

# Developing and Reporting Health Indicators : Data Issues and Traps

**Eugene Wen MD. DrPH.**

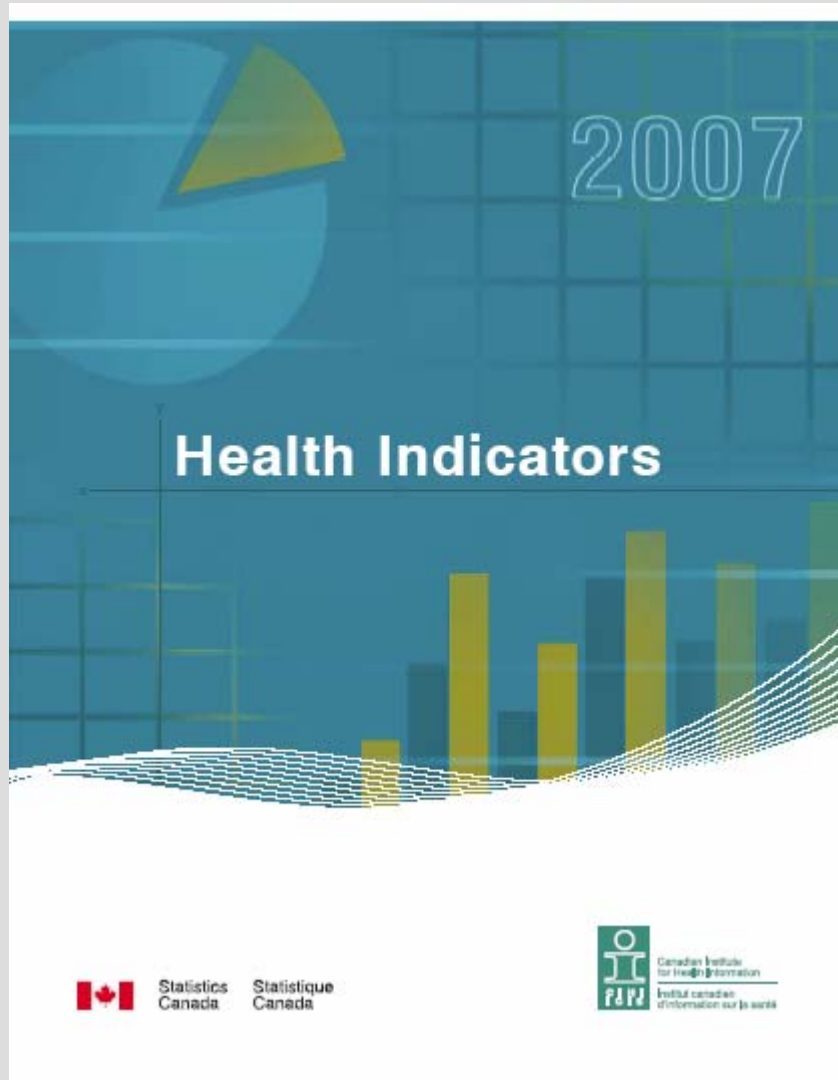
**for Canadian SAS Health User Group Meeting  
Toronto  
June 26, 2007**



Canadian Institute  
for Health Information

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# Health Indicators: What's New?



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**globeandmail.com: Delay in hip surgery worse for seniors, study finds - Microsoft Internet Explorer**

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## Delay in hip surgery worse for seniors, study finds

Canadian Press  
May 30, 2007 at 12:27 PM EDT

TORONTO — A new report finds that nearly 25,000 seniors were admitted to hospital in Canada last year with a broken hip.

The Canadian Institute for Health Information looked at how quickly people in different parts of the country received surgery to repair the damage in 2005-2006.

The study found that two-thirds of hip-fracture patients had surgery either on the day they were admitted or the next day, but that some had to wait longer.

Eight per cent of seniors admitted to Canadian hospitals outside Quebec spent four or more days in hospital before having surgery.

**Internet Links**

- [CIHI: Health Indicators 2007](#)

Those in Prince Edward Island, British Columbia and Nova Scotia were more likely to have surgery quickly, while patients in Manitoba and Saskatchewan were behind the national average.

