

***Hospital Report 2006: Acute Care  
Women's Health Technical Summary***

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# Overview

The Women's Health component of the Clinical Utilization and Outcomes quadrant of Acute Care underwent redevelopment in 2004/2005, resulting in fourteen sex-specific<sup>1</sup> and sex-sensitive indicators<sup>2</sup>. A representative group of managers and clinicians from hospitals across Ontario helped to select these indicators; and smaller expert groups for each clinical area helped to define and validate these indicators, which were then presented in *Hospital Report 2005: Acute Care* (refer to the *2005 Technical Summary* for details of the redevelopment process). The same indicators are presented in *Hospital Report 2006: Acute Care* (although some of the indicator methodologies have changed slightly due to feedback from the expert panel and one indicator has been suspended due to data quality issues). Hospital-specific results for all indicators are reported in the e-scorecard, which are available for download (for participating Ontario hospitals only) from the Hospital Report website, [www.hospitalreport.ca](http://www.hospitalreport.ca). A smaller subset of these indicators are reported publicly, accompanied by performance allocations, in the *Hospital Report Executive Summary*.

This *Technical Summary* describes the women's health indicator definitions and performance rating methodologies, and specifies which indicators are reported publicly in the executive insert.

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<sup>1</sup> Sex-specific - relevant to one sex only (e.g. indicators of access to and outcomes of procedures to treat female gynecological conditions)

<sup>2</sup> Sex-sensitive – relevant to both sexes and to comparisons between the sexes (e.g. indicators of access to and outcomes of cardiac care)

**Table 1.0: Overview of Women’s Health Clinical Utilization and Outcomes Indicators for *Hospital Report 2006: Acute Care***

Indicator (Name and Type)	Location	Application of Performance Allocations	Type of Performance Allocation
<b>GYNECOLOGICAL CONDITIONS AND HYSTERECTOMY</b>			
Route of Hysterectomy – Difference between Vaginal and Abdominal  <i>(Appropriateness of Practice/Process Indicator)</i>	<i>Executive Summary</i>	No	N/A
Rate of adverse events for patients undergoing procedures for benign gynecological conditions  <i>(Outcome Indicator)</i>	<i>Executive Summary</i>	Yes	Above average vs. Average vs. Below average
Rate of 30-day unplanned readmissions for patients undergoing procedures for benign gynecological conditions  <i>(Outcome Indicator)</i>	<i>Executive Summary</i>	Yes	Above average vs. Average vs. Below average
Rate of select alternatives to hysterectomy versus rate of hysterectomy  <i>(Practice/Access Indicator)</i>	E-scorecard	N/A	N/A
<b>LABOUR AND DELIVERY</b>			
Rate of adverse events for patients undergoing labour and/or delivery  <i>(Outcome Indicator)</i>	<i>Executive Summary</i>	Yes	Above average vs. Average vs. Below average
Rate of 14-day unplanned readmissions (Total & by type of delivery) for patients undergoing labour and delivery  <i>(Outcome Indicator)</i>	<i>Executive Summary</i>	Yes (for total)	Above average vs. Average vs. Below average
Rate of episiotomy  <i>(Appropriateness of Practice/Process Indicator)</i>	E-scorecard	N/A	N/A
Rate of third and fourth degree vaginal tears  <i>(Outcome Indicator)</i>	E-scorecard	N/A	N/A
Rates of c-section (elective, non-elective) and operative vaginal delivery  <i>(Utilization Indicator)</i>	E-scorecard	N/A	N/A
Rates of vaginal birth after c-section (elective, non-elective; successful, failed)  <i>(Utilization Indicator)</i>	E-scorecard	N/A	N/A
<b>CARDIAC CARE (BY SEX)</b>			
Rate of access to coronary angiography by sex (Rate for Females, Rate Males, Value of Difference between sexes)  <i>(Equitable access indicator)</i>	<i>Executive Summary</i>	Yes	Statistically significant difference (i.e. unequal) vs. No statistically significant difference (i.e. equal)

Indicator (Name and Type)	Location	Application of Performance Allocations	Type of Performance Allocation
Rate of 30-day readmissions for acute coronary syndrome by sex (Rate for Females, Rate Males, Value of Difference between sexes)  <i>(Equitable outcome indicator)</i>	<i>Executive Summary</i>	Yes	Statistically significant difference (i.e. unequal) vs. No statistically significant difference (i.e. equal)
Rate of 30-day readmissions for congestive heart failure by sex (Rate for Females, Rate Males, Value of Difference between sexes)  <i>(Equitable outcome indicator)</i>	<i>Executive Summary</i>	Yes	Statistically significant difference (i.e. unequal) vs. No statistically significant difference (i.e. equal)
Rate of access to drug-eluting stents for patients undergoing PTCA with stents (by Sex) (Rate for Females, Rate Males, Value of Difference between sexes)  <i>(Equitable access indicator)</i>	E-scorecard	N/A	N/A

## Description of Data & Data Sources

The Women's Health Clinical Utilization and Outcomes indicators in *Hospital Report 2006: Acute Care* were derived from Canadian Institute for Health Information (CIHI) data that have been collected under consistent guidelines, by trained abstractors, in all acute care hospitals in Ontario. These data have been used extensively in previous reports on health care performance, and form the basis for many journal articles. The data undergo extensive edit checks to improve accuracy, but all errors cannot be eliminated. It is important to recognize the limitations of the measures of utilization and outcomes; they will only be as accurate as the data sources on which they are based. However, using these data to produce comparative performance information should lead to refinements and improvements in data quality over time.

Since April 1 2003, all Ontario day surgery abstracts have been submitted to the National Ambulatory Care Reporting System (NACRS) (prior to this they were submitted to the Discharge Abstract Database (DAD)). The NACRS database includes data from day surgery units, emergency departments, and other ambulatory care clinics. It uses a different approach for identifying day surgery cases than the DAD. For more information see the "Same Day Surgery Data in Ontario" sidebar below.

The record layout of the NACRS database is substantially different than the DAD. However, comprehensive analysis and re-formatting of the NACRS data was performed by CIHI to enable consistent analysis based on the two databases. NACRS same day surgery data was mapped to the DAD layout then joined with the DAD inpatient data to enable consistent analysis. Note that for many fields, imperfect 'mappings' were required to translate the NACRS data to the DAD layout. This may impede Ontario hospitals' ability to replicate results that include day surgery cases.

### Same Day Surgery Data in Ontario

Effective April 1, 2003, all Ontario hospitals were mandated to report all ambulatory care data to the National Ambulatory Care Reporting System (NACRS) at CIHI. NACRS includes data acquisition and reporting standards intended for hospital- and community-based private and public ambulatory care activity that occurs in clinics, emergency departments, and day surgical units. These data are intended to support: management and operational decision making at the facility level; resource allocation decisions at a global and facility level; provincial and national comparisons; and the effective analysis of ambulatory care services.

Day surgery cases in NACRS are identified based on the MIS functional centres mandated by the Ontario Ministry of Health and Long Term Care (MOHLTC) for 'surgical day/night care'.

**Table 2.0: Identifying day surgery cases**

	Criteria	Codes
Include	NACRS records identified as 'surgical day/night care'	MIS functional centre codes 7~ 34020, 7~ 34025**, 7~ 34055, 7~ 260**, 7~ 262, 7~ 265**, and 7~ 310
Exclude	All unscheduled ER visits	MIS functional centre = 7~ 310 <b>AND</b> 'Scheduled ED Visit Indicator' = 'N'
	Possible duplicate records	MIS functional centre code 7131076

Note: ~ represents any digit.

Please note that this year's methodology for selecting day surgery cases from NACRS is based on the MIS functional centres mandated by the Ontario Ministry of Health and Long Term Care. For details on last year's methodology, refer to *Technical Summary 2005: Women's Health* found on the *Hospital Report Web site*, [www.hospitalreport.ca](http://www.hospitalreport.ca).

### General Notes

- All possible 25 diagnoses and 20 procedure codes on the discharge abstract were used in the analysis. For 2004-2005, note that all 10 possible diagnoses and procedure codes in NACRS are mapped over to the DAD format.
- Both inpatient and day surgery cases were used.

### Data Quality Issues

- Although wound infection is an important indicator of post-procedure clinical quality, we are not including this diagnosis in these indicators as recent analysis at CIHI has indicated that there are significant data quality concerns regarding the use of the code T81.4 'Infection following a procedure, not elsewhere classified'. This analysis and subsequent chart audits show that the code has a high false-positive rate. CIHI has been conducting educational workshops for coders to address this issue and we anticipate that the data quality concerns will improve for future reporting. Note that this does not affect code O86.00^ 'Infection of obstetric surgical wound', therefore, we are still including this code in our analysis.

### Coding Limitations

- In the Hysterectomy/Gynecological Conditions section, we frequently use Hysterectomy (all types) as an inclusion in either the numerator or denominator. Note that the code for partial hysterectomy, 1.RM.87.^ 'Excision partial, uterus and surrounding structures', also includes procedures other than partial hysterectomy (e.g. fibroidectomy, myomectomy) which we are not able to separate. Therefore, these cases may be including procedures other than a partial hysterectomy. For some indicators, this code was dropped in order to avoid capturing myomectomies. As of April 1, 2006 a new coding enhancement will be implemented in order to enable the distinction between myomectomies and partial hysterectomies (this is an important distinction as a myomectomy preserves fertility, whereas, a subtotal hysterectomy does not).

### Diagnosis Typing for Numerator and Denominator

- **Numerator:** For the diagnosis code selection in the numerator for the Women's Health indicators (other than the adverse events related indicators), we want to capture diagnoses of interest as a type M (and not a type M and 2). For the adverse events related indicators, we generally are looking for the diagnoses of interest as a type 2. However, the Labour and Delivery section is an exception. As diagnosis typing from the Obstetrics chapter in Folio is unique from the other chapters, we are not applying any diagnosis typing criteria in the Labour and Delivery section for the adverse events indicators. For the diagnoses of interest, it is more appropriate for us to use the sixth-digit subclassification in Folio, which identifies the phase in which the patient is receiving care and whether or not delivery occurs within that episode of care. The diagnosis typing criteria for the numerators appear in the sections in the numerator definition for each indicator.
- **Denominator:** For all the denominator criteria (except for the Labour and Delivery section), patients were included in the diagnostically defined groups if the diagnosis of interest was coded as a type M diagnosis. However, since the goal was to identify conditions that developed before hospital admissions, if the M-diagnosis was also listed on the discharge abstract as a type 2 diagnosis, indicating that the most responsible condition developed after admission, the patient was excluded from the analysis. In order to

identify patients who might have been admitted with the diagnosis of interest, but who had developed another most responsible diagnosis after admission, patients were also included if another diagnosis was coded as a type M and a type 2 (indicating that the M-diagnosis developed after admission) and the diagnosis of interest was coded as a type 1. For the Labour and Delivery section, the denominator criteria consists of patients with a diagnosis of interest as a type M (but not a type M and 2) or a type 1.

