/- SD</th>
<th>Mean</th>
<th>+/- SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>125</td>
<td>102</td>
<td>149</td>
<td>211</td>
</tr>
<tr>
<td>From Consultation to Colonoscopy</td>
<td>29</td>
<td>45</td>
<td>54</td>
<td>96</td>
</tr>
<tr>
<td>Total Wait Time for Patient</td>
<td>154</td>
<td>117</td>
<td>203</td>
<td>229</td>
</tr>
</tbody>
</table>

#### Procedure Times (Mins)

<table>
<thead>
<tr>
<th>Procedure Time</th>
<th>My Data</th>
<th>National Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion Times</td>
<td>06:33</td>
<td>08:57</td>
</tr>
<tr>
<td>Withdrawal Times</td>
<td>06:50</td>
<td>07:30</td>
</tr>
<tr>
<td>Total Procedure Time</td>
<td>13:23</td>
<td>16:27</td>
</tr>
</tbody>
</table>

#### Polyps

<table>
<thead>
<tr>
<th>Polyp Analysis</th>
<th>My Data</th>
<th>National Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyps (Mean per patient with polyps)</td>
<td>2.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Patients with Polyps</td>
<td>6</td>
<td>501</td>
</tr>
<tr>
<td>Patients with Polyps (%)</td>
<td>24%</td>
<td>36%</td>
</tr>
</tbody>
</table>

#### Mucosal Biopsies

<table>
<thead>
<tr>
<th>Biopsies Analysis</th>
<th>My Data</th>
<th>National Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients with Mucosal Biopsies</td>
<td>2</td>
<td>450</td>
</tr>
<tr>
<td>Patients with Mucosal Biopsies (%)</td>
<td>8%</td>
<td>32%</td>
</tr>
</tbody>
</table>

#### Bowel Preparation

<table>
<thead>
<tr>
<th>Preparation Analysis</th>
<th>My Data</th>
<th>National Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ottawa Score (Min 0 / Max 14)</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>Patients with Ottawa Score &lt; 5 (#)</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>Patients with Ottawa Score &lt; 5 (%)</td>
<td>60%</td>
<td>2%</td>
</tr>
</tbody>
</table>
CAG Colonoscopy Audit: 2008-2009
Polyp Removal vs. Withdrawal Time

Polyp removal rate (%)

Spearman Correlation Coefficient = 0.3949
p = 0.002

Canadian Association of Gastroenterology
Quality Program Structure

Quality Endoscopy

- Endoscopy Global Rating Scale (GRS-C)
- Practice Audit Colonoscopy Endoscopy Residents
- Training Trainers Learners Practitioners
- Endoscopy Reporting Required Data Format
- Credentialing Maintain Current CAG Statements
Summary – 1

• Procedure quality should be addressed in the context of system service delivery
• Colorectal screening is one of many indications for colonoscopy
• Colonoscopy is a diagnostic and therapeutic modality associated with potential for significant adverse events
• Quality and access issues for colonoscopy are interdependent
Summary – 2

• Access to colonoscopy is limited despite significant increases in procedural volumes.
• Reductions in inappropriate procedures may facilitate access to colonoscopy.
• Consensus on key performance indicators provides a basis for quality assurance.
• **Practice audit** allows colonoscopists to monitor and improve practice.
• Quality & access issues can be addressed within an overall quality framework.