Munich Cancer Registry

ICD-10 C50: Breast cancer (women)

Survival

Year of diagnosis	1988-1997	1998-2020
Patients	11,935	73,478
Diseases	12,417	77,358
Cases evaluated	10,651	59,306
Creation date	04/15/2022	
Database export	12/20/2021	
Population (females)	2.48 m	

BERLIN

GERMANY

BAVARIA

MUNICH

Munich Cancer Registry
Cancer Registry Bavaria - Upper Bavaria Regional Center
at Klinikum Grosshadern/IBE
Marchioninistr. 15
Munich, 81377
Germany

https://www.tumorregister-muenchen.de/en

https://www.tumorregister-muenchen.de/en/facts/surv/sC50f_E-ICD-10-C50-Breast-cancer-women-survival.pdf

Index of figures and tables

ICD-10 C50: Malignant neoplasm of breast (women)
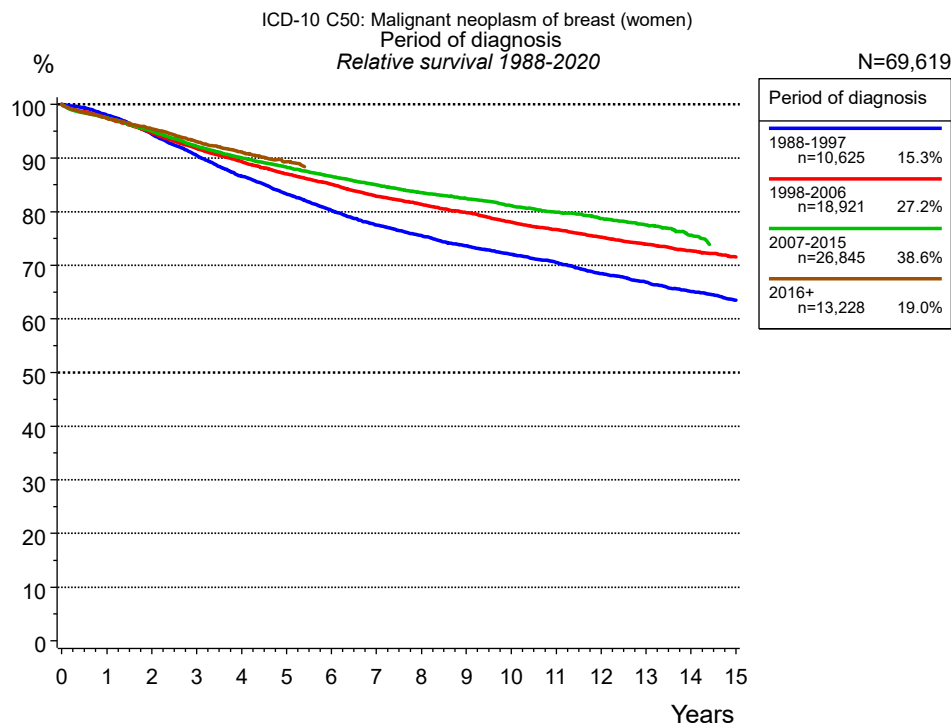Period of diagnosis
Relative survival 1988-2020

Figure 1a. Relative survival of patients with breast cancer (women) by period of diagnosis. Included in the evaluation are 69,619 cases diagnosed between 1988 and 2020.

The presented survival curves are derived from clinical records with valid follow-up informations, which means that death certificate cases (DCO) cases are omitted from the analysis. With this one restriction, the MCR has provided population-based statistics since 1998, collecting data on all cancer cases in the region of southern Bavaria. Historical data of previous time periods can be heavily selected, therefore, univariate survival comparisons of the presented time periods must be carefully considered. Nonetheless, all calculable survival curves are depicted to facilitate the comparison of long time follow-up analyses of relative survival between particular cancers.

	Period of diagnosis							
	1988-1997 n=10,625		1998-2006 n=18,921		2007-2015 n=26,845		2016+ n=13,228	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	96.4	98.0	95.8	97.5	95.9	97.5	95.8	97.4
2	91.4	94.5	91.5	94.6	91.9	95.0	92.2	95.4
3	86.2	90.5	87.3	91.8	87.8	92.2	88.4	93.0
4	81.1	86.6	83.6	89.3	84.4	90.0	85.1	91.1
5	76.7	83.3	80.1	87.0	81.5	88.3	82.0	89.3
6	72.7	80.2	77.1	85.1	78.6	86.6		
7	69.0	77.5	73.9	82.9	75.9	85.0		
8	66.2	75.5	71.4	81.4	73.4	83.5		
9	63.5	73.6	68.8	79.8	71.2	82.4		
10	61.1	72.1	66.2	78.0	68.8	81.1		
11	58.8	70.6	63.8	76.6	66.5	79.9		
12	56.0	68.5	61.5	75.2	64.3	78.7		
13	53.7	66.8	59.3	73.9	62.0	77.5		
14	51.4	65.2	57.2	72.7	59.3	75.6		
15	49.2	63.5	55.1	71.5				
Median	14.7		17.8					

Table 1b. Observed (obs.) and relative (rel.) survival of patients with breast cancer (women) by period of diagnosis for period 1988-2020 (N=69,619).