**Table 3.0: General Exclusions**

	<b>Criteria</b>	<b>Codes</b>
<b>Exclude:</b>	Patients with a diagnosis of cancer listed on the discharge abstract*	ICD-10-CA C00-C43, C45-C96, D00-D09, D37-D48, Z51.0, Z51.1
	Patients with a diagnosis of AIDS/HIV listed on the discharge abstract*	ICD-10-CA B24, Z21
	Patients with a diagnosis of violent trauma listed on the discharge abstract*	ICD-10-CA V01-V99, W03, W06-W09, W11-W17, W20-W45, W49-W60, W64-W77, W81, W83-W94, W99, X00 – X19, X30-X39, X52, X58-X99, Y00-Y09, Y35.^, Y36.^
	Patients without an Ontario residence	Postal Code that does not begin with: K, L, M, N, P
	Patients without a valid health insurance number	HIN equal to 'Zs' (hospitals can check records with an invalid HIN from their CIHI default report)
	Patients less than 15 or greater than 84 years of age	
	Care provided outside of Ontario	Submitting Province Code not equal to 5
	<b><i>For Labour and Delivery indicators only:</i></b> Patients less than 13 or greater than 64	

\*All diagnosis positions are included

## **Linking Cases Across Hospitals**

The research report draws on data for all of Ontario's acute care hospitals. Transferring patients from one hospital to another is an important facet of health care in Ontario. Although transfers are relatively rare for surgical patients, they occur more frequently in medical patients. In order to avoid analyzing transfers as two separate hospitalizations, the basic unit of analysis studied in *Hospital Report 2006: Acute Care* is the episode of care. An episode includes all continuous hospitalizations in acute care hospitals, and can include transfers from one acute care hospital to another. The rules for transfers are as follows:

1. If the patient is admitted within 24 hours of discharge, and either of the institutions has coded it as a transfer, the case is considered as a transfer.
2. If the patient is admitted more than 24 hours following discharge, it is not considered a transfer and is treated as a new episode.

Unique patients are tracked from one hospital to another based on scrambled health card numbers.

Occasionally, when a patient is transferred from one facility to another, the discharge date/time from the first hospital may be later than the admission date/time from the second hospital. Similarly, some patients are transferred to a day-surgery facility while they are inpatients at another facility; while they receive the day-surgery, their bed at the inpatient facility stays open, waiting for their return. The methodology behind the episode building accounts for these kinds of transfers. In cases with a multi-hospital episode of care, LOS is calculated as follows:

*(Last hospitalization discharge date - first hospital admission date) - ALC days in last hospitalization*

## **Replication of Results by Ontario Hospitals**

Similar to the Clinical Utilization and Outcomes quadrant, as part of the verification process for the Women's Health results, many participating hospitals go through a detailed validation of the values that underlie their performance allocations. This is an important step in ensuring the accuracy of the results, and helps to build confidence in the values presented in *Hospital Report: Acute Care*. However, for many of the indicators it is not possible to exactly replicate the results. This is due to the fact that the unit of analysis for the Women's Health section is an "episode of care", which can potentially span more than one acute care facility. As such, outcomes are attributed in specific ways for each indicator.

A special advisory panel of hospital chief executive officers and other stakeholders helped to develop rules for assigning outcomes to episodes of care involving more than one hospital for last year's report; this year's report follows the same rules. In each case, the rules were based on the principle that the hospital with the most control over the outcome should be assigned that outcome. However, the fact that so many hospitals are involved in the care of a single patient emphasizes the inter-linked nature of the hospital system. The following list explains how each outcome indicator is allocated, and to what extent hospitals can expect to replicate the results:

- **Cardiac Readmissions** are attributed to the last hospital in the episode. For example, if an episode spans two hospitals – i.e. first they are admitted to Hospital A, then transferred to Hospital B, then discharged (marking the end of this episode of care) – then they are admitted to another hospital, Hospital C, within 28 days with a condition related to their original diagnosis in Hospital A, then Hospital B is assigned the readmission outcome for this patient. Because the readmission can be to any hospital in Ontario, hospitals will not likely be able to replicate the numerator for any readmission indicators. They should be able to replicate some of the denominator, and a subset of the actual numerator (since they can count cases readmitted to their own facility).
- **Other Readmissions:** Unlike the 2005 report (which assigned the readmission to the last hospital in the episode), this year the readmissions for indicators of 'Rate of 14-day unplanned readmissions for patients undergoing labour and delivery' and 'Rate of 30-day unplanned readmissions for patients undergoing procedures for benign gynecological conditions' are now assigned to the hospital that performed the procedure. For example, in the scenario described in the above paragraph, the readmission would be assigned to Hospital A.
- **Adverse Events** are attributed to the hospital treating the patient when the adverse event diagnosis developed. For example, if an episode spans three hospitals – i.e. first they are admitted to Hospital A, then transferred to Hospital B, then transferred to Hospital C, then discharged (marking the end of this episode of care) – and the patient has a valid adverse event in Hospital C, then only Hospital C will be assigned the adverse event outcome. Hospitals A and B will not have an adverse event assigned to them. Hospitals should be able to replicate most of the denominator – the inpatient cases - and a subset of the actual numerator. The denominator consists of both inpatient and day-surgery cases where the day-surgery case must have started as an inpatient in the episode of care. However, a hospital may not be able to replicate the entire numerator because a LOS cut-off (used as a screen to identify cases where the adverse event likely impacted the patient's overall LOS) is compared to the episode LOS that cannot be calculated if the episode of care spans across different hospitals.
- **Access to Coronary Angiography** is attributed to the first hospital in the episode. Using this rule, hospitals that do not have their own cardiac catheterization

facilities can receive credit for recognizing the need to access the technology. For example, if an episode spans two hospitals – small community Hospital A, then a transfer to large teaching Hospital B – and the patient receives a coronary angiography at Hospital B, it is actually Hospital A that is attributed with providing access to the advanced technology. As such, hospitals will not be able to replicate the numerator of this indicator. They should, however, be able to replicate a subset of the denominator. Hospitals may not be able to replicate the entire denominator because of transfers during the episode of care.

- **All other indicators** values are attributed to the hospital treating the patient where the condition captured in the numerator occurred.

Understanding the rules for attributing episodes to hospitals is important for interpreting hospital-specific results. If care for a specific patient group in a hospital rarely involves a transfer, then the number of episodes assigned to that hospital for the indicator should be very similar. However, if care for a specific patient group in a hospital frequently involves transfers, then the number of episodes assigned to the hospital for calculation of the indicator may be substantially different.

# Indicator Definitions

This section includes definitions for all women’s health indicators featured in *Hospital Report 2006: Acute Care*. Appendix B describes the definitions of all additional clinical indicators that are available to hospitals in the E-scorecard.

## 1. Gynecological Conditions & Hysterectomy

### Difference between vaginal and abdominal hysterectomies.

The within-hospital normalized risk-adjusted difference between the numbers of vaginal (or laparoscopically assisted vaginal) and abdominal hysterectomies. The values for this indicator fall between 1 and -1: a value of 1 means that hospitals perform all vaginal hysterectomies; a value of -1 means that hospitals perform all abdominal hysterectomies; a value of 0 means that hospitals perform equal numbers of vaginal and abdominal hysterectomies. Although hospital-specific values are presented in the Executive Report, hospitals are not assigned performance classifications for these values.

Refer to the risk-adjustment section of this report for the basic formula for this indicator.

In terms of clinical definitions, the indicator has two main components – 1) vaginal and 2) abdominal hysterectomies for patients with benign uterine conditions, defined below.

- i. **Proportion of vaginal or laparoscopically-assisted vaginal hysterectomy in patients with benign gynecological conditions who had a hysterectomy.**

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	
	Vaginal hysterectomy (or laparoscopically-assisted vaginal hysterectomy)	1.RM.89.AA, 1.RM.89.CA 1.RM.89.DA, 1.RM.91.CA

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>		Diagnosis Type M (but not M and 2), Type 1 (with another Dx type M and 2):
	Abnormal uterine bleeding	N92.^, N93.^
	Uterine fibroids	D25.^
	Any of the above diagnoses <b>AND</b> any of the following procedures:	

Cases (Denominator)		
	Criteria	Codes
	Hysterectomy (total and radical)	1.RM.89.^, 1.RM.91.^
<b>Exclude:</b>	Pelvic exenteration	1.PM.91.^
	Genital prolapse and pelvic sling	N81.^ (any diagnosis type on the abstract) <b>and</b> any of: 1.PL.74.AF.^, 1.PL.74.AL-FF, 1.PL.74.CA-XX-K
	Endometriosis of the bowel or pelvic cavity and bowel resection	N80.0-N80.5, N80.8 (any diagnosis type on the abstract) <b>and</b> any of: 1.NK.87.^, 1.NM.87.^, 1.NM.89.^, 1.NM.91.^
	Major procedures in pregnancy or childbirth	CMG 600
	General Exclusion Criteria (exclude if age < 15 or > 84 years)	(see section on General Exclusions of this report )

- ii. **Proportion of abdominal hysterectomy in patients with benign gynecological conditions who had a hysterectomy.**

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	
	Abdominal hysterectomy	1.RM.89.LA, 1.RM.91.LA

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>		Diagnosis Type M (but not M and 2), Type 1 (with another Dx type M and 2):
	Abnormal uterine bleeding	N92.^, N93.^
	Uterine fibroids	D25.^
	Any of the above diagnoses <b>AND</b> any of the following procedures:	
	Hysterectomy (total and radical)	1.RM.89.^, 1.RM.91.^
<b>Exclude:</b>	Pelvic exenteration	1.PM.91.^
	Genital prolapse and pelvic sling	N81.^ (any diagnosis type on the abstract) <b>and</b> any of: 1.PL.74.AF.^, 1.PL.74.AL-FF, 1.PL.74.CA-XX-K
	Endometriosis of the bowel or pelvic cavity and bowel resection	N80.0-N80.5, N80.8 (any diagnosis type on the abstract) <b>and</b> any of: 1.NK.87.^, 1.NM.87.^, 1.NM.89.^, 1.NM.91.^
	Major procedures in pregnancy or childbirth	CMG 600
	General Exclusion Criteria (exclude if age < 15 or > 84 years)	(see section on General Exclusions of this report )

Cases (Denominator)		
	Criteria	Codes
	> 84 years)	Exclusions of this report)

- iii. **Percent of female patients experiencing adverse events during hospitalization for surgery/procedure for benign gynecological conditions (attributed to the hospital treating the patient when the complication developed).**

Note: Please see section on Replicating Results by Ontario Hospitals for notes regarding replication of results for multi-hospital episodes of care for this indicator.

