

1 **Appendix 1. Canadian Classification of Health Intervention Codes Used to Identify**  
2 **any Vaginal Mesh (Synthetic) Implantation Procedure(s) for Pelvic Organ**  
3 **Prolapse**

4

Canadian Classification of health Intervention Code	Dates Active	Description	Number of patients in cohort
1RS80CAXXN	April 2002- March 2006	'Repair, vagina NEC vaginal approach Using synthetic material'	1533
1RS80CRXXN	April 2006- Present	Repair, vagina per orifice (vaginal) approach with incision using synthetic material	3915

5

6 Codes were selected after review of Canadian Institute for Health Information Canadian  
7 Classification of Health Intervention code description/evolution guides, yearly coding  
8 frequency, and review of actual coding practices with trained hospital based Canadian  
9 Institute for Health Information Canadian coders. Other distinct Classification of Health  
10 Intervention codes specify alternative implantable materials for vaginal repairs, such as  
11 biologic grafts and native tissue repairs.

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

## Appendix 2. Administrative Data Codes Used to Define Our Composite Outcome of Mesh Removal or Revision

Code	Dates Active	Description
<b>1. Canadian Classification of Health Intervention Codes</b>		
1.RS.55.CA-XX-N	April 2003-Present	Removal of device, from vagina, of synthetic material (e.g. mesh, sling) using vaginal approach
1.RS.55.LA-XX-N	April 2002-Present	Removal of device, from vagina, of synthetic tissue (e.g. mesh), using open approach
1.RS.56.CA	April 2002-Present	Removal of foreign body, from vagina, using vaginal [approach (for simple extraction)
1.RS.56.CR	April 2002-Present	Removal of foreign body, from vagina, using vaginal approach and incisional technique
1.RS.56.DA	April 2006-Present	Removal of foreign body, from vagina using laparoscopic approach
1.RS.56.LA	April 2006-Present	Removal of foreign body, vagina using open (abdominal) approach
1.RS.59	April 2002-Present	Destruction of vagina, all approaches
1.SZ.55.LA-XX-N	April 2002- 2006	Removal of device, from soft tissue of the chest and abdomen (e.g. mesh), using open approach
1.RS.86.CA-XX-E	April 2002-March 2006	Closure of fistula, from vagina NEC terminating at skin, using vaginal approach and local flap repair
1.RS.86.LA-XX-E	April 2002-March 2006	Closure of fistula, from vagina NEC terminating at skin, using open (perineal) approach and local flap repair
1.RS.86.MB	April 2006-Present	Closure of fistula, from vagina for fistula terminating at skin (vaginal, perineal) all approaches
1.NP.86.MH	April 2002-Present	Closure of fistula, from small with large intestine terminating in genital tract, with simple excision
1.NQ.86.MH	April 2002-Present	Closure of fistula, from rectum terminating in genital tract, with simple excision

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

1.PQ.86.MH	April 2009-Present	Closure of fistula, from urethra terminating in genital tract, with simple excision and closure (urethrovaginal)
1.PM.86.MH	April 2009-Present	Closure of fistula, from bladder terminating in genital tract, with open approach simple excision and closure
1.PM.86.GH	April 2002-Present	Closure of fistula, from bladder terminating in genital tract, with endoscopic (percutaneous) approach simple excision and closure
1.PM.86.RB	April 2009-Present	Closure of fistula, from bladder terminating in genital tract, with open vaginal approach simple excision and closure fistula
1.PM.86.MD	April 2009-2009	Closure of fistula, from bladder NEC terminating in genital tract, with open approach simple excision and closure
1.PM.86.RA	April 2002-2009	Closure of fistula, from bladder NEC terminating at vagina, with open vaginal approach simple excision and closure
1.RS.87.AA	April 2002	Excision of partial vagina using combined laparoscopic and vaginal approaches
1.RS.87.AC	April 2002-Present	Excision of partial vagina using combined open abdominal and vaginal approaches
1.RS.87.CA	April 2002-2006	Excision of partial vagina NEC using vaginal approach
1.RS.87.CR	April 2006- Present	Excision of partial vagina using vaginal approach and incision
1.RS.87.CRAG	April 2006- Present	Excision of partial vagina using vaginal approach with incision and laser (with or without loop electrode)
1.RS.87.LA	April 2002- Present	Excision of partial vagina using open abdominal approach