ICD-10 C50: Malignant neoplasm of breast (women)
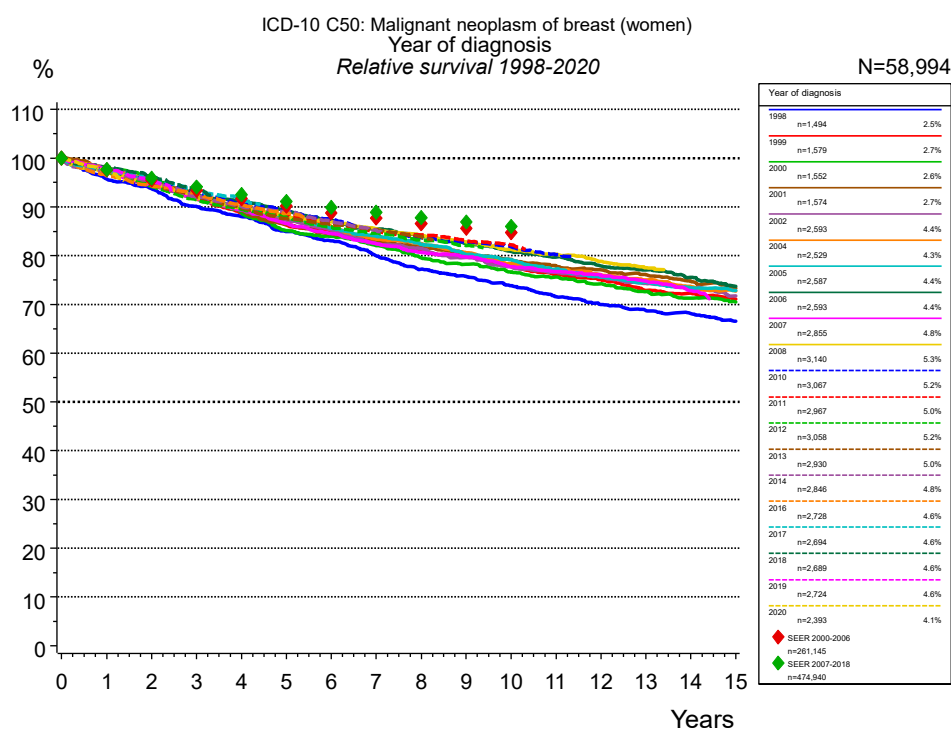Year of diagnosis
Relative survival 1998-2020

Figure 1c. Relative survival of patients with breast cancer (women) by year of diagnosis. Included in the evaluation are 58,994 cases diagnosed between 1998 and 2020.

The survival results of the SEER program (Surveillance, Epidemiology, and End Results) of the American National Cancer Institute (NCI) are summarized as the period of diagnosis from 2000 to 2018, and are represented by colored diamonds in order to facilitate comparisons between MCR and SEER.

	Year of diagnosis												
	1998 n=1,494		1999 n=1,579		2000 n=1,552		2001 n=1,574		2002 n=2,593		2004 n=2,529		2005 n=2,587	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	93.9	95.7	95.7	97.4	96.2	97.9	96.3	97.8	96.4	98.1	96.0	97.7	95.7	97.4
2	90.5	93.7	91.4	94.6	92.5	95.8	91.7	94.7	91.5	94.8	91.8	94.9	91.7	94.8
3	85.6	90.1	87.4	92.0	87.7	92.4	88.2	92.4	87.1	91.7	87.2	91.7	87.5	92.0
4	82.2	88.0	82.9	88.7	83.0	88.9	84.0	89.3	83.5	89.3	84.2	89.9	83.9	89.7
5	78.1	85.0	79.4	86.3	78.1	85.1	80.2	86.4	80.2	87.3	81.2	88.0	80.9	87.9
6	75.1	83.0	76.7	84.8	75.7	83.9	77.3	84.5	77.1	85.3	78.0	85.9	77.5	85.6
7	71.2	80.0	73.7	82.8	72.8	82.1	74.9	83.1	73.3	82.5	74.6	83.3	74.9	84.0
8	67.6	77.2	71.1	81.1	69.6	79.6	72.5	81.7	71.2	81.5	72.6	82.5	72.2	82.3
9	65.4	75.8	68.8	79.8	67.3	78.3	70.5	80.6	68.3	79.6	69.8	80.6	69.1	80.2
10	62.6	73.8	66.1	77.9	64.8	76.7	68.3	79.3	65.5	77.7	66.8	78.4	67.0	79.2
11	59.7	71.6	63.5	76.2	62.8	75.6	66.0	77.9	63.4	76.7	64.5	77.1	64.2	77.3
12	57.3	70.0	61.5	75.1	60.6	74.2	64.2	77.1	61.4	75.6	62.6	76.0	61.7	75.6
13	55.3	68.8	58.6	72.9	58.2	72.6	62.3	76.1	59.2	74.3	60.5	75.0	59.6	74.5
14	53.8	68.1	57.1	72.4	56.2	71.3	60.2	74.7	57.2	73.3	58.3	73.6	57.5	73.4
15	51.5	66.5	55.0	71.1	54.6	70.5	57.9	73.3	54.8	71.8	56.4	72.7	55.9	72.9
Median	15.8		18.0		17.7		20.1		17.5					

	Year of diagnosis													
cont'd	2006 n=2,593		2007 n=2,855		2008 n=3,140		2010 n=3,067		2011 n=2,967		2012 n=3,058		2013 n=2,930	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	95.7	97.3	95.7	97.4	95.7	97.3	95.9	97.5	95.6	97.3	95.5	97.1	96.2	97.8
2	91.4	94.3	91.3	94.5	91.8	94.9	92.5	95.5	91.7	94.8	91.1	94.2	91.9	95.0
3	88.2	92.4	87.2	91.8	87.8	92.1	88.5	92.8	87.6	92.0	87.1	91.5	87.8	92.1
4	85.8	91.3	83.6	89.4	84.3	89.8	85.0	90.6	84.6	90.2	83.9	89.5	84.2	89.8
5	82.6	89.3	79.7	86.6	81.5	88.2	82.4	89.3	81.4	88.3	81.1	87.8	80.9	87.6
6	79.3	87.2	76.5	84.5	79.2	87.0	79.4	87.5	78.8	86.7	78.1	85.9	78.6	86.4
7	76.4	85.4	73.5	82.5	76.5	85.4	76.1	85.2	75.9	84.9	75.8	84.7	76.3	85.3
8	74.1	84.1	70.7	80.7	74.1	84.1	73.5	83.6	74.0	84.2	73.2	83.2	73.9	83.9
9	71.3	82.5	68.7	79.7	71.7	82.8	71.5	82.8	71.8	83.1	70.8	82.0		
10	68.7	80.9	65.8	77.7	69.1	81.3	69.4	81.8	69.7	82.2				
11	66.4	79.7	63.8	76.8	67.0	80.3	66.8	80.2						
12	63.6	77.9	62.0	76.0	64.5	78.8								
13	61.7	77.0	59.8	74.8	62.2	77.5								
14	59.1	75.5	57.1	72.8										
15	56.5	73.7												
Median														

	Year of diagnosis											
cont'd	2014 n=2,846		2016 n=2,728		2017 n=2,694		2018 n=2,689		2019 n=2,724		2020 n=2,393	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	95.4	97.1	94.8	96.4	95.9	97.5	96.5	98.3	95.9	97.5	95.5	97.1
2	92.1	95.2	91.2	94.3	92.7	95.9	92.7	96.1	92.3	95.5		
3	87.6	92.0	88.3	92.7	88.6	93.2	88.5	93.4				
4	84.4	90.1	84.7	90.5	85.6	91.4						
5	82.1	89.1	81.6	88.6								
6	78.8	87.0										
7	75.8	85.2										
Median												

Table 1d. Observed (obs.) and relative (rel.) survival of patients with breast cancer (women) by year of diagnosis for period 1998-2020 (N=58,994).

