Unpacking regional variation in Ontario hysterectomy rates: Where is the quality gap?

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CAHSPR 2016
Bill 46

(Capítulo 11,
Statutes of Ontario, 2010)

An Act respecting
the care provided by
health care organizations

The people of Ontario and their Government:

... Believe that the patient experience and the support of patients and their caregivers to realize their best health is a critical element of ensuring the future of our health care system

... Share a vision for a Province where excellent health care services are available to all Ontarians, where professions work together, and where patients are confident that their health care system is providing them with excellent health care

... Recognize that a high quality health care system is one that is accessible, appropriate, effective, efficient, equitable, integrated, patient centred, population health focussed, and safe

Projet de loi 46

(Chapitre 14,
Lois de l’Ontario de 2010)

Loi relative aux soins
fournis par les organismes
de soins de santé
(c) to promote health care that is supported by the best available scientific evidence by,

(i) making recommendations to health care organizations and other entities on **standards of care** in the health system, based on or respecting clinical practice guidelines and protocols

(ii) making recommendations, based on evidence and with consideration of the recommendations in subclause (i), to the Minister concerning the Government of Ontario’s provision of funding for health care services and medical devices;
HQO has initiated a program to develop quality standards in areas where there appear to be large variations in care or where there is a gap between the best possible care and the quality of care that is currently provided.
Where our interest in hysterectomy came from...

16,858 hysterectomies performed in Ontario in 2013/14

~$100m in hospital costs
“I am concerned about the rate of hysterectomies,” Dr. Jennifer Blake, chief executive officer of the Society of Obstetricians and Gynaecologists of Canada, told the Star. “Were these women given other alternatives? We just don’t know. Sometimes a hysterectomy is the only option, but most often there is something else you can do.”

The SOGC is starting to question how many of these procedures are being performed unnecessarily. And it is urging physicians to stop using the surgery as a cure-all for pelvic health problems.
Hysterectomy rates: OECD comparison

Figure 4.4. Age-standardised rates of hysterectomy per 100 000 females, 2008 or latest year available

Per 100 000 females

Hysterectomy rates: provincial comparison

Figure 4.15. Hysterectomy rate by province/territory, Canada, 2003 and 2010

[Graph showing the rate of hysterectomies per 100,000 women for various provinces and territories in Canada, comparing the years 2003 and 2010.]
The prevalence of hysterectomy is 75% higher in Canada... than in Israel, Spain, Portugal or the Czech Republic. Most countries have two- to three-fold variation across geographic areas but Canada ... has close to four-fold.

Geographic variations in health care: What do we know and what can be done to improve health system performance? OECD (2014)
Age standardized rate of hysterectomies per 100,000 women, by LHIN of residence

Source: CIHI Portal DAD & NACRS
Age standardized rate of hysterectomies per 100,000 women, by LHIN of residence

Source: CIHI Portal DAD & NACRS
Methods and data

- Data extracted from CIHI Portal Discharge Abstract Database and National Ambulatory Care Reporting System (Day surgery) for 2013/14 discharges

  - 1.RM.91.* (Radical hysterectomy)
  - 1.RM.89.* (Total hysterectomy)
  - 1.RM.87.BA-GX, 1.RM.87.CA-GX, 1.RM.87.DA-GX, 1.RM.87.LA-GX and SU CCI extent attribute coded (Subtotal hysterectomy)

- Major diagnosis groups defined by Most Responsible Diagnosis:
  - Cancer: C** (all malignant neoplasms) and D059 – D073 (all carcinoma)
  - Abnormal bleeding: N920, N921, N922, N924, N925, N926, N938, N939 (Bansi-Matharu et al. BJOG 2013)
  - Fibroids: D250, D251, D252, D259 (Reeves et al. 2014 BMCM)
  - Prolapse: N811, N812, N813, N814, N815, N816, N818, N819 (Reeves et al. 2014 BMCM)

- Standardized rates derived through CIHI Portal direct standardization procedure using 5-year age groups, 2013 Population Estimates File and 2011 Census data
Total Ontario hysterectomy volumes and costs by diagnosis group (2013/14)

- **Cancer**: 18.6%
- **Uterine Bleeding**: 24.5%
- **Fibroids**: 18.4%
- **Prolapse**: 19.0%
- **Endometrial hyperplasia**: 2.3%
- **Pain-related**: 3.8%
- **Other**: 5.6%
- **Benign / unspecified neoplasm**: 3.0%
- **Endometriosis**: 4.6%
- **Other**: 7.7%
- **Pain-related**: 3.4%
- **Endometriosis**: 4.0%
- **Benign / unspecified neoplasm**: 3.0%