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	
	Death in hospital	Discharge Disposition code = '7'
<b>OR</b>	<b>Type 2 diagnosis</b> of any of the following conditions:	
	Sepsis	T85.7 and Y83.^ (Type 9), T83.6 and Y83.^ (Type 9), T80.2 and Y83.^ (Type 9), T88.0 and Y83.^ (Type 9)
	Anaphylactic reaction	T78.0^, T78.1, T78.2, T80.5, T88.6
	Post-admission Pneumonia	Type 2 J13, J14, J15.^, J16.^, J18.^, <b>or</b> J69.0 and Type 3 B95.^ or B96.^
	Pelvic infection	N73.0, N73.2, N73.8, N73.9
	Peritonitis	K65.^, N73.3, N73.5
	Dehiscence	T81.3 and Y84.^ (Type 9)
	Cardiopulmonary arrest	I46.0, I46.9
	Upper respiratory tract infection	J06.^
	Hemorrhage	T81.0
	Fluid overload	E87.7
	Hyponatremia	E87.1
	Cerebral and pulmonary edema	G93.6, J81
	Injuries to urinary tract or gastrointestinal tract (e.g. bladder perforation, ureteral injuries, injuries to rectum and bowel)	K91.9, N99.8, N99.9, T81.2
	Bowel obstruction	K56.6
	Formation of uteroperitoneal fistulas	N82.^
	Venous thromboembolism	T80.1
	Urinary tract infection (UTI)	N39.0
	Fever over 39	R50.^
	Retention (and urinary complications following procedure)	R33 and Y83.1 (Type 9), N99.8, N99.9, T83.2, T83.5, T83.8, T83.9

Episodes (Numerator)		
	Paralytic ileus	K56.0
<b>AND</b>	Episode LOS greater than provincial median of 2 days	

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	Uterine artery embolization	1.RM.13.GQ-C2
	Hysterectomy (all types)	1.RM.87.BA-AG, 1.RM.87.BA-AK, 1.RM.87.BA-GX, 1.RM.87.CA-AK, 1.RM.87.CA-GX 1.RM.87.DA-AG, 1.RM.87.DA-AK, 1.RM.87.DA-GX, 1.RM.87.LA-AK, 1.RM.87.LA-GX, 1.RM.89.^, 1.RM.91.^
	Endometrial ablation	1.RM.59.^
	Any of the above procedures <b>AND</b> any of the following diagnoses:	Diagnosis Type M (but not M and 2), Type 1 (with another Dx type M and 2):
	Abnormal uterine bleeding	N92.^, N93.^
	Uterine fibroids	D25.^
<b>Exclude:</b>	Bladder suspension (combined with hysterectomy)	1.PL.74.^ and 1.RM.89.^
	Vaginal repair	1.RS.80.^
	Pelvic exenteration	1.PM.91.^
	Genital prolapse and pelvic sling	N81.^ (any diagnosis type on the abstract) <b>and</b> any of: 1.PL.74.AF.^, 1.PL.74.AL-FF, 1.PL.74.CA-XX-K
	Endometriosis of the bowel or pelvic cavity and bowel resection	N80.0-N80.5, N80.8 (any diagnosis type on the abstract) <b>and</b> any of: 1.NK.87.^, 1.NM.87.^, 1.NM.89.^, 1.NM.91.^
	Major procedures in pregnancy or childbirth	CMG 600
	General Exclusion Criteria (exclude if age < 15 or > 84 years)	(see section on General Exclusions of this report)

Note: There is a limitation to using code T81.0 "Haemorrhage and haematoma complicating a procedure, not elsewhere classified" as it does not include hemorrhage due to procedures for prosthetic devices, implants and grafts.

- iv. **Proportion of readmissions following surgical treatment/procedure for benign gynecological conditions within 30 days following discharge (attributed to the**

hospital that performed the procedure, i.e. the first hospital in the episode of care).

Note: Please see section on Replicating Results by Ontario Hospitals for notes regarding replication of results for multi-hospital episodes of care for this indicator.

Episodes (Numerator)		
	Criteria	Codes
	Cases within denominator with:	
<b>Include:</b>	readmissions relevant to initial care within 30 days of discharge	Diagnosis Type M (but not M and 2)
	Sepsis	T85.7 and Y83.^ (Type 9), T83.6 and Y83.^ (Type 9), T80.2 and Y83.^ (Type 9), T88.0 and Y83.^ (Type 9)
	Anaphylactic reaction	T78.0^, T78.1, T78.2, T88.6, T80.5
	Pelvic infection	N73.9, N73.8, N73.0, N73.2
	Peritonitis	N73.5, N73.3, K65.^
	Dehiscence	T81.3 and Y84.^ (Type 9)
	Cardiopulmonary arrest	I46.0, I46.9
	Upper respiratory tract infection	J06.^
	Hemorrhage (and requirement for transfusion)	T81.0
	Aspiration pneumonitis	J69.0, J95.4
	Fluid overload	E87.7
	Hyponatremia	E87.1
	Cerebral and pulmonary edema	G93.6, J81
	Injuries to urinary tract or gastrointestinal tract (e.g. bladder perforation, ureteral injuries, injuries to rectum and bowel)	K91.9, N99.8, N99.9, T81.2
	Bowel obstruction	K56.6
	Formation of uteroperitoneal fistulas	N82.^
	Venous thromboembolism	T80.1
	Urinary tract infection (UTI)	N39.0
	Fever over 39	R50.^
	Retention (and urinary complications following procedure)	R33 and Y83.1 (Type 9), N99.8, N99.9, T83.2, T83.5, T83.8, T83.9
	Paralytic ileus	K56.0
<b>Exclude:</b>	Elective readmissions	Admission category equal to 'L'

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>		Diagnosis Type M (but not M and 2), Type 1 (with another Dx type M and 2):

Cases (Denominator)		
	Abnormal uterine bleeding	N92.^, N93.^
	Uterine fibroids	D25.^
	Any of the above diagnoses <b>AND</b> any of the following procedures:	
	Uterine artery embolization	1.RM.13.GQ-C2
	Hysterectomy (all types)	1.RM.87.BA-AG, 1.RM.87.BA-AK, 1.RM.87.BA-GX, 1.RM.87.CA-AK, 1.RM.87.CA-GX, 1.RM.87.DA-AG, 1.RM.87.DA-AK, 1.RM.87.DA-GX, 1.RM.87.LA-AK, 1.RM.87.LA-GX, 1.RM.89.^, 1.RM.91.^
	Endometrial ablation	1.RM.59.^
<b>Exclude:</b>	Pelvic exenteration	1.PM.91.^
	Cases where the patient signed herself out or died	Discharge Disposition Code equal to 6 (sign out), 7 (death), or 9 (stillbirth)
	Major procedures in pregnancy or childbirth	CMG 600
	General Exclusion Criteria (exclude if age < 15 or > 84 years)	(see section on General Exclusions of this report)

## 2. Labour and Delivery

Note: The Obstetric chapter in Folio is unique in assigning the diagnosis type from other chapters. Since the patient can have a short LOS, type 1 and type 2 diagnoses are sometimes used interchangeably. As a result, we will not be using type 2 as a criteria for the adverse events listed, but rather we are relying on the selection of obstetrical codes that fall under the sixth-digit sub classification 'Delivered, with mention of postpartum condition', with the exception of the condition for uterine rupture. As there is no post-partum code available under this category, we will use the codes available under the sixth-digit sub classification 'Delivered, with or without mention of antepartum condition' for this condition.

- i. **Proportion of women undergoing labour and/or delivery who experience adverse events (attributed to the hospital treating the patient when the complication developed).**

Please see section on Replicating Results for Ontario Hospitals regarding replication of results for multi-hospital episodes of care for this indicator.

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	any diagnosis type
	Endometritis	O23.502, O85.002
	Organ failure/ dysfunction	O74.202, O75.402, O75.882
	Sepsis	O85.002
	Uterine rupture	O71.101, O71.111, O71.181
	Eclampsia	O15.202
	Pulmonary or cardiac events (congestive heart failure, pulmonary edema, embolism)	O75.402, O99.402, O99.502
	Renal failure	O90.402
	Urinary tract infection (UTI)	O86.202
	Wound infection	O86.002
	Hemorrhage	O72.002, O72.102, O72.202
	Aspiration Pneumonitis due to anaesthesia during labour and delivery	O74.001, O74.002
<b>AND</b>	Episode LOS greater than provincial median of 2 days	

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	All patients admitted for delivery	5.MD.50.^- 5.MD.60.^
<b>Exclude:</b>	General Exclusion Criteria (exclude if age < 13 or > 64 years)	(see section on General Exclusions of this report)

- ii. **Rate of hospital readmissions within 14 days of discharge in women undergoing labour and delivery for all deliveries and stratified by type of delivery (vaginal, caesarean section) - attributed to the first hospital in the episode of care.**

In the executive summary report (*Hospital Report 2006: Acute Care*), this indicator for total readmissions (i.e. vaginal + c-section) is included at a hospital-specific level with performance allocations. Hospital can access crude values for readmissions stratified by type of delivery in the E-scorecard.

**Note:** please see section on Replicating Results for Ontario Hospitals for notes regarding replication of results for multi-hospital episodes of care for this indicator.

**a) by vaginal delivery:**

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator:	Diagnosis type M (not a type M and 2)
	Readmission related to initial labour and delivery within 14 days of discharge	
	Pre-existing hypertension complicating pregnancy, childbirth and the puerperium	O10.^04
	Pre-existing hypertensive disorder with superimposed proteinuria	O11.004
	Gestational [pregnancy-induced] oedema and proteinuria without hypertension	O12.^04
	Gestational [pregnancy-induced] hypertension without significant proteinuria	O13.004
	Gestational [pregnancy-induced] hypertension with significant proteinuria	O14.004
	Eclampsia	O15.204
	Unspecified maternal hypertension	O16.004
	Pre-existing diabetes mellitus, Type 1	O24.0^4
	Pre-existing diabetes mellitus, Type 2	O24.^04
	Pre-existing diabetes mellitus of other specified type	O24.2^4
	Pre-existing diabetes mellitus, of unspecified type	O24.3^4
	Diabetes mellitus arising in pregnancy	O24.4^4
	Diabetes mellitus in pregnancy, unspecified	O24.9^4
	Malnutrition in pregnancy	O25.004
	Maternal care for other conditions predominantly related to pregnancy	O26.^04
	Maternal care for known or suspected abnormality of pelvic organs	O34.^04
	Perineal laceration during delivery	O70.^04
	Other obstetric trauma	O71.^04
	Postpartum haemorrhage	O72.^04

Episodes (Numerator)		
	Retained placenta and membranes, without haemorrhage	O73.^04
	Complications of anaesthesia during labour and delivery	O74.^04
	Other complications of labour and delivery, not elsewhere classified	O75.^04, O75.884
	Puerperal sepsis	O85.004
	Other puerperal infections	O86.^04
	Venous complications in the puerperium	O87.^04
	Obstetric embolism	O88.^04
	Complications of anaesthesia during the puerperium	O89.^04
	Complications of the puerperium, not elsewhere classified	O90.^04
	Infections of breast associated with childbirth	O91.^04
	Other disorders of breast and lactation associated with childbirth	O92.^04
	Obstetric death of unspecified cause	O95.004
	Maternal infectious and parasitic diseases classifiable elsewhere but complicating pregnancy, childbirth and the puerperium	O98.^04
	Other maternal diseases classifiable elsewhere but complicating pregnancy, childbirth and the puerperium	O99.^04
	Mental and behavioural disorders associated with the puerperium, not elsewhere classified	F53.^
<b>Exclude:</b>	Elective readmissions	Admission category equal to 'L'

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	All vaginal deliveries	5.MD.50.^- 5.MD.56.^
<b>Exclude:</b>	Cases where the patient signed herself out or died	Discharge Disposition Code equal to 6 (sign out), 7 (death), or 9 (stillbirth)
	General Exclusion Criteria (exclude if age < 13 or > 64 years)	(see section on General Exclusions of this report )

b) by c-section:

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	Diagnosis type M (not type M and 2)
	Readmission related to initial labour and delivery within 14 days of discharge	
	Pre-existing hypertension complicating pregnancy, childbirth and the puerperium	O10.^04
	Pre-existing hypertensive disorder with superimposed proteinuria	O11.004
	Gestational [pregnancy-induced] oedema and proteinuria without hypertension	O12.^04