ICD-10 C50: Malignant neoplasm of breast (women)
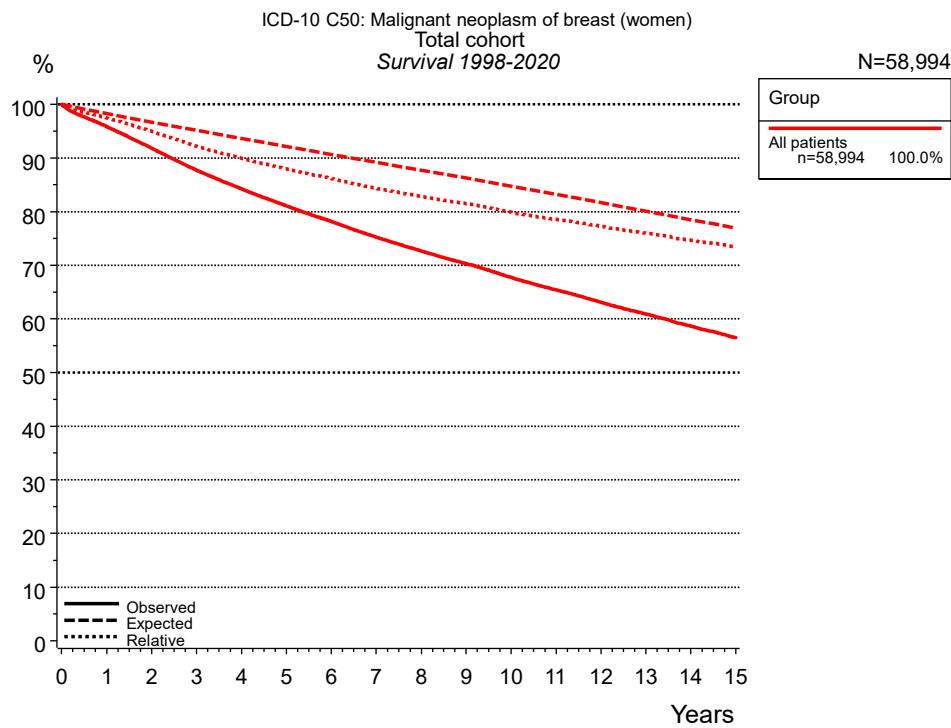Total cohort
Survival 1998-2020

Figure 2a. Observed, expected and relative survival of the total cohort with breast cancer (women). Included in the evaluation are 58,994 cases diagnosed between 1998 and 2020.

	Group	
	All patients	
	n=58,994	
Years	obs. %	rel. %
0	100.0	100.0
1	95.8	97.5
2	91.8	95.0
3	87.7	92.2
4	84.2	90.0
5	81.1	88.0
6	78.1	86.2
7	75.2	84.3
8	72.7	82.9
9	70.3	81.5
10	67.7	79.9
11	65.4	78.6
12	63.1	77.3
13	60.9	76.0
14	58.6	74.7
15	56.5	73.5
Median	18.5	

Table 2b. Observed (obs.) and relative (rel.) survival of the total cohort with breast cancer (women) for period 1998-2020 (N=58,994).

ICD-10 C50: Malignant neoplasm of breast (women)
Age category
Observed survival 1998-2020

Figure 3a. Observed survival of patients with breast cancer (women) by age category. Included in the evaluation are 58,994 cases diagnosed between 1998 and 2020.

