

Supplementary Table 1. Patient demographics and clinical characteristics.					
	Total (N=68614)	LND only (N=64796)	SLN-B/LND (N=2041)	SLN-B only (N=1777)	p value
Age at Diagnosis					<0.0001 ¹
N	68614	64796	2041	1777	
Mean (SD)	62.7 (10.3)	62.7 (10.3)	62.6 (10.0)	61.5 (10.6)	
Median	63.0	63.0	63.0	62.0	
Q1, Q3	56.0, 69.0	56.0, 69.0	56.0, 69.0	55.0, 68.0	
Range	(20.0-90.0)	(20.0-90.0)	(26.0-90.0)	(24.0-90.0)	
Race					<0.0001 ²
Missing	682	628	28	26	
White	57840 (85.1%)	54621 (85.1%)	1707 (84.8%)	1512 (86.4%)	
Black	6784 (10.0%)	6551 (10.2%)	138 (6.9%)	95 (5.4%)	
Other	3308 (4.9%)	2996 (4.7%)	168 (8.3%)	144 (8.2%)	
Charlson-Deyo Score					0.0151 ²
0	50871 (74.1%)	48048 (74.2%)	1529 (74.9%)	1294 (72.8%)	
1	14372 (20.9%)	13531 (20.9%)	441 (21.6%)	400 (22.5%)	
2+	3371 (4.9%)	3217 (5.0%)	71 (3.5%)	83 (4.7%)	
Insurance Status					<0.0001 ²
Missing	716	671	24	21	
Not insured	2178 (3.2%)	2130 (3.3%)	34 (1.7%)	14 (0.8%)	
Private Insurance	33902 (49.9%)	31835 (49.6%)	1061 (52.6%)	1006 (57.3%)	
Medicaid	3658 (5.4%)	3467 (5.4%)	112 (5.6%)	79 (4.5%)	
Medicare	27437 (40.4%)	26007 (40.6%)	793 (39.3%)	637 (36.3%)	
Other Government	723 (1.1%)	686 (1.1%)	17 (0.8%)	20 (1.1%)	
Income					<0.0001 ²
Missing	853	803	26	24	
Less than 40227	11500 (17.0%)	11096 (17.3%)	228 (11.3%)	176 (10.0%)	
40227 to 50353	14668 (21.6%)	14028 (21.9%)	364 (18.1%)	276 (15.7%)	
50354 to 63332	16111 (23.8%)	15330 (24.0%)	411 (20.4%)	370 (21.1%)	
63333+	25482 (37.6%)	23539 (36.8%)	1012 (50.2%)	931 (53.1%)	
Education (% No HSD)					<0.0001 ²
Missing	742	698	22	22	
17.6% or more	12815 (18.9%)	12283 (19.2%)	301 (14.9%)	231 (13.2%)	
10.9% to 17.5%	17617 (26.0%)	16770 (26.2%)	476 (23.6%)	371 (21.1%)	
6.3% to 10.8%	19952 (29.4%)	18767 (29.3%)	634 (31.4%)	551 (31.4%)	
Less than 6.3%	17488 (25.8%)	16278 (25.4%)	608 (30.1%)	602 (34.3%)	
Facility Type					<0.0001 ²
Missing	1520	1430	40	50	
Community	1876 (2.8%)	1759 (2.8%)	64 (3.2%)	53 (3.1%)	
Comprehensive Community	25196 (37.6%)	24212 (38.2%)	643 (32.1%)	341 (19.7%)	
Academic	29737 (44.3%)	27567 (43.5%)	1003 (50.1%)	1167 (67.6%)	
Integrated Network	10285 (15.3%)	9828 (15.5%)	291 (14.5%)	166 (9.6%)	
AJCC Pathologic Stage					<0.0001 ²
1	649 (0.9%)	619 (1.0%)	15 (0.7%)	15 (0.8%)	
1A	39187 (57.1%)	36562 (56.4%)	1242 (60.9%)	1383 (77.8%)	
1B	13339 (19.4%)	12818 (19.8%)	348 (17.1%)	173 (9.7%)	
2	3972 (5.8%)	3835 (5.9%)	91 (4.5%)	46 (2.6%)	
3	34 (0.0%)	31 (0.0%)	3 (0.1%)	0 (0.0%)	
3A	2464 (3.6%)	2372 (3.7%)	60 (2.9%)	32 (1.8%)	
3B	658 (1.0%)	629 (1.0%)	14 (0.7%)	15 (0.8%)	

