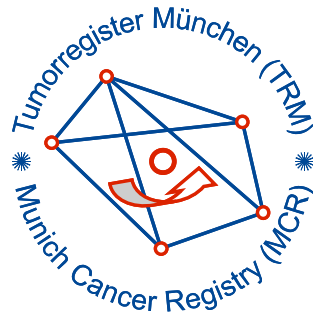


Munich Cancer Registry



- Incidence and Mortality
- Selection Matrix
- Homepage
- *Deutsch*

ICD-10 C51-C58: Fem. genitale cancer

Survival

Year of diagnosis	1988-1997	1998-2020
Patients	5,423	29,325
Diseases	5,485	29,952
Cases evaluated	4,914	23,291
Creation date	04/15/2022	
Database export	12/20/2021	
Population (females)	2.48 m	



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/sC5158E-ICD-10-C51-C58-Fem.-genitale-cancer-survival.pdf>

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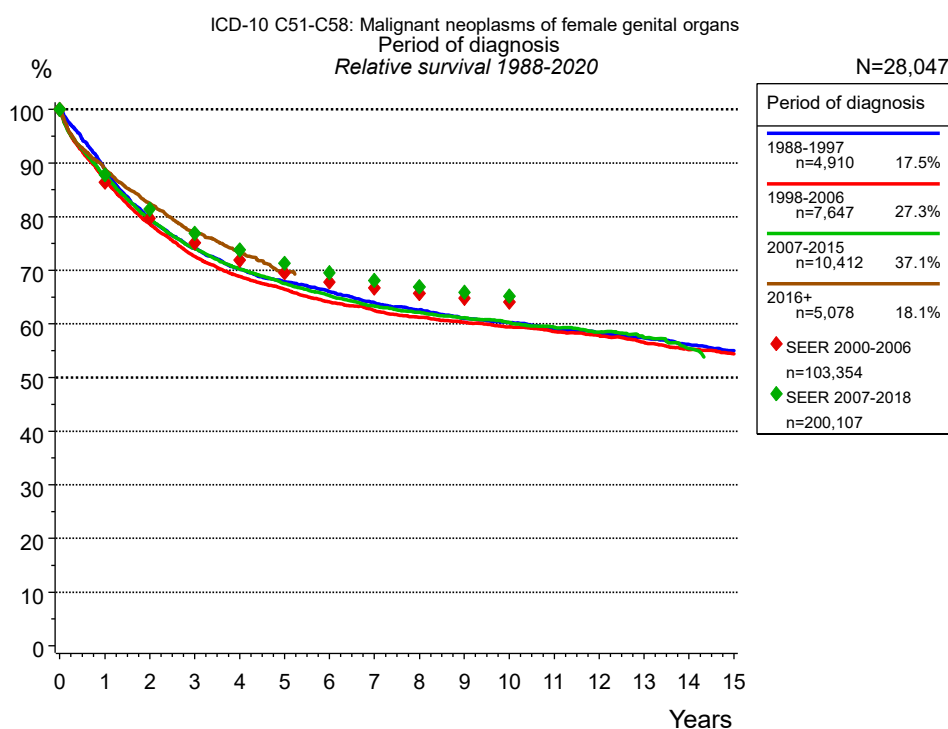


Figure 1a. Relative survival of patients with fem. genitale cancer by period of diagnosis. Included in the evaluation are 28,047 cases diagnosed between 1988 and 2020.

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.

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.

Years	Period of diagnosis							
	1988-1997 n=4,910		1998-2006 n=7,647		2007-2015 n=10,412		2016+ n=5,078	
	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	87.0	88.9	85.1	87.1	85.9	87.6	87.3	88.9
2	76.3	79.5	75.4	78.6	76.5	79.5	79.7	82.5
3	69.6	74.1	68.4	72.6	70.2	74.1	73.3	77.1
4	64.8	70.2	63.8	68.9	65.4	70.3	68.7	73.3
5	61.3	67.9	60.4	66.4	61.8	67.5	64.3	69.8
6	58.5	66.0	57.3	64.1	58.7	65.3		
7	55.6	64.0	54.9	62.5	56.0	63.4		
8	53.3	62.6	52.8	61.3	54.0	62.2		
9	50.9	61.0	50.9	60.3	52.1	61.2		
10	49.3	60.2	49.3	59.5	50.3	60.3		
11	47.3	59.0	47.6	58.6	48.6	59.4		
12	45.8	58.3	46.0	57.8	46.9	58.5		
13	44.2	57.4	44.1	56.6	45.2	57.5		
14	42.4	56.2	42.1	55.2	42.5	55.4		
15	40.6	55.0	40.6	54.4				
Median	9.5		9.6		10.1			

Table 1b. Observed (obs.) and relative (rel.) survival of patients with fem. genitale cancer by period of diagnosis for period 1988-2020 (N=28,047).