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

1.RS.89.CA	April 2002-2006	Excision of total, vagina NEC using vaginal approach with suture closure
1.RS.89.CR	April 2006-Present	Excision of total vagina using vaginal approach and incision
1.RS.89.LA	April 2002-Present	Excision of total vagina using open abdominal approach
1.RS.50	April 2002-Present	Dilatation vagina NEC
<b>2. Ontario Health Insurance Plan Code</b>		
<b>Code</b>	<b>Dates Active</b>	<b>Description</b>
S715	1992-Present	Excision of vaginal cyst or benign lesions
<b>3. Combination of A) Canadian Classification of Health Intervention Code &amp; B) International Statistical Classification of Diseases and</b>		
<b>A)Related Health Problems 10 Diagnosis codes</b>		
<b>Code</b>	<b>Dates Active</b>	<b>Description</b>
1.RS.80	April 2002-Present	Repair, vagina
1.RS.72	April 2002-Present	Release, vagina
1.RS.56	April 2002-Present	Removal vaginal foreign body
1.PM.56.LA	April 2002-Present	Removal bladder foreign body
1.RS.74	April 2002-Present	Fixation, vagina
<b>B) International Statistical Classification of Diseases and Related Health Problems 10 Diagnosis codes</b>		
<b>Code</b>	<b>Dates Active</b>	<b>Description</b>

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

T834, T856, Y831, Y834, Y838, Y839	April 2002-Present	Mechanical complication of genital implant, subsequent surgical procedure with complication or abnormal reaction without misadventure at the time of procedure.
---------------------------------------	--------------------	---

If multiple codes were present, the first occurrence of a code was considered as the date of the primary outcome.

Codes were selected after review of Canadian Institute for Health Information, Canadian Classification of Health Intervention code description/evolution guides, yearly coding frequency, and review of actual coding practices with trained hospital based Canadian Institute for Health Information coders. Ontario Health Insurance Plan codes were selected after discussion with high volume urogynecologists treating prolapse mesh complications. Due to the procedure based rather than indication based nature of these codes, and the fact that multiple codes may be assigned to a single surgery, we could not definitively determine the specific reason why most patients were having the mesh removed or revised.

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

### Appendix 3. Coding Definitions for Study Covariates

Covariate	Source	Codes
<b>Obesity</b>	Canadian Institute for Health Information – Discharge Abstract Database/ Same Day Surgery Database (International Statistical Classification of Diseases 10)	E66x Obesity
	Canadian Institute for Health Information – Discharge Abstract Database/ Same Day Surgery Database (International Statistical Classification of Diseases 9)	278.x Obesity
	Ontario Health Insurance Plan Database	E676, E010
<b>Previous POP repair (with or without mesh)</b>	Canadian Institute for Health Information – Discharge Abstract Database/ Same Day Surgery Database (Canadian Classification of Health Intervention*)	1.RS.74 Fixation of vagina
		1.RS.80 Repair of vagina
	Canadian Institute for Health Information –	82.40 Anterior & posterior vaginal repair

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

	Discharge Abstract Database/ Same Day Surgery Database  (Canadian Classification of Diagnostic, Therapeutic and Surgical Procedures*)	82.41 Anterior vaginal repair
		82.42 Posterior vaginal repair
		82.43 Anterior & posterior vaginal repair
		81.30 Repair of uterine support
		81.31 Interposition
		81.32 Other uterine suspension
		81.33 Vaginal repair chronic uterine inversion
		81.39 Other repair of uterine support
	Ontario Health Insurance Plan Database	S716 S717 S718 S719 S723 S720 S721 S722 S812 S760 S813  S761 S758 S759
<b>Previous POP repair with MESH</b>	Canadian Institute for Health Information – Discharge Abstract Database/ Same Day Surgery Database  (Canadian Classification of Health Intervention)	1.RS.74.CR-XX-N Fixation of vagina, vaginal approach with synthetic tissue (e.g. mesh)
		1.RS.74.LA-XX-N Fixation of vaginal, abdominal approach with synthetic tissue (e.g. mesh)
		1.RS.74.DA-XX-N Fixation of vagina, laparoscopic approach with synthetic tissue (e.g. mesh)
		1.RS.74.CA-XX-N Fixation of vagina NEC, vaginal approach with synthetic tissue (e.g. mesh)