Supplementary Table 1. Patient demographics and clinical characteristics.					
	Total (N=68614)	LND only (N=64796)	SLN-B/LND (N=2041)	SLN-B only (N=1777)	p value
3C1	5631 (8.2%)	5316 (8.2%)	206 (10.1%)	109 (6.1%)	
3C2	2680 (3.9%)	2614 (4.0%)	62 (3.0%)	4 (0.2%)	
AJCC Pathologic T Stage					<0.001 ²
pT1	694 (1.0%)	664 (1.0%)	15 (0.7%)	15 (0.8%)	
pT1A	40745 (59.4%)	38001 (58.6%)	1305 (63.9%)	1439 (81.0%)	
pT1B	15988 (23.3%)	15333 (23.7%)	447 (21.9%)	208 (11.7%)	
pT2	5579 (8.1%)	5374 (8.3%)	148 (7.3%)	57 (3.2%)	
pT3/3A/3B	5608 (8.2%)	5424 (8.4%)	126 (6.2%)	58 (3.3%)	
AJCC Pathologic N Stage					<0.0001 ²
0	60303 (87.9%)	56866 (87.8%)	1773 (86.9%)	1664 (93.6%)	
1	5631 (8.2%)	5316 (8.2%)	206 (10.1%)	109 (6.1%)	
2	2680 (3.9%)	2614 (4.0%)	62 (3.0%)	4 (0.2%)	
Grade					<0.0001 ²
Missing	14802	13995	422	385	
Well/Moderately	37873 (70.4%)	35476 (69.8%)	1157 (71.5%)	1240 (89.1%)	
Poorly/Undifferentiated	15939 (29.6%)	15325 (30.2%)	462 (28.5%)	152 (10.9%)	
Histology					<0.0001 ²
Endometrioid	53428 (77.9%)	50253 (77.6%)	1598 (78.3%)	1577 (88.7%)	
Mixed	5339 (7.8%)	5060 (7.8%)	166 (8.1%)	113 (6.4%)	
Serous	5131 (7.5%)	4930 (7.6%)	156 (7.6%)	45 (2.5%)	
Carcinosarcoma	3156 (4.6%)	3054 (4.7%)	78 (3.8%)	24 (1.4%)	
Clear Cell	1020 (1.5%)	986 (1.5%)	25 (1.2%)	9 (0.5%)	
Other	540 (0.8%)	513 (0.8%)	18 (0.9%)	9 (0.5%)	
Histotype					<0.0001 ²
1	53428 (77.9%)	50253 (77.6%)	1598 (78.3%)	1577 (88.7%)	
2	15186 (22.1%)	14543 (22.4%)	443 (21.7%)	200 (11.3%)	
Lymph Vascular Invasion					<0.0001 ²
Missing	4132	3953	91	88	
Not present	48762 (75.6%)	45916 (75.5%)	1422 (72.9%)	1424 (84.3%)	
Present	15720 (24.4%)	14927 (24.5%)	528 (27.1%)	265 (15.7%)	
Any Adjuvant Therapy					<0.0001 ²
No Adjuvant Therapy	38214 (55.7%)	35776 (55.2%)	1127 (55.2%)	1311 (73.8%)	
Adjuvant Therapy	30400 (44.3%)	29020 (44.8%)	914 (44.8%)	466 (26.2%)	
Adjuvant Chemotherapy					<0.0001 ²
Not Received	51685 (75.3%)	48643 (75.1%)	1471 (72.1%)	1571 (88.4%)	
Received	16929 (24.7%)	16153 (24.9%)	570 (27.9%)	206 (11.6%)	
Adjuvant Hormone Therapy					0.4317 ²
Missing	1519	1424	49	46	
Not Received	66788 (99.5%)	63087 (99.6%)	1981 (99.4%)	1720 (99.4%)	
Received	307 (0.5%)	285 (0.4%)	11 (0.6%)	11 (0.6%)	
Adjuvant Radiation Therapy					<0.0001 ²
Not Received	44335 (64.6%)	41640 (64.3%)	1321 (64.7%)	1374 (77.3%)	
Brachytherapy	14450 (21.1%)	13678 (21.1%)	474 (23.2%)	298 (16.8%)	
External Beam	9581 (14.0%)	9238 (14.3%)	242 (11.9%)	101 (5.7%)	
Other	248 (0.4%)	240 (0.4%)	4 (0.2%)	4 (0.2%)	

¹Kruskal Wallis and ²Chi-Square tests between the three groups corresponding to the type of lymph node assessment. AJCC, American Joint Committee on Cancer. LND, Lymphadenectomy. SLN-B, Sentinel lymph node biopsy.

Supplementary Table 2. Univariate cox proportional hazards regression models for overall survival.			
Variable	Level	Univariate Hazard Ratio (95% CI)*	p-value
LN Surgery	LND only	1.0 reference	
	SLN-B Only	0.52 (0.41, 0.66)	<0.001
	SLN-B/LND	0.82 (0.70, 0.97)	0.018
Age at Diagnosis	Per 10 years	1.83 (1.78, 1.87)	<0.001
Race	White	1.0 reference	
	Black	2.09 (1.97, 2.23)	<0.001
	Other	0.83 (0.73, 0.94)	0.004
	Unknown	1.02 (0.79, 1.31)	0.905
Charlson-Deyo Score	0	1.0 reference	
	1	1.32 (1.25, 1.40)	<0.001
	2+	1.94 (1.77, 2.12)	<0.001
Insurance Status	Private Insurance	1.0 reference	
	Not insured	1.50 (1.30, 1.73)	<0.001
	Medicaid	1.57 (1.40, 1.77)	<0.001
	Medicare	2.46 (2.34, 2.60)	<0.001
	Other Government	1.21 (0.93, 1.58)	0.152
	Unknown	1.64 (1.29, 2.08)	<0.001
Income	\$63,333+	1.0 reference	
	\$50,354-\$63,332	1.14 (1.07, 1.22)	<0.001
	\$40,227-\$50,353	1.19 (1.12, 1.27)	<0.001
	Less than \$40,227	1.45 (1.36, 1.55)	<0.001
	Unknown	1.06 (0.84, 1.33)	0.645
Education (% No HSD)	17.6% or more	1.39 (1.29, 1.49)	<0.001
	10.9%-17.5%	1.26 (1.18, 1.35)	<0.001
	6.3%-10.8%	1.21 (1.13, 1.29)	<0.001
	Less than 6.3%	1.0 reference	
	Unknown	1.12 (0.88, 1.43)	0.371
Facility Type	Community	1.35 (1.18, 1.54)	<0.001
	Comprehensive Community	1.10 (1.04, 1.16)	<0.001
	Academic	1.0 reference	
	Integrated Network	1.07 (0.99, 1.15)	0.075
	Unknown	0.42 (0.32, 0.54)	<0.001
AJCC Pathologic Stage	1	1.01 (0.72, 1.40)	
	1A	1.0 reference	
	1B	2.12 (1.98, 2.28)	<0.001
	2	3.09 (2.81, 3.38)	<0.001
	3	2.22 (0.83, 5.91)	0.112
	3A	3.83 (3.45, 4.24)	<0.001
	3B	7.52 (6.51, 8.69)	<0.001
	3C1	5.45 (5.08, 5.84)	<0.001
	3C2	7.12 (6.56, 7.73)	<0.001
	AJCC Pathologic N Stage	pN0	1.0 reference
pN1		3.52 (3.31, 3.74)	<0.001
pN2		4.60 (4.27, 4.95)	<0.001
AJCC Pathologic T Stage	pT1	1.16 (0.87, 1.54)	0.327
	pT1A	1.0 reference	
	pT1B	2.26 (2.13, 2.41)	<0.001
	pT2	3.81 (3.54, 4.10)	<0.001
	pT3/3A/3B	6.40 (6.01, 6.83)	<0.001
Grade	Well/Moderately	1.0 reference	
	Poorly/Undifferentiated	4.42 (4.18, 4.67)	<0.001
	Unknown	2.05 (1.92, 2.19)	<0.001
Histology	Endometrioid	1.0 reference	
	Mixed	2.04 (1.88, 2.21)	<0.001
	Serous	3.61 (3.38, 3.86)	<0.001
	Carcinosarcoma	6.12 (5.71, 6.55)	<0.001