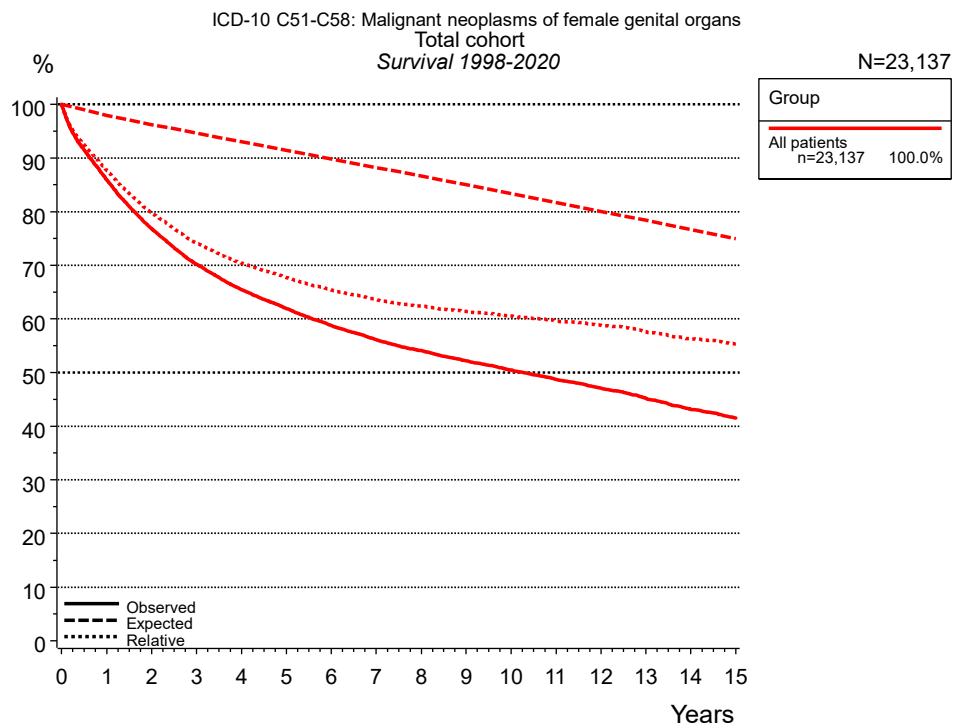


Figure 2a. Observed, expected and relative survival of the total cohort with fem. genitale cancer. Included in the evaluation are 23,137 cases diagnosed between 1998 and 2020.

Years	Group	
	All patients n=23,137	
	obs. %	rel. %
0	100.0	100.0
1	85.9	87.7
2	76.8	79.8
3	70.2	74.2
4	65.5	70.4
5	61.9	67.7
6	58.7	65.4
7	56.2	63.6
8	54.1	62.4
9	52.2	61.4
10	50.4	60.5
11	48.7	59.6
12	47.1	58.8
13	45.2	57.6
14	43.1	56.2
15	41.5	55.3
Median	10.3	

Table 2b. Observed (obs.) and relative (rel.) survival of the total cohort with fem. genitale cancer for period 1998-2020 (N=23,137).

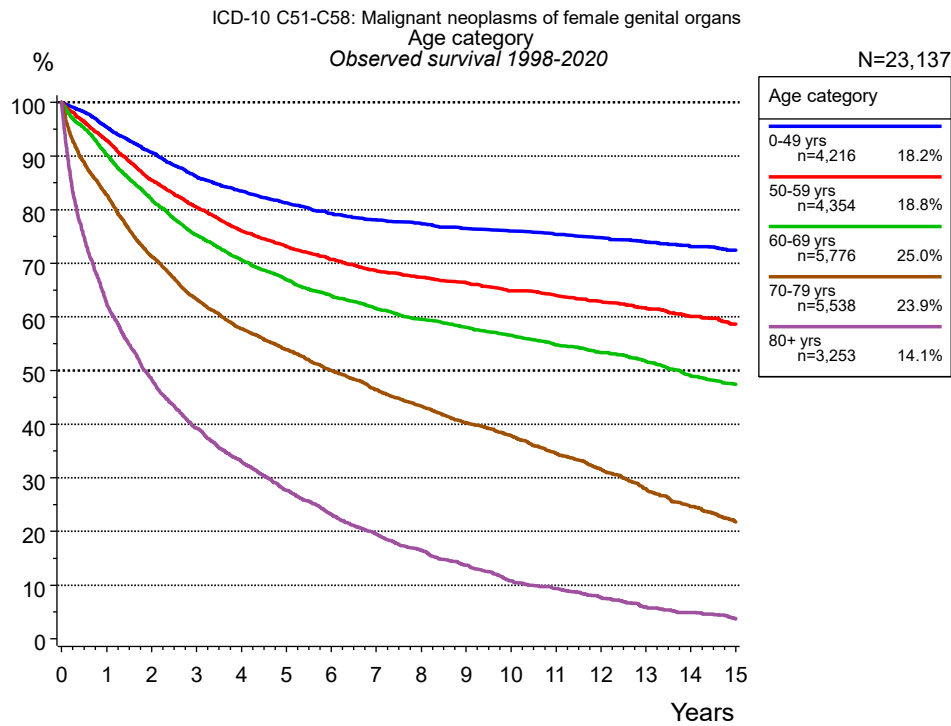


Figure 3a. Observed survival of patients with fem. genitale cancer by age category. Included in the evaluation are 23,137 cases diagnosed between 1998 and 2020.