Episodes (Numerator)		
	Gestational [pregnancy-induced] hypertension without significant proteinuria	O13.004
	Gestational [pregnancy-induced] hypertension with significant proteinuria	O14.004
	Eclampsia	O15.204
	Unspecified maternal hypertension	O16.004
	Pre-existing diabetes mellitus, Type 1	O24.0^4
	Pre-existing diabetes mellitus, Type 2	O24.^04
	Pre-existing diabetes mellitus of other specified type	O24.2^4
	Pre-existing diabetes mellitus, of unspecified type	O24.3^4
	Diabetes mellitus arising in pregnancy	O24.4^4
	Diabetes mellitus in pregnancy, unspecified	O24.9^4
	Malnutrition in pregnancy	O25.004
	Maternal care for other conditions predominantly related to pregnancy	O26.^04
	Maternal care for known or suspected abnormality of pelvic organs	O34.^04
	Perineal laceration during delivery	O70.^04
	Other obstetric trauma	O71.^04
	Postpartum haemorrhage	O72.^04
	Retained placenta and membranes, without haemorrhage	O73.^04
	Complications of anaesthesia during labour and delivery	O74.^04
	Other complications of labour and delivery, not elsewhere classified	O75.^04, O75.884
	Puerperal sepsis	O85.004
	Other puerperal infections	O86.^04
	Venous complications in the puerperium	O87.^04
	Obstetric embolism	O88.^04
	Complications of anaesthesia during the puerperium	O89.^04
	Complications of the puerperium, not elsewhere classified	O90.^04
	Infections of breast associated with childbirth	O91.^04
	Other disorders of breast and lactation associated with childbirth	O92.^04
	Obstetric death of unspecified cause	O95.004
	Maternal infectious and parasitic diseases classifiable elsewhere but complicating pregnancy, childbirth and the puerperium	O98.^04
	Other maternal diseases classifiable elsewhere but complicating pregnancy, childbirth and the puerperium	O99.^04
	Mental and behavioural disorders associated with the puerperium, not elsewhere classified	F53.^
<b>Exclude:</b>	Elective readmissions	Admission category equal to 'L'

Cases (Denominator)		
	Criteria	Codes

*Hospital Report 2006: Acute Care*

<b>Include:</b>	All c-section deliveries	5.MD.60.^
<b>Exclude:</b>	Cases where the patient signed herself out or died	Discharge Disposition Code equal to 6 (sign out), 7 (death), or 9 (stillbirth)
	General Exclusion Criteria (exclude if age < 13 or > 64 years)	(see section on General Exclusions of this report)

### 3. Cardiac Care

For the following cardiac indicators, the Executive Report and E-Scorecard include the rates for men and women, the values of the difference between women and men, and the direction and statistical significance of these differences. The indicator quantifying the difference between rates for women and men [i.e. (F-M)/F] is the value of the difference between women and men attributable to sex – or a value for “equity”.

In terms of interpretation, is the difference value [i.e. (F-M)/F] is negative (i.e. includes the full range of negative values), males have higher rates than females; if this value is positive (up to a value of + 1), females have higher rates than males. A value of “0” is the benchmark as it represents true equity between men and women. Refer to the Performance Rating section of this *Technical Report* for details of the method used to evaluate hospitals based on sex differences on these cardiac indicators.

i. **Rate of patients with acute myocardial infarction who receive coronary angiography within the episode of care, by sex**

**Note:** For multi-hospital episodes of care, the technology use was attributed to the hospital to which the patient was admitted at the beginning of the episode of care. Please see section on Replicating Results by Ontario Hospitals for notes regarding replication of results for multi-hospital episodes of care for this indicator. Unlike last year, if there are multiple episodes of AMI for a patient, only the first episode of AMI is counted.

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	
	Coronary angiography	3.IP.10.^

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	Acute Myocardial Infarction (AMI)	I21.^, I22.^ (Diagnosis Type M (but not M and 2), Type 1 (with another Dx type M and 2))
<b>Exclude:</b>	Chronic renal failure/hepatic failure	K72.1, N18.^ (any diagnosis type on the abstract)
	Dementia	F00.^, F01.^, F02.^, F03 (any diagnosis type on abstract)
	Certain Mental Disorders	F04, F05.^, F06.^, F07.^,

Cases (Denominator)		
		F09, F10.^, F11.^, F12.^, F13.^, F14.^, F15.^, F16.^, F17.^, F18.^, F19.^, F20.^, F21, F22.^, F23.^, F24, F25.^, F28, F29, F30.^, F31.^, F34.^, F38.^, F39, F40.^, F41.^, F42.^, F43.^, F44.^, F45.^, F48.^, F50.^, F51.^, F52.^, F53.^, F54, F55, F59, F60.^, F61, F62.^, F63.^, F64.^, F65.^, F66.^, F68.^, F69, F70.^, F71.^, F72.^, F73.^, F78.^, F79.^, F80.^, F81.^, F82, F83, F84.^, F88, F89, F90.^, F91.^, F92.^, F93.^, F94.^, F95.^, F98.^, F99 (any diagnosis type on the abstract)
	Discharged alive <b>and</b> had an episode LOS less than 3 days (i.e. 0-2 days)	
	General Exclusion Criteria (exclude if age < 15 or > 84 years)	(see section on General Exclusions of this report)

Note: Lake of the Woods District Hospital, which serves Kenora, Ontario, transfers some AMI patients to Winnipeg, Manitoba for angiography. As this report only captures care provided in Ontario, the rate of access to angiography by sex for Lake of the Woods District Hospital is likely higher than the rates for men and women presented in the *Hospital Report Executive Summary*.

ii. **Rate of readmissions to hospital within 30 days of discharge for patients with acute coronary syndrome by sex (attributed to last hospital in the episode)**

**Note:** Please see section on Replicating Results by Ontario Hospitals for notes regarding replication of results for multi-hospital episodes of care for this indicator.

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within the denominator with:	Diagnosis type M (not type M and 2)
	readmission relevant to initial care (see list below)	
	Acute Myocardial Infarction (AMI)	I21.^, I22.^
	Other acute and subacute forms of ischemic heart disease	I24.^
	Old myocardial infarction (MI)	I25.2
	Angina pectoris	I20.^
	Unstable angina	I20.0
	Congestive heart failure	I50.0
	Other forms of chronic ischemic heart disease	I25.^

	Conduction disorders	I44.^, I45.^
	Cardiac dysrhythmias	I49.^
	Functional disturbances following cardiac surgery	I97.1
	Urinary tract infection	N39.0
	Stroke	I60-I64
	Acute renal failure,	N17.^
	Hemorrhage, hematoma or seroma complicating a procedure	T81.0
	Vascular complications of medical care	T81.7 and Y84.^ (type 9)
	Cardiac complications during or resulting from a procedure	I97.1, I97.8, I97.9
	Respiratory complications during or resulting from a procedure	J95.88, J95.9
	Readmission occurred within 30 days of discharge	
<b>Exclude:</b>	Elective readmissions	Admission category equal to 'L'

<b>Cases (Denominator)</b>		
	<b>Criteria</b>	<b>Codes</b>
<b>Include:</b>		Diagnosis Type M (but not M and 2), Type 1 (with another Dx type M and 2)
	Acute Myocardial Infarction (AMI)	I21.^, I22.^
	Unstable angina	I20.0
	Cardiogenic shock	R57.0
<b>Exclude:</b>	Cases where the patient signed himself/herself out or died	Discharge Disposition Code equal to 6 (sign out), 7 (death), or 9 (stillbirth)
	Discharged alive <b>AND</b> had an episode LOS less than 2 days (i.e. 0-1 day)	
	General Exclusion Criteria (exclude if age < 15 or > 84 years)	(see section on General Exclusions of this report)

iii. **Rate of all-cause readmissions to hospital within 30 days of discharge for patients with congestive heart failure by sex**

<b>Episodes (Numerator)</b>		
	<b>Criteria</b>	<b>Codes</b>
<b>Include:</b>	Cases within denominator with all-cause readmissions relevant to initial care within 30 days of discharge	
<b>Exclude:</b>	Elective readmissions	Admission category equal to 'L'

<b>Cases (Denominator)</b>		
	<b>Criteria</b>	<b>Codes</b>

<b>Cases (Denominator)</b>		
<b>Include:</b>	Congestive heart failure	I50.0 (Diagnosis Type M (but not M and 2), Type 1 (with another Dx type M and 2)
<b>Exclude:</b>	Cases where the patient signed himself/herself out or died	Discharge Disposition Code equal to 6 (sign out), 7 (death), or 9 (stillbirth)
	General Exclusion Criteria (exclude if age < 15 or > 84 years)	(see section on General Exclusions of this report )

## Performance Rating

Performance allocations for indicators of women's health in *Hospital Report 2006: Acute Care* were based on data from 2004/2005.

### Gynecological Conditions and Hysterectomy and Labour & Delivery

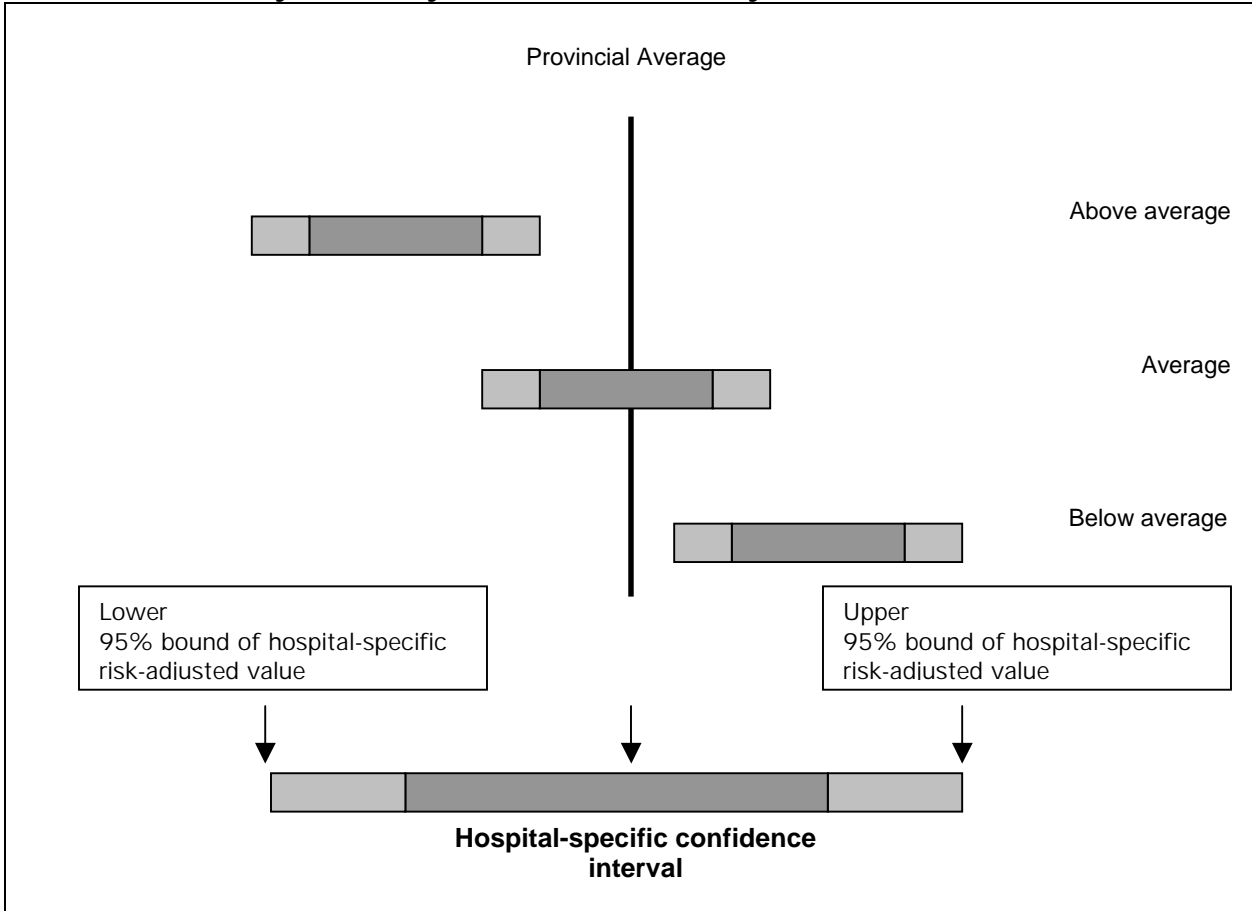
In *Hospital Report 2006: Acute Care*, a shaded cell designates a hospital's performance for each indicator; for women's health indicators in the gynecological conditions and hysterectomy, and labour and delivery groups, shading is based on categories of 'above average', 'provincial average', or 'below average' performance. These performance allocations are assigned using confidence intervals around the hospital's risk-adjusted value (assessed against the provincial average, which serves as the benchmark). For these indicators, a lower value indicates better performance. However, no single set of measures should be taken as representative of overall hospital performance. Note that performance classifications were provided for all hospital-specific indicators in these sex-specific clinical groups in the 2006 Executive Report except for Route of Hysterectomy – Difference between Vaginal and Abdominal.