	Clear Cell	3.39 (2.96, 3.89)	<0.001
	Other	2.65 (2.14, 3.27)	<0.001
Histotype	1	1.0 reference	
	2	3.43 (3.27, 3.60)	<0.001
Lymph Vascular Invasion	Not present	1.0 reference	
	Present	3.55 (3.38, 3.73)	<0.001
	Unknown	1.48 (1.33, 1.64)	<0.001
Any Adjuvant Therapy	No Adjuvant Therapy	1.0 reference	
	Adjuvant Therapy	2.29 (2.18, 2.41)	<0.001
Adjuvant Chemotherapy	No Chemotherapy received	1.0 reference	
	Chemotherapy received	2.57 (2.45, 2.69)	<0.001
Adjuvant Hormone Therapy	No Hormone Therapy received	1.0 reference	
	Hormone Therapy received	1.79 (1.34, 2.38)	<0.001
	Unknown	1.10 (0.93, 1.28)	0.264
Adjuvant Radiation Therapy	No Adjuvant Therapy	1.0 reference	
	Adjuvant Therapy	1.46 (1.39, 1.53)	<0.001
Adjuvant Radiation Modality	No Radiation	1.0 reference	
	Brachytherapy	1.05 (0.98, 1.12)	0.148
	External Beam	2.11 (1.99, 2.34)	<0.001
	Other	1.57 (1.11, 2.22)	0.011

AJCC, American Joint Committee on Cancer. LN, Lymph node. LND, Lymphadenectomy. SLN-B, Sentinel lymph node biopsy.

* Hazard ratios estimate the risk of an event (death for any cause) in each group compared to that of the reference group. Hazard ratios lower than 1 represent a risk of events lower than the reference group, whereas hazard ratios higher than 1 represent a higher risk of events.