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

	Canadian Institute for Health Information – Discharge Abstract Database/ Same Day Surgery Database (Canadian Classification of Diagnostic, Therapeutic and Surgical Procedures)	82.64 vaginal suspension and fixation
<b>Previous or Concurrent SUI procedures (with or without mesh)</b>	Canadian Institute for Health Information – Discharge Abstract Database/ Same Day Surgery Database (Canadian Classification of Health Intervention)	1.PL.74 Fixation bladder neck
		1.PL.80 Repair bladder neck
		1.PL.53 Implantation of internal device, bladder neck
		1.PL.35.BA-T9 Pharmacotherapy of bladder neck endoscopic transurethral approach
		1.PL.35.BA-W0 Pharmacotherapy of bladder neck endoscopic transurethral approach, using other synthetic agents (e.g. silicone, Macroplastique)
		1.PL.35.BA-W2 Pharmacotherapy of bladder neck endoscopic transurethral approach, using bovine collagen
		1.PL.35.BA-W8 Pharmacotherapy of bladder neck endoscopic transurethral approach using Teflon

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

		1.PL.35.HA-T9 Pharmacotherapy of bladder neck, percutaneous injection using pharmacological agent NEC
		1.PL.35.HA-W0 Pharmacotherapy of bladder neck, percutaneous injection using other synthetic agents (e.g. silicone, macropastique)
		1.PL.35.HA-W2 Pharmacotherapy of bladder neck, percutaneous injection using bovine collagen
		1.PL.35.HA-W8 Pharmacotherapy of bladder neck percutaneous injection using Teflon
		1.PQ.35.BA-W2 Pharmacotherapy of urethra NEC, endoscopic transurethral approach, using bovine collagen
		1.PQ.35.BA-W8 Pharmacotherapy of urethra NEC, endoscopic transurethral approach using synthetic agent (e.g. Teflon paste)
		1.PQ.35.BA-Z9 Pharmacotherapy of urethra, endoscopic transurethral approach using agent NEC
		1.PQ.35.HA-T9 Pharmacotherapy of urethra, percutaneous injection, using pharmacological agent NEC

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

		1.PQ.35.HA-W2 Pharmacotherapy of urethra NEC, percutaneous injection, using bovine collagen
		1.PQ.35.HA-W8 Pharmacotherapy of urethra NEC, percutaneous injection, using synthetic agent (e.g. Teflon paste)
		1.PQ.35.HA-Z9 Pharmacotherapy of urethra, percutaneous injection using agent NEC
	Canadian Institute for Health Information – Discharge Abstract Database/ Same Day Surgery Database (Canadian Classification of Diagnostic, Therapeutic and Surgical Procedures)	71.2 Plication UV junction
		71.3 Levator muscle operation for UV suspension
		71.40 Suprapubic sling operation
		71.5 Retropubic suspension
		71.60 Periurethral suspension and compression
		71.7 Other SUI surgery
	Ontario Health Insurance Plan Database	S728, S731, S748, S815, S549, S546, E791
<b>Previous or Concurrent SUI procedure with MESH</b>	Canadian Institute for Health Information – Discharge Abstract Database/ Same Day Surgery Database (Canadian Classification of Health Intervention)	1.PL.74CR-XX-N Fixation of bladder neck, vaginal approach with incision using synthetic material (e.g.TVT, Monarc, SPARC)
		1.PL.74.AF-FF Fixation, bladder neck combined open abdominal and endoscopic transvaginal approach using synthetic material