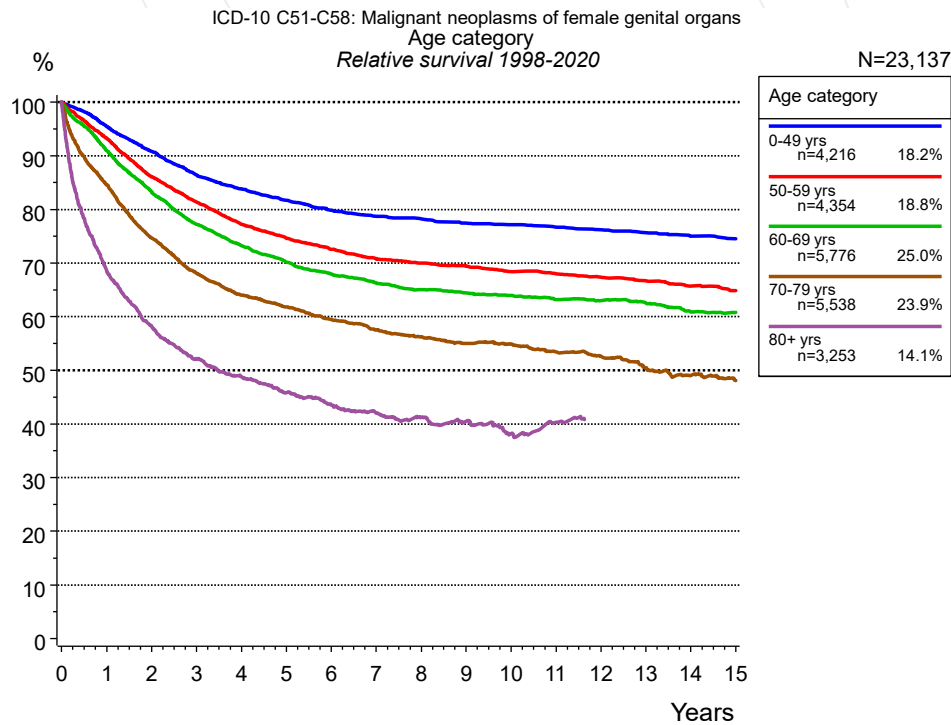


Figure 3b. Relative survival of patients with fem. genitale cancer by age category. Included in the evaluation are 23,137 cases diagnosed between 1998 and 2020.

Years	Age category									
	0-49 yrs n=4,216		50-59 yrs n=4,354		60-69 yrs n=5,776		70-79 yrs n=5,538		80+ yrs n=3,253	
	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
1	95.3	95.4	92.9	93.3	90.3	91.0	82.8	84.6	62.5	68.5
2	90.7	90.8	85.4	86.0	81.9	83.3	71.3	74.7	48.4	58.1
3	86.1	86.4	80.5	81.4	75.3	77.3	63.3	68.1	39.3	52.1
4	83.5	83.8	76.0	77.2	70.6	73.3	57.8	64.0	33.1	48.8
5	81.2	81.7	73.1	74.6	66.9	70.2	53.9	61.8	27.7	45.9
6	79.3	79.9	70.7	72.6	64.0	67.9	50.0	59.5	23.1	43.5
7	78.1	78.8	68.6	70.8	61.6	66.3	46.5	57.5	19.5	42.0
8	77.4	78.2	67.4	70.0	59.5	65.0	43.3	56.3	16.5	41.3
9	76.4	77.4	66.3	69.4	58.0	64.4	40.3	55.0	13.7	40.5
10	76.0	77.1	64.9	68.4	56.6	64.0	37.9	54.8	10.8	38.2
11	75.4	76.7	64.0	68.0	54.8	63.2	34.6	53.4	9.3	40.3
12	74.8	76.2	62.9	67.4	53.4	63.0	31.6	52.6	7.7	41.3
13	74.0	75.7	61.6	66.7	51.7	62.6	27.9	50.4	5.9	40.3
14	73.1	75.0	60.1	65.7	48.9	60.9	24.6	49.0	4.9	43.8
15	72.5	74.6	58.7	64.9	47.4	60.8	21.8	48.1	3.7	44.5
Median			22.2		13.7		6.0		1.9	

Table 3c. Observed (obs.) and relative (rel.) survival of patients with fem. genitale cancer by age category for period 1998-2020 (N=23,137).