Supplementary Table 3. Multivariable cox proportional hazards regression models for overall survival, in the entire group and stratified by lymph node status with lymph node assessment by SLN-B only and SLN-B/LND merged in a single group							
Variable	Level	Overall		pN0		pN1/2	
		Multivariable Hazard Ratio (95% CI)*	p-value	Multivariable Hazard Ratio (95% CI)*	p-value	Multivariable Hazard Ratio (95% CI)*	p-value
LN Surgery	LND only	1.0 reference		1.0 reference		1.0 reference	
	Any SLN-B	0.92 (0.80, 1.05)	0.199	1.01 (0.86, 1.18)	0.956	0.80 (0.62, 1.04)	0.091
Age	Per 10 years	1.61 (1.56, 1.67)	<0.001	1.70 (1.64, 1.77)	<0.001	1.38 (1.30, 1.47)	<0.001
Race	White	1.0 reference		1.0 reference		1.0 reference	
	Black	1.45 (1.36, 1.56)	<0.001	1.52 (1.40, 1.66)	<0.001	1.33 (1.19, 1.49)	<0.001
	Other	0.94 (0.83, 1.07)	0.368	0.93 (0.79, 1.10)	0.416	0.92 (0.74, 1.15)	0.465
	Unknown	0.97 (0.75, 1.25)	0.821	0.91 (0.66, 1.27)	0.585	1.08 (0.72, 1.60)	0.723
Charlson-Deyo Score	0	1.0 reference		1.0 reference		1.0 reference	
	1	1.21 (1.14, 1.28)	<0.001	1.28 (1.20, 1.37)	<0.001	1.09 (0.98, 1.21)	0.099
	2+	1.66 (1.52, 1.82)	<0.001	1.90 (1.71, 2.11)	<0.001	1.25 (1.05, 1.49)	0.011
Insurance Status	Private Insurance	1.0 reference		1.0 reference		1.0 reference	
	Not insured	1.31 (1.14, 1.52)	<0.001	1.26 (1.04, 1.52)	0.019	1.29 (1.03, 1.62)	0.028
	Medicaid	1.24 (1.10, 1.39)	<0.001	1.23 (1.06, 1.43)	0.008	1.13 (0.93, 1.38)	0.213
	Medicare	1.13 (1.06, 1.20)	<0.001	1.14 (1.06, 1.23)	<0.001	1.10 (0.98, 1.23)	0.111
	Other Government	1.0 (0.76, 1.30)	0.984	0.95 (0.67, 1.35)	0.781	1.12 (0.74, 1.71)	0.584
Income	Unknown	1.19 (0.94, 1.51)	0.153	1.14 (0.84, 1.55)	0.399	1.21 (0.82, 1.78)	0.336
	\$63,333+	1.0 reference		1.0 reference		1.0 reference	
	\$50,354-\$63,332	1.04 (0.97, 1.12)	0.231	1.10 (1.01, 1.19)	0.030	0.96 (0.85, 1.09)	0.535
	\$40,227-\$50,353	1.05 (0.97, 1.14)	0.201	1.11 (1.01, 1.22)	0.031	0.94 (0.82, 1.08)	0.388
	Less than \$40,227	1.11 (1.01, 1.21)	0.025	1.17 (1.05, 1.30)	0.006	1.01 (0.87, 1.18)	0.857
Education (% No HSD)	Unknown	0.54 (0.28, 1.04)	0.065	0.56 (0.21, 1.51)	0.254	0.55 (0.23, 1.34)	0.190
	17.6% or more	1.05 (0.95, 1.15)	0.326	1.01 (0.90, 1.14)	0.813	1.07 (0.90, 1.26)	0.442
	10.9%-17.5%	1.07 (0.99, 1.16)	0.104	1.04 (0.94, 1.15)	0.449	1.09 (0.94, 1.26)	0.261
	6.3%-10.8%	1.14 (1.06, 1.22)	<0.001	1.13 (1.04, 1.23)	0.005	1.13 (0.99, 1.28)	0.074
	Less than 6.3%	1.0 reference		1.0 reference		1.0 reference	
Facility Type	Unknown	2.10 (1.05, 4.21)	0.037	2.24 (0.81, 6.24)	0.122	1.75 (0.65, 4.67)	0.266
	Community	1.24 (1.09, 1.42)	0.001	1.30 (1.10, 1.53)	0.002	1.13 (0.90, 1.41)	0.289
	Comprehensive Community	1.13 (1.07, 1.19)	<0.001	1.16 (1.08, 1.24)	<0.001	1.07 (0.97, 1.18)	0.154
	Academic	1.0 reference		1.0 reference		1.0 reference	
	Integrated Network	1.08 (1.00, 1.16)	0.040	1.13 (1.03, 1.23)	0.006	1.0 (0.88, 1.14)	0.970
AJCC Pathologic N Stage	Unknown	2.42 (1.84, 3.18)	<0.001	2.55 (1.81, 3.59)	<0.001	2.0 (1.27, 3.15)	0.003
	pN0	1.0 reference		--		--	
	pN1	1.65 (1.53, 1.77)	<0.001	--		1.0 reference	
	pN2	1.73 (1.59, 1.89)	<0.001	--		1.05 (0.96, 1.15)	0.249
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AJCC Pathologic T Stage	pT1	1.18 (0.88, 1.58)	0.263	1.07 (0.77, 1.49)	0.690	1.78 (0.97, 3.26)	0.064
	pT1A	1.0 reference		1.0 reference		1.0 reference	
	pT1B	1.69 (1.58, 1.80)	<0.001	1.65 (1.53, 1.78)	<0.001	1.42 (1.21, 1.68)	<0.001
	pT2	2.30 (2.12, 2.49)	<0.001	2.13 (1.93, 2.35)	<0.001	2.09 (1.78, 2.46)	<0.001
	pT3/3A/3B	3.21 (2.97, 3.47)	<0.001	3.06 (2.77, 3.39)	<0.001	2.90 (2.49, 3.38)	<0.001
Grade	Well/Moderately	1.0 reference		1.0 reference		1.0 reference	
	Poorly/Undifferentiated	2.08 (1.94, 2.22)	<0.001	2.03 (1.87, 2.19)	<0.001	2.10 (1.84, 2.40)	<0.001
	Unknown	1.55 (1.45, 1.66)	<0.001	1.44 (1.33, 1.56)	<0.001	1.81 (1.57, 2.08)	<0.001
Lymph Vascular Invasion	Not present	1.0 reference		1.0 reference		1.0 reference	
	Present	1.63 (1.54, 1.73)	<0.001	1.71 (1.60, 1.83)	<0.001	1.33 (1.19, 1.49)	<0.001
Histology	Unknown	1.15 (1.04, 1.28)	0.009	1.13 (1.0, 1.27)	0.055	1.04 (0.85, 1.28)	0.720
	1	1.0 reference		1.0 reference		1.0 reference	
Adjuvant Chemotherapy	2	1.63 (1.54, 1.73)	<0.001	1.71 (1.59, 1.84)	<0.001	1.44 (1.30, 1.60)	<0.001
	No Chemotherapy received	1.0 reference		1.0 reference		1.0 reference	
	Chemotherapy received	0.81 (0.76, 0.86)	<0.001	0.85 (0.79, 0.92)	<0.001	0.68 (0.61, 0.75)	<0.001