**Total Ontario hysterectomy cases**: 16,858

**Total hospital costs**: ~$100m
Total Ontario hysterectomy volumes and costs by diagnosis group (2013/14)

- **Prolapse**: 19.0% (80.5% of total cases)
- **Fibroids**: 18.4%
- **Uterine Bleeding**: 24.5%
- **Cancer**: 18.6%
- **Benign / unspecified neoplasm**: 3.0%
- **Endometriosis**: 4.6%
- **Endometrial hyperplasia**: 2.3%
- **Pain-related**: 3.8%

- **Prolapse**: 16.9%
- **Fibroids**: 16.1%
- **Uterine Bleeding**: 21.0%
- **Cancer**: 25.9%
- **Benign / unspecified neoplasm**: 3.0%
- **Endometriosis**: 4.0%
- **Endometrial hyperplasia**: 2.1%
- **Pain-related**: 3.4%

80.5% of total cases, 79.9% of total cost.
Age standardized rates of inpatient hysterectomies – cancer
(2013/14 standardized by 5 year age groups)
Age standardized rates of inpatient hysterectomies – fibroids
(2013/14 standardized by 5 year age groups)
Age standardized rates of inpatient hysterectomies – prolapse
(2013/14 standardized by 5 year age groups)
Age standardized rates of inpatient hysterectomies – uterine bleeding
(2013/14 standardized by 5 year age groups)
Age standardized rates of inpatient hysterectomies – 4 major diagnosis groups (2013/14 standardized by 5 year age groups)
Hysterectomy rates for bleeding diagnoses by census area – funnel plot
(Standardized by 5 year age groups)
Hysterectomy rates for bleeding diagnoses by census area – funnel plot
(Standardized by 5 year age groups)

Most high rate outliers are small, rural census areas
Inpatient hysterectomy rates by age group – uterine bleeding diagnoses

Procedures per 100,000 residents by age group
Time trends in LHIN inpatient hysterectomy rates – fibroids
(Standardized by 5 year age groups)
Time trends in LHIN inpatient hysterectomy rates – uterine bleeding
(Standardized by 5 year age groups)
Hysterectomies for uterine bleeding: variation in surgical approach by hospital (facilities with 100+ cases in 2013/14)
Age standardized rate of hysterectomies per 100,000 women for 4 largest diagnosis groups

- **North East**
- **Erie St. Clair**
- **Waterloo Wellington**
- **South East**
- **North Simcoe Muskoka**
- **Champlain**
- **South West**
- **Hamilton Niagara Haldimand Brant**
- **North West**
- **Central East**
- **Central West**
- **Central**
- **Mississauga Halton**
- **Toronto Central**

**Diagnosis Groups:**
- **BLEEDING**
- **FIBROIDS**
- **PROLAPSE**
- **CANCER**
Age standardized rate of hysterectomies per 100,000 women for 4 largest diagnosis groups

Suggests a need for provincial standards of care for women with heavy menstrual bleeding

BLEEDING
FIBROIDS
PROLAPSE
CANCER

North East
Erie St. Clair
Waterloo
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North West
Central East
Central
Central West
Halton
Mississauga Halton
Toronto Central
A few conclusions…

- Significant regional variation in hysterectomy rates at the LHIN level in Ontario; even more pronounced between smaller areas
- Understanding sources of variation requires breaking down ~17,000 hysterectomies performed each year to major diagnostic indications
- 4 major diagnosis groups make up ~80% of volumes and costs: fibroids, uterine bleeding, cancer, prolapse
- Rates of cancer-related hysterectomies vary little by LHIN; fibroids and prolapse-related hysterectomies have greater variation, while uterine bleeding-related hysterectomies show massive variation
- Most of the highest rate outlier areas are small, rural census areas
- While hysterectomies for fibroids have reduced significantly in all LHINs over the past decade, rates of hysterectomy for uterine bleeding have remained high and relatively stable across most LHINs
- Low rates in some LHINs do not seem to be offset by other hospital-based procedures, suggesting differences in access to and affordability of medical therapies (e.g. levonorgestrel-releasing intrauterine devices, TXA)
HQO’s response: now under development

- Scope of recommendations focuses on assessment, upstream drug and surgical alternatives to hysterectomy
- Multidisciplinary panel, including 2 patient representatives
- Will be 10-15 quality statements with accompanying quality indicators
- Key principles for the standard: promoting informed patient choice and shared decision-making
Thank you.

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