

Sister Study Mortality and Primary Cause of Death: Overall (Full Cohort) and Among Incident DCIS or Invasive Breast Cancer Events¹: Data Release 11.1²

	Full Cohort		Incident DCIS or Invasive ¹ Breast Cancer	
	N	% of cohort	N	% of cases ⁴
Total Deaths	3,367	6.6	385	8.3
Primary Cause of Death³	N	% of deaths	N	% of deaths
Cancer	1,401	41.6	251	65.2
Breast Cancer⁵	155	4.6	153	39.7
Reproductive Cancer	202	6.0	19	4.9
Ovarian, fallopian tube, and peritoneal	136	4.0	12	3.1
Uterine (including endometrial)	53	1.6	6	1.6
Other reproductive	13	0.4	1	0.3
Non-reproductive Cancer	966	28.7	65	16.9
Colon and rectal (including appendiceal)	63	1.9	5	1.3
Pancreatic	154	4.6	7	1.8
Biliary tract (excluding intrahepatic bile duct)	8	0.2	0	0.0
Liver (including intrahepatic bile duct)	34	1.0	2	0.5
Stomach and esophageal	33	1.0	5	1.3
Head and neck	12	0.4	0	0.0
Bronchus and lung	315	9.4	24	6.2
Kidney	23	0.7	0	0.0
Bladder	16	0.5	0	0.0
Melanoma (skin)	21	0.6	3	0.8
Non-Hodgkin's lymphoma	44	1.3	0	0.0
Multiple myeloma	37	1.1	5	1.3
Leukemia	50	1.5	4	1.0
Other lymphoid, hematopoietic, or immunoproliferative	18	0.5	4	1.0
Brain tumors (malignant and benign)	67	2.0	3	0.8
Mesothelium and soft tissue	23	0.7	2	0.5
Other non-reproductive cancer	48	1.4	1	0.3
Multiple/Unspecified Primaries	78	2.3	14	3.6
Non-cancer Disorders	1656	49.2	113	29.4
Circulatory System Disorders	657	19.5	43	11.2
Myocardial infarction	66	2.0	4	1.0
Chronic ischemic heart disease	142	4.2	10	2.6
Cardiac arrest	19	0.6	2	0.5
Heart failure	59	1.8	3	0.8
Other circulatory	193	5.7	12	3.1
Stroke	148	4.4	11	2.9
Other cerebrovascular	30	0.9	1	0.3

Primary Cause of Death ³	Full Cohort		Incident DCIS or Invasive ¹ Breast Cancer	
	N	% of deaths	N	% of deaths
Respiratory Disorders	267	7.9	15	3.9
COPD	144	4.3	4	1.0
Other respiratory	123	3.7	11	2.9
Endocrine/Metabolic Disorders	88	2.6	2	0.5
Diabetes, type 2	49	1.5	1	0.3
Other endocrine/metabolic	39	1.2	1	0.3
Dementia	203	6.0	15	3.9
Alzheimer's	99	2.9	5	1.3
Other dementias	104	3.1	10	2.6
Nervous System Disorders	117	3.5	7	1.8
Parkinson's	35	1.0	2	0.5
Motor neuron disease	32	1.0	0	0.0
Other nervous system	50	1.5	5	1.3
Digestive Disorders	96	2.9	7	1.8
Urinary System Disorders	49	1.5	7	1.8
Infection and Parasitic Diseases	108	3.2	10	2.6
COVID-19	35	1.0	4	1.0
Other infection and parasitic diseases	73	2.2	6	1.6
Other Non-cancer Disorders	71	2.1	7	1.8
Injury and other External Causes	149	4.4	7	1.8
Unknown Cause	161	4.8	14	3.6

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 11.1 includes reported deaths that occurred on or before 12/31/2020 and incident DCIS or invasive breast cancer diagnoses that occurred on or both 9/30/2021, excluding all data from participants who have withdrawn their data from the study (n=5). 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=4,628). 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).