Adjuvant Hormone Therapy	No Hormone Therapy received	1.0 reference		1.0 reference		1.0 reference	
	Hormone Therapy received	1.12 (0.84, 1.49)	0.442	1.01 (0.66, 1.53)	0.975	1.10 (0.74, 1.64)	0.638
	Unknown	1.07 (0.91, 1.25)	0.441	1.12 (0.93, 1.36)	0.240	1.0 (0.75, 1.33)	0.994
Adjuvant Radiation Therapy	No Radiation	1.0 reference		1.0 reference		1.0 reference	
	Brachytherapy	0.81 (0.75, 0.86)	<0.001	0.86 (0.79, 0.92)	<0.001	0.63 (0.53, 0.74)	<0.001
	External Beam	0.88 (0.83, 0.94)	<0.001	1.01 (0.92, 1.10)	0.876	0.73 (0.67, 0.81)	<0.001
	Other	0.81 (0.57, 1.14)	0.224	0.90 (0.58, 1.40)	0.641	0.68 (0.38, 1.20)	0.183

AJCC, American Joint Committee on Cancer. LN, Lymph node. LND, Lymphadenectomy. SLN-B, Sentinel lymph node biopsy.

* Hazard ratios estimate the risk of an event (death for any cause) in each group compared to that of the reference group. Hazard ratios lower than 1 represent a risk of events lower than the reference group, whereas hazard ratios higher than 1 represent a higher risk of events.

Supplementary Table 4. Multivariable cox proportional hazards regression models for overall survival limited to patients who underwent LND with ≥ 10 pelvic and ≥ 1 para-aortic lymph nodes removed, in the entire group and stratified by lymph node status with lymph node assessment by SLN-B only and SLN-B/LND merged in a single group.

Variable	Level	Overall		pN0		pN1/2	
		Multivariable Hazard Ratio (95% CI)*	p-value	Multivariable Hazard Ratio (95% CI)*	p-value	Multivariable Hazard Ratio (95% CI)*	p-value
LN Surgery	LND only	1.0 reference		1.0 reference		1.0 reference	
	Any SLN-B	0.96 (0.81, 1.15)	0.681	1.06 (0.86, 1.31)	0.582	0.83 (0.59, 1.17)	0.282
Age	Per 10 years	1.59 (1.50, 1.68)	<0.001	1.67 (1.56, 1.79)	<0.001	1.42 (1.29, 1.57)	<0.001
Race	White	1.0 reference		1.0 reference		1.0 reference	
	Black	1.49 (1.33, 1.68)	<0.001	1.62 (1.39, 1.89)	<0.001	1.39 (1.16, 1.68)	<0.001
	Other	0.98 (0.80, 1.21)	0.879	1.07 (0.83, 1.39)	0.598	0.86 (0.61, 1.22)	0.397
	Unknown	0.96 (0.63, 1.49)	0.869	0.80 (0.44, 1.44)	0.450	1.41 (0.75, 2.67)	0.289
Charlson-Deyo Score	0	1.0 reference		1.0 reference		1.0 reference	
	1	1.22 (1.11, 1.35)	<0.001	1.34 (1.19, 1.51)	<0.001	1.07 (0.91, 1.25)	0.447
	2+	1.56 (1.31, 1.85)	<0.001	1.57 (1.27, 1.95)	<0.001	1.53 (1.15, 2.03)	0.003
Insurance Status	Private Insurance	1.0 reference		1.0 reference		1.0 reference	
	Not insured	1.35 (1.07, 1.71)	0.010	1.61 (1.19, 2.17)	0.002	1.09 (0.75, 1.57)	0.650
	Medicaid	1.37 (1.13, 1.66)	0.001	1.29 (0.98, 1.69)	0.071	1.38 (1.05, 1.82)	0.022
	Medicare	1.15 (1.03, 1.28)	0.012	1.23 (1.07, 1.41)	0.003	1.05 (0.88, 1.26)	0.610
	Other Government	1.12 (0.72, 1.74)	0.625	0.97 (0.53, 1.76)	0.906	1.51 (0.77, 2.95)	0.234
	Unknown	0.98 (0.66, 1.47)	0.940	0.88 (0.47, 1.66)	0.700	0.99 (0.58, 1.67)	0.965
Income	\$63,333+	1.0 reference		1.0 reference		1.0 reference	
	\$50,354-\$63,332	1.0 (0.89, 1.13)	0.947	1.09 (0.94, 1.26)	0.265	0.92 (0.75, 1.12)	0.397
	\$40,227-\$50,353	1.08 (0.95, 1.23)	0.226	1.13 (0.96, 1.32)	0.135	1.0 (0.81, 1.23)	0.962
	Less than \$40,227	1.06 (0.91, 1.23)	0.490	1.18 (0.97, 1.43)	0.101	0.93 (0.73, 1.19)	0.577
	Unknown	0.57 (0.18, 1.76)	0.324	0.78 (0.11, 5.57)	0.806	0.56 (0.14, 2.28)	0.419
Education (% No HSD)	17.6% or more	1.06 (0.91, 1.25)	0.440	1.01 (0.82, 1.24)	0.924	1.06 (0.82, 1.37)	0.638
	10.9%-17.5%	1.06 (0.93, 1.22)	0.400	1.06 (0.89, 1.26)	0.523	0.99 (0.79, 1.24)	0.904
	6.3%-10.8%	1.18 (1.04, 1.32)	0.008	1.24 (1.07, 1.43)	0.005	1.05 (0.86, 1.29)	0.618
	Less than 6.3%	1.0 reference		1.0 reference		1.0 reference	
	Unknown	2.69 (0.82, 8.81)	0.101	2.52 (0.34, 18.72)	0.365	1.66 (0.35, 7.92)	0.525
Facility Type	Community	1.16 (0.93, 1.43)	0.188	1.28 (0.97, 1.70)	0.078	1.02 (0.73, 1.42)	0.923
	Comprehensive Community	1.05 (0.96, 1.15)	0.337	1.10 (0.98, 1.23)	0.101	0.99 (0.85, 1.15)	0.895
	Academic	1.0 reference		1.0 reference		1.0 reference	
	Integrated Network	0.95 (0.84, 1.07)	0.357	1.01 (0.87, 1.17)	0.930	0.86 (0.71, 1.05)	0.148
	Unknown	2.09 (1.29, 3.39)	0.003	1.60 (0.77, 3.29)	0.211	2.51 (1.29, 4.87)	0.007
AJCC Pathologic N Stage	pN0	1.0 reference		--		--	
	pN1	1.72 (1.52, 1.94)	<0.001	--		1.0 reference	
	pN2	1.91 (1.69, 2.17)	<0.001	--		1.13 (0.99, 1.29)	0.077
AJCC Pathologic T Stage	pT1	1.06 (0.61, 1.84)	0.824	1.0 (0.54, 1.88)	0.993	1.33 (0.42, 4.24)	0.628
	pT1A	1.0 reference		1.0 reference		1.0 reference	
	pT1B	1.62 (1.45, 1.82)	<0.001	1.58 (1.39, 1.80)	<0.001	1.52 (1.19, 1.96)	0.001
	pT2	2.29 (2.01, 2.62)	<0.001	2.22 (1.88, 2.64)	<0.001	2.16 (1.68, 2.78)	<0.001
	pT3/3A/3B	2.94 (2.59, 3.34)	<0.001	3.10 (2.61, 3.70)	<0.001	2.70 (2.13, 3.42)	<0.001
Grade	Well/Moderately	1.0 reference					
	Poorly/Undifferentiated	2.0 (1.78, 2.24)	<0.001	1.94 (1.68, 2.23)	<0.001	2.12 (1.73, 2.61)	<0.001
	Unknown	1.66 (1.47, 1.87)	<0.001	1.59 (1.37, 1.83)	<0.001	1.83 (1.47, 2.29)	<0.001
Lymph Vascular Invasion	Not present	1.0 reference		1.0 reference		1.0 reference	
	Present	1.53 (1.39, 1.69)	<0.001	1.61 (1.43, 1.80)	<0.001	1.37 (1.15, 1.64)	<0.001
	Unknown	1.05 (0.88, 1.26)	0.566	1.04 (0.84, 1.29)	0.731	0.99 (0.71, 1.37)	0.937
Histology	1	1.0 reference		1.0 reference		1.0 reference	
	2	1.62 (1.47, 1.79)	<0.001	1.63 (1.44, 1.85)	<0.001	1.59 (1.36, 1.86)	<0.001
Adjuvant Chemotherapy	No Chemotherapy received	1.0 reference		1.0 reference		1.0 reference	
	Chemotherapy	0.87 (0.78, 0.96)	0.006	0.89 (0.78, 1.02)	0.085	0.79 (0.65, 0.94)	0.010