ICD-10 C50: Malignant neoplasm of breast (women)
Age category
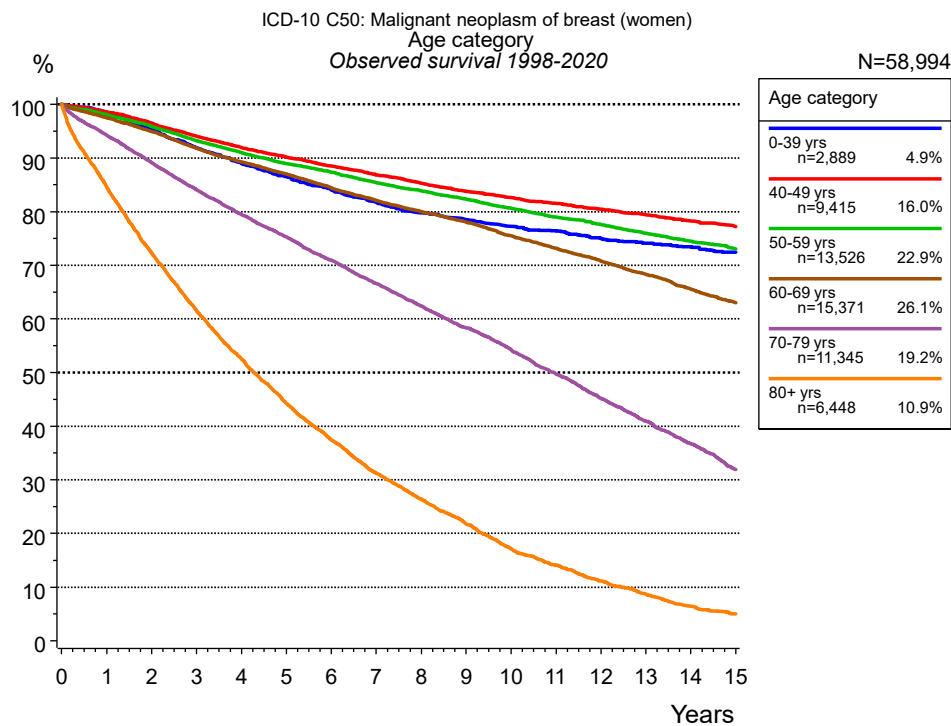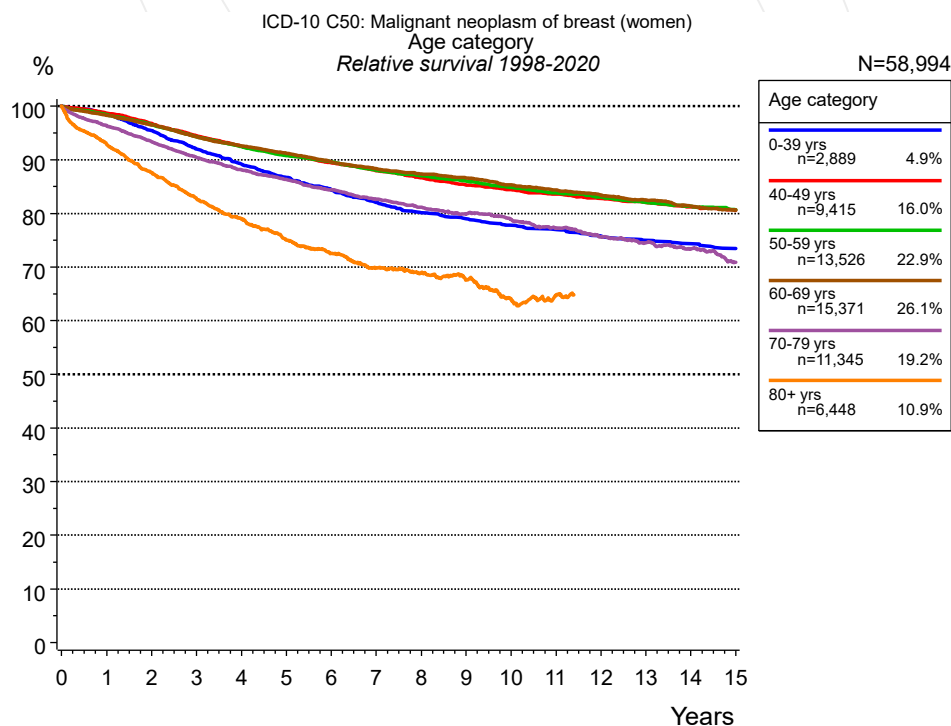*Relative survival 1998-2020*

Figure 3b. Relative survival of patients with breast cancer (women) by age category. Included in the evaluation are 58,994 cases diagnosed between 1998 and 2020.

	Age category											
	0-39 yrs n=2,889		40-49 yrs n=9,415		50-59 yrs n=13,526		60-69 yrs n=15,371		70-79 yrs n=11,345		80+ yrs n=6,448	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	98.5	98.5	98.6	98.7	98.1	98.4	97.5	98.3	94.3	96.4	84.6	92.9
2	95.3	95.4	96.5	96.8	95.9	96.5	94.9	96.5	89.1	93.3	72.3	87.6
3	91.8	92.0	94.0	94.4	93.2	94.3	91.8	94.3	84.1	90.4	61.6	82.8
4	89.0	89.2	91.9	92.5	91.0	92.5	89.3	92.6	79.4	88.1	52.5	78.9
5	86.5	86.8	90.2	90.9	89.0	90.8	87.0	91.2	75.3	86.3	44.2	75.0
6	84.0	84.3	88.5	89.4	87.4	89.7	84.4	89.6	70.9	84.4	37.5	72.6
7	81.7	82.1	86.9	88.0	85.4	88.1	82.1	88.4	66.6	82.6	31.2	69.8
8	79.7	80.2	85.3	86.6	83.9	87.0	80.0	87.4	62.4	81.2	26.4	69.0
9	78.6	79.0	83.8	85.3	82.4	86.0	78.0	86.6	58.3	80.0	21.8	67.6
10	77.2	77.8	82.6	84.4	80.6	84.9	75.5	85.3	54.2	78.9	17.1	64.0
11	76.4	77.0	81.5	83.6	79.0	83.8	73.2	84.4	49.7	77.2	14.1	64.7
12	75.1	75.8	80.4	82.8	77.6	83.0	70.8	83.4	45.1	75.6	11.2	64.3
13	74.1	75.0	79.4	82.1	75.9	82.0	68.3	82.5	40.9	74.6	8.7	64.0
14	73.4	74.4	78.3	81.2	74.5	81.3	65.5	81.3	36.7	73.3	6.4	62.3
15	72.4	73.5	77.3	80.6	73.1	80.7	63.1	80.7	31.9	70.8	5.0	65.5
Median							19.8		11.0		4.3	

Table 3c. Observed (obs.) and relative (rel.) survival of patients with breast cancer (women) by age category for period 1998-2020 (N=58,994).

ICD-10 C50: Malignant neoplasm of breast (women)
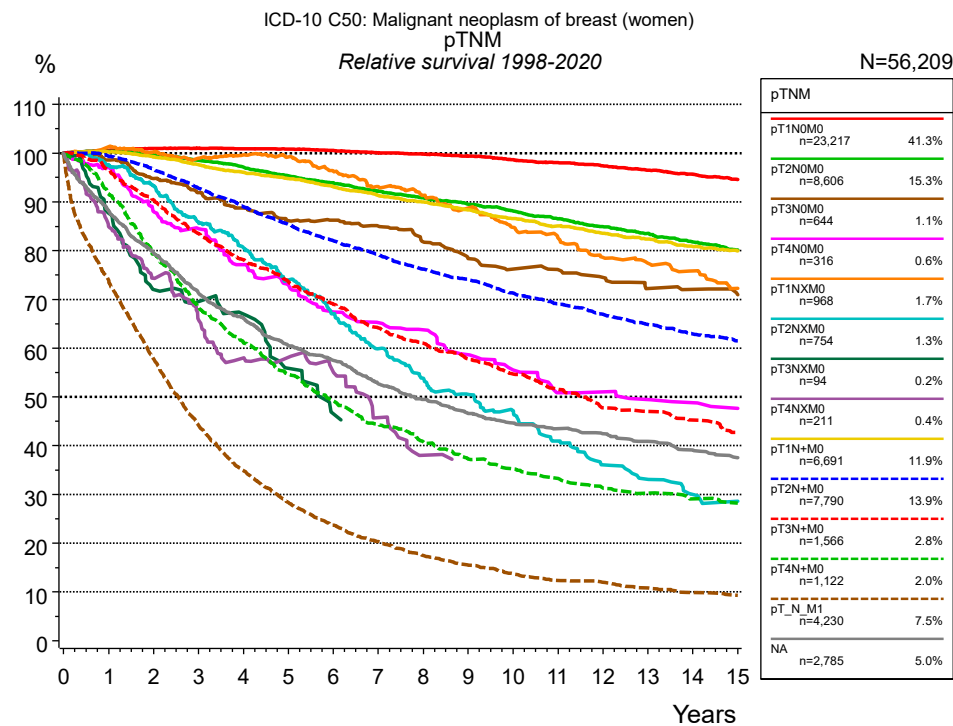pTNM
Relative survival 1998-2020