The study of health data found that those who had to wait longer than the next day for surgery were 22 per cent more likely to die in hospital within 30 days

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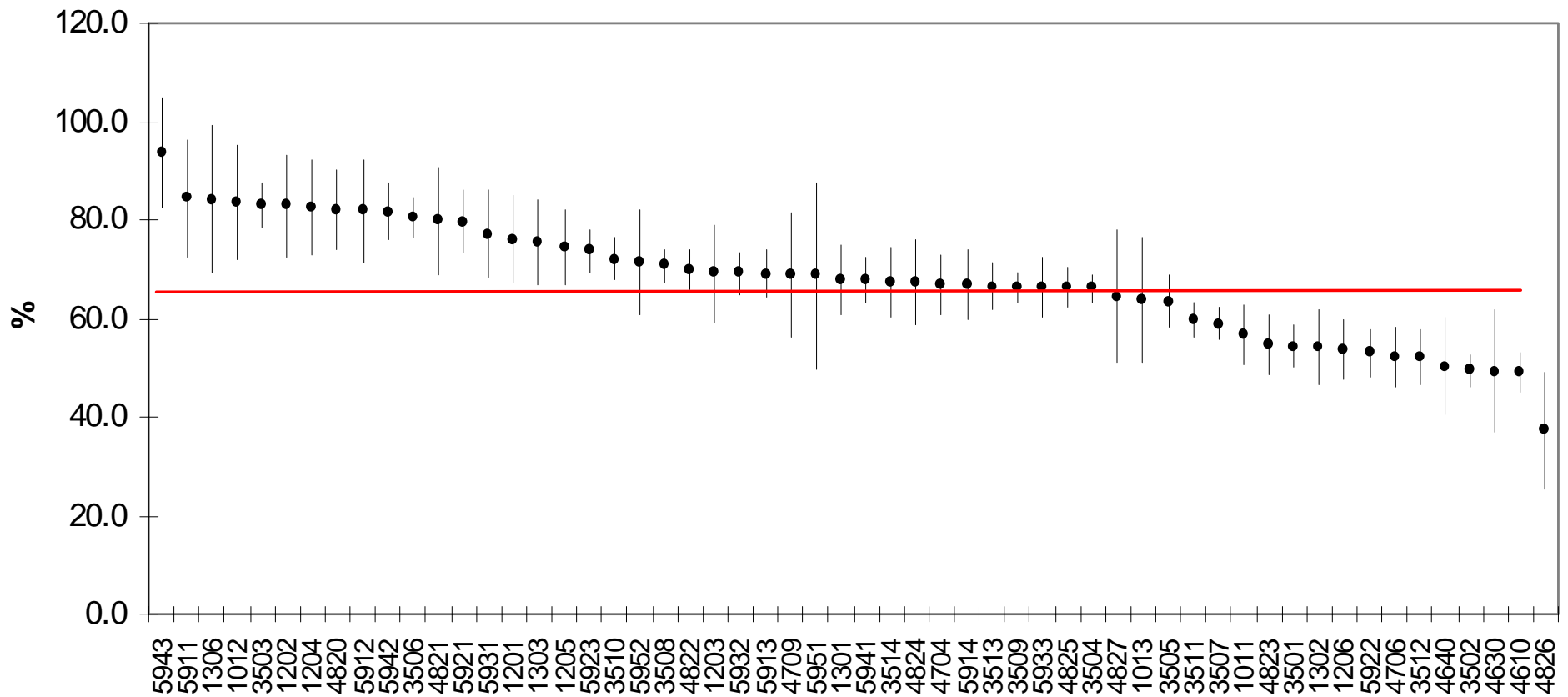
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### Wait time for hip fracture surgery (same or next day) by reportable regions FY 2005/06



# Indicator Development and Reporting

- Definition
- Clinical details
- Analytical details
- Data review and data quality
- Consultation and verification
- Production and publication
- Follow up inquiries

# Data Issues:

- Limited information available
  - e.g. procedure time vs. date
- Coding systems:
  - e.g. ICD-9/CM vs. ICD-10-CA
- Coding variations:
  - e.g. AMI with proc
- Clinical practice changes:
  - e.g. AMI LOS
- Other data quality issues

