



Factor	N (%)
Open Gynecologic Procedure	11,340 (84.6%)
Laparoscopic Gynecologic Procedure	3,110 (23.2%)
Concurrent Hepatobiliary Surgery	51 (0.38%)
Race: Black	5,438 (40.6%)
Smoking History	2,009 (15.0%)
Hyperlipidemia	2,074 (15.5%)
History of GI Surgery	1,873 (14.0%)
History of Pulmonary Disease	2,756 (20.6%)
History of IBS or IBD	424 (3.2%)
Obesity	1,856 (13.8%)
History of Cancer	2,030 (15.1%)
Elixhauser Comorbidities: >1	5,761 (43.0%)
Age: <30	1,999 (14.9%)
Age: 65-80	1,303 (9.7%)
History of Chemo or XRT	204 (1.5%)
History of Liver Disease	492 (3.7%)
Age (years)	
Follow Up (months)	
Total Index Costs (\$)	

Outcome	N (%)
Surgical Site Infection	736 (5.5%)
Surgical Site Occurrence	1,188 (8.9%)
All Complications Excl. Hernia	1,917 (14.3%)
Reoperative Hernia	181 (1.4%)

Risk Stratification Model for Operative Incisional Hernia in Ob-Gyn Cohort (N=13,408; Hernia Incidence = 1.4%)

Factor	Beta Coefficient	95% Lower Bound	95% UpperBound	P value
Concurrent Surgery	1.27	0.353	2.195	0.007
Open Gynecologic Procedure	0.92	-0.003	1.843	0.051
Laparoscopic Gynecologic Procedure	-0.71	-1.137	-0.280	0.001
Race: Black	-0.34	-0.683	0.011	0.058
Smoking History	0.37	0.027	0.709	0.034
Hyperlipidemia	0.37	0.020	0.711	0.038
History of GI Surgery	0.76	0.426	1.097	<0.001
History of Pulmonary Disease	0.45	0.122	0.771	0.007
History of IBS or IBD	0.76	0.202	1.316	0.008
Obesity	0.55	0.195	0.908	0.002
History of Cancer	0.52	0.147	0.886	0.006
Elixhauser Comorbidities: >1	0.78	0.346	1.215	<0.001
Age: <30	-0.51	-1.302	0.287	0.211
Age: 65-80	0.18	-0.230	0.584	0.394
History of Chemo or XRT	1.53	1.036	2.021	<0.001
History of Liver Disease	0.76	0.326	1.192	0.001
Constant	-6.30	-7.244	-5.365	<0.001

Endpoint: reoperative hernia*

C statistic = 0.82

Backend equation:
$$\frac{\exp(\hat{\alpha} + \hat{\beta}_1 X_1 + \hat{\beta}_2 X_2 + \hat{\beta}_3 X_3)}{1 + \exp(\hat{\alpha} + \hat{\beta}_1 X_1 + \hat{\beta}_2 X_2 + \hat{\beta}_3 X_3)}$$

In plain language, the numerator is: e raised to the sum of the constant and the beta coefficients of all present risk factors. The denominator is 1 plus the numerator.

Risk Stratification Model for SSI in Ob-Gyn Cohort (N-13,408; SSI Incidence = 5.5%)

Factor	Beta Coefficient	95% Lower Bound	95% Upper Bound	P value
Concurrent Surgery	0.40	0.66	3.36	0.34
Open Gynecologic Procedure	0.70	1.42	2.84	<0.001
Laparoscopic Gynecologic Procedure	-0.45	0.53	0.78	<0.001
Race: Black	0.06	0.90	1.25	0.50
Smoking History	0.49	1.37	1.95	<0.001
Hyperlipidemia	0.09	0.90	1.33	0.36
History of GI Surgery	0.62	1.55	2.22	<0.001
History of Pulmonary Disease	0.34	1.18	1.66	<0.001
History of IBS or IBD	0.30	0.94	1.93	0.10
Obesity	0.53	1.40	2.05	<0.001
History of Cancer	0.46	1.29	1.93	<0.001
Elixhauser Comorbidities: >1	0.37	1.19	1.75	<0.001
Age: <30	-0.30	0.55	1.00	0.05
Age: 65-80	0.13	0.90	1.43	0.29
History of Chemo or XRT	0.56	1.17	2.60	0.01
History of Liver Disease	0.44	1.17	2.08	<0.001
Constant	-4.16	0.01	0.02	<0.001

Endpoint: SSI

Backend equation:
$$\frac{\exp(\hat{\alpha} + \hat{\beta}_1 X_1 + \hat{\beta}_2 X_2 + \hat{\beta}_3 X_3)}{1 + \exp(\hat{\alpha} + \hat{\beta}_1 X_1 + \hat{\beta}_2 X_2 + \hat{\beta}_3 X_3)}$$

Total Cost Multivariate Regression in Ob-Gyn Cohort (N=10,842)

Factor	Beta Coefficient	95% Lower Bound	95% UpperBound	P value
Concurrent Surgery	7048.566	4609.348	9487.785	<0.001
Open Gynecologic Procedure	1988.684	1589.585	2387.782	<0.001
Laparoscopic Gynecologic Procedure	-683.543	-998.4973	-368.5888	<0.001
Race: Black	34.07934	-252.7752	320.9339	0.816
Smoking History	991.8525	619.0632	1364.642	<0.001
Hyperlipidemia	139.6914	-244.4891	523.8719	0.476
History of GI Surgery	2022.726	1635.273	2410.179	<0.001
History of Pulmonary Disease	1833.62	1492.621	2174.618	<0.001
History of IBS or IBD	822.4624	87.83498	1557.09	0.028
Obesity	-329.3957	-728.2287	69.43739	0.105
History of Cancer	3936.147	3530.807	4341.487	<0.001
Elixhauser Comorbidities: >1	1217.592	897.5281	1537.656	<0.001
Age: <30	-430.8527	-846.5776	-15.12774	0.042
Age: 65-80	917.557	443.7072	1391.407	<0.001
History of Chemo or XRT	4888.627	3851.244	5926.01	<0.001
History of Liver Disease	2154.71	1437.616	2871.805	<0.001
Constant	6542.773	6145.402	6940.143	<0.001

Endpoint: Total Cost

Backend equation: $\hat{\alpha} + \hat{\beta}_1 \times 0 + \hat{\beta}_2 \times 1 + \hat{\beta}_3 \times 1$

Unlike in the previous two models, this model is a linear regression which means that you can calculate a predicted total cost by simply adding up the Constant and the beta coefficients of all present risk factors.