N=56,209

Figure 4a. Relative survival of patients with breast cancer (women) by pTNM. For 57,977 of 58,994 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 56,209 cases an evaluable classification was established. The grey line represents the subgroup of 2,785 patients with missing values regarding pTNM (4.7 % of 58,994 patients, the percent values of all other categories are related to n=56,209).

	pTNM													
	pT1N0M0 n=23,217		pT2N0M0 n=8,606		pT3N0M0 n=644		pT4N0M0 n=316		pT1NXM0 n=968		pT2NXM0 n=754		pT3NXM0 n=94	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	99.6	100.6	98.8	100.4	96.2	98.6	92.3	97.0	97.2	101.3	90.4	97.6	80.4	87.7
2	99.0	101.0	96.7	99.9	90.0	94.8	79.8	88.0	92.0	100.3	80.0	93.3	60.8	72.0
3	98.0	101.0	93.6	98.5	85.1	91.9	73.4	84.5	87.0	99.0	67.9	85.8	54.0	69.6
4	96.7	100.9	90.7	97.1	80.0	88.8	63.9	77.1	84.0	99.6	59.1	80.6	48.2	67.0
5	95.5	100.8	87.4	95.4	75.7	86.1	57.9	72.9	80.1	99.2	50.2	74.0	36.8	55.9
6	94.0	100.5	84.5	93.9	74.0	86.3	51.7	67.4	74.5	96.4	42.2	67.0	28.6	46.5
7	92.3	100.1	81.3	92.2	71.0	85.0	48.0	65.3	69.1	93.1	34.9	59.9		
8	90.8	99.8	78.6	90.9	66.6	81.8	45.4	63.8	65.0	91.3	29.3	53.8		
9	89.1	99.4	75.9	89.5	62.4	78.5	40.4	58.7	60.7	88.8	25.6	50.5		
10	87.0	98.7	73.3	88.2	59.1	76.2	36.6	55.5	55.8	84.8	22.3	47.1		
11	85.0	98.1	70.5	86.6	57.7	76.1	32.5	50.9	52.5	82.6	18.1	41.0		
12	83.0	97.4	67.6	84.9	55.5	74.5	31.9	51.0	48.2	78.6	14.8	36.1		
13	80.6	96.5	65.1	83.5	52.4	72.2	30.2	49.4	45.9	77.4	13.0	33.1		
14	78.4	95.6	62.4	81.8	51.4	72.1	28.9	48.8	43.6	75.8	11.1	30.0		
15	75.9	94.6	59.8	80.1	49.7	71.0	27.5	47.6	40.3	72.2	10.2	28.6		
Median			20.4		15.0		6.4		11.5		5.1		3.6	

	pTNM												
cont'd	pT4NXM0 n=211		pT1N+M0 n=6,691		pT2N+M0 n=7,790		pT3N+M0 n=1,566		pT4N+M0 n=1,122		pT_N_M1 n=4,230		NA n=2,785	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	76.6	84.9	99.4	100.3	97.9	99.4	95.0	96.6	88.1	91.7	72.1	73.8	83.8	88.1
2	60.8	74.3	97.4	99.2	93.8	96.7	87.3	90.4	73.4	79.3	55.2	57.7	72.0	79.5
3	48.5	65.7	94.8	97.6	88.6	92.8	79.2	83.4	61.1	68.4	41.4	44.1	62.1	71.3
4	38.9	58.0	92.3	96.1	83.7	89.0	73.0	78.1	52.7	61.1	32.1	34.9	55.6	66.1
5	35.1	58.1	90.0	94.8	78.9	85.3	67.7	73.6	45.5	54.6	25.6	28.3	49.4	60.5
6	30.1	55.1	87.3	93.1	74.7	82.0	62.4	69.0	39.6	49.2	21.0	23.7	45.7	57.4
7	22.4	45.8	84.6	91.3	70.8	79.1	57.1	64.1	34.6	44.4	17.6	20.3	41.0	52.7
8	16.9	38.0	82.2	90.0	67.1	76.2	53.4	61.0	30.7	40.8	14.8	17.5	37.8	49.5
9	15.4	37.4	79.6	88.4	64.1	74.0	49.7	57.7	27.1	37.3	13.0	15.5	35.0	46.6
10			76.9	86.6	60.6	71.3	46.5	54.7	24.9	35.2	11.2	13.7	32.9	44.7
11			74.4	85.1	57.8	69.2	43.1	51.6	22.9	33.3	9.9	12.4	31.5	43.5
12			71.9	83.6	54.9	66.9	39.2	47.7	20.9	31.3	9.4	12.0	30.2	42.5
13			69.7	82.4	52.2	64.8	37.9	47.0	19.6	30.3	8.3	10.8	28.5	40.9
14			67.3	80.9	49.8	62.9	35.9	45.3	18.2	29.1	7.4	9.9	26.9	39.2
15			65.3	80.0	47.7	61.5	33.3	42.8	17.3	28.2	6.8	9.3	25.1	37.5
Median	2.9				13.9		9.0		4.4		2.3		4.9	

Table 4b. Observed (obs.) and relative (rel.) survival of patients with breast cancer (women) by pTNM for period 1998-2020 (N=56,209).

