

Appendix 1. Codes for Procedures and Comorbidities

	CPT	ICD-9	ICD-10
Index procedures			
Hysteroscopic procedure	58565		
Laparoscopic procedure	58670, 58671		
Encounter for sterilization		V25.2	Z302
Reoperations			
Hysteroscopic procedure	58565		
Tubal ligation or resections	58670, 58671, 58611, 58615, 58600, 58605, 58700	65.4x, 65.6x, 66.2-66.6, 66.92	0UB50ZZ, 0UB54ZZ, 0UB60ZZ, 0UB64ZZ, 0UB70ZZ, 0UB74ZZ, 0UL50CZ, 0UL50ZZ, 0UL54CZ, 0UL54ZZ, 0UL60CZ, 0UL60ZZ, 0UL64CZ, 0UL64ZZ, 0UL70CZ, 0UL70ZZ, 0UL74CZ, 0UL74ZZ, 0U55-0U57, 0UT5-0UT7
Hysterectomy (inpatient)		68.3-68.7, 68.9	0UT9
Comorbidities*			
Leiomyoma		218.x	D25.x
Endometriosis		617.x	N80.x
PID		614-616	N70-N77
Menstrual disorder		626.x	N91-N93

*Elixhauser comorbidity codes obtained from HCUP website: <https://www.hcup-us.ahrq.gov/toolssoftware/comorbidity/comorbidity.jsp>.

Appendix 2. Codes for Cancer Outcomes

Cancer Type	Estimated New Cases 2017*	ICD-9	ICD-10
Breast	266,180	174	C60
Lung (Including Bronchus)	222,600	161, 162	C32, C33, C34
Colon and Rectal (Combined)	136,430	163, 164.0, 164.1	C18, C19, C20
Melanoma	87,110	172	C43, D03
Bladder	79,030	188	C67
Kidney (Renal Cell and Renal Pelvis) Cancer	63,990	189	C64, C66, C66, C68
Uterine corpus	61,280	179, 182	C64, C66
Thyroid	66,870	193	C73
Pancreatic	63,670	167	C26
Oral and pharynx	49,670	140-149	C00-C14
Liver and Intrahepatic Bile Duct	40,710	166	C22
Ovary and other GYN cancer†	33,270	183, 184	C61, C62, C66, C67
Stomach	28,000	161	C16
Brain and other nervous system	23,800	191	C71
Esophagus	16,940	160	C16
Uterine cervix†	12,820	180	C63

*From CDC cancer statistics.

†Revised to include all gynecologic cancer for this study.

Appendix 3. Sensitivity Analysis Excluding Index Reduced Procedures

	Hysteroscopic Sterilization (n=10027)		Laparoscopic Sterilization (n=10027)		Hazard Ratio (96% CI)	P values
	Events	Estimated Risk	Events	Estimated Risk		
Additional hysteroscopic sterilization	73	0.7%	NR	<0.1%	-	-
Additional tubal ligation or resection						
All years	316	3.8%	110	1.6%	2.86(2.30-3.66)	<.001
Time dependent covariate						
Year 1					6.66(4.18-10.26)	<.001
Year 2					2.22(1.41-3.49)	<.001
Year 3-7					1.82(1.33-2.49)	<.001
Hysterectomy during follow-up†	63	0.9%	70	0.9%	0.88(0.63-1.24)	0.47

7-year follow-up of additional procedure after initial hysteroscopic and laparoscopic sterilization, propensity score matched cohort. (Reference: Laparoscopic Sterilization)

*Additional tubal intervention was defined as undergoing additional hysteroscopic sterilization or tubal ligation or resection.

†Excluded hysterectomy related to uterine cancer, leiomyoma, or benign tumor.

NR: Not reportable for events<11.

Appendix 4. Secondary Analysis of New Cancer Diagnosis Within 7 Years Among Patients Who Did Not Have Cancer at Baseline, Propensity Score–Matched Cohort

	Hysteroscopic Sterilization (n=10063)		Laparoscopic Sterilization (n=10063)		Hazard Ratio (96% CI)	P value
	Events	Estimated Risk	Events	Estimated Risk		
Gynecologic cancer	NR	0.1%	NR	0.1%	2.63(0.70-9.91)	0.16
Other cancer	91	1.2%	93	1.3%	0.96(0.72-1.28)	0.80
Any cancer*	98	1.3%	94	1.3%	1.03(0.78-1.36)	0.86

(Reference: Laparoscopic Sterilization)

* Any cancer incidence was not equal to the sum of gynecologic cancer and other cancer incidence due to multiple cancer diagnosis for some patients.

NR: Not reportable for events<11.