# Example: AMI Coding

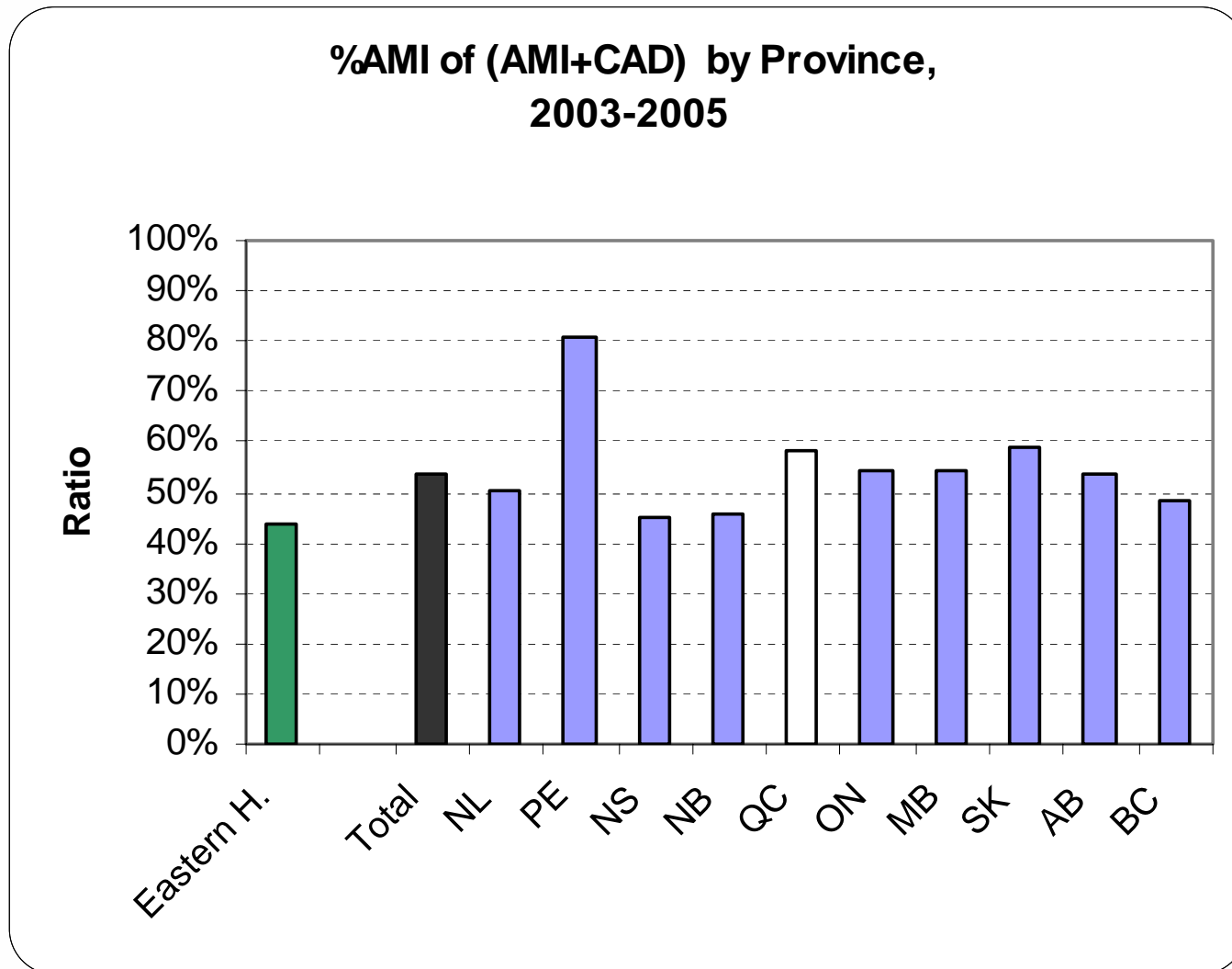
- AMI without cardiac procedures: MRD<sub>x</sub>= AMI
- Just PCI or CABG: MRD<sub>x</sub>=CAD
- AMI + CABG: MRD<sub>x</sub>=CAD
- AMI + PCI: MRD<sub>x</sub>=AMI or CAD

