

Supplementary Table 1. Cohort creation

Selection Criteria	N	Number excluded
Female breast cancer treated with mastectomy between 1998 and 2007	44735	
Continuous coverage from 3 months prior through 23 months after mastectomy	24141	20594
No diagnosis codes for distant metastasis	21546	2595
No radiation administered within 3 months prior to mastectomy	21101	445
Two or more diagnosis codes for breast cancer or ductal carcinoma in situ from 3 months prior through 12 months after mastectomy	20560	541
Treated with either: (1) mastectomy with no reconstruction within 23 months of mastectomy, (2) mastectomy with immediate implant-based reconstruction, or (3) mastectomy with immediate autologous reconstruction.	14894	5666

Supplementary Table 2. Diagnosis and procedure codes used to select cohort and define surgery, reconstruction, and covariates

	ICD-9 diagnosis codes	ICD-9 procedure codes	CPT codes	Time interval relative to date of mastectomy
Invasive breast cancer	174.X			-3 through +11 months
Ductal carcinoma in situ	233.0			-3 through +11 months
Distant Metastasis	196.XX- 199.XX (excluding 196.0, 196.3, 198.2, 198.81)			-3 through +11 months
Mastectomy		85.4, 85.41-85.48, 85.33, 85.34, 85.35, 85.36	19180,19182,19200,19220,19240,19303,19304, 19305,19306, 19307	date of mastectomy
Bilateral mastectomy		85.35, 85.36, 85.42, 85.44, 85.46, 85.48		date of mastectomy
Breast cancer lymph node surgery		40.3, 40.23, 40.51, 85.43, 85.45, 85.47	38740, 38745, 38525, 19162, 19200, 19220, 19240, 19302, 19307	-3 through +11 months
Radiation therapy	V58.0, V66.1, V67.1	92.2, 92.20 – 92.27, 92.29, 92.3, 92.30 - 92.39, 92.4, 92.41	77371-77373, 77401 – 77525, 77761 – 77799, G0174, G0251, G0339, G0340, G0173, 0082T, 61793, 0182T	-3 through +11 months

Chemotherapy	V58.1, V66.2, V67.2	99.25	96400 – 96549, J9000 – J9999, Q0083 – Q0085, J8520, J8521, J8530, J8540, J8560, J8597, J8610, J8999; The following codes were excluded: J9003, J9165, J9175, J9202, J9209, J9212-J9226, J9240, J9395	-3 through +11 months
Any reconstruction		85.53, 85.54, 85.33, 85.35, 85.95, 85.70, 85.71, 85.72, 85.73, 85.74, 85.75, 85.76, 85.7, 85.79, 85.86, 85.82, 85.83, 85.84, 85.85, 85.89, 85.86, 85.93, 85.96	19361, 19364, 19366, 19367, 19368, 19369, 19340, 19342, 19357, 19350,	-0 to +24 months
Autologous reconstruction		85.70, 85.71, 85.72, 85.73, 85.74, 85.75, 85.76, 85.7, 85.79, 85.84, 85.85	19361, 19364, 19367, 19368, 19369	-0 to +24 months
Implant Reconstruction		85.53, 85.54, 85.33, 85.35	19340, 19342	-0 to +24 months
Tissue expander		85.95	19357	-0 to +24 months

Abbreviations: CPT (current procedural terminology), ICD (International Classification of Diseases)

Supplementary Table 3. Definition of outcomes derived from claims

Outcome	Description	ICD-9 diagnosis codes	ICD-9 procedure codes	CPT codes
Wound complication	Disruption of operation wound	998.3		
	Disruption of external operation wound	998.32		
	Nonhealing surgical wound	998.83		
Infection	Persistent postoperative fistula	998.6		
	Inflammatory disease of breast	611.0		
	Carbuncle/furuncle of trunk including breast	680.2		
	Cellulitis/abscess of trunk including pectoral region, chest wall	682.2		
	Cellulitis/abscess of upper arm and forearm including axilla/shoulder	682.3		
	Cellulitis/abscess of unspecified site	682.9		
	Other local infections of skin and subcutaneous tissue including pyoderma, pyogenic granuloma, other, unspecified	686.X		
	Infected postoperative seroma	998.51		
	Other postoperative infection	998.59		
	Erysipelas	035.X		
	Infection and inflammatory reaction caused by other internal prosthetic device, implant, and graft	996.69		

	Postoperative infection, not elsewhere classified	998.50		
	Infected postoperative seroma	998.51		
	Other postoperative infection	998.59		
Implant removal	Removal of implant of breast		85.94	
	Removal of intact mammary implant			19328
	Removal of mammary implant material			19330
Fat necrosis	Fat necrosis	611.3		

Abbreviations: CPT (current procedural terminology), ICD (International Classification of Diseases)