		received					
Adjuvant Hormone Therapy	No Hormone Therapy received	1.0 reference		1.0 reference		1.0 reference	
	Hormone Therapy received	1.22 (0.74, 1.99)	0.439	0.77 (0.36, 1.62)	0.483	1.80 (0.92, 3.52)	0.086
	Unknown	1.02 (0.78, 1.33)	0.896	1.03 (0.73, 1.45)	0.877	1.0 (0.66, 1.51)	0.982
Adjuvant Radiation Therapy	No Radiation	1.0 reference		1.0 reference		1.0 reference	
	Brachytherapy	0.79 (0.71, 0.88)	<0.001	0.84 (0.74, 0.95)	0.004	0.68 (0.53, 0.86)	0.002
	External Beam	0.82(0.74, 0.91)	<0.001	0.84 (0.72, 0.99)	0.033	0.78 (0.67, 0.91)	0.001
	Other	0.78 (0.43, 1.41)	0.411	0.45 (0.17, 1.21)	0.113	1.23 (0.58, 2.61)	0.596

AJCC, American Joint Committee on Cancer. LN, Lymph node. LND, Lymphadenectomy. SLN-B, Sentinel lymph node biopsy.

* Hazard ratios estimate the risk of an event (death for any cause) in each group compared to that of the reference group. Hazard ratios lower than 1 represent a risk of events lower than the reference group, whereas hazard ratios higher than 1 represent a higher risk of events.

Supplementary Table 5. Multivariable cox proportional hazards regression models for overall survival in the entire group stratified by histotype with lymph node assessment by SLN-B only and SLN-B/LND merged in a single group.

