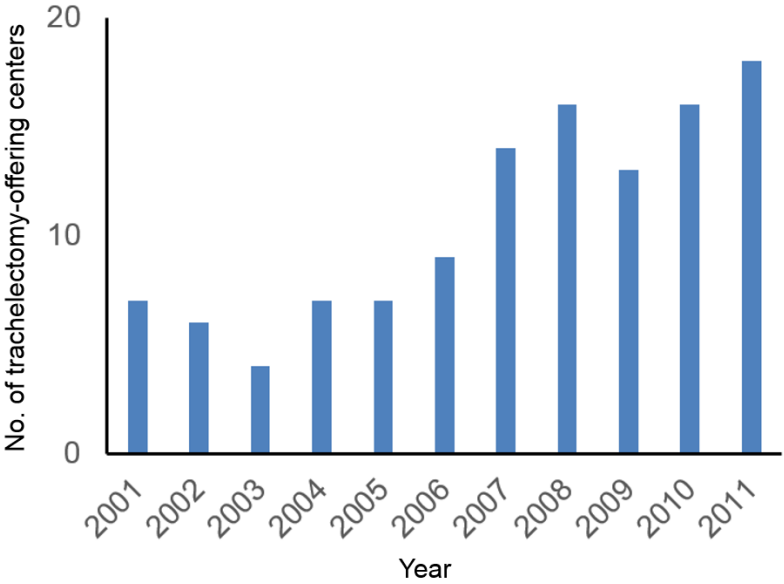
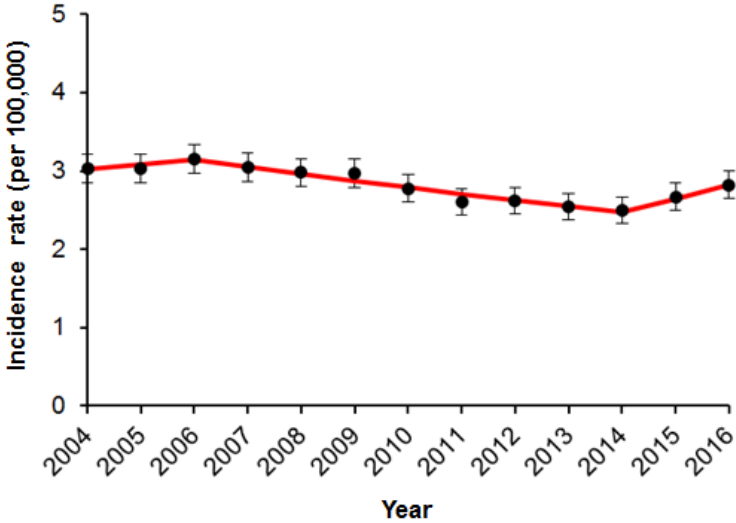


Supplemental Figure S1. Number of trachelectomy-offering centers per calendar year between 2001-2011.



Supplemental Figure S2. Age-adjusted populational incidence rate of localized cervical cancer among women aged <45 years (2004-2016).



SEER*Stat 8.3.6 was used to generate the results. Age-adjusted populational incidence rate for localized cervical cancer among women aged <45 years are shown between 2004-2016. Between 2006 and 2014, annual percentage was -3.0 (95% confidence interval -4.0 to -1.9, $P<0.001$). There was no change in the rate for the periods 2004-2006 and 2014-2016.

Supplemental Table S1. Volume-outcome relation in various oncologic surgeries.

Cancer type	Incidence rank [†]	Author	Year	Area	No.	Surgery type	Surgical complication	Oncologic outcome
Volume-outcome relationship, observed								
Brain	16	Shinjo [10]	2019	JPN	1,354	TRS	↓hospital mortality	
Lung	2	Møller [11]	2016	UK	15,738	Lobec	↓1M mortality	
		Schillemans [12]	2019	BEL	9,817	Lobec		Improved OS
Liver	13	Hollenbeck [13]	2006	USA	3,630	Hepatec	↓surgical mortality	
		Chapman [14]	2017	USA	12,757	Hepatec		Improved OS
Pancreatic	11	Mackay [15]	2019	NLD*	4,495	PD	↓hospital mortality	
Cervical	20	Matsuo [16]	2019	USA	5,964	RH		Improved DFS / OS
Ovarian	17	Wright [17]	2012	USA	36,624	TRS	↓hospital mortality	
		Uppal [18]	2018	USA	42,931	TRS	↓1-3M mortality	Improved OS
Gynecologic	n/a	Matsuo [19]	2019	USA	1,912	Exent	↓surgical mortality	
Volume-outcome relationship, inconsistent[§]								
Esophageal	18	Rouvelas [20]	2007	SWE	1,199	ER		Improved OS
		Kozower [21]	2012	USA	6,248	ER	No association (hospital mortality)	
Breast	1	Chen [22]	2009	TWN	13,360	Resec		Improved OS
		Sheckter [23]	2019	USA	103,310	Reconst	No association (complication)	
Colon	4	Schrag [24]	2000	USA	27,986	Colec		Improved OS
		Meyerhardt [25]	2004	USA	1,330	Colec		No association (OS, DFS)
Prostate	3	Begg [26]	2002	USA	11,522	RP	↓surgical complication No association (1M mortality)	
		Ellison [27]	2005	USA	12,635	RP		Improved DFS No association (OS)
Bladder	6	Mayer [28]	2010	UK	8,596	RC	No association (1M mortality)	
		Siemens [29]	2014	CAN	2,802	TRS		Improved OS
Endometrial	9	Buskwofie [30]	2018	USA	324,502	Hyst		No association (OS)
		Wright [31]	2018	USA	44,558	Hyst	↓surgical mortality	