ICD-10 C50: Malignant neoplasm of breast (women)
Extent of disease
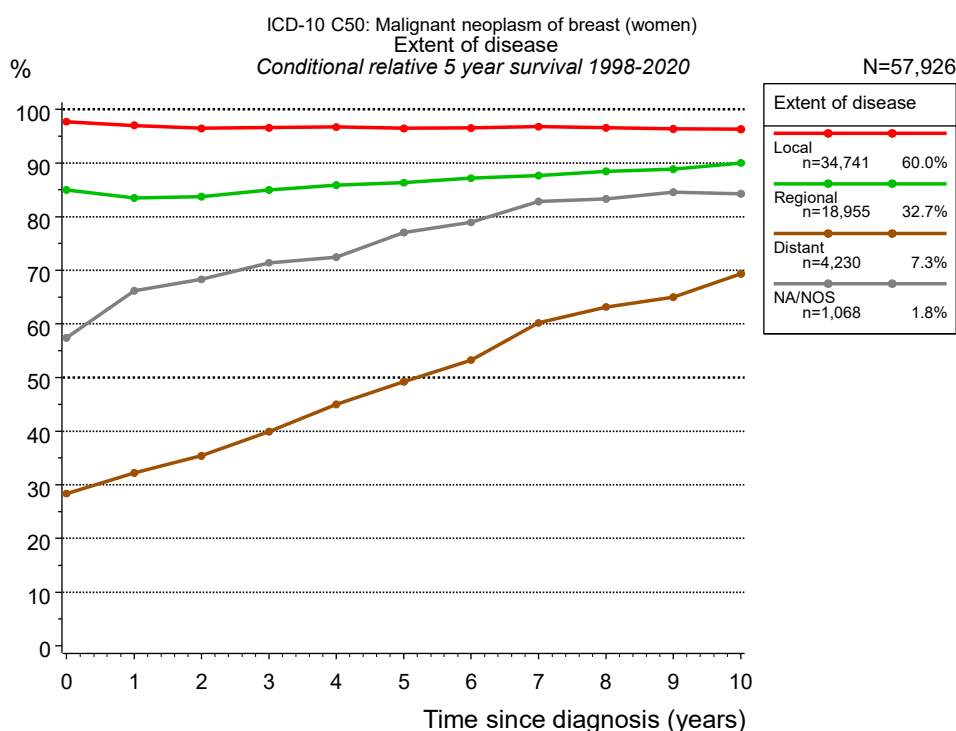*Conditional relative 5 year survival 1998-2020*

Figure 4c. Conditional relative 5-year survival of patients with breast cancer (women) by extent of disease. For 57,977 of 58,994 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 57,926 cases an evaluable classification was established. The grey line represents the subgroup of 1,068 patients with missing values regarding extent of disease (1.8 % of 58,994 patients, the percent values of all other categories are related to n=57,926).

	Extent of disease							
	Local		Regional		Distant		NA/NOS	
		Cond. surv. %		Cond. surv. %		Cond. surv. %		Cond. surv. %
Years	n	5 yrs	n	5 yrs	n	5 yrs	n	5 yrs
0	34,741	97.7	18,955	85.0	4,230	28.3	1,068	57.4
1	32,935	97.0	17,754	83.5	2,938	32.2	819	66.2
2	30,730	96.4	16,172	83.7	2,125	35.4	690	68.3
3	28,312	96.6	14,451	85.0	1,495	39.9	590	71.4
4	26,033	96.7	12,988	85.8	1,061	45.0	509	72.4
5	23,786	96.5	11,642	86.3	782	49.2	425	77.0
6	21,642	96.5	10,420	87.1	593	53.3	375	78.9
7	19,506	96.7	9,273	87.7	453	60.2	332	82.9
8	17,517	96.6	8,223	88.5	333	63.2	296	83.3
9	15,599	96.4	7,233	88.9	256	65.0	257	84.6
10	13,712	96.3	6,275	90.0	207	69.3	233	84.2

Table 4d. Conditional relative 5-year survival of patients with breast cancer (women) by extent of disease for period 1998-2020 (N=57,926).

Conditional relative survival rates refer to the relative survival probability, in this case for 5 years after cancer diagnosis, compared to the age- and sex-matched population (=100 %) under the condition of being alive for a certain time period (x-axis in Figure 4a). The results illustrate to what extent the cancer induced mortality of particular subgroups declines in the subsequent years after detection of the malignancy. For instance, according to the presented survival statistics, patients in the subgroup extent of disease="Local", who are alive at least 3 years after cancer diagnosis, the conditional relative 5-year survival rate is 96.6% (n=28,312).
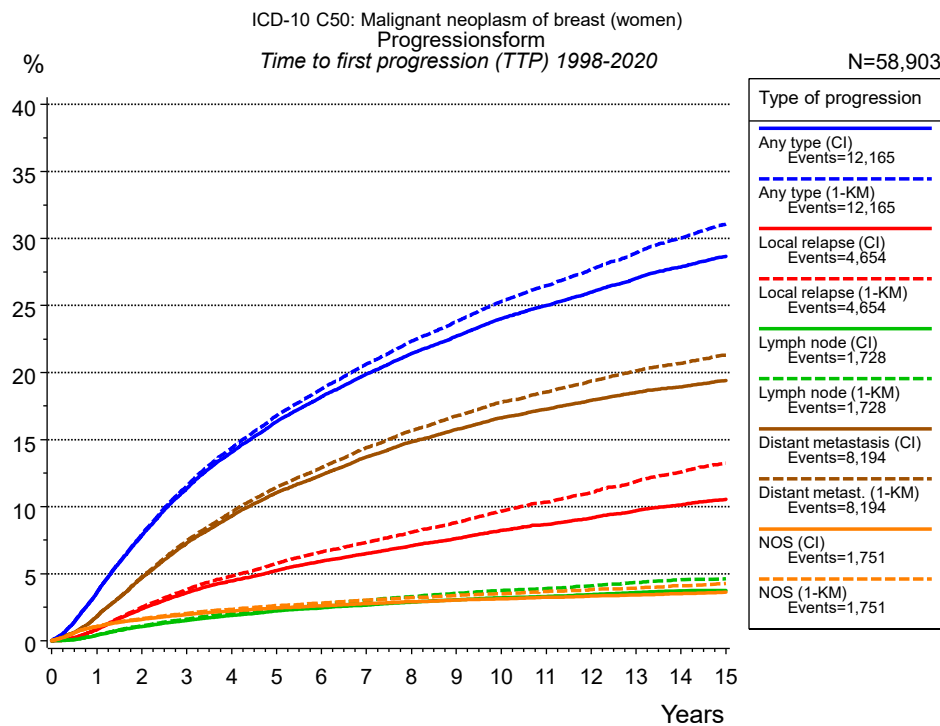
ICD-10 C50: Malignant neoplasm of breast (women)
Progressionsform
Time to first progression (TTP) 1998-2020   N=58,903

