

Sister Study Mortality and Primary Cause of Death: Overall (Full Cohort) and Among Incident DCIS or Invasive Breast Cancer Events¹: Data Release 9.1²

	Full Cohort		Incident DCIS or Invasive ¹ Breast Cancer	
	N	% of cohort	N	% of cases ⁴
Total Deaths	2,469	4.9	258	6.5
Primary Cause of Death³	N	% of deaths	N	% of deaths
Cancer	1,098	44.5	179	69.4
Breast Cancer⁵	117	4.7	115	44.6
Reproductive Cancer	164	6.6	17	6.6
Ovarian, fallopian tube, and peritoneal	113	4.6	11	4.3
Uterine (including endometrial)	41	1.7	5	1.9
Other reproductive	10	0.4	1	0.4
Non-reproductive Cancer	753	30.5	35	13.6
Colon and rectal (including appendiceal)	50	2.0	3	1.2
Pancreatic	120	4.9	3	1.2
Biliary tract (excluding intrahepatic bile duct)	4	0.2	0	0.0
Liver (including intrahepatic bile duct)	25	1.0	1	0.4
Stomach and esophageal	29	1.2	4	1.6
Head and neck	10	0.4	0	0.0
Bronchus and lung	248	10.0	14	5.4
Kidney	18	0.7	0	0.0
Bladder	12	0.5	0	0.0
Melanoma (skin)	19	0.8	2	0.8
Non-Hodgkin's lymphoma	32	1.3	0	0.0
Multiple myeloma	30	1.2	4	1.6
Leukemia	35	1.4	2	0.8
Other lymphoid, hematopoietic, or immunoproliferative	10	0.4	1	0.4
Brain tumors (malignant and benign)	57	2.3	0	0.0
Mesothelium and soft tissue	19	0.8	1	0.4
Other non-reproductive cancer	35	1.4	0	0.0
Multiple/Unspecified Primaries	64	2.6	12	4.7
Non-cancer Disorders	1,123	45.5	66	25.6
Circulatory System Disorders	440	17.8	26	10.1
Myocardial infarction	50	2.0	3	1.2
Chronic ischemic heart disease	99	4.0	8	3.1
Cardiac arrest	12	0.5	1	0.4
Heart failure	28	1.1	2	0.8
Other circulatory	130	5.3	7	2.7
Stroke	106	4.3	5	1.9
Other cerebrovascular	15	0.6	0	0.0

Primary Cause of Death ³	Full Cohort		Incident DCIS or Invasive ¹ Breast Cancer	
	N	% of deaths	N	% of deaths
Respiratory Disorders	193	7.8	7	2.7
COPD	97	3.9	0	0.0
Other respiratory	96	3.9	7	2.7
Endocrine/Metabolic Disorders	67	2.7	2	0.8
Diabetes, type 2	41	1.7	1	0.4
Other endocrine/metabolic	26	1.1	1	0.4
Dementia	117	4.7	8	3.1
Alzheimer's	55	2.2	2	0.8
Other dementias	62	2.5	6	2.3
Nervous System Disorders	87	3.5	4	1.6
Parkinson's	22	0.9	0	0.0
Motor neuron disease	27	1.1	0	0.0
Other nervous system	38	1.5	4	1.6
Digestive Disorders	78	3.2	5	1.9
Urinary System Disorders	34	1.4	5	1.9
Infection and Parasitic Diseases	53	2.1	5	1.9
Other Non-cancer Disorders	54	2.2	4	1.6
Injury and Other External Causes	113	4.6	3	1.2
Unknown Cause	135	5.5	10	3.9

Abbreviations: DCIS=Ductal carcinoma *in situ*

¹ DCIS or invasive breast cancer events are defined by the following ICD10 codes: D05.1 (DCIS), C50 (invasive breast cancer), and D48.6 (neoplasm of uncertain behavior of breast).

² Data release 9.1 includes reported deaths that occurred on or before 12/31/2018 and incident DCIS or invasive breast cancer diagnoses that occurred on or before 9/30/2019, excluding all data from participants who have withdrawn their data from the study (n=3). To be considered an incident DCIS or invasive breast cancer event, breast must be the primary site, and the cancer diagnosis must have occurred after the participant's baseline date.

³ See specific ICD10 codes for primary cause of death [here](#). Priority for cause of death when death is reported by multiple sources: Medical record>National Death Index (NDI) Plus>Death certificate. Death was assigned to unknown cause when report of death was not available from one of these sources.

⁴ Based on total number of incident DCIS or invasive breast cancer cases (n=3,999). See First DCIS or Invasive Breast Cancer summary table [here](#).

⁵ Breast cancer deaths in the full cohort include women who were diagnosed with invasive breast cancer prior to the participant's baseline date and hence were excluded from total deaths among incident DCIS or invasive breast cancer cases (n=2).