Munich Cancer Registry

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

Cancer statistics: Survival

C51-C58: Fem. genitale cancer

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	3,818	5,334	16,663
Diseases	3,859	5,392	16,991

Creation date	04/01/2013
Export date	01/03/2013
Population (females)	2.3 m

C51-C58: Malignant neoplasms of female genital organs
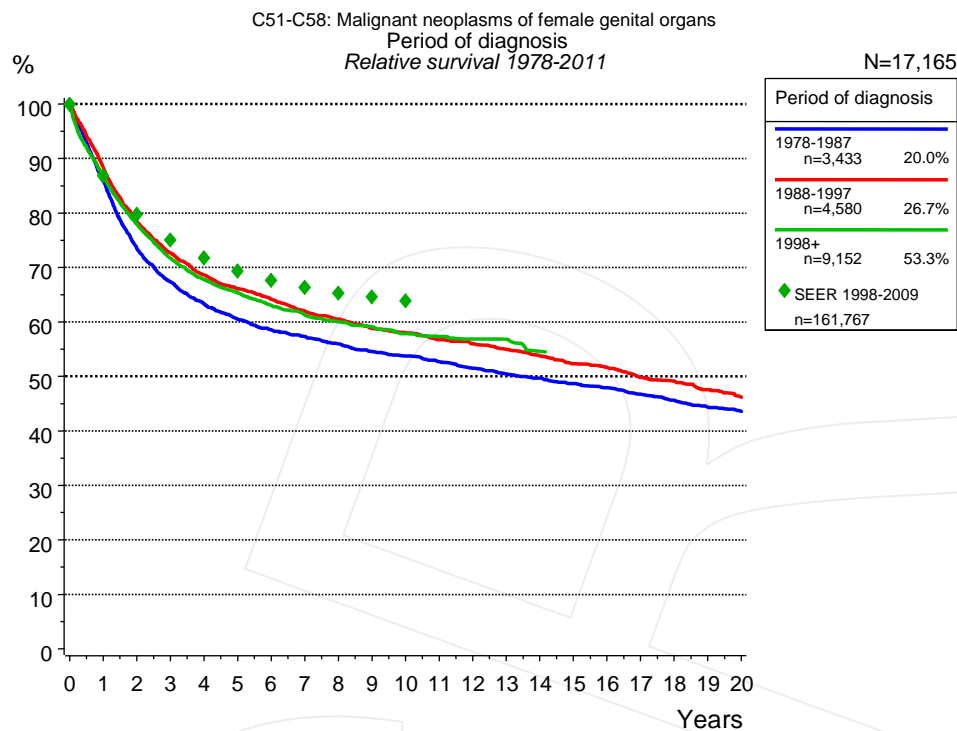Period of diagnosis
Relative survival 1978-2011

Figure 1a. Relative survival of patients with fem. genitale cancer by period of diagnosis. Included in the evaluation are 17,165 cases diagnosed between 1978 and 2011.

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 1998 to 2009, and are represented by green 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.

| | Period of diagnosis | | | | | |
| | 1978-1987 n=3,433 | | 1988-1997 n=4,580 | | 1998+ n=9,152 | |
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	83.9	85.7	86.3	88.3	84.7	86.7
2	70.6	73.4	75.1	78.4	74.7	77.9
3	63.5	67.3	68.1	72.6	67.5	71.7
4	58.5	63.3	63.1	68.6	62.7	67.8
5	55.0	60.5	59.5	66.1	59.4	65.3
6	52.2	58.5	56.6	64.1	56.3	63.0
7	50.1	57.3	53.6	62.0	53.8	61.3
8	48.0	56.0	51.2	60.5	51.8	60.0
9	45.8	54.6	48.7	58.8	49.9	59.1
10	44.2	53.7	47.1	58.0	48.0	57.8
11	42.4	52.7	45.2	56.7	46.6	57.3
12	40.6	51.5	43.6	56.0	45.5	56.8
13	38.9	50.4	41.9	55.0	44.5	56.8
14	37.4	49.7	40.1	53.8	42.3	54.6
15	35.9	48.7	38.2	52.3		
16	34.4	47.9	36.8	51.6		
17	32.8	46.7	34.7	49.8		
18	31.3	45.6	33.5	49.1		
19	29.7	44.3	31.7	47.6		
20	28.5	43.6	29.9	46.1		