Variable	Level	Histology 1		Histology 2	
		Multivariable Hazard Ratio (95% CI)*	p-value	Multivariable Hazard Ratio (95% CI)*	p-value
LN Surgery	LND only	1.0 reference		1.0 reference	
	Any SLN-B	0.92 (0.77, 1.10)	0.357	0.95 (0.77, 1.17)	0.642
Age	Per 10 years	1.74 (1.66, 1.81)	<0.001	1.44 (1.37, 1.51)	<0.001
Race	White	1.0 reference		1.0 reference	
	Black	1.52 (1.36, 1.69)	<0.001	1.41 (1.29, 1.54)	<0.001
	Other	0.92 (0.77, 1.10)	0.377	0.96 (0.80, 1.16)	0.679
	Unknown	1.14 (0.82, 1.60)	0.435	0.84 (0.57, 1.24)	0.390
Charlson-Deyo Score	0	1.0 reference		1.0 reference	
	1	1.26 (1.17, 1.37)	<0.001	1.16 (1.07, 1.26)	<0.001
	2+	1.97 (1.75, 2.21)	<0.001	1.40 (1.22, 1.61)	<0.001
Insurance Status	Private Insurance	1.0 reference		1.0 reference	
	Not insured	1.54 (1.28, 1.85)	<0.001	1.02 (0.81, 1.29)	0.855
	Medicaid	1.36 (1.16, 1.61)	<0.001	1.09 (0.91, 1.29)	0.343
	Medicare	1.15 (1.05, 1.26)	0.002	1.08 (0.99, 1.19)	0.090
	Other Government	0.99 (0.69, 1.44)	0.965	1.04 (0.71, 1.53)	0.834
	Unknown	0.95 (0.67, 1.35)	0.775	1.46 (1.06, 2.03)	0.023
Income	\$63,333+	1.0 reference		1.0 reference	
	\$50,354-\$63,332	1.08 (0.98, 1.19)	0.107	1.04 (0.94, 1.15)	0.502
	\$40,227-\$50,353	1.13 (1.01, 1.25)	0.026	1.01 (0.90, 1.13)	0.905
	Less than \$40,227	1.25 (1.11, 1.42)	<0.001	1.01 (0.89, 1.15)	0.843
	Unknown	1.77 (0.79, 3.94)	0.165	0.25 (0.08, 0.78)	0.017
Education (% No HSD)	17.6% or more	1.0 (0.88, 1.14)	0.981	1.04 (0.91, 1.20)	0.533
	10.9%-17.5%	1.07 (0.96, 1.20)	0.242	1.03 (0.91, 1.16)	0.656
	6.3%-10.8%	1.15 (1.04, 1.27)	0.005	1.11 (1.0, 1.23)	0.052
	Less than 6.3%	1.0 reference		1.0 reference	
	Unknown	0.79 (0.34, 1.87)	0.596	3.68 (1.12, 12.15)	0.033
Facility Type	Community	1.25 (1.05, 1.48)	0.012	1.17 (0.95, 1.44)	0.145
	Comprehensive Community	1.11 (1.03, 1.20)	0.006	1.14 (1.06, 1.23)	<0.001
	Academic	1.0 reference		1.0 reference	
	Integrated Network	1.13 (1.03, 1.25)	0.013	1.0 (0.90, 1.11)	0.986
	Unknown	3.38 (2.48, 4.62)	<0.001	1.19 (0.65, 2.19)	0.577
AJCC Pathologic N Stage	pN0	1.0 reference		1.0 reference	
	pN1	1.74 (1.56, 1.94)	<0.001	1.63 (1.49, 1.80)	<0.001
	pN2	2.12 (1.84, 2.43)	<0.001	1.62 (1.45, 1.81)	<0.001
AJCC Pathologic T Stage	pT1	1.27 (0.88, 1.83)	0.210	0.97 (0.60, 1.54)	0.883
	pT1A	1.0 reference		1.0 reference	
	pT1B	1.70 (1.55, 1.85)	<0.001	1.65 (1.49, 1.83)	<0.001
	pT2	2.54 (2.26, 2.85)	<0.001	2.06 (1.84, 2.30)	<0.001
	pT3/3A/3B	3.81 (3.39, 4.27)	<0.001	2.79 (2.51, 3.10)	<0.001
Grade	Well/Moderately	1.0 reference		1.0 reference	
	Poorly/Undifferentiated	2.29 (2.12, 2.48)	<0.001	2.15 (1.86, 2.48)	<0.001
	Unknown	1.24 (1.13, 1.35)	<0.001	2.13 (1.82, 2.48)	<0.001
Lymph Vascular Invasion	Not present	1.0 reference		1.0 reference	
	Present	1.67 (1.54, 1.81)	<0.001	1.55 (1.42, 1.69)	<0.001
	Unknown	1.11 (0.96, 1.29)	0.146	1.14 (0.98, 1.32)	0.101
Adjuvant Chemotherapy	No Chemotherapy received	1.0 reference		1.0 reference	
	Chemotherapy received	0.78 (0.70, 0.86)	<0.001	0.77 (0.71, 0.84)	<0.001
Adjuvant Hormone Therapy	No Hormone Therapy received	1.0 reference		1.0 reference	
	Hormone Therapy received	1.05 (0.74, 1.48)	0.803	0.96 (0.57, 1.63)	0.888
	Unknown	1.07 (0.86, 1.33)	0.569	1.04 (0.83, 1.32)	0.717
Adjuvant Radiation	No Radiation	1.0 reference		1.0 reference	

Therapy	Brachytherapy	0.83 (0.76, 0.91)	<0.001	0.74 (0.67, 0.81)	<0.001
	External Beam	0.87 (0.79, 0.95)	0.003	0.84 (0.77, 0.92)	<0.001
	Other	0.93 (0.57, 1.52)	0.766	0.71 (0.43, 1.16)	0.174

Supplementary Table 6. Multivariable cox proportional hazards regression models for overall survival limited to patients who underwent LND with ≥ 10 pelvic and ≥ 1 para-aortic lymph nodes removed stratified by histotype, with lymph node assessment by SLN-B only and SLN-B/LND merged in a single group.