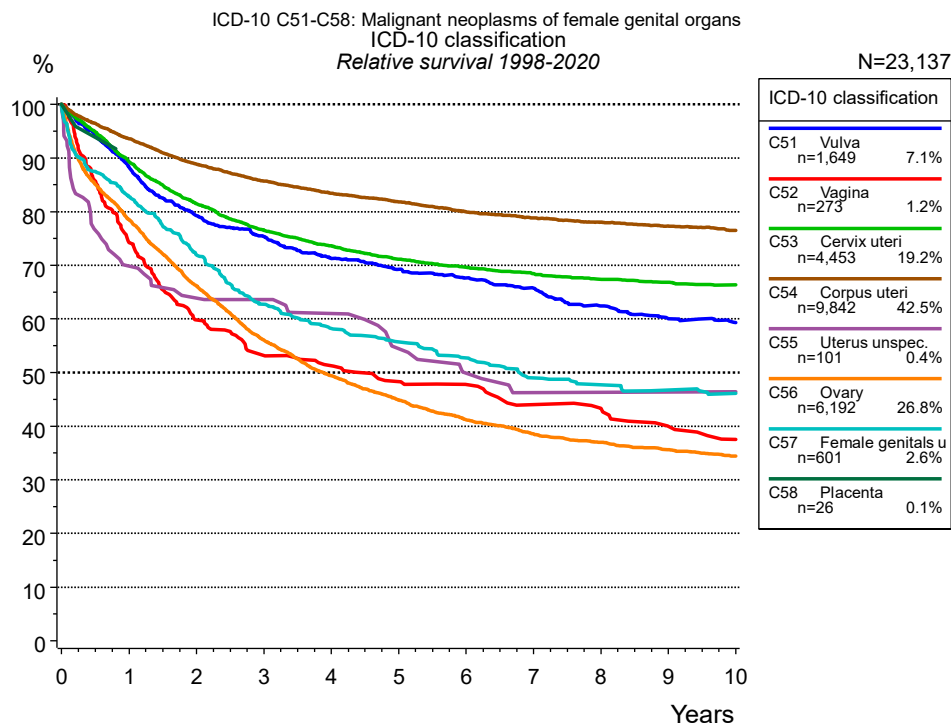


Figure 4a. Relative survival of patients with fem. genitale cancer by ICD-10 classification. Included in the evaluation are 23,137 cases diagnosed between 1998 and 2020.

ICD-10 classification														
Years	C51 Vulva n=1,649		C52 Vagina n=273		C53 Cervix uteri n=4,453		C54 Corpus uteri n=9,842		C55 Uterus unspec. n=101		C56 Ovary n=6,192		C57 Female genitals unspec. n=601	
	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	85.1	88.3	71.4	74.2	88.4	89.3	91.6	93.6	68.2	69.8	76.8	78.5	81.0	82.8
2	73.7	79.2	55.8	59.8	80.2	81.5	85.2	88.9	61.4	63.9	63.8	66.1	69.1	71.9
3	68.0	75.4	48.4	53.2	74.8	76.5	80.4	85.7	60.2	63.6	53.3	56.1	59.3	62.7
4	62.4	71.2	45.4	51.2	71.6	73.7	76.7	83.4	56.6	61.1	46.3	49.4	53.9	58.2
5	59.0	69.2	41.8	48.3	68.7	71.1	73.7	81.8	49.4	54.5	41.4	44.8	50.6	55.7
6	56.0	67.6	39.9	47.8	66.8	69.6	70.4	80.0	44.3	49.9	37.5	41.2	46.9	52.7
7	52.9	65.7	35.8	44.0	65.3	68.4	67.8	78.8	40.5	46.3	34.5	38.5	42.7	49.0
8	48.7	62.4	34.7	43.3	63.9	67.4	65.6	78.0	40.5	46.3	32.6	37.0	40.8	47.7
9	45.5	60.0	30.7	40.0	63.0	66.8	63.4	77.3	40.5	46.4	30.9	35.6	39.0	46.8
10	43.9	59.3	28.2	37.5	62.1	66.3	61.2	76.5	40.5	46.4	29.4	34.4	37.7	46.1
Median	7.5		2.7				14.6		4.9		3.4		5.3	

ICD-10 classification cont'd		
C58 Placenta n=26		
Years	obs. %	rel. %
0	100.0	100.0
Median		

Table 4b. Observed (obs.) and relative (rel.) survival of patients with fem. genitale cancer by ICD-10 classification for period 1998-2020 (N=23,137).