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

		1.PL.74.AL-XX-N Fixation of bladder neck, combined vaginal and percutaneous approach using synthetic material
		1.PL.74.AF-XX-N Fixation of bladder neck combined vaginal and abdominal approach using synthetic material
		1.PL.74.LA-XX-N Fixation of bladder neck, open retropubic, perineal approach using synthetic material
		1.PL.74.DA-XX-N Fixation of bladder neck, endoscopic retropubic approach using synthetic tissue
		1.PL.74.AF-XX-Q Fixation of bladder neck, combined vaginal and abdominal approach, using combined sources of tissue (e.g. graft and synthetic tissue)
		1.PL.74.LA-XX-Q Fixation of bladder neck, open retropubic/perineal approach using combined sources of tissue (e.g. graft and synthetic tissue)
	Canadian Institute for Health Information –	71.40 Suprapubic sling operation

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

	Discharge Abstract Database/ Same Day Surgery Database (Canadian Classification of Diagnostic, Therapeutic and Surgical Procedures)	71.60 Periurethral suspension and compression
	Ontario Health Insurance Plan Database	S815
<b>Previous or Concurrent Hysterectomy</b>	Canadian Institute for Health Information – Discharge Abstract Database/ Same Day Surgery Database (Canadian Classification of Health Intervention)	5.CA.89.CK Vaginal Hysterectomy with pregnancy
		5.CA.89.GB laparoscopic hysterectomy with pregnancy
		5.CA.89.WJ Open hysterectomy with pregnancy
		5.CA.89.WK Open hysterectomy with pregnancy
		5.MD.60.KE Cesarean section hysterectomy
		5.MD.60.RC Cesarean section hysterectomy with forceps
		5.MD.60.RD Cesarean section hysterectomy with vacuum
		1.RM.89 Total hysterectomy
		1.RM.91 Radical hysterectomy
	Canadian Institute for Health Information –	86.42 Hysterectomy with pregnancy
		80.30 Total abdominal hysterectomy

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

	Discharge Abstract Database/ Same Day Surgery Database (Canadian Classification of Diagnostic, Therapeutic and Surgical Procedures)	80.40 Vaginal hysterectomy 80.50 Radical hysterectomy 80.60 Radical vaginal hysterectomy
	Ontario Health Insurance Plan Database	S757 S816 S763 S762 S710 S758 S759
<b>Prior cystoscopy</b>	Ontario Health Insurance Plan Database	Z607, Z606
<b>Prior Urodynamic Studies</b>	Ontario Health Insurance Plan Database	G475, G192, G193, G194, G477
<b>Urologic visits</b>	Ontario Health Insurance Plan Database	A355, C355, W355, A356, C356, W356, A353, C353, C354, A354
<b>Gynecologic visits</b>	Ontario Health Insurance Plan Database	A205 A206 A203 A204 C205 C206 C203 C204 W305 W306
<b>Transfusion</b>	Canadian Institute for Health Information – Discharge Abstract Database	BTREDBC incidence of blood transfusion 1.LZ.19.xxxx intervention code for transfusion

The entire data holdings were used as appropriate to determine covariate status.

\*Canadian Classification of Diagnostic, Therapeutic and Surgical Procedures codes were used prior to April 1 2002 after which they were replaced by Canadian Classification of Health Intervention codes.

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

## Appendix 4. Complete Baseline Characteristics

<b>Baseline Characteristic</b>	<b>Overall (n= 5448)</b>	<b>Performed by Low Volume Surgeon (&lt;75<sup>th</sup> percentile) (n= 1613)</b>	<b>Performed by High Volume Surgeon (&gt;75<sup>th</sup> percentile) (n = 3835)</b>	<b>Standard Difference of the Mean*</b>
Age	63.0 (55.0-71.0)	63.0 (55.0-71.0)	63.0 (55.0-71.0)	0
Obesity (BMI>40kg/m <sup>2</sup> ) n (%)	109(2.0)	35(2.2)	74(1.9)	0.02
Diabetes	806(14.8)	252(15.6)	554(14.4)	0.03
ADG Resource Utilization Band†	4(3-4)	4(3-4)	4(3-4)	0
Ontario Marginalization Index‡				
Dependency	3(2-4)	3(2-4)	3(2-4)	0.03
Material Deprivation	2(1-4)	3(1-4)	2(1-3)	0.12
Ethnic concentration	3(2-5)	3(2-5)	3(2-5)	0.06
Residential Instability	3(1-4)	3(2-4)	3(1-4)	0.07
Rural residence	670(12.3)	216(13.4)	454(11.8)	0.05
Health care contact one year prior to procedure				
Hospital admissions	0(0-0)	0(0-0)	0(0-0)	0.09
Urology/Gynecology visits	2(1-4)	3(1-4)	2(1-4)	0.18
General physician visits	6(4-10)	6(4-10)	6(4-10)	0.03