# AMI Coding:

## Proportion of CAD and AMI by Province, 2003-2005

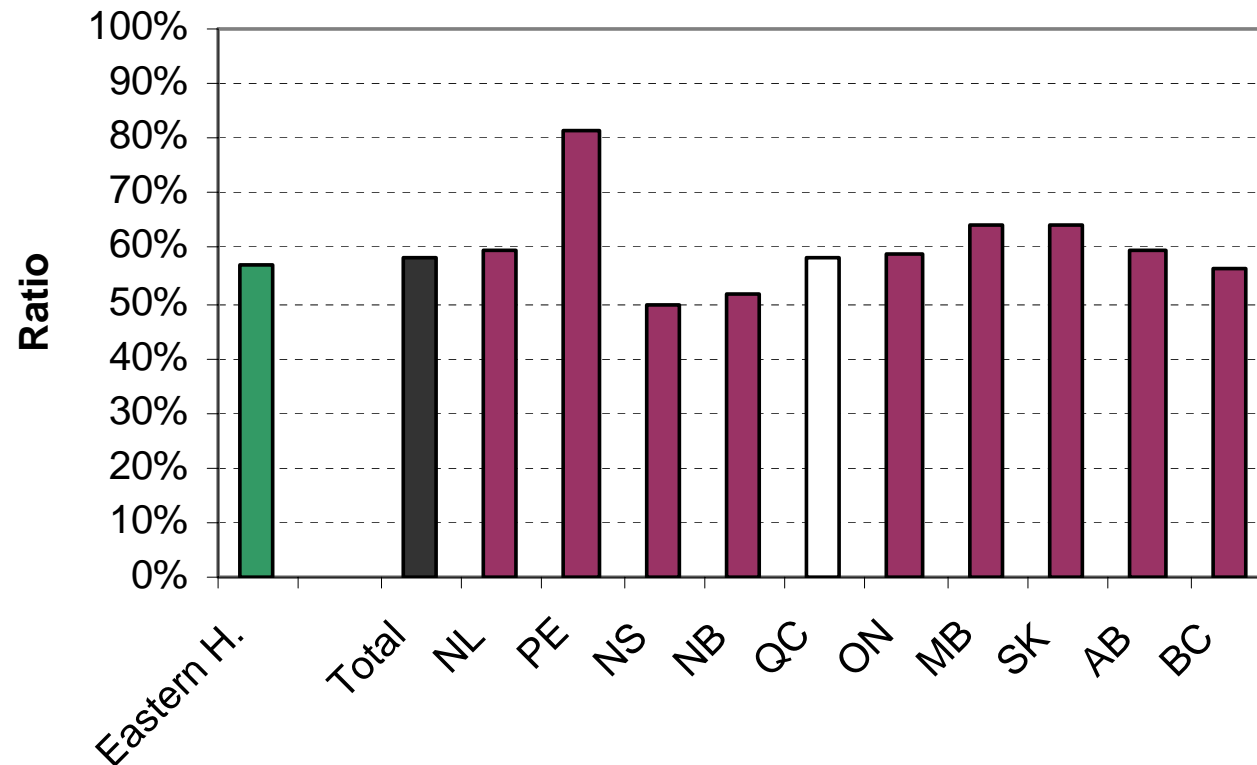
Province	AMI_MRDX	CAD+PROC	CAD_MRDX	Total	Corrected AMI
Eastern H.	44%	13%	43%		57%
<b>Total</b>	53%	5%	42%	319666	58%
NL	50%	9%	40%	7456	60%
PE	81%	0%	19%	1279	81%
NS	45%	4%	51%	14842	49%
NB	45%	6%	49%	10993	51%
QC	58%	0%	42%	55254	58%
ON	54%	5%	41%	138769	59%
MB	54%	10%	36%	11941	64%
SK	59%	5%	36%	10923	64%
AB	54%	6%	41%	29778	59%
BC	48%	8%	44%	38431	56%

# AMI Coding:



# AMI Coding:

Corrected %AMI of (AMI+CAD) by Province,  
2003-2005



**Proportion of CAD and AMI by Province, 2003-2005**

Province	AMI_MRDX	CAD+PROC	CAD_MRDX	Total	Corrected AMI	MRDx %-QC	Corrected %-QC
Eastern H.	44%	13%	43%		57%	-14%	-1%
<b>Total</b>	53%	5%	42%	319666	58%	-5%	0%
NL	50%	9%	40%	7456	60%	-8%	2%
PE	81%	0%	19%	1279	81%	23%	23%
NS	45%	4%	51%	14842	49%	-13%	-9%
NB	45%	6%	49%	10993	51%	-13%	-7%
QC	58%	0%	42%	55254	58%	0%	0%
ON	54%	5%	41%	138769	59%	-4%	1%
MB	54%	10%	36%	11941	64%	-4%	6%
SK	59%	5%	36%	10923	64%	1%	6%
AB	54%	6%	41%	29778	59%	-4%	1%
BC	48%	8%	44%	38431	56%	-10%	-2%

# Revised AMI case selection criteria: “3 rules”

- (a) AMI is MRDx but not a Type 2 diagnosis; or
- (b) AMI as Type 1,W,X,Y and where another diagnosis is MRDx and Type 2; or
- (c) CAD is MRDx and AMI as Type 1,W,X,Y and having PCI /CABG

# Conclusion:

- All Data have limitations.
- Data quality is the key.
- Most of data issues can be identified through a process of systemic analysis and review.
- Some data issues can be accommodated in analyses.
- There's still something out there unknown,
- and something new coming...

***What a wonderful world!***

# *Thank You!* Questions?

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