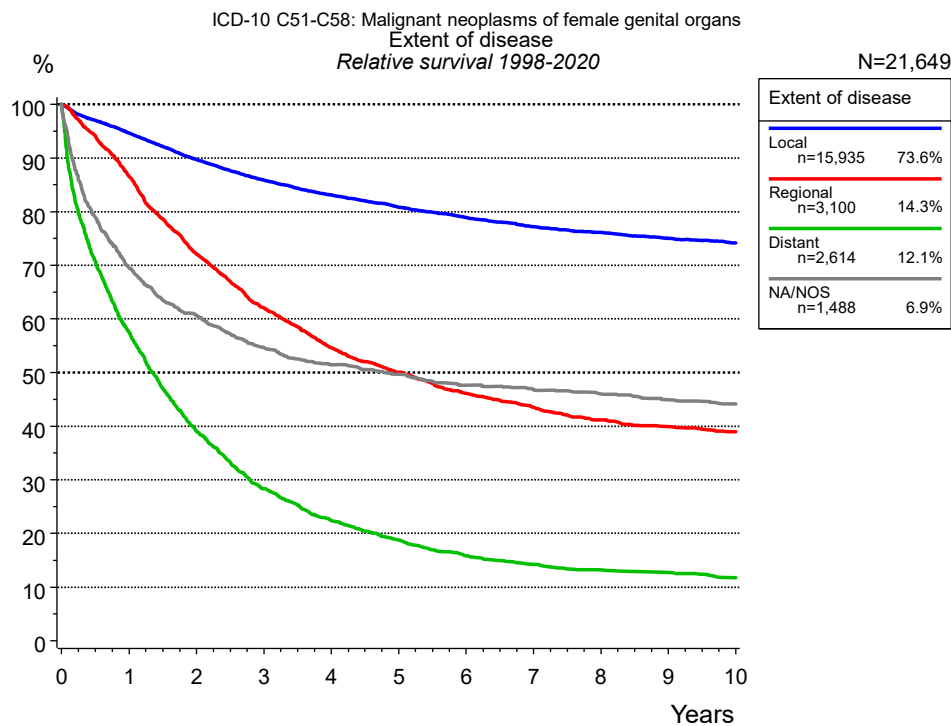


Figure 4e. Relative survival of patients with fem. genitale cancer by extent of disease. For 21,782 of 23,137 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 21,649 cases an evaluable classification was established. The grey line represents the subgroup of 1,488 patients with missing values regarding extent of disease (6.4 % of 23,137 patients, the percent values of all other categories are related to n=21,649).

Years	Extent of disease							
	Local n=15,935		Regional n=3,100		Distant n=2,614		NA/NOS n=1,488	
	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	92.8	94.6	85.2	86.5	56.1	57.4	66.8	69.4
2	86.4	89.7	70.1	72.1	37.7	39.1	56.7	60.6
3	81.3	85.9	59.5	62.0	26.9	28.3	50.1	54.6
4	77.3	83.1	51.8	54.6	21.0	22.4	46.4	51.4
5	73.8	80.9	46.8	50.1	17.2	18.7	44.1	49.7
6	70.8	78.9	42.7	46.1	14.3	15.8	41.6	47.7
7	67.9	77.2	39.8	43.5	12.6	14.2	40.3	46.7
8	65.7	76.1	37.1	41.2	11.6	13.2	39.0	46.0
9	63.5	75.0	35.5	39.9	10.9	12.8	37.5	44.9
10	61.5	74.2	34.2	39.0	9.9	11.7	36.4	44.1
Median	15.3		4.3		1.3		3.0	

Table 4f. Observed (obs.) and relative (rel.) survival of patients with fem. genitale cancer by extent of disease for period 1998-2020 (N=21,649).