For these sex-specific indicators, performance allocations are assigned as follows:

- If the lower bound of the confidence interval of the hospital's specific risk-adjusted value is above the provincial average, that hospital is classified as having *below average performance*.
- If the upper and lower bounds of the confidence interval of the hospital's specific risk-adjusted value surround the provincial average value, the hospital is classified as having *average performance*.
- If the upper bound of the confidence interval of the hospital's specific risk-adjusted value is below the provincial average value, that hospital is classified as having *above average performance*.

Figure 1.0 illustrates the methods used for assigning performance for these indicators.

**Figure 1.0: Performance Rating Methodology for Indicators: Gynecological Conditions & Hysterectomy, and Labour & Delivery Indicators**



## Cardiac Care

For women’s health indicators in the cardiac care group, shading is based on the statistical significance of the differences between women and men on the specific rates of access and readmissions. There are two categories of shading for these indicators – “statistically significant difference between women and men”<sup>3</sup>; AND “no statistically significant difference between women and men”<sup>4</sup>. Again, no single set of measures should be taken as representative of overall hospital performance.

The Executive Report and the E-Scorecard include the rates for women and men, the values of the differences between women and men and the direction and statistical significance of these differences at the hospital level. The indicator quantifying the difference between rates for women and men [i.e. (F-M)/F] is the value of the difference between women and men attributable to sex (after factors

<sup>3</sup> shaded with below average colour as this is not preferred, and the direction of the difference is also indicated (F > M, M > F) along with the hospital-specific numeric value

<sup>4</sup> shaded with above average colour as this is preferred and indicates better, or potentially more equitable performance

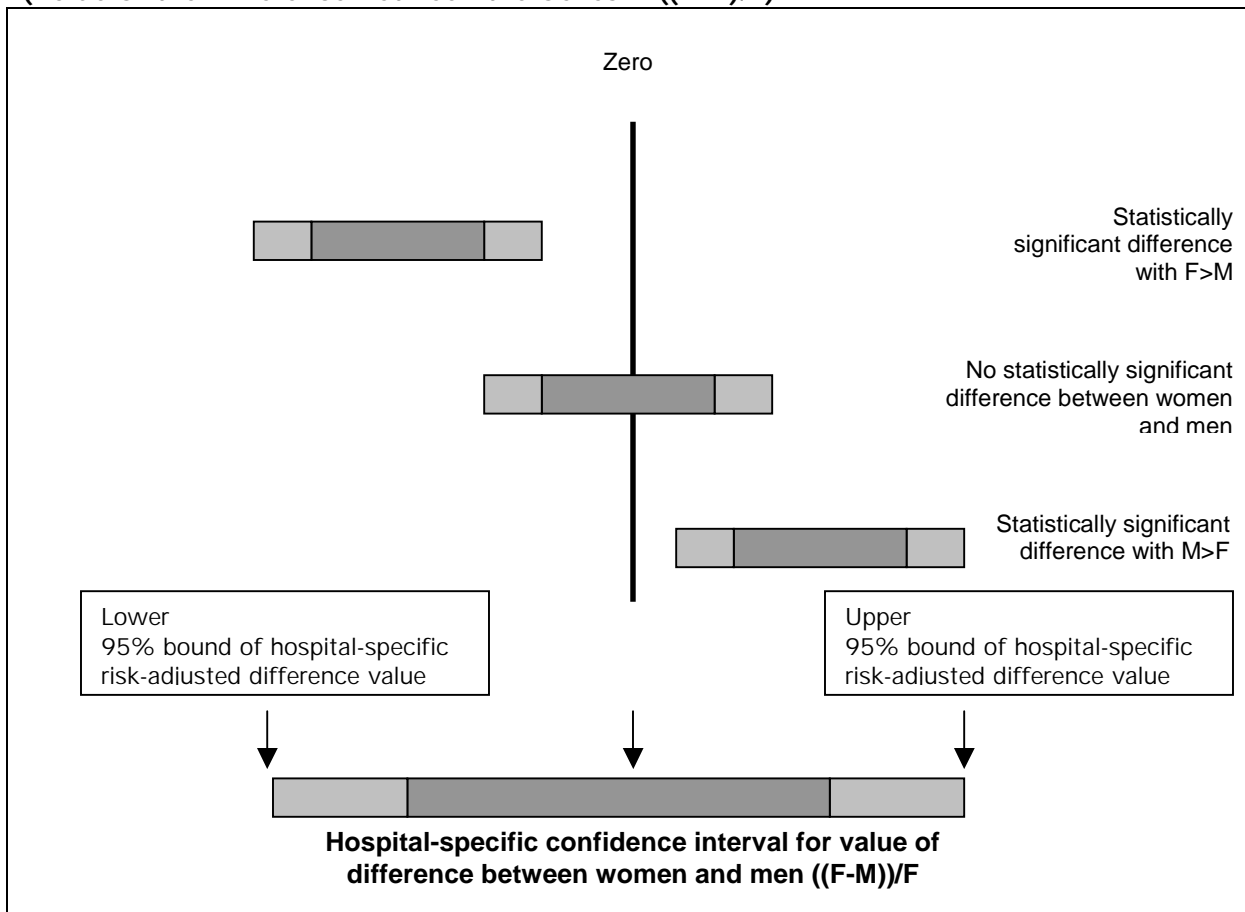
such as age and co-morbidities are accounted for) - or a value for "equity". Performance ratings for these indicators are based on 95% confidence intervals of hospital's risk-adjusted difference values. Again, in terms of interpretation, if this value [i.e.  $(F-M)/F$ ] is negative (includes full range of negative values), males have higher rates than females; if this value is positive (i.e. it may be positive up to a value of 1), females have higher rates than males. A value of "0" is used as the benchmark as it represents true equity between women and men.

For these sex-sensitive indicators, performance allocations are assigned as follows:

- If a hospital's 95% confidence value around their specific value of the difference between women and men for a given indicator surrounds zero, the hospital is classified as having no statistically significant sex difference.
- If a hospital's 95% confidence interval around their specific value of the difference between women and men for a given indicator does not include zero and is negative, then the hospital is said to have unequal (i.e.  $M > F$ ) performance or a statistically significant sex difference, in which males have a higher rates than females.
- If a hospital's 95% confidence interval around their specific value of the difference between women and men for a given indicator does not include zero and is positive, then the hospital is said to have unequal ( $F > M$ ) performance or a statistically significant sex difference, in which females have a significantly higher rate than males.

Figure 2.0 illustrates the methods used for assigning performance for these indicators.

Figure 2.0: Performance Rating Methodology for Indicators: Cardiac Indicators  
(Value of the Difference Between the Sexes – ((F-M)/F))



In some hospitals, the low volume of specific types of care may raise issues of confidentiality for patients or physicians, or may put the hospital in a position where a small number of adverse events could have a large impact on observed readmission or appropriateness of care rates. Sample size affects performance allocations, especially for rare event-type<sup>5</sup> indicators such as rates of adverse events and readmissions; hospitals with small numbers of patients may not have an adequate sample size to achieve above or below average performance. Performance allocations in this case (i.e. for small hospitals), therefore, may be an artifact of small numbers, as opposed to a true reflection of performance. In particular, small hospitals with zero events for readmissions or adverse events (for indicators in the Gynecological Conditions and Hysterectomy, and Labour and Delivery groups), may be classified as average performers not so much as a reflection of their true performance, but rather because sufficiently large numbers of other small hospitals had similar rates. Additional work is underway to resolve this issue; options such as combining the adverse events and readmissions indicators to

<sup>5</sup> Rare event indicators = indicators with < 5% event rate

enable larger numbers of events, and small hospitals to achieve performance beyond “average” are being considered.

In the hospital-specific section of *Hospital Report 2006: Acute Care*, hospitals are assigned a score of not reportable (‘NR’) in the following cases:

- If case volumes were less than five for a given patient group.
- For medical cases, if there were fewer than two ‘most responsible physicians’ providing care to patients within the patient group for the given indicator.
- For surgical cases, if there were fewer than two ‘most responsible surgeons/physicians’, AND fewer than five surgeons/anaesthetists/physicians involved in the care of patients within the patient group for the given indicator.
- For the indicator Route of Hysterectomy-Difference Between Vaginal and Abdominal, (NR) is due to < 5 of either type of hysterectomy.
- NR for the difference values-that is, (F-M)/F) occurs when the number of cases is < 5 for either females or males.
- NR for the difference value occurs when either of the rate(s) for males or females is zero.

## Calculating Confidence Intervals

95% confidence intervals around the adjusted values were calculated from the Poisson distribution when the observed numerators were less than 100. Otherwise, the confidence intervals were calculated using Byar’s approximation<sup>6</sup>.

When 95% confidence intervals proved to be too stringent or too lenient to yield a reasonable amount of variation in the performance ratings, 90%, 99%, or 99.9% confidence intervals were considered.

The following table reports the confidence intervals that were used for each indicator.

**Table 4.0: Indicator-specific Confidence Intervals**

Indicator	Confidence Interval
Rate of adverse events for patients undergoing procedures for benign gynecological conditions	95%
Rate of 30-day unplanned readmissions for patients undergoing procedures for benign gynecological conditions	90%
Rate of adverse events for patients undergoing labour and/or delivery	99.9%
Rate of 14-day unplanned readmissions for patients undergoing labour and delivery	90%
Rate of access to coronary angiography by sex (Rate for Females, Rate Males, Value of Difference between sexes)	95%

<sup>6</sup> N. E. Breslow, N. E. Day, *Statistical Methods in Cancer Research: Volume II – The Design and Analysis of Cohort Studies* (Lyon: International Agency for Research on Cancer, 1987).