Table 1b. Observed (obs.) and relative (rel.) survival of patients with fem. genitale cancer by period of diagnosis for period 1978-2011 (N=17,165).
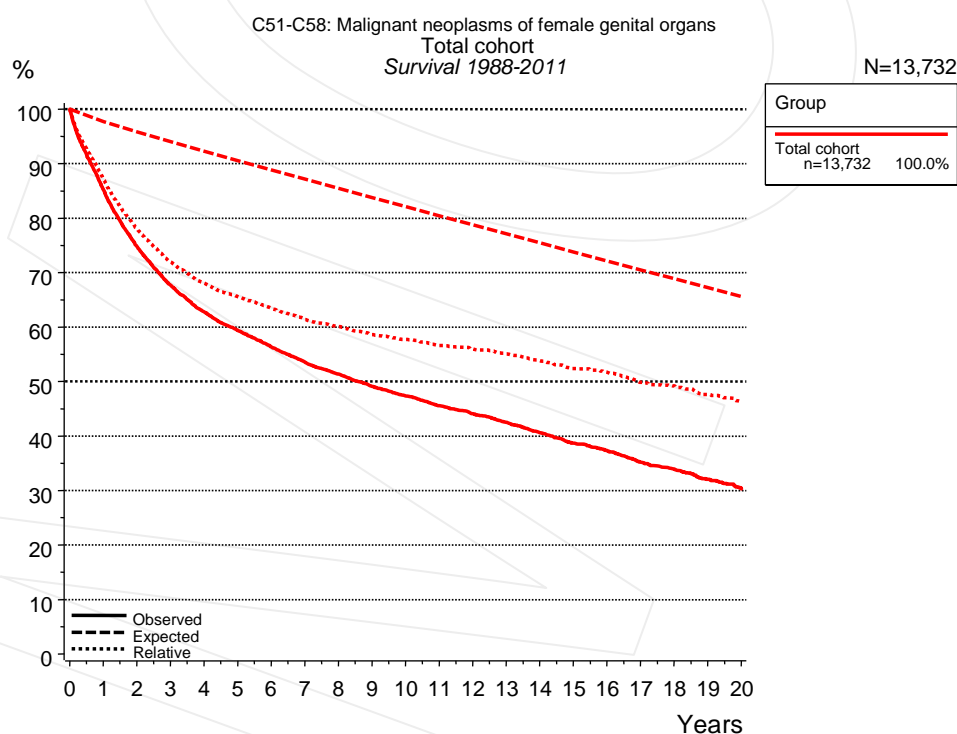

Figure 2a. Observed, expected and relative survival of the total cohort with fem. genitale cancer. Included in the evaluation are 13,732 cases diagnosed between 1988 and 2011.

Years	Group Total cohort n=13,732	
	obs. %	rel. %
0	100.0	100.0
1	85.2	87.2
2	74.8	78.0
3	67.7	72.0
4	62.8	68.0
5	59.4	65.6
6	56.4	63.4
7	53.6	61.5
8	51.4	60.1
9	49.1	58.6
10	47.4	57.7
11	45.6	56.6
12	44.1	55.9
13	42.5	55.1
14	40.6	53.8
15	38.7	52.4
16	37.3	51.7
17	35.2	49.9
18	33.9	49.2
19	32.1	47.6
20	30.3	46.2