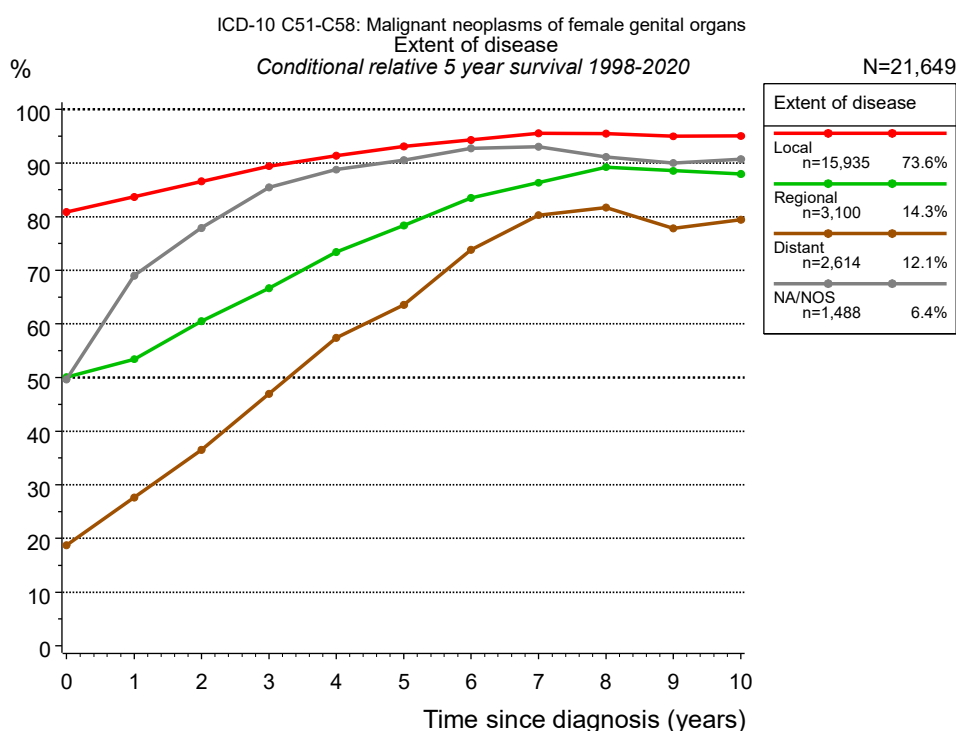


Figure 4i. Conditional relative 5-year survival of patients with fem. genitale cancer by extent of disease. For 21,782 of 23,137 cases diagnosed between 1998 and 2020 valid data could be obtained for this item. For a total of 21,649 cases an evaluable classification was established. The grey line represents the subgroup of 1,488 patients with missing values regarding extent of disease (6.4 % of 23,137 patients, the percent values of all other categories are related to n=21,649).

Years	Extent of disease							
	Local		Regional		Distant		NA/NOS	
	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs
0	15,935	80.9	3,100	50.1	2,614	18.7	1,488	49.7
1	14,173	83.7	2,549	53.4	1,421	27.6	945	69.0
2	12,604	86.6	2,004	60.5	900	36.5	766	77.9
3	11,192	89.4	1,615	66.6	598	46.9	646	85.4
4	9,958	91.4	1,312	73.4	426	57.4	561	88.8
5	8,886	93.1	1,095	78.3	321	63.6	511	90.5
6	7,998	94.3	930	83.5	245	73.8	458	92.7
7	7,132	95.5	785	86.3	191	80.3	428	93.0
8	6,358	95.5	670	89.2	159	81.7	394	91.1
9	5,616	95.0	570	88.5	132	77.8	353	90.0
10	4,944	95.1	495	87.9	102	79.4	318	90.7

Table 4j. Conditional relative 5-year survival of patients with fem. genitale cancer by extent of disease for period 1998-2020 (N=21,649).

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 4g). 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 89.4% (n=11,192).

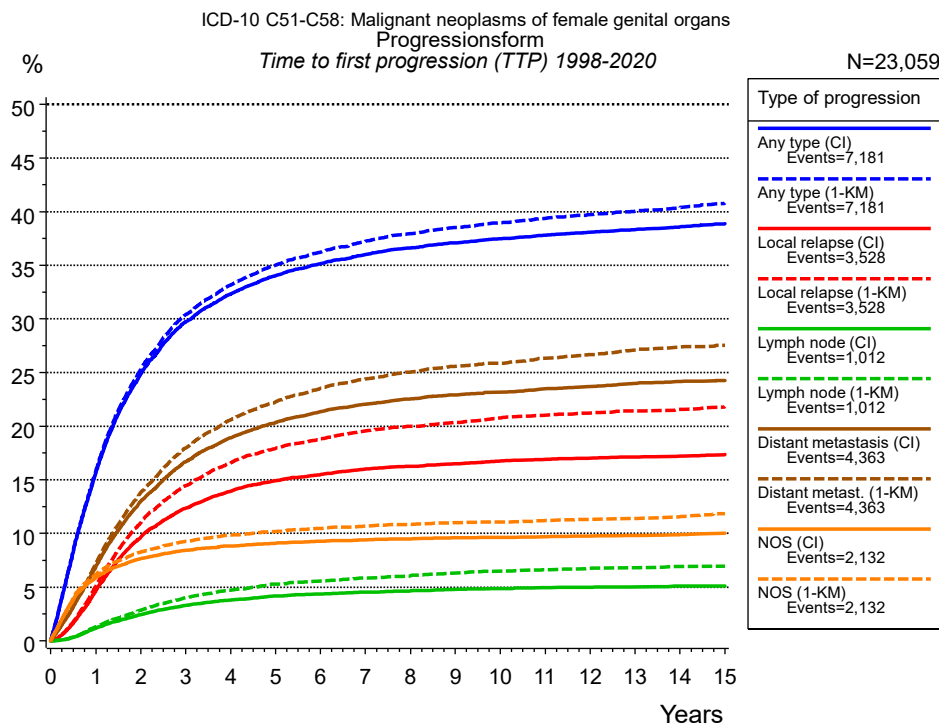


Figure 5a. Time to first progression of 23,059 patients with fem. genitale cancer diagnosed between 1998 and 2020 (in solid cancers M0 only) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