Variable	Level	Histology 1		Histology 2	
		Multivariable Hazard Ratio (95% CI)*	p-value	Multivariable Hazard Ratio (95% CI)*	p-value
LN Surgery	LND only	1.0 reference		1.0 reference	
	Any SLN-B	0.95 (0.74, 1.22)	0.686	1.09 (0.84, 1.42)	0.504
Age	Per 10 years	1.69 (1.56, 1.83)	<0.001	1.43 (1.32, 1.56)	<0.001
Race	White	1.0 reference		1.0 reference	
	Black	1.46 (1.19, 1.79)	<0.001	1.53 (1.32, 1.77)	<0.001
	Other	0.98 (0.73, 1.31)	0.870	1.01 (0.76, 1.34)	0.971
	Unknown	1.23 (0.68, 2.24)	0.491	0.85 (0.46, 1.57)	0.605
Charlson-Deyo Score	0	1.0 reference		1.0 reference	
	1	1.30 (1.13, 1.49)	<0.001	1.16 (1.01, 1.32)	0.034
	2+	1.91 (1.52, 2.41)	<0.001	1.32 (1.03, 1.71)	0.029
Insurance Status	Private Insurance	1.0 reference		1.0 reference	
	Not insured	1.76 (1.29, 2.41)	<0.001	0.98 (0.70, 1.39)	0.923
	Medicaid	1.62 (1.23, 2.13)	<0.001	1.19 (0.90, 1.56)	0.223
	Medicare	1.27 (1.08, 1.48)	0.003	1.06 (0.91, 1.23)	0.436
	Other Government	1.18 (0.68, 2.06)	0.564	1.07 (0.52, 2.20)	0.865
Income	Unknown	0.72 (0.37, 1.40)	0.330	1.24 (0.75, 2.04)	0.408
	\$63,333+	1.0 reference		1.0 reference	
	\$50,354-\$63,332	1.05 (0.89, 1.25)	0.561	0.99 (0.84, 1.17)	0.942
	\$40,227-\$50,353	1.21 (1.01, 1.44)	0.041	1.00 (0.84, 1.20)	0.965
	Less than \$40,227	1.27 (1.02, 1.57)	0.034	0.94 (0.77, 1.17)	0.594
Education (% No HSD)	Unknown	3.97 (1.27, 12.42)	0.018	0.12 (0.007, 1.95)	0.136
	17.6% or more	1.02 (0.81, 1.28)	0.875	1.03 (0.82, 1.28)	0.805
	10.9%-17.5%	1.07 (0.88, 1.30)	0.514	1.02 (0.84, 1.24)	0.843
	6.3%-10.8%	1.21 (1.02, 1.43)	0.029	1.11 (0.94, 1.31)	0.223
	Less than 6.3%	1.0 reference		1.0 reference	
Facility Type	Unknown	0.44 (0.13, 1.50)	0.189	11.43 (0.67, 194.01)	0.092
	Community	1.09 (0.81, 1.47)	0.564	1.19 (0.88, 1.62)	0.259
	Comprehensive Community	1.01 (0.89, 1.15)	0.867	1.10 (0.97, 1.25)	0.145
	Academic	1.0 reference		1.0 reference	
	Integrated Network	1.01 (0.85, 1.21)	0.880	0.89 (0.75, 1.05)	0.163
AJCC Pathologic N Stage	Unknown	3.14 (1.85, 5.35)	<0.001	0.72 (0.20, 2.55)	0.608
	pN0	1.0 reference		1.0 reference	
	pN1	1.63 (1.34, 1.98)	<0.001	1.81 (1.54, 2.14)	<0.001
	pN2	2.26 (1.84, 2.76)	<0.001	1.87 (1.59, 2.19)	<0.001
	AJCC Pathologic T Stage	pT1	1.40 (0.69, 2.83)	0.353	0.79 (0.34, 1.84)
pT1A		1.0 reference		1.0 reference	
pT1B		1.64 (1.40, 1.92)	<0.001	1.62 (1.38, 1.91)	<0.001
pT2		2.51 (2.07, 3.06)	<0.001	2.07 (1.73, 2.48)	<0.001
pT3/3A/3B		3.43 (2.81, 4.19)	<0.001	2.69 (2.78, 3.19)	<0.001
Grade	Well/Moderately	1.0 reference		1.0 reference	
	Poorly/Undifferentiated	2.30 (2.01, 2.64)	<0.001	1.85 (1.46, 2.36)	<0.001
	Unknown	1.34 (1.15, 1.56)	<0.001	2.022 (1.57, 2.60)	<0.001
Lymph Vascular Invasion	Not present	1.0 reference		1.0 reference	
	Present	1.61 (1.40, 1.85)	<0.001	1.45 (1.26, 1.66)	<0.001
	Unknown	0.99 (0.76, 1.29)	0.930	1.13 (0.79, 1.60)	0.397
Adjuvant Chemotherapy	No Chemotherapy received	1.0 reference		1.0 reference	
	Chemotherapy received	0.78 (0.66, 0.92)	0.003	0.89 (0.78, 1.03)	0.107
Adjuvant Hormone Therapy	No Hormone Therapy received	1.0 reference		1.0 reference	
	Hormone Therapy received	0.77 (0.40, 1.49)	0.435	2.24 (1.09, 4.63)	0.029
	Unknown	0.94 (0.63, 1.41)	0.776	1.13 (0.79, 1.60)	0.512

Adjuvant Radiation Therapy	No Radiation	1.0 reference		1.0 reference	
	Brachytherapy		0.85 (0.73, 0.98)	0.025	0.71 (0.61, 0.83)
External Beam		0.85 (0.73, 1.0)	0.051	0.77 (0.67, 0.89)	<0.001
Other		0.64 (0.24, 1.71)	0.368	0.96 (0.46, 1.97)	0.904