Figure 5a. Time to first progression of 58,903 patients with breast cancer (women) diagnosed between 1998 and 2020 (in solid cancers M0 only) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

	Type of progression						
	Any type (CI)	Any type (1-KM)	Local relapse (CI)	Local relapse (1-KM)	Lymph node (CI)	Lymph node (1-KM)	Distant metastasis (CI)
N	54,727	54,727	58,903	58,903	58,903	58,903	54,729
Events	11,806	11,806	4,427	4,427	1,686	1,686	8,008
compet.	6,449		15,514		16,556		7,863
Years	%	%	%	%	%	%	%
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	3.6	3.6	0.8	0.9	0.4	0.4	1.8
2	7.9	8.0	2.4	2.5	1.1	1.1	4.7
3	11.3	11.5	3.6	3.8	1.5	1.6	7.3
4	14.0	14.4	4.5	4.8	1.9	2.1	9.3
5	16.3	16.8	5.2	5.8	2.2	2.5	11.0
6	18.2	18.8	5.9	6.6	2.5	2.7	12.4
7	19.9	20.6	6.5	7.3	2.7	3.0	13.7
8	21.4	22.3	7.1	8.1	2.9	3.3	14.8
9	22.7	23.8	7.6	8.8	3.1	3.5	15.8
10	24.0	25.3	8.2	9.7	3.2	3.7	16.6
11	25.0	26.5	8.7	10.4	3.3	3.9	17.3
12	26.0	27.7	9.1	11.0	3.4	4.1	17.9
13	27.0	28.9	9.7	11.9	3.6	4.3	18.5
14	27.9	30.0	10.1	12.6	3.7	4.5	18.9
15	28.7	31.1	10.5	13.3	3.8	4.6	19.4

cont'd	Type of progression		
	Distant metast. (1-KM)	NOS (CI)	NOS (1-KM)
N	54,729	58,901	58,901
Events	8,008	1,709	1,709
compet.		16,387	
Years	%	%	%
0	0.0	0.0	0.0
1	1.8	1.1	1.1
2	4.8	1.6	1.6
3	7.4	2.0	2.0
4	9.6	2.2	2.3
5	11.5	2.4	2.6
6	12.9	2.6	2.8
7	14.4	2.8	3.0
8	15.7	2.9	3.2
9	16.8	3.0	3.4
10	17.8	3.1	3.5
11	18.5	3.2	3.7
12	19.4	3.3	3.8
13	20.1	3.4	3.9
14	20.7	3.5	4.1
15	21.3	3.6	4.3

Table 5b. Time to first progression of patients with breast cancer (women) for period 1998-2020 (N=58,903), also showing the total of progression events (Events) and of deaths as competing risk (compet.).
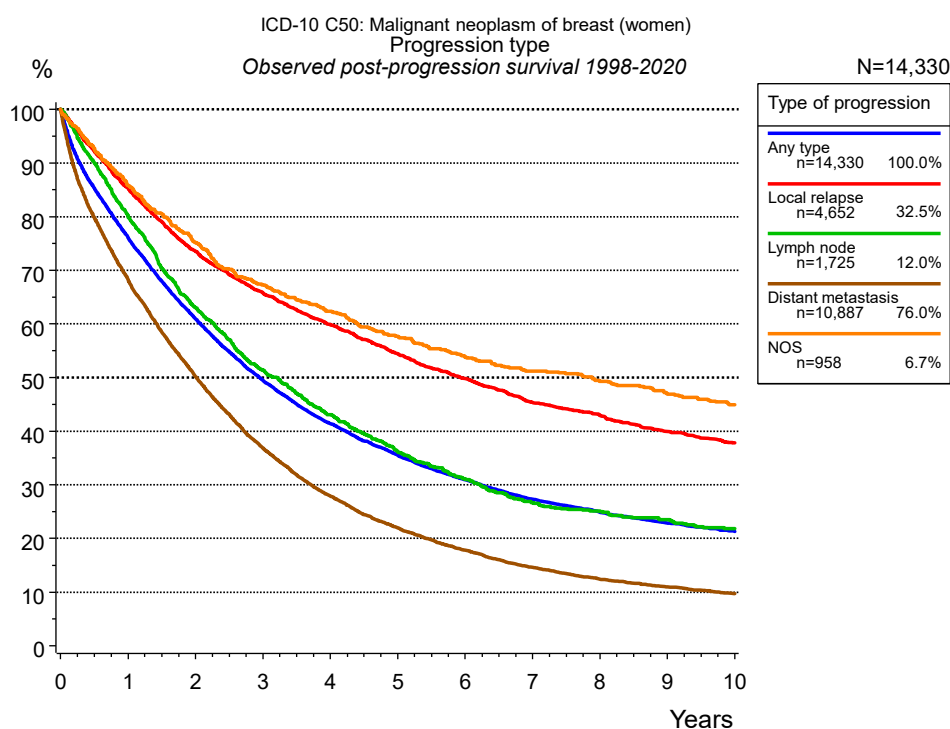
ICD-10 C50: Malignant neoplasm of breast (women)
Progression type
Observed post-progression survival 1998-2020   N=14,330

Figure 5c. Observed post-progression survival of 14,330 patients with breast cancer (women) diagnosed between 1998 and 2020. These 14,330 patients with documented progression events during their course of disease represent 24.3 % of the totally 58,903 evaluated cases (incl. M1, n=4,176, 7.1 %). Patients with cancer relapse documented via death certificates only were excluded (n=2,011, 3.4 %). Multiple progression types on different sites are included in the evaluation even when not occuring synchronously. The NOS (not otherwise specified) class is included under the condition, that it is the one and only progression type during the course of disease.