		Type of progression					
N	Any type (CI)	Any type (1-KM)	Local relapse (CI)	Local relapse (1-KM)	Lymph node (CI)	Lymph node (1-KM)	Distant metastasis (CI)
	20,551	20,551	23,059	23,059	23,059	23,059	20,551
Events	7,154	7,154	3,515	3,515	1,008	1,008	4,347
compet.	2,610		7,826		9,817		4,661
Years	%	%	%	%	%	%	%
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	15.7	15.8	4.6	5.1	1.2	1.3	6.9
2	24.9	25.3	9.6	11.0	2.4	2.9	13.0
3	29.7	30.4	12.4	14.5	3.3	4.0	16.7
4	32.3	33.2	13.9	16.6	3.8	4.7	18.9
5	34.0	35.0	14.9	18.0	4.2	5.3	20.3
6	35.2	36.3	15.5	18.8	4.4	5.6	21.4
7	36.0	37.2	16.0	19.6	4.5	5.9	22.0
8	36.6	37.9	16.3	20.0	4.6	6.1	22.5
9	37.1	38.5	16.5	20.4	4.8	6.3	22.9
10	37.5	39.0	16.7	20.8	4.9	6.5	23.2
11	37.8	39.4	16.9	21.0	4.9	6.6	23.5
12	38.1	39.7	17.0	21.2	5.0	6.8	23.7
13	38.3	40.1	17.1	21.4	5.0	6.8	24.0
14	38.6	40.4	17.2	21.6	5.1	6.9	24.2
15	38.9	40.8	17.4	21.9	5.1	6.9	24.3

<i>cont'd</i>	Type of progression		
	Distant metast. (1- KM)	NOS (CI)	NOS (1-KM)
N	20,551	23,059	23,059
Events	4,347	2,124	2,124
compet.		8,729	
Years	%	%	%
0	0.0	0.0	0.0
1	7.2	5.9	6.2
2	13.8	7.7	8.3
3	18.0	8.4	9.3
4	20.6	8.9	9.8
5	22.3	9.1	10.2
6	23.5	9.3	10.5
7	24.4	9.4	10.7
8	25.1	9.5	10.8
9	25.6	9.6	11.0
10	25.9	9.6	11.1
11	26.4	9.7	11.2
12	26.7	9.8	11.3
13	27.1	9.8	11.4
14	27.4	9.9	11.6
15	27.6	10.0	11.8

Table 5b. Time to first progression of patients with fem. genitale cancer for period 1998-2020 (N=23,059), also showing the total of progression events (Events) and of deaths as competing risk (compet.).

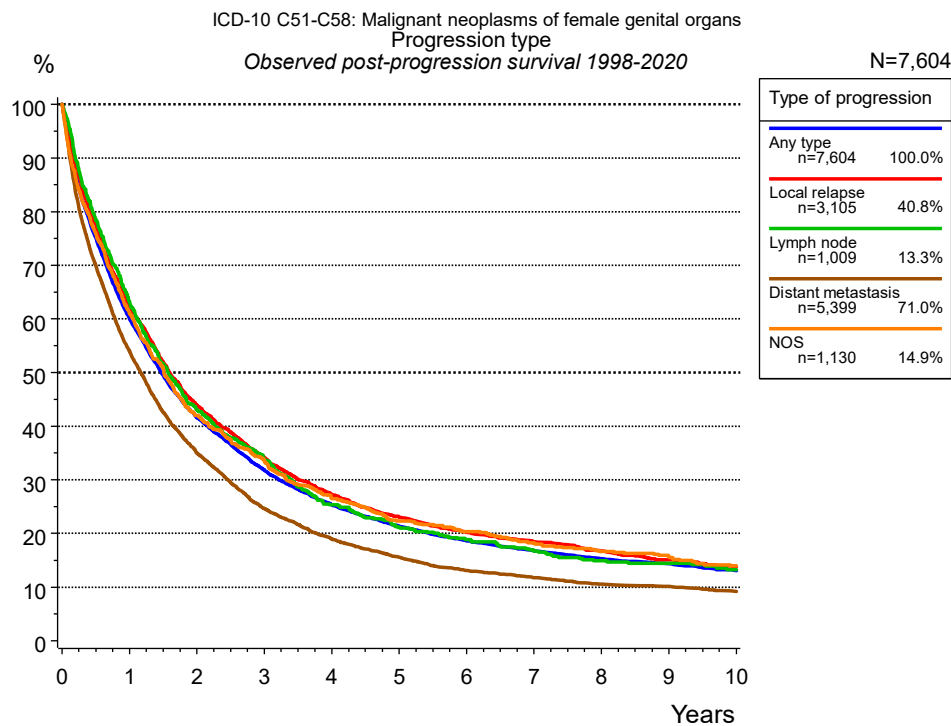


Figure 5c. Observed post-progression survival of 7,604 patients with fem. genitale cancer diagnosed between 1998 and 2020. These 7,604 patients with documented progression events during their course of disease represent 33.0 % of the totally 23,059 evaluated cases (incl. M1, n=2,508, 10.9 %). Patients with cancer relapse documented via death certificates only were excluded (n=2,085, 9.0 %). Multiple progression types on different sites are included in the evaluation even when not occurring 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.