†based on the 2019 incidence statistics per SEER (gender irrespective) *including Germany. § inconsistency refers variable volume-outcome relationship results across the studies. Abbreviations: colec, colectomy; ER, esophageal resection; hepatic, hepatectomy; hyst, hysterectomy; Reconst, free-flap and prosthetic breast reconstruction; lobec, pulmonary lobectomy; RC, radical cystectomy; RH, radical hysterectomy; RP, radical prostatectomy; Resec, breast resection; TRS, tumor reductive surgery; PD, pancreatoco-duodenectomy; DFS, disease-free survival; OS, overall survival; BEL, Belgium; CAN, Canada; Exent, exenteration; JPN, Japan; NLD, Netherlands; SWE, Sweden; TWN, Taiwan; UK, United Kingdom; USA, United States of America; 1M, 1 month; 3M, 3 months

Supplemental Table S2. ICD-9 code list.

ICD-9 Diagnosis Codes	
Cervical cancer	1800, 1801, 1808, 1809
Obesity	27800
Morbid obesity	27801
History of radiation	V153, V661, E9268, E9269, V671
History of chemotherapy	V5811, V662, V672, V8741
History of other malignancy	See codes for CC14
Metastatic disease	See codes for CC16
Perioperative complications	
Position-dependent complications	
Fluid overload	27669
Laryngeal edema	47825, 4786
Air embolism	9991, 9580
Cerebral edema	3485
Pulmonary edema	5184
Respiratory failure	5185, 5188, 99739
Requirement for prolonged ventilation	9671, 9672
Aspiration	77085, 77086, 99732
Atelectasis	7704, 7705
Peripheral nerve injury	953, 954, 955, 956, 957, 9970 36100, 36101, 36102, 36103, 36104, 36105, 3612, 3613, 36283, 3700, 3713, 37140, 37142, 37170, 3712, 37250, 37271, 37272, 37273, 37289, 3729, 9180, 9181, 9182, 9189
Ocular injury	
Cardiac arrhythmia, arrest, or failure	427, 428, 429
Compartment syndrome	9589, 7297
Rhabdomyolysis	72888
Bladder injury	8670, 8671
Ureteral injury	8672, 8673
Intestinal injury	8632, 8633, 8634, 8635, 8628
Vascular injury	9020, 9021, 9022, 9023, 9024, 9025, 9028, 9029, 9049
Postoperative hemorrhage	99811, 9582, 2851
Postoperative shock	9980, 9954
Wound complications	9583, 99812, 99813, 9983, 9985, 99883
Venous Thromboembolism/Pulmonary Embolism	452, 453, 4151, 4162
Cerebrovascular Accident	4329, 433, 434, 435, 436, 437
Myocardial Infarction	410
Pneumonia	480, 481, 482, 483, 484, 485, 486, 99731, 99732
Systemic Inflammatory Response Syndrome/Sepsis	9959
Ileus/Small Bowel Obstruction	5601, 5603, 5608, 5609
Intestinal perforation	56983
AKI	584
Pyelonephritis	590
Coagulopathy	79092, 2867, 28659, 2866, 2867, 2869
Electrolyte imbalance	276
Intraabdominal abscess	56722, 56731, 56738, 5695
Charlson Comorbidity Index	
CC1: Myocardial Infarction	410, 411, 412
CC2: Congestive Heart Failure	39891, 40201, 40211, 40291, 40401, 40403, 40411, 40413, 40491, 40493, 4254, 4255, 4357, 4258, 4259, 428
CC3: Peripheral Vascular Disease	0930, 4373, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 451, 452, 453, 454, 455, 456
CC4: Cerebrovascular Disease	3623, 430, 431, 432, 433, 434, 435, 436, 437, 438
CC5: Dementia	290, 294, 331

CC6: Chronic Pulmonary Disease	415, 416, 490, 491, 492, 493, 494, 495, 496, 500, 501, 502, 503, 504, 505, 506, 507, 508, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519
CC7: Connective Tissue Disease	710, 711, 712, 713, 714, 715, 716
CC8: Peptic Ulcer Disease	531, 532, 533, 534, 535
CC9: Mild Liver Disease	0701, 0703, 0705, 07070, 0709, 5710, 5713, 5714, 5716, 5718, 5719, 5731, 5732, 5733, 5738, 5739
CC10: Diabetes without complications	2490, 2500
CC11: Diabetes with complications	2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509
CC12: Paraplegia and hemiplegia	3341, 342, 343, 344
CC13: Renal disease	403, 404, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593
CC14: Cancer	140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 170, 171, 172, 173, 174, 175, 176, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209
CC15: Moderate or Severe Liver Disease	4560, 4561, 4562, 570, 5711, 5712, 5715, 572, 5730, 5734, 5735, V427, 99682
CC16: Metastatic Carcinoma	196, 197, 198, 199
CC17: HIV/AIDS	042, 07953, 79571, V08