Medical record documentation often lacks the linguistic severity to distinguish between local relapse, regional lymph node metastasis and distant spread in solid cancers. Frequently, the statement "not specified" is the only information in registries regarding relapse of the disease. The category "Any type" denotes all cases who suffered from at least one relapse during the course of disease (incl. primary M1-status). Although, the real number of relapsed patients is likely to be much higher. The accumulated percentage of patients with local relapse or distant metastasis exceeds the 100 % value because patients are potentially considered in more than one subgroup.

	Type of progression				
	Any type	Local relapse	Lymph node	Distant metastasis	NOS
	n=14,330	n=4,652	n=1,725	n=10,887	n=958
Years	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
1	76.1	85.2	79.9	68.2	85.7
2	60.9	73.5	63.0	50.2	75.2
3	49.5	65.8	51.3	36.8	67.3
4	41.4	59.9	43.0	27.9	62.3
5	35.5	54.5	36.1	22.0	57.7
6	31.0	49.8	31.2	17.8	53.9
7	27.3	45.3	26.7	14.6	51.2
8	24.9	42.9	25.1	12.4	49.3
9	22.9	39.9	23.5	10.9	46.9
10	21.3	37.8	21.9	9.7	44.9

Table 5d. Observed post-progression survival of patients with breast cancer (women) for period 1998-2020 (N=14,330).

ICD-10 C50: Malignant neoplasm of breast (women)
Type of Progression: Distant metastasis
Observed post-progression survival by period of progression date 1988-2020   N=14,066
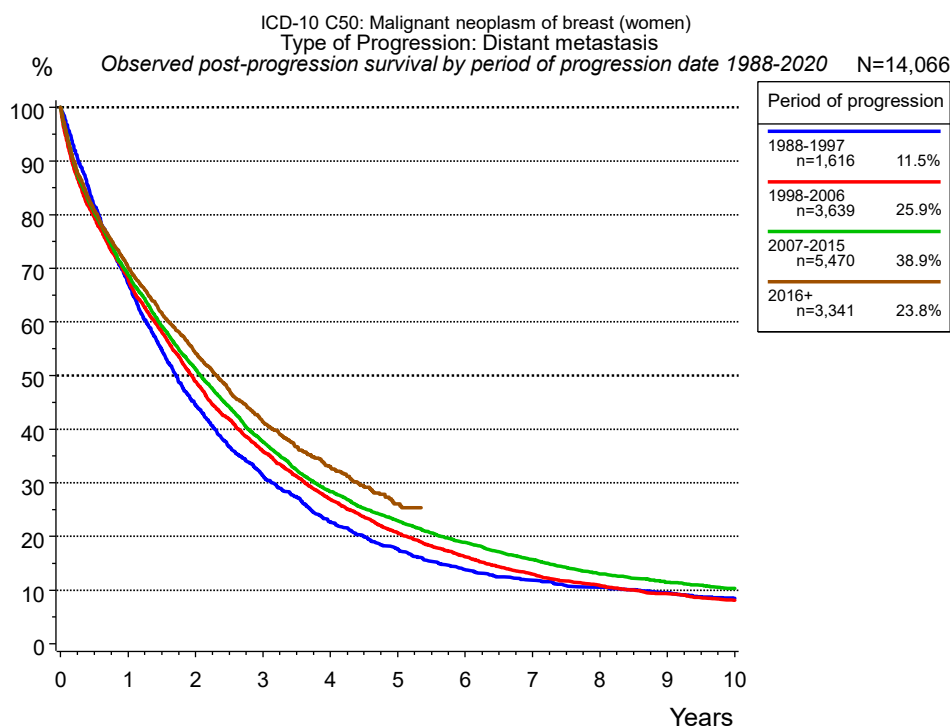

Figure 5e. Observed post-progression (distant metastasis) survival of 14,066 patients with breast cancer (women) diagnosed between 1988 and 2020 by period of progression.

	Period of progression			
Years	1988-1997 n=1,616 %	1998-2006 n=3,639 %	2007-2015 n=5,470 %	2016+ n=3,341 %
0	100.0	100.0	100.0	100.0
1	67.1	68.1	68.8	70.2
2	44.5	48.9	51.2	54.2
3	31.3	35.9	37.7	41.4
4	22.8	27.0	28.4	33.0
5	17.7	20.7	22.9	26.1
6	13.8	16.2	18.8	
7	11.8	12.9	15.7	
8	10.4	10.9	13.0	
9	9.4	9.3	11.5	
10	8.4	8.1	10.3	

Table 5f. Observed post-progression (distant metastasis) survival of patients with breast cancer (women) for period 1988-2020 by period of progression (N=14,066).

Shortcuts

MCR	Munich Cancer Registry, Germany	
NCI	National Cancer Institute, USA	
SEER	Surveillance, Epidemiology, and End Results, USA	
UICC	Union for International Cancer Control, Geneva	
DCO	Death certificate only	Death certificate provides the only notification to the registry.
NA	Not available	
NOS	Not otherwise specified	
OS	Overall/Observed survival	Overall/Observed survival (Kaplan-Meier estimate) Date of entry: diagnosis Event: death from any cause
RS	Relative survival	Survival compared to "general population", ratio of observed to expected survival (Ederer II method), reflecting cancer specific survival
AS	Assembled survival	Assembled chart of observed, expected, relative survival
CS	Conditional survival	Survival probability under the condition of surviving a given period of time
TTP	Time to progression	Time to first progression / relapse Date of entry: diagnosis Event: (progression / relapse): first local-, lymph node recurrence, distant metastasis or unspecified progression
	1-KM	1 minus Kaplan-Meier estimator ("inverse" Kaplan-Meier estimator)
	CI	Cumulative incidence Death as competing risk (according to Kalbfleisch und Prentice)
PPS	Post-progression survival	Survival since first progression / relapse (Kaplan-Meier estimate) Date of entry (progression / relapse): first local-, lymph node recurrence, distant metastasis or unspecified progression Event: death from any cause

Recommended Citation

Munich Cancer Registry. Survival ICD-10 C50: Breast cancer (women) [Internet]. 2022 [updated 2022 Apr 15; cited 2022 Jun 1]. Available from: https://www.tumorregister-muenchen.de/en/facts/surv/sC50f_E-ICD-10-C50-Breast-cancer-women-survival.pdf

Copyright

Disclaimer