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

Cystoscopy	1,629(29.9)	463(28.7)	166(30.4)	0.04
Urodynamic studies	1,752(32.2)	427(26.5)	1,325(34.6)	0.18
Fiscal year of mesh-based POP surgery				
2002 (April 1, 2002-March 30, 2003)	376(6.9)	110(6.8)	266(6.9)	0
2003	343(6.3)	101(6.3)	242(6.3)	0
2004	360(6.6)	104(6.4)	256(6.7)	0.01
2005	454(8.3)	140(8.7)	314(8.2)	0.02
2006	471(8.6)	170(10.5)	301(7.8)	0.09
2007	621(11.4)	186(11.5)	435(11.3)	0.01
2008	628(11.5)	171(10.6)	457(11.9)	0.04
2009	534(9.8)	148(9.2)	386(10.1)	0.03
2010	539(9.9)	143(8.9)%	396(10.3)	0.05
2011	478(8.8)	133(8.2)	345(9.0)	0.03
2012	427(7.8)	129(8.0)	298(7.8)	0.01
2013 (April 1- December 30, 2013)	217(4.0)	78(4.8)	139(3.6)	0.06
Operating surgeon specialty				
Urology	247(4.5)	136(8.4)	111(2.9)	0.24
Obstetrics and Gynecology	5,180(95.1)	1,456(90.3)	3,724(97.1)	0.28

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

Unknown	21(0.4)	21(1.3)	0(0)	0.16
Academic /Teaching Hospital	2,727(50.1)	540(33.5)	2,187(57.0)	0.49
Previous pelvic procedures (10 years)				
Previous hysterectomy	515(9.5)	147(9.1)	368(9.6)	0.02
Previous SUI procedure (any)	652(12.0)	179(11.1)	473(12.3)	0.04
Previous SUI procedure with mesh	273(5.0)	71(4.4)	202(5.3)	0.04
Previous POP procedure (any)	1,032(18.9)	332(20.6)	700(18.3)	0.06
Previous POP procedure with mesh (transvaginal or transabdominal)	164(3.0)	51(3.2)	113(2.9)	0.02
Concurrent Procedure				
Concurrent hysterectomy	1,855(34.0)	608(37.7)	1,247(32.5)	0.11
Concurrent SUI procedure (any)	2,456(45.1)	675(41.8)	1,781(46.4)	0.09
Concurrent mesh SUI procedure	1,799(33.0)	486(30.1)	1,313(34.2)	0.09
Length of stay (days)	2(2-3)	3(2-4)	2(2-3)	0.40
Transfusion	69(1.3)	28(1.7)	41(1.1)	0.05
Mortality – death after index surgery	284(5.2)	98(6.1)	186(4.9)	0.05
Emigration – after index surgery	80(1.5)	21(1.3)	59(1.5)	0.02

---

Data are median (interquartile range) or n (%) unless otherwise specified

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

BMI, body mass index

\* Standardized differences of the mean are less sensitive to sample size than traditional hypothesis testing. A value > 10% (0.10) is considered a potentially meaningful difference between groups.

† Using the Aggregated Diagnostic Group (ADG) codes, one of six resource utilization bands was assigned to patients based on their health care utilization and the severity and chronicity of the medical problems for which they access health care services (0 = non users, 1= healthy users, 2 = low morbidity, 3 = moderate morbidity, 4= high morbidity, 5 = very high morbidity). This claims-based comorbidity adjustment system considers both inpatient and outpatient care, and categorizes comorbidities based on duration, severity, and etiology of the comorbidity. This better discriminates the comorbidities of a patient population that rarely received inpatient care.