Years	Type of progression				
	Any type n=7,604 %	Local relapse n=3,105 %	Lymph node n=1,009 %	Distant metastasis n=5,399 %	NOS n=1,130 %
0	100.0	100.0	100.0	100.0	100.0
1	60.0	62.3	63.3	54.0	61.2
2	41.6	43.9	43.1	35.0	42.0
3	31.8	34.2	33.9	24.6	33.5
4	25.3	27.3	25.3	19.0	26.5
5	21.3	23.0	21.2	15.6	22.3
6	18.6	20.2	18.9	13.1	20.4
7	16.7	18.4	16.7	11.7	18.1
8	15.3	16.7	14.9	10.5	16.6
9	14.4	15.1	14.4	10.1	15.7
10	13.1	13.8	13.3	9.2	14.0

Table 5d. Observed post-progression survival of patients with fem. genitale cancer for period 1998-2020 (N=7,604).

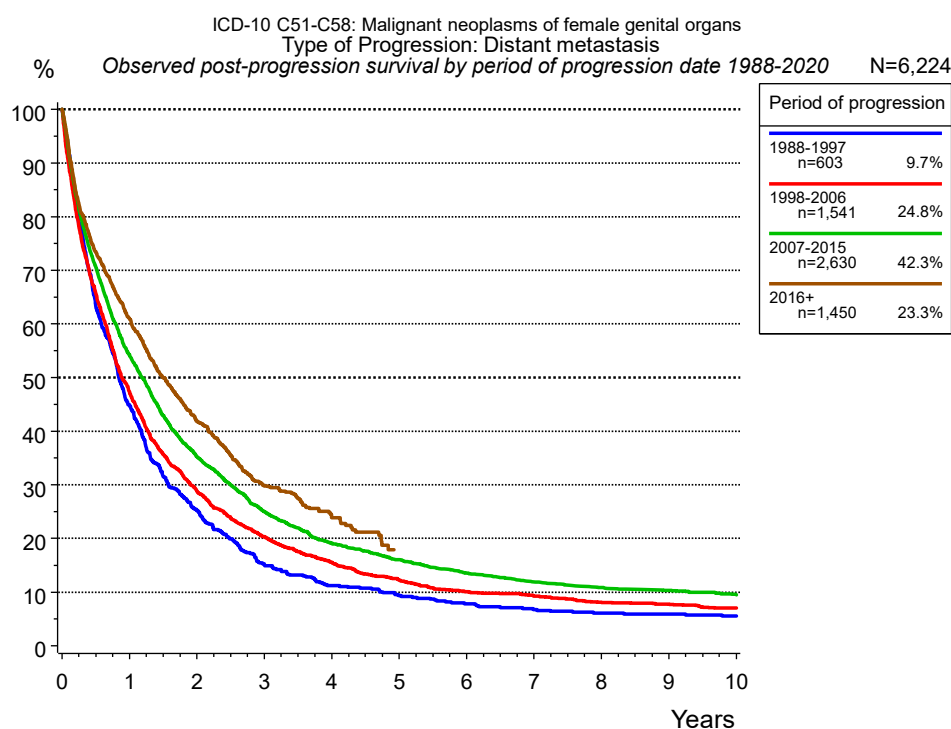


Figure 5e. Observed post-progression (distant metastasis) survival of 6,224 patients with fem. genitale cancer diagnosed between 1988 and 2020 by period of progression.

Years	Period of progression			
	1988-1997 n=603 %	1998-2006 n=1,541 %	2007-2015 n=2,630 %	2016+ n=1,450 %
0	100.0	100.0	100.0	100.0
1	44.7	47.3	54.2	60.9
2	25.3	28.8	35.2	41.9
3	15.2	20.3	25.0	29.8
4	11.3	15.5	19.1	24.5
5	9.4	12.2	16.0	
6	7.8	10.1	13.5	
7	6.8	9.2	11.9	
8	6.1	8.1	10.8	
9	5.9	7.8	10.3	
10	5.5	7.0	9.5	

Table 5f. Observed post-progression (distant metastasis) survival of patients with fem. genitale cancer for period 1988-2020 by period of progression (N=6,224).

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

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