Indicator	Confidence Interval
Rate of 30-day readmissions for acute coronary syndrome by sex (Rate for Females, Rate Males, Value of Difference between sexes)	95%
Rate of 30-day readmissions for congestive heart failure by sex (Rate for Females, Rate Males, Value of Difference between sexes)	95%

## Risk-Adjustment

In comparing hospital-specific rates of utilization/access and outcomes, it is important to take into account differences in patient characteristics that may vary systematically among hospitals. In clinical research, risk-adjustment occurs when patient scores are adjusted to remove pre-existing influences (e.g. case-mix groups, age), and hospital traits (i.e. volume). Risk adjustment modeling is a statistical technique that allows us to level the playing field when it comes to making comparisons across hospitals. However, this technique can never fully compensate for differences in hospital traits in the same way that randomization can achieve.

For each of the women’s health indicators reported in *Hospital Report 2006: Acute Care*, risk-adjustment variables and techniques were selected on the basis of appropriateness and viability (i.e. sufficient numbers of events). This issue is particularly important because patients with certain characteristics are less likely to receive some specific treatments or to have positive clinical outcomes than other groups. If a hospital tends to serve a disproportionate number of such patients, it may be unfairly reported as having higher rates of undesirable events, when in fact, these rates may be comparable to another hospital with lower instances that simply serves a different population.

Given the paucity of events across many of the clinical and utilization women’s health indicators, standard modeling techniques were deemed inadequate for purposes of risk adjustment. In order to compensate for indicators with rare events (< 5%), models better suited for this purpose were tested (Poisson and Negative Binomial regressions). The Poisson model was used in all indicators with rare events as over dispersion was not evident. Logistic regression was the model used if sufficient events were available. In order to define the general framework for modeling purposes, all variables were categorized, and subsequently aggregated according to common patient characteristics. For each of the indicators listed in Table 2.0, the specific type of model (distribution and link) used in the risk adjustment is described. The link describes the functional relationship between the outcome and the linear combination of the predictor variables.

Table 5.0 Descriptions of Risk-Adjustment Models

Indicator	Risk Adjustment Model (Distribution)	Risk Adjustment Model (Link)
Route of Hysterectomy – Difference between Vaginal and Abdominal	Logistic	Logit
Rate of adverse events for patients undergoing procedures for benign gynecological conditions	Poisson regression	Log
Rate of 30-day unplanned readmissions for patients undergoing procedures for benign gynecological conditions	Poisson regression	Log
Rate of adverse events for patients undergoing labour and delivery	Poisson regression	Log
Rate of 14-day unplanned total readmissions for patients undergoing labour and delivery	Poisson regression	Log
Rate of access to coronary angiography by sex ((F-M)/F Difference value)	Logistic	Logit
Rate of 30-day readmissions for acute coronary syndrome by sex ((F-M)/F Difference value)	Poisson regression	Log
Rate of 30-day readmissions for congestive heart failure by Sex ((F-M)/F Difference value)	Poisson regression	Log

Although much attention was paid to the structure of the data, some caveats are noted:

1. For cardiac care indicators rates were modeled separately for males and females. Although, this approach may not completely adjust for confounding effects between gender and the remaining risk factors, the effect on risk adjustment is minimal in effect.
2. The models did not account for admission or adverse events, which were associated with the same patient (Multiple admission rate). This issue is more pertinent for the cardiac care indicators. The effect of ignoring correlatedness of data is to reduce the effective sample size of the cohort. Given the small percentage of patients affected this was not considered to have a major impact on risk adjustment.
3. Finally, it is important to emphasize that risk-adjustment attempts to control for, but cannot entirely eliminate, the impact of differences in patients' pre-admission health status on performance. The expected performance is a relative measure. It describes the expected level of performance at an institution based on how well all institutions perform. Risk-adjustment only *reduces* the effect of differences in the patient population across hospitals; it

cannot eliminate the effect of these differences completely. As a result, hospitals with the sickest patients may tend to score more poorly than other institutions, even after risk-adjustment. Likewise, hospitals that treat rare or highly specialized groups of patients may tend to score poorly, even after risk-adjustment. It is important to keep these caveats in mind when comparing hospital performance.

Candidate variables in each of the models consisted of gender, age (categorical) and Elixhauser co-morbidity variables. The Elixhauser co-morbidities are comprised of 30 disease groups (i.e. Pneumonia, Asthma, CHF, etc). For each of the indicators in the three clinical groupings, the corresponding variables used for risk adjustment are listed.

**Table 6.0: Gynecological Conditions and Hysterectomy Indicator Risk-Adjustment Variables**

Models for Indicators – Gynecological Conditions and Hysterectomy		
Indicators	Variables or Pre-Existing Conditions	Age Categories or ICD-10-CA and Other Codes
Route of Hysterectomy – Difference Between Vaginal and Abdominal	Age	< 45, > = 45
Both indicators below have same variables in their risk-adjustment model:  Rate of adverse events for patients undergoing procedures for benign gynecological conditions AND Rate of 30-day unplanned readmissions for patients undergoing procedures for benign gynecological conditions	Age	< 45, > = 45
	Hypertension (Uncomplicated)	I10.0
	Diabetes	E10.90,E11.9,E11.0,E13.9 E10.1,E11.1,E13.1,E14.1, E11.01,E13.01,E14.01,E10.2, E11.2,E13.2,E14.2,E10.3,E11.3, E14.3,E10.4,E11.4,E13.4,E14.4, E10.5,E11.5,E13.5,E14.5,E10.9, E11.9,E13.9,E14.9,O24.4,O24.0, O24.1,O24.3,O24.9
	Anemia	D50.0,D50.08,D50.1,D50.9, D51,D52,D64.9

**Table 7.0: Labour and Delivery Indicator Risk-Adjustment Variables**

Models for Indicators – Labour & Delivery		
Indicators	Variables or Pre-Existing Conditions	Age Categories or ICD-10-CA and Other Codes
Both indicators below have same variables in their risk-adjustment model:  Rate of adverse events for patients undergoing labour and delivery  AND	Age	< 35, > = 35
	Conduction Disorders (Congestive heart failure, Left ventricular failure, heart failure unspecified)	I44.3,I44.7,I44.6,I45.1,I45.9, I45.6,I45.8,I47.1,I47.9,I48.0, I48,I49.9,R00.0,Z95.0,Z45.0
	Chest Conditions	J40,J41,J42,J44,J43.0,J43.1,J43.2 J43.8,J43.9,J45.0,J45.1,J45.8,J45.9, J47,J67.0,J44.0,J60,J61,J62,J63,J66, J65,J68.4

Rate of 14-day unplanned total readmissions for patients undergoing labour and delivery	Neurological Disorders	G31.9,G20,G10,G25.5,G11.0, G11.1,G11.2,G11.3,G11.4,G11.8, G11.9,G12.0,G12.1,G12.2,G12.9, G35,G37.0,G37.8,G37.9,G40.3, G40.1,G40.2,G40.8,G40.9,G93.1, G93.4,R56.0,R56.8,R47.0
	Gestational Diabetes	O24.4,O24.0,O24.1,O24.3,O24.9
	Hypothyroidism	E03.0,E03.1,E00.0,E00.1,E00.2, E00.3,E00.4,E00.5,E00.8,E00.9, E89.0,E03.2,E03.8,E03.9
	Coagulation Disorders	D66,D69.1,D69.30,D69.38,D69.4, D69.5,D69.6
	Obesity	E66.8
	Anemia	D50.8,D50.1,D50.9,D51,D50.9, D51,D52,D64.9
	Neurotic Disorders	F34.1,F34.0,F43.2,F32.9

**Table 8.0: Cardiac Indicator Risk-Adjustment Variables**

Models for Indicators – Cardiac Care		
Indicators	Variables or Pre-Existing Conditions	Age Categories or ICD-10-CA and Other Codes
All three indicators below have same variables in their risk-adjustment model:	Age	Females: < 65, > = 65, Males: < 55, > = 55
	CHF	I50.0,I50.1,I50.9
Rate of access to coronary angiography by sex	Conduction Disorders	I44.3,I44.7,I44.6,I45.1,I45.9, I45.6,I45.8,I47.1,I47.9,I48.0, I48,I49.9,R00.0,Z95.0,Z45.0
	Atherosclerosis	I70.0,I70.1,I70.2,I70.8,I70.9, I71.2,I71.4,I71.6,I71.9,I73.1, I73.8,I73.9,I77.1,K55.1,K55.9, Z95.8
AND	Hypertension (Uncomplicated)	I100
Rate of 30-day readmissions for acute coronary syndrome by sex	Hypertension (Complicated)	I50.0,I11,I13,N18,N19,I15.01, I15.10,I15.80,I15.81,I15.90,I15.91 I15.00,
AND	Chest Conditions	J40,J41,J42,J44,J43.0,J43.1,J43.2 J43.8,J43.9,J45.0,J45.1,J45.8,J45.9, J47,J67.0,J44.0,J60,J61,J62,J63,J66, J65,J68.4
Rate of 30-day readmissions for congestive heart failure by Sex	Diabetes	E10.90,E11.9,E11.0,E13.9 E10.1,E11.1,E13.1,E14.1, E11.01,E13.01,E14.01,E10.2, E11.2,E13.2,E14.2,E10.3,E11.3, E14.3,E10.4,E11.4,E13.4,E14.4, E10.5,E11.5,E13.5,E14.5,E10.9, E11.9,E13.9,E14.9,O24.4,O24.0, O24.1,O24.3,O24.9
((F-M)/F Difference value)	Hypothyroidism	E03.0,E03.1,E00.0,E00.1,E00.2, E00.3,E00.4,E00.5,E00.8,E00.9, E89.0,E03.2,E03.8,E03.9
	Renal Failure	N17.0,N17.1,N17.2,N17.8,N17.9, N18.0,N18.1,N18.2,N18.8,N18.9, N19,Z94.0,Z99.2,Z49.1,Z49.2
	Anemia	D50.8,D50.1,D50.9,D51,D50.9, D51,D52,D64.9

In order to produce the adjusted indicator, the observed indicator rates are divided by the expected rates and adjusted to the provincial average. The specific adjusted indicators and their formulas are described below.

**Table 9.0: Indicator Formulas**

Indicator description	Indicator Formula (unadjusted and adjusted)
Route of Hysterectomy – Difference between Vaginal and Abdominal	$\text{observed} = \frac{(\# \text{ of Vaginal} - \# \text{ of Abdominal}) \text{ Hysterectomies}}{\text{Total \# of hysterectomies}}$ $\text{expected} = \frac{(\# \text{ Expected Vaginal} - \# \text{ Expected Abdominal Hysterectomies})}{(\# \text{ Expected Vaginal} + \# \text{ Expected Abdominal Hysterectomies})}$ $\text{adjusted} = \text{observed/expected} * \text{provincial difference}$
Rate of adverse events for patients undergoing procedures for benign gynecological conditions	$\text{observed} = \frac{\# \text{ of adverse events}}{\# \text{ of patients undergoing procedures}}$ $\text{expected} = \frac{\# \text{ of expected adverse events}}{\# \text{ of patients undergoing procedures}}$ $\text{adjusted} = \text{observed/expected} * \text{Provincial Rate}$
Rate of 30-day unplanned readmissions for patients undergoing procedures for benign gynecological conditions	$\text{observed} = \frac{\# \text{ of 30 day readmissions}}{\# \text{ of patients undergoing procedures}}$ $\text{expected} = \frac{\# \text{ of expected 30 day readmissions}}{\# \text{ of patients undergoing procedures}}$ $\text{adjusted} = \text{observed/expected} * \text{Provincial Rate}$
Rate of adverse events for patients undergoing labour and delivery	$\text{observed} = \frac{\# \text{ of adverse events}}{\# \text{ of patients admitted for L\&D}}$ $\text{expected} = \frac{\# \text{ of expected adverse events}}{\# \text{ of patients admitted for L\&D}}$ $\text{adjusted} = \text{observed/expected} * \text{Provincial Rate}$
Rate of 14-day unplanned	$\# \text{ of 14 day total readmissions}$

Indicator description	Indicator Formula (unadjusted and adjusted)
total readmissions for patients undergoing labour and delivery	$\text{observed} = \frac{\text{\# of vaginal and c-section deliveries}}{\text{\# of expected 14 day total readmissions}}$ $\text{expected} = \frac{\text{\# of vaginal and c-section deliveries}}{\text{\# of vaginal and c-section deliveries}}$ $\text{adjusted} = \text{observed/expected*Provincial Rate}$
Rate of access to coronary angiography by sex	$F_{\text{adjusted rate}} = (F_{\text{observed}} / F_{\text{expected}}) * (\text{Female Provincial Rate})$ $M_{\text{adjusted rate}} = (M_{\text{observed}} / M_{\text{expected}}) * (\text{Male Provincial Rate})$ $\text{adjusted} = (F_{\text{adjusted rate}} - M_{\text{adjusted rate}}) / F_{\text{adjusted rate}}$
Rate of 30-day readmissions for acute coronary syndrome by sex	$F_{\text{adjusted rate}} = (F_{\text{observed}} / F_{\text{expected}}) * (\text{Female Provincial Rate})$ $M_{\text{adjusted rate}} = (M_{\text{observed}} / M_{\text{expected}}) * (\text{Male Provincial Rate})$ $\text{adjusted} = (F_{\text{adjusted rate}} - M_{\text{adjusted rate}}) / F_{\text{adjusted rate}}$
Rate of 30-day readmissions for congestive heart failure by sex	$F_{\text{adjusted rate}} = (F_{\text{observed}} / F_{\text{expected}}) * (\text{Female Provincial Rate})$ $M_{\text{adjusted rate}} = (M_{\text{observed}} / M_{\text{expected}}) * (\text{Male Provincial Rate})$ $\text{adjusted} = (F_{\text{adjusted rate}} - M_{\text{adjusted rate}}) / F_{\text{adjusted rate}}$

## Appendix A: Women’s Health Expert (Panel) Advisors

The following contributors provided input into the Women’s Health redevelopment process for *Hospital Report 2005*, and were continually consulted with to provide feedback throughout the production of *Hospital Report 2006*.

Expert Advisor	Primary Affiliation(s)	Contribution to Women’s Health Redevelopment Process
<p>Donna Stewart, MD</p> <p>*Hospital Report Research Collaborative, Women’s Health Co-Investigator</p>	<ul style="list-style-type: none"> <li>Professor and Chair of Women’s Health, University of Toronto and University Health Network</li> </ul>	<ul style="list-style-type: none"> <li>Reviewed and advised on the initial literature search strategy, panel composition, and criteria for the selection of candidate indicators for the panel process</li> <li>Participated in the expert panel meeting and advised on the relevance, soundness and feasibility of a series of candidate women’s health indicators, and on next steps for the review and selection process</li> <li>Provided ongoing feedback on and validation for definitions of the final set of women’s health indicators and questions on the structures and services survey</li> </ul>
<p>Arlene Bierman, MD</p> <p>*Hospital Report Research Collaborative, Women’s Health Co-Investigator</p>	<ul style="list-style-type: none"> <li>Ontario Women’s Health Council Chair of Women’s Health, University of Toronto Inner City Health Research Unit, St. Michael’s Hospital</li> </ul>	<ul style="list-style-type: none"> <li>Reviewed and advised on the initial literature search strategy, panel composition, and criteria for the selection of candidate indicators for the panel process</li> <li>Participated in the expert panel meeting and advised on the relevance, soundness and feasibility of a series of candidate women’s health indicators, and on next steps for the review and selection process</li> <li>Provided ongoing feedback on and validation for definitions of the final set of women’s health indicators and questions on the structures and services survey</li> </ul>
<p>Beth Abramson, MD</p>	<ul style="list-style-type: none"> <li>Director, Cardiac Prevention Centre &amp; Women’s Cardiovascular Health (St. Michael’s Hospital)</li> <li>Assistant Professor of Medicine, University of</li> </ul>	<ul style="list-style-type: none"> <li>Participated in the expert panel meeting and advised on the relevance, soundness and feasibility of a series of candidate women’s health indicators (i.e. particularly those related to cardiovascular disease and quality of cardiac care)</li> </ul>

Expert Advisor	Primary Affiliation(s)	Contribution to Women's Health Redevelopment Process
	Toronto	<ul style="list-style-type: none"> <li>• Provided ongoing feedback on and validation for definitions of the final set of cardiac-related women's health indicators and questions on the structures and services survey</li> </ul>
Jennifer Blake, MD	<ul style="list-style-type: none"> <li>• Professor of Obstetrics &amp; Gynecology, University of Toronto</li> <li>• Head of Women's Health and Chief of Obstetrics &amp; Gynecology, Sunnybrook &amp; Women's College Health Sciences Centre</li> </ul>	<ul style="list-style-type: none"> <li>• Provided feedback for the expert panel meeting and advised on the relevance, soundness and feasibility of a series of candidate women's health indicators (i.e. particularly those related to gynecological conditions and hysterectomy)</li> <li>• Provided ongoing feedback on and validation for definitions of the final set of gynecology-related women's health indicators and questions on the structures and services survey</li> </ul>
Angela Cheung, MD	<ul style="list-style-type: none"> <li>• Associate Director of University Health Network Women's Health Program &amp; Director of University Health Network Osteoporosis Program</li> <li>• Assistant Professor of Medicine at the University of Toronto</li> </ul>	<ul style="list-style-type: none"> <li>• Participated in the expert panel meeting and advised on the relevance, soundness and feasibility of a series of candidate women's health indicators</li> </ul>
Donna Ciliska	<ul style="list-style-type: none"> <li>• Professor of Nursing, McMaster University</li> </ul>	<ul style="list-style-type: none"> <li>• Participated in the expert panel meeting and advised on the relevance, soundness and feasibility of a series of candidate women's health indicators</li> </ul>
Harriet MacMillan, MD	<ul style="list-style-type: none"> <li>• Associate Professor, Psychiatry &amp; Behavioural Neurosciences</li> <li>• Associate Member, Clinical Epidemiology &amp; Biostatistics and Director of Child Advocacy and Assessment Program, McMaster University</li> </ul>	<ul style="list-style-type: none"> <li>• Provided feedback on the definitions of indicators related to screening protocols for sexual assault and domestic violence (relevant to the future redevelopment of women's health in the Emergency Department Report)</li> </ul>
Joan Murphy, MD	<ul style="list-style-type: none"> <li>• Division Head of Gynecologic Oncology, University Health Network</li> <li>• Associate Professor, Department of Obstetrics and Gynaecology, University of Toronto</li> </ul>	<ul style="list-style-type: none"> <li>• Provided feedback on the selection of candidate indicators related to gynecological conditions (i.e. notably a candidate indicator on cervical cancer screening)</li> </ul>
Mireille Norris, MD	<ul style="list-style-type: none"> <li>• Internist/Geriatrician, Providence Health Care</li> </ul>	<ul style="list-style-type: none"> <li>• Participated in the expert panel meeting and advised on the</li> </ul>

Expert Advisor	Primary Affiliation(s)	Contribution to Women's Health Redevelopment Process
	(Toronto) <ul style="list-style-type: none"> <li>• Assistant Professor of Medicine, University of Toronto</li> </ul>	relevance, soundness and feasibility of a series of candidate women's health indicators
Paula Rochon, MD	<ul style="list-style-type: none"> <li>• Associate Professor of Medicine, University of Toronto</li> <li>• Senior Scientist and Assistant Director, Kunin Lunenfeld Applied Research Unit, Baycrest Centre for Geriatric Care</li> <li>• Scientist, Institute for Clinical Evaluative Sciences</li> </ul>	<ul style="list-style-type: none"> <li>• Participated in the expert panel meeting and advised on the relevance, soundness and feasibility of a series of candidate women's health indicators</li> </ul>
Diane Whitney, MD	<ul style="list-style-type: none"> <li>• Vice President of Medical Affairs &amp; Clinical Director Women's Program Centre for Addiction &amp; Mental Health</li> <li>• Assistant Professor, University of Toronto &amp; University of Western Ontario</li> </ul>	<ul style="list-style-type: none"> <li>• Participated in the expert panel meeting and advised on the relevance, soundness and feasibility of a series of candidate women's health indicators, and particularly those related to mental health</li> </ul>
Claire Bombardier, MD	<ul style="list-style-type: none"> <li>• University Health Network</li> <li>• Professor of Medicine and Director of Division of Rheumatology, University of Toronto</li> <li>• Head of Division of Clinical Decision-Making &amp; Health Care, Toronto General Research Institute</li> </ul>	<ul style="list-style-type: none"> <li>• Provided feedback on candidate women's health indicators related to musculoskeletal conditions</li> </ul>
Moira Kapral, MD	<ul style="list-style-type: none"> <li>• Internist, University Health Network</li> <li>• Assistant Professor of Medicine, University of Toronto</li> <li>• Scientist, Institute for Clinical Evaluative Sciences</li> </ul>	<ul style="list-style-type: none"> <li>• Provided feedback on candidate women's health indicators related to stroke</li> </ul>
C. Ruth Wilson, MD	<ul style="list-style-type: none"> <li>• Professor, Department of Family Medicine, Queen's University</li> <li>• Chair of the Ontario Family Health Team Action Group</li> </ul>	<ul style="list-style-type: none"> <li>• Participated in the expert panel meeting and advised on the relevance, soundness and feasibility of a series of candidate women's health indicators</li> </ul>
Terry O'Driscoll, MD	<ul style="list-style-type: none"> <li>• Chief of Staff, Sioux Lookout Meno Ya Win Health Centre</li> <li>• Preceptor, Northwestern Ontario Medical Program</li> </ul>	<ul style="list-style-type: none"> <li>• Provided ongoing feedback on and validation for definitions of the final set of women's health indicators and questions on the structures and services survey in the area of labour</li> </ul>

Expert Advisor	Primary Affiliation(s)	Contribution to Women's Health Redevelopment Process
	and Family Medicine North	and delivery
Alan Bocking, MD	<ul style="list-style-type: none"> <li>• Chief of Obstetrics &amp; Gynecology, Mount Sinai Hospital</li> <li>• Chair of Department of Obstetrics &amp; Gynecology, University of Toronto</li> </ul>	<ul style="list-style-type: none"> <li>• Provided ongoing feedback on and validation for definitions of the final set of women's health indicators and questions on the structures and services survey in the area of labour and delivery</li> </ul>
Nicholas Leyland, MD	<ul style="list-style-type: none"> <li>• Chief of Obstetrics &amp; Gynecology, St. Joseph's Health Centre</li> <li>• Assistant Professor, Department of Obstetrics &amp; Gynecology, University of Toronto</li> </ul>	<ul style="list-style-type: none"> <li>• Provided ongoing feedback on and validation for definitions of the final set of women's health indicators and questions on the structures and services survey in the area of gynecological conditions and hysterectomy</li> </ul>
Lynn Wilson, MD	<ul style="list-style-type: none"> <li>• Chief, Family and Community Medicine, St. Joseph's Health Centre (Toronto)</li> <li>• Associate Professor of Family and Community Medicine, University of Toronto</li> </ul>	<ul style="list-style-type: none"> <li>• Participated in the expert panel meeting and advised on the relevance, soundness and feasibility of a series of candidate women's health indicators</li> </ul>
Catherine MacKinnon, MD	<ul style="list-style-type: none"> <li>• Obstetrician, Brantford</li> <li>• Obstetrics and Gynecology Faculty Member, University of Western Ontario</li> <li>• Chair of Society of Obstetrics &amp; Gynecology Clinical Practice Obstetrics Committee</li> </ul>	<p>Provided ongoing feedback on and validation for definitions of the final set of women's health indicators and questions on the structures and services survey in the area of labour and delivery</p>

## Appendix B: Additional Indicators in the E-scorecard

This section describes the definitions for the Women's Health indicators that appear only in the E-scorecard (crude values without performance allocations).

### 1. Gynecological Conditions & Hysterectomy

- a) Proportion of patients with benign gynecological conditions as the only uterine problem who undergo select alternatives to hysterectomy.

Note: This component is used to calculate a difference value of the proportion of: **use of/access to hysterectomy alternatives for patients with benign gynecological conditions** to the proportion of: use of/access to hysterectomy for patients with benign gynecological conditions.

Episodes (Numerator)		
	Criteria	ICD-10 Codes
<b>Include:</b>	Cases within denominator with:	
	Endometrial ablation	1.RM.59.^
	Uterine artery embolization	1.RM.13.GQ-C2

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>		Diagnosis Type M (but not M and 2), Type 1 (with another Dx type M and 2):
	Abnormal uterine bleeding	N92.^, N93.^
	Uterine fibroids	D25.^
<b>Exclude:</b>	Endometriosis of the bowel or pelvic cavity	N80.0-N80.5, N80.8 (any diagnosis type on the abstract)
	Pelvic exenteration	1.PM.91.^
	Major procedures in pregnancy or childbirth	CMG 600
	General Exclusion Criteria (exclude if age < 15 or > 84 years)	(see section on General Exclusions of this report)

Note:

- The Women's Health Expert Panel (gynecology) wanted to include hysteroscopic myomectomy (1.RM.87.BA.^) in the numerator for the indicator component described above, as it is a hysterectomy alternative. However, this code also includes subtotal, partial hysterectomy, which is included in the following indicator component. As a result of this code

limitation, it was decided to exclude hysteroscopic myomectomy from the component above, and include it in the component below. However, note that code 1.RM.87.^ ^ may contain myomectomy cases in the results for the following indicator component. There will be a coding enhancement as of April 1, 2006 in order to enable the distinction between myomectomies and subtotal hysterectomies (this is an important distinction for this indicator as a myomectomy preserves fertility, whereas, a subtotal hysterectomy does not).

- In addition, the Women’s Health Expert Panel (gynecology) originally wanted to exclude patients with previous ablation, myomectomy, resection, uterine artery embolization (within past two years) from the denominator, however, in the new classification system format for ICD-10-CA/CCI in DAD, it is not possible to capture this information. Therefore, we may be including women who have had “previous alternative to hysterectomy” cases in the denominator.

**b) Proportion of patients with benign gynecological conditions as the only uterine problem who undergo hysterectomy.**

Note: This component is used to calculate the ratio of the proportion of: use of/access to hysterectomy alternatives for patients with benign gynecological conditions to the proportion of: **use of/access to hysterectomy for patients with benign gynecological conditions.**

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	
	Hysterectomy (all types)	1.RM.87.BA-AG, 1.RM.87.BA-AK, 1.RM.87.BA-GX, 1.RM.87.CA-AK, 1.RM.87.CA-GX 1.RM.87.DA-AG, 1.RM.87.DA-AK, 1.RM.87.DA-GX, 1.RM.87.LA-AK, 1.RM.87.LA-GX, 1.RM.89.^ ^, 1.RM.91.^ ^

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>		Diagnosis Type M (but not M and 2), Type 1 (with another Dx type M and 2):
	Abnormal uterine bleeding	N92.^, N93.^

Cases (Denominator)		
	Uterine fibroids	D25.^
<b>Exclude:</b>	Endometriosis of the bowel or pelvic cavity	N80.0-N80.5, N80.8 (any diagnosis type on the abstract)
	Pelvic exenteration	1.PM.91.^
	Major procedures in pregnancy or childbirth	CMG 600
	General Exclusion Criteria (exclude if age < 15 or > 84 years)	(see section on General Exclusions of this report)

c) **Proportion of women with benign gynecological conditions undergoing hysterectomy with concurrent bilateral oophorectomy**

Note: This indicator has been suspended due to data quality issues. We will investigate the possibility of including this indicator for future years.

2. **Labour and Delivery**

a) **Rate of Episiotomy**

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	
	Episiotomy	5.MD.50.GH, 5.MD.53.JE, 5.MD.53.KJ, 5.MD.53.KL, 5.MD.53.KN, 5.MD.53.KS, 5.MD.54.KJ, 5.MD.54.KL, 5.MD.54.KN, 5.MD.54.NF, 5.MD.55.KJ, 5.MD.55.KL, 5.MD.55.KN, 5.MD.55.KR, 5.MD.56.GH, 5.MD.56.PA, 5.MD.56.PB, 5.MD.56.PC, 5.MD.56.PD, 5.MD.56.PE, 5.MD.56.PF, 5.MD.56.PG, 5.MD.56.PH, 5.MD.56.PJ

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	All vaginal deliveries	5.MD.50.^ - 5.MD.56.^
<b>Exclude:</b>	General Exclusion Criteria (exclude if age < 13 or > 64 years)	(see section on General Exclusions of this report )

b) Rate of third and fourth degree vaginal-perineal tears/lacerations during labour and delivery.

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	any diagnosis type
	3rd degree tears	O70.201
	4th degree tears	O70.301

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	All vaginal deliveries	5.MD.50.^ - 5.MD.56.^
<b>Exclude:</b>	General Exclusion Criteria (exclude if age < 13 or > 64 years)	(see section on General Exclusions of this report)

Note: Coding and recording the degree of vaginal-perineal tears/lacerations by the operator may not be clearly identified so comparisons may be difficult.

c) Rates of c-section (elective, non-elective) and operative vaginal delivery (Utilization Indicator).

i. Proportion of women admitted for delivery who deliver by caesarean section during/after trial of labour.

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	any diagnosis type
	Caesarean section during/after trial of labour (primary and repeat)	5.MD.60.^ <b>and</b> One of O64.^01, O65.^01, O66.^01

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	All patients admitted for delivery	5.MD.50.^ - 5.MD.60.^
<b>Exclude:</b>	General Exclusion Criteria (exclude if age < 13 or > 64 years)	(see section on General Exclusions of this report)

Note: This only captures cases where there is obstructed labour, trial of labour fails, and the patient requires a caesarean section. We cannot capture other

non-obstructive indications for caesarean section with 'trial of labour' such as fetal distress, uterine inertia, etc.

ii. Proportion of women admitted for delivery who deliver by elective caesarean section (primary and repeat).

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	Diagnosis type M (but not M and 2)
	Elective caesarean section (primary and repeat)	O32.^01, O33.^01, O34.^01, O34.291, O34.^02, Z37.^ <b>and</b> 5.MD.60.^ AND Admission Category = 'L'

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	All patients admitted for delivery	5.MD.50.^- 5.MD.60.^
<b>Exclude:</b>	General Exclusion Criteria (exclude if age < 13 or > 64 years)	(see section on General Exclusions of this report)

iii. Proportion of women undergoing labour who deliver by operative vaginal delivery (forceps and/or vacuum extraction).

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	
	Forceps <b>and/or</b> vacuum extraction	5.MD.53.^, 5.MD.54.^, 5.MD.55.^, 5.MD.56.NN, 5.MD.56.NR, 5.MD.56.NW, 5.MD.56.PC, 5.MD.56.PF, 5.MD.56.PJ

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	Patients undergoing vaginal delivery	5.MD.50.^ - 5.MD.56.^
<b>Exclude:</b>	General Exclusion Criteria (exclude if age < 13 or > 64 years)	(see section on General Exclusions of this report)

d) Rates of vaginal birth after c-section (elective, non-elective; successful, failed)(Utilization Indicator)

i. Percent of women with prior transverse lower segment caesarean who undergo a trial of labour with a vaginal birth after caesarean section (VBAC)

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with:	any diagnosis type
	VBAC	O75.701

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	Patients with prior transverse lower segment caesarean	Type M (not M and 2) or type 1: O34.201, O75.701
<b>Exclude:</b>	General Exclusion Criteria (exclude if age < 13 or > 64 years)	(see section on General Exclusions of this report )

ii. Percent of women with prior transverse lower segment caesarean who undergo a trial of labour, tried VBAC but ended up with c-section

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator:	any diagnosis type
	Failed VBAC	O66.401

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	Patients with prior transverse lower segment caesarean	Type M (not M and 2) or type 1: O34.201, O75.701
<b>Exclude:</b>	General Exclusion Criteria (exclude if age < 13 or > 64 years)	(see section on General Exclusions of this report)

iii. Percent of women with prior transverse lower segment caesarean who are admitted for delivery with an elective caesarean section

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator:	any diagnosis type
	Elective caesarean	O34.201 and

		5.MD.60.^ and Admission Category = 'L'
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Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	Patients with prior transverse lower segment caesarean	Type M (not M and 2) or type 1: O34.201, O75.701
<b>Exclude:</b>	General Exclusion Criteria (exclude if age < 13 or > 64 years)	(see section on General Exclusions of this report)

### 3. Cardiac Care

- a) Proportion/ratio of patients with acute coronary syndrome who receive percutaneous transluminal coronary angioplasty (PTCA) with stent, by drug-eluting stent, by sex

Episodes (Numerator)		
	Criteria	Codes
<b>Include:</b>	Cases within denominator with: PTCA with drug-eluting stent	1.IL.35.HH-T9 and 1.IJ.50.GQ-OA

Cases (Denominator)		
	Criteria	Codes
<b>Include:</b>	PTCA with stent	1.IJ.50.GQ-OA
	Any of the above procedures <b>AND</b> any of the following diagnoses:	Diagnosis Type M (but not M and 2), Type 1 (with another Dx type M and 2):
	Acute Myocardial Infarction (AMI)	I21.^, I22.^
	Unstable angina	I20.0
	Cardiogenic shock	R57.0
	Coronary artery disease	I25.1^
<b>Exclude:</b>	General Exclusion Criteria (exclude if age < 15 or > 84 years)	(see section on General Exclusions of this report)