‡ The Ontario Marginalization Index is a geographically-based, multidimensional index, that is derived from the Canadian Census data, which is used as a substitute for individual marginalization (1= least marginalized, 5 = most marginalized). These domains assess 18 different socioeconomic and marginalization variables for small geographic areas, e.g., Proportion of people >65 years or <14 years (dependency), proportion unemployed (material deprivation), proportion of visible minorities (ethnic concentration), and proportion of dwellings not owned (residential instability).  
Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

**Appendix 5. The Cumulative Incidence of Composite Outcome by Years of Follow-up (Calculated Using Life Table Methodology to Account for the Increased Risk of Complications Over Time)**

<b>Year of follow-up</b>	<b>Number of Patients at the beginning of the follow-up interval</b>	<b>Number of patients censored</b>	<b>Number of patients with mesh removal or revision during the follow-up interval</b>	<b>Cumulative Incidence (95% CI)</b>
1 year follow-up	5448	233	99	1.86% (1.49-2.22%)
2 years follow-up	5116	467	37	2.60% (2.17-3.03%)
3 years follow-up	4612	508	30	3.27% (2.78-3.76%)
4 years follow-up	4074	545	16	3.68% (3.15-4.21%)
5 years follow-up	3513	535	13	4.06%(3.50-4.63%)

Among women with 10 years follow-up, the cumulative incidence rate is 5.15% (95% CI 4.40-5.89).

Data are n unless otherwise specified

Due to a small number of patients with events (n<6), years 6-10 are not shown in keeping with privacy regulations.

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

**Appendix 6. One-Year Rate of Procedures for Mesh Complications Following Vaginal Implantation of Mesh for Pelvic Organ Prolapse, by Operative Year**

<b>Year</b>	<b>Cohort size</b>	<b>Frequency of outcome</b>	<b>Event rate (per 1000 person-years)</b>
2002	376	8(2.13)	21.54
2005	454	12(2.64)	26.78
2006	471	14(2.97)	30.11
2007	621	15(2.42)	24.59
2008	628	14(2.23)	22.52
2009	534	13(2.43)	24.69
2010	539	10(1.86)	18.74
<b>Total</b>	<b>4804</b>	<b>129 (2.69)</b>	<b>20.43</b>

Data are n (%)

Due to a small number of patients with events (N<6) years 2003, 2004 and 2011 are not shown in keeping with privacy regulations.

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

## Appendix 7. Multivariable Survival Analysis to Assess Independent Patient and Provider Risk Factors

### Associated With Mesh Complications (Removal or Revision) After Mesh Implantation for Pelvic Organ Prolapse

	Model 1: High volume >75 <sup>th</sup> percentile		Model 2: Very High volume >90 <sup>th</sup> percentile	
	Hazards Ratio (95% CI)	<i>P</i>	Hazard Ratio (95% CI)	<i>P</i>
Surgeon volume (reference = low volume)	0.95(0.64-1.39)	0.78	0.59(0.40-0.86)	<0.01
Surgeon Specialty (reference = Urology)				
Gynecology	1.22(0.70-2.13)	0.49	1.46(0.83-2.57)	0.18
Teaching hospital	0.95(0.51-1.77)	0.88	1.12(0.63-1.97)	0.70
Fiscal year of cohort entry (reference=2002)				
2003	0.78(0.36-1.70)	0.54	0.80(0.37-1.74)	0.58
2004	1.04(0.42-2.59)	0.93	1.06(0.45-2.51)	0.89
2005	1.6(0.92-2.77)	0.10	1.54(0.88-2.69)	0.13
2006	1.81(1.05-3.13)	0.03	1.79(1.00-3.22)	0.05
2007	1.27(0.71-2.24)	0.42	1.20(0.68-2.12)	0.54
2008	1.30(0.75-2.24)	0.35	1.27(0.73-2.18)	0.40
2009	1.21(0.67-2.18)	0.53	1.21(0.65-2.22)	0.55