Table 2b. Observed (obs.) and relative (rel.) survival of the total cohort with fem. genitale cancer for period 1988-2011 (N=13,732).
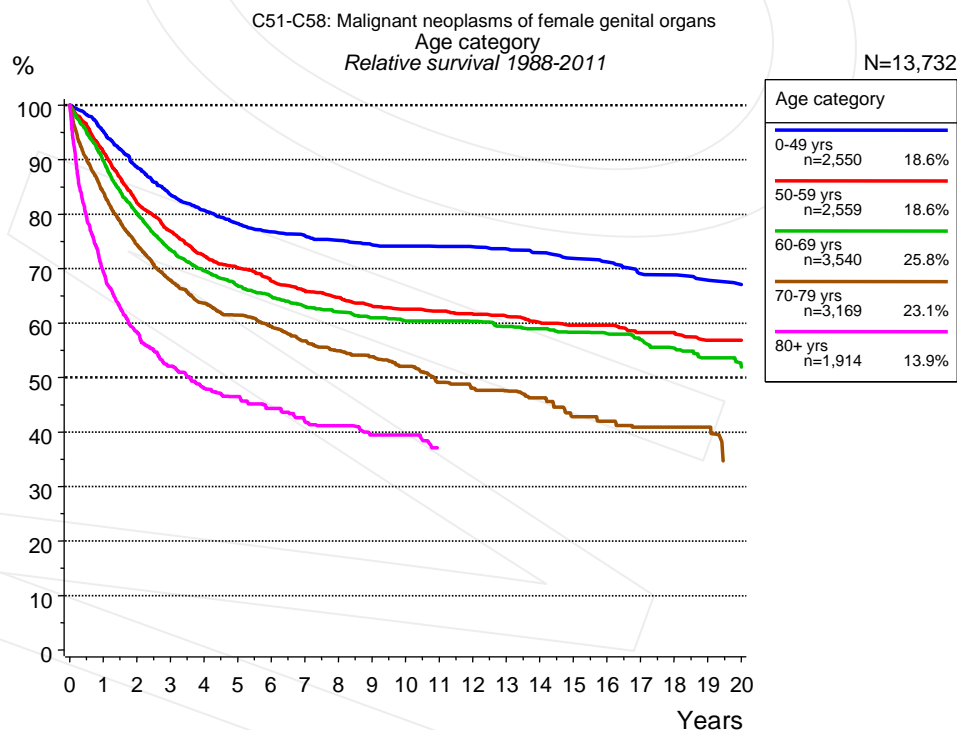

Figure 3a. Relative survival of patients with fem. genitale cancer by age category. Included in the evaluation are 13,732 cases diagnosed between 1988 and 2011.

C51-C58: Malignant neoplasms of female genital organs
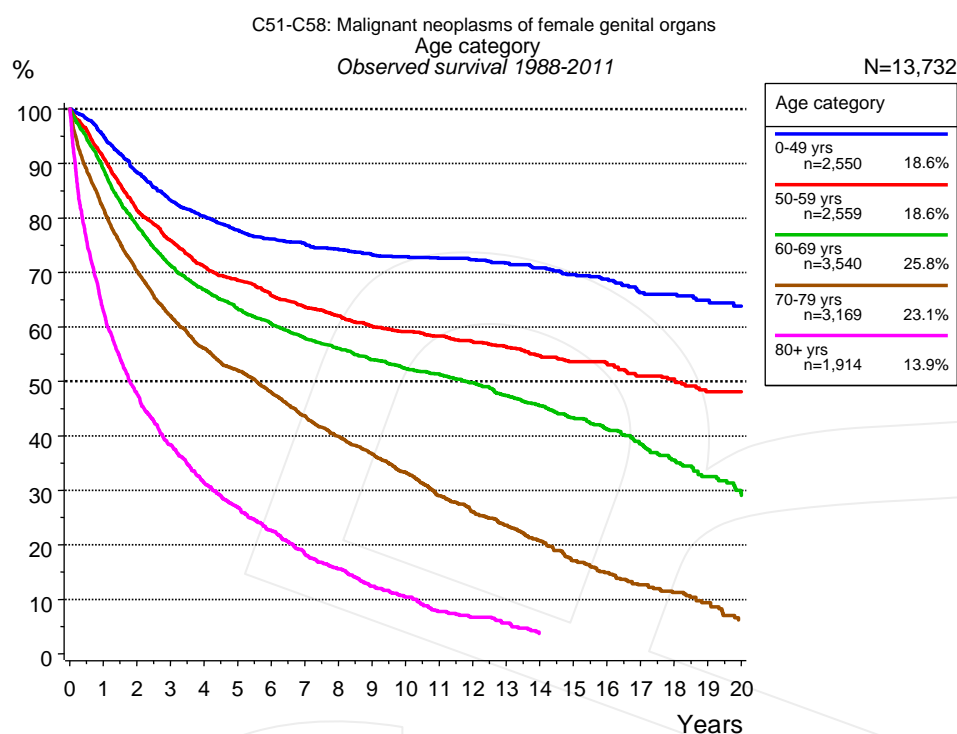Age category
Observed survival 1988-2011

Figure 3b. Observed survival of patients with fem. genitale cancer by age category. Included in the evaluation are 13,732 cases diagnosed between 1988 and 2011.

	0-49 yrs n=2,550		50-59 yrs n=2,559		60-69 yrs n=3,540		70-79 yrs n=3,169		80+ yrs n=1,914	
Years	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	95.1	95.2	91.1	91.4	89.0	89.8	81.8	84.0	62.7	69.2
2	88.5	88.7	81.4	82.0	78.7	80.2	70.3	74.4	47.7	58.3
3	83.3	83.6	75.8	76.8	71.2	73.4	62.1	67.9	38.4	52.1
4	80.3	80.7	71.1	72.3	66.8	69.6	56.1	63.6	31.4	48.1
5	77.8	78.3	68.5	70.1	63.3	66.9	52.0	61.4	26.8	46.5
6	76.1	76.7	65.7	67.7	60.6	64.9	48.0	59.4	22.6	44.3
7	75.3	76.0	63.7	65.9	57.9	63.0	43.7	56.7	18.2	41.9
8	74.3	75.2	62.0	64.7	56.0	62.0	39.9	54.9	15.6	41.1
9	73.2	74.3	60.1	63.1	54.0	60.9	36.7	53.8	12.4	39.5
10	72.9	74.1	59.1	62.6	52.3	60.4	33.3	52.1	10.4	39.5
11	72.6	74.1	58.3	62.2	51.4	60.4	29.0	49.1	7.7	37.1
12	72.3	74.0	57.3	61.7	49.7	60.3	26.1	48.0		
13	71.7	73.6	56.3	61.3	47.4	59.4	23.6	47.6		
14	70.8	72.9	54.7	60.1	45.5	59.0	20.7	46.3		
15	69.6	71.8	53.6	59.6	43.3	58.3	17.1	42.8		
16	68.8	71.2	53.2	59.6	41.2	58.0	14.9	42.0		
17	66.3	69.0	51.0	58.3	38.5	56.9	12.7	40.9		
18	66.0	68.8	50.4	58.3	35.6	55.4	11.3	40.9		
19	64.9	67.8	48.1	56.9	32.5	53.6	9.4	40.9		
20	63.8	67.1	48.1	56.9	29.0	51.9				

Age category

Table 3c. Observed (obs.) and relative (rel.) survival of patients with fem. genitale cancer by age category for period 1988-2011 (N=13,732).

C51-C58: Malignant neoplasms of female genital organs
ICD-10 classification
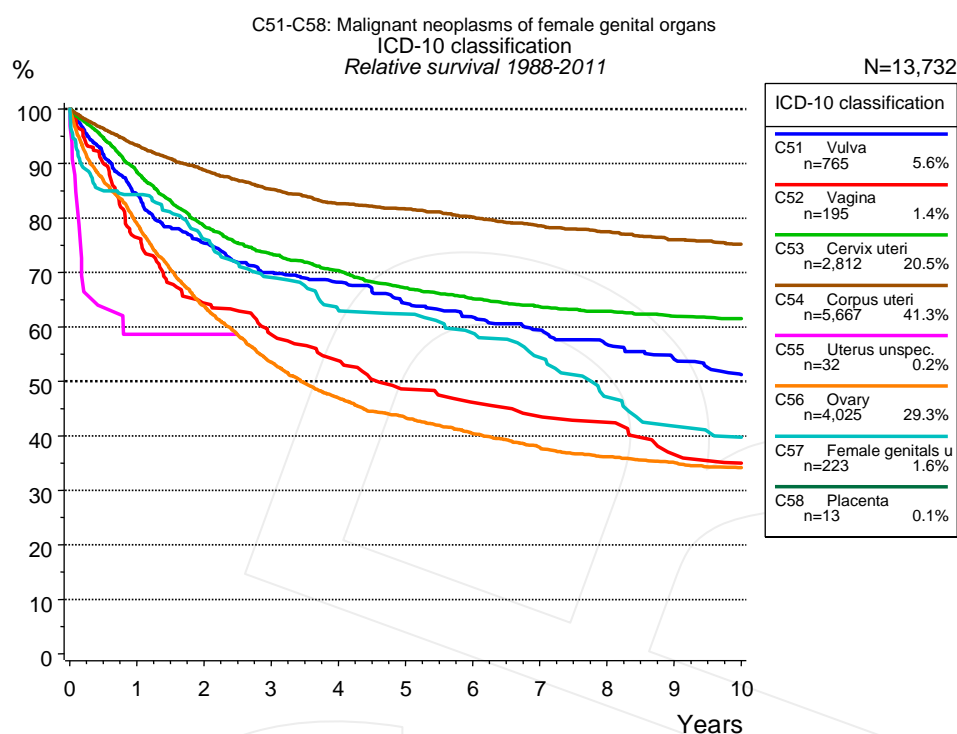*Relative survival 1988-2011*   N=13,732

Figure 4a. Relative survival of patients with fem. genitale cancer by ICD-10 classification. Included in the evaluation are 13,732 cases diagnosed between 1988 and 2011. Subgroups with sample size <15 are dropped from the chart.

ICD-10 classification

Years	C51 Vulva n=765 obs. %	rel. %	C52 Vagina n=195 obs. %	rel. %	C53 Cervix uteri n=2,812 obs. %	rel. %	C54 Corpus uteri n=5,667 obs. %	rel. %	C55 Uterus unspec. n=32 obs. %	rel. %	C56 Ovary n=4,025 obs. %	rel. %	C57 Female genitals unspec. n=223 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	80.6	84.3	73.7	76.4	87.2	88.4	91.1	93.4	55.8	58.7	77.4	79.0	82.4	84.3
2	69.6	75.4	60.2	64.4	76.7	78.6	84.6	88.8	55.8	58.7	61.5	63.8	72.4	76.1
3	62.6	70.0	53.7	58.6	71.0	73.4	79.3	85.3			50.9	53.5	64.4	69.0
4	59.1	68.2	48.1	53.8	67.4	70.4	75.0	82.6			44.0	47.0	57.7	63.1
5	54.2	64.3	41.8	48.6	63.8	67.2	72.4	81.6			40.0	43.3	55.7	62.4
6	50.5	61.8	38.8	46.2	61.3	65.2	69.3	80.2			36.8	40.4	51.5	58.9
7	47.4	59.4	36.3	43.5	59.4	63.7	66.2	78.6			33.9	37.8	46.3	54.4
8	44.0	56.8	34.6	42.5	58.2	62.9	63.6	77.4			32.0	36.2	39.0	47.1
9	40.7	54.1	28.8	36.6	56.7	62.0	60.8	76.0			30.5	35.1	33.8	41.8
10	37.7	51.3	26.8	35.0	55.7	61.5	58.5	75.1			29.3	34.2	31.9	39.8

	ICD-10 classification	
cont'd	C58 Placenta n=13	
Years	obs. %	rel. %
0	100.0	100.0

Table 4b. Observed (obs.) and relative (rel.) survival of patients with fem. genitale cancer by ICD-10 classification for period 1988-2011 (N=13,732).
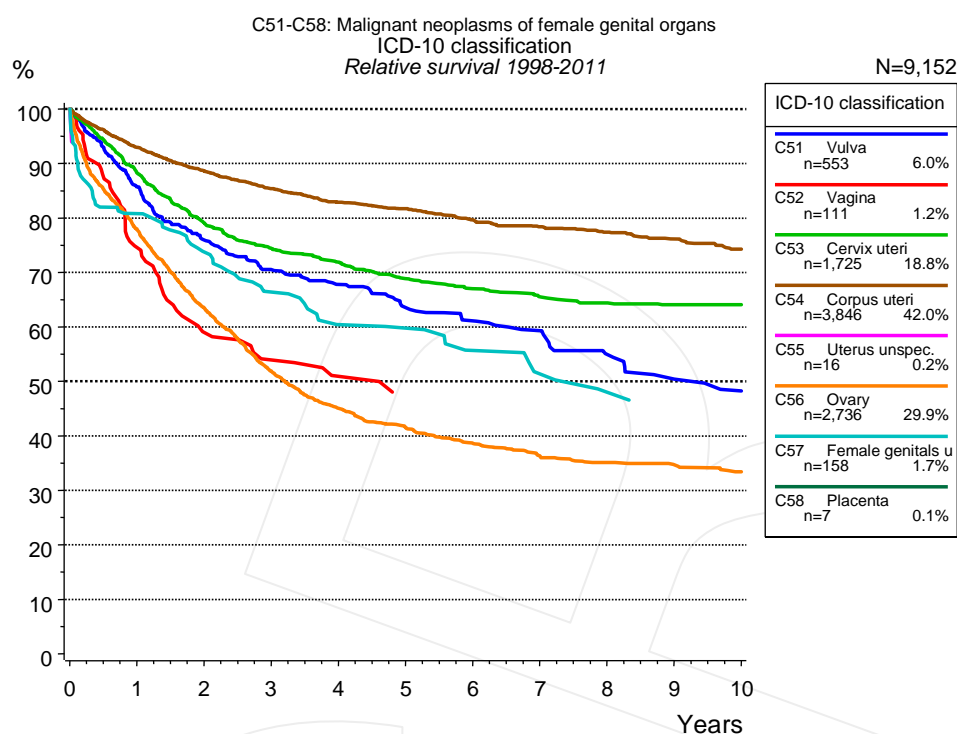
C51-C58: Malignant neoplasms of female genital organs
ICD-10 classification
Relative survival 1998-2011　　　　　　　　N=9,152

ICD-10 classification		
C51	Vulva	
	n=553	6.0%
C52	Vagina	
	n=111	1.2%
C53	Cervix uteri	
	n=1,725	18.8%
C54	Corpus uteri	
	n=3,846	42.0%
C55	Uterus unspec.	
	n=16	0.2%
C56	Ovary	
	n=2,736	29.9%
C57	Female genitals u	
	n=158	1.7%
C58	Placenta	
	n=7	0.1%

Figure 4c. Relative survival of patients with fem. genitale cancer by ICD-10 classification. Included in the evaluation are 9,152 cases diagnosed between 1998 and 2011. Subgroups with sample size <15 are dropped from the chart.

ICD-10 classification

Years	C51 Vulva n=553 obs. %	rel. %	C52 Vagina n=111 obs. %	rel. %	C53 Cervix uteri n=1,725 obs. %	rel. %	C54 Corpus uteri n=3,846 obs. %	rel. %	C55 Uterus unspec. n=16 obs. %	rel. %	C56 Ovary n=2,736 obs. %	rel. %	C57 Female genitals unspec. n=158 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	81.9	85.7	71.9	74.5	87.2	88.3	90.8	93.0			76.2	77.9	78.9	80.8
2	70.0	76.0	54.9	59.0	77.5	79.1	84.7	88.7			61.1	63.4	70.1	73.8
3	62.7	70.5	49.1	53.9	72.4	74.4	79.8	85.4			49.2	51.9	61.7	66.4
4	58.5	67.8	45.0	50.9	69.5	71.9	75.8	82.9			42.1	45.1	54.6	60.4
5	53.6	63.6	41.3	47.9	66.1	68.9	73.0	81.7			38.3	41.6	53.5	59.8
6	50.1	61.1	41.3	47.2	63.9	67.0	69.6	79.6			35.1	38.6	48.1	55.7
7	47.3	59.3			62.1	65.5	67.0	78.4			32.5	36.3	43.5	51.4
8	42.2	55.0			60.7	64.4	64.6	77.4			31.0	35.1	39.9	48.0
9	37.6	50.4			59.8	64.0	62.1	76.1			30.1	34.7	37.8	45.5
10	35.6	48.3			59.8	64.0	59.0	74.3			28.5	33.4		

	ICD-10 classification	
cont'd	C58 Placenta n=7	
Years	obs. %	rel. %
0	100.0	100.0

Table 4d. Observed (obs.) and relative (rel.) survival of patients with fem. genitale cancer by ICD-10 classification for period 1998-2011 (N=9,152).

C51-C58: Malignant neoplasms of female genital organs