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

2010	1.44(0.81-2.56)	0.22	1.37(0.77-2.45)	0.28
2011	0.56(0.25-1.25)	0.16	0.55(0.24-1.24)	0.15
2012	0.51(0.16-1.64)	0.26	0.49(0.15-1.58)	0.24
Region of residence (reference=region 1)*				
Region 2	1.53 (0.78-2.98)	0.21	1.18 (0.66-2.12)	0.57
Region 3	1.16 (0.48-2.79)	0.75	0.92 (0.39-2.15)	0.84
Region 4	0.76 (0.30-1.97)	0.58	0.62 (0.23-1.66)	0.34
Region 5	1.2 (0.67-2.15)	0.55	1.02 (0.58-1.79)	0.94
Region 6	0.66 (0.28-1.55)	0.34	0.57 (0.26-1.28)	0.17
Region 7	0.94 (0.44-2.00)	0.87	0.79 (0.40-1.57)	0.50
Region 8	1.18 (0.58-2.39)	0.65	0.97 (0.53-1.77)	0.92
Region 9	0.38 (0.04-3.80)	0.41	0.28 (0.03-2.65)	0.27
Region 10	0.90 (0.39-2.08)	0.81	0.69 (0.31-1.50)	0.35
Region 11	0.96 (0.32-2.87)	0.94	0.78 (0.27-2.26)	0.65
Region 12	0.83 (0.29-2.38)	0.73	0.65 (0.26-1.61)	0.35
Region 13	2.16 (0.76-6.13)	0.15	1.73 (0.61-4.94)	0.31
Region 14	2.42 (0.95-6.17)	0.06	1.81 (0.66-2.12)	0.17
Age (per 10 year increase)	0.81(0.71-0.92)	<0.01	0.81(0.72-0.92)	<0.01

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

Ontario Marginalization Index (per unit)				
Dependency	0.94(0.83-1.07)	0.34	0.94(0.83-1.07)	0.34
Deprivation	0.94(0.83-1.05)	0.28	0.94(0.83-1.05)	0.27
Ethnic concentration	0.91(0.81-1.03)	0.14	0.91(0.81-1.03)	0.14
Instability	1.07(0.97-1.19)	0.17	1.07(0.96-1.18)	0.23
ADG Resource Utilization Band (per unit)	1.31(1.08-1.58)	<0.01	1.30(1.08-1.56)	<0.01
Previous hysterectomy	0.87(0.57-1.33)	0.52	0.88(0.58-1.35)	0.56
Previous SUI procedure	1.43(0.95-2.17)	0.09	1.41(0.94-2.11)	0.10
Previous SUI mesh procedure	1.13(0.73-1.75)	0.57	1.18(0.78-1.81)	0.43
Previous POP procedure	1.16(0.78-1.72)	0.47	1.12(0.77-1.65)	0.55
Previous POP mesh procedure	0.95(0.49-1.84)	0.87	0.94(0.48-1.83)	0.85
Concurrent hysterectomy	0.70(0.50-0.99)	0.04	0.67(0.47-0.95)	0.02
Concurrent SUI procedure	0.98(0.63-1.53)	0.92	1.02(0.65-1.61)	0.92
Concurrent SUI mesh procedure	1.30(0.82-2.06)	0.27	1.31(0.82-2.08)	0.25
Transfusion at index hospitalization (RBC)	3.98(2.06-7.67)	<0.01	3.70(1.96-6.98)	<0.01
Diabetes Mellitus	0.91(0.61-1.34)	0.63	0.88(0.59-1.30)	0.51
Obesity	0.82(0.3-2.26)	0.70	0.81(0.30-2.19)	0.68

---

CI indicates Confidence Interval

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.

Two different definitions of surgeon volume were used in separate statistical models.

\* The province of Ontario is separated into 14 Local Health Integration Networks (LHINs, based on geographic areas of the province) that are responsible for planning, integrating and funding local health care. These regions were anonymised according to privacy regulations.

Kelly E, Winick-Ng J, Welk B. Surgeon experience and complications of transvaginal prolapse mesh. *Obstet Gynecol* 2016; 127.

The authors provided this information as a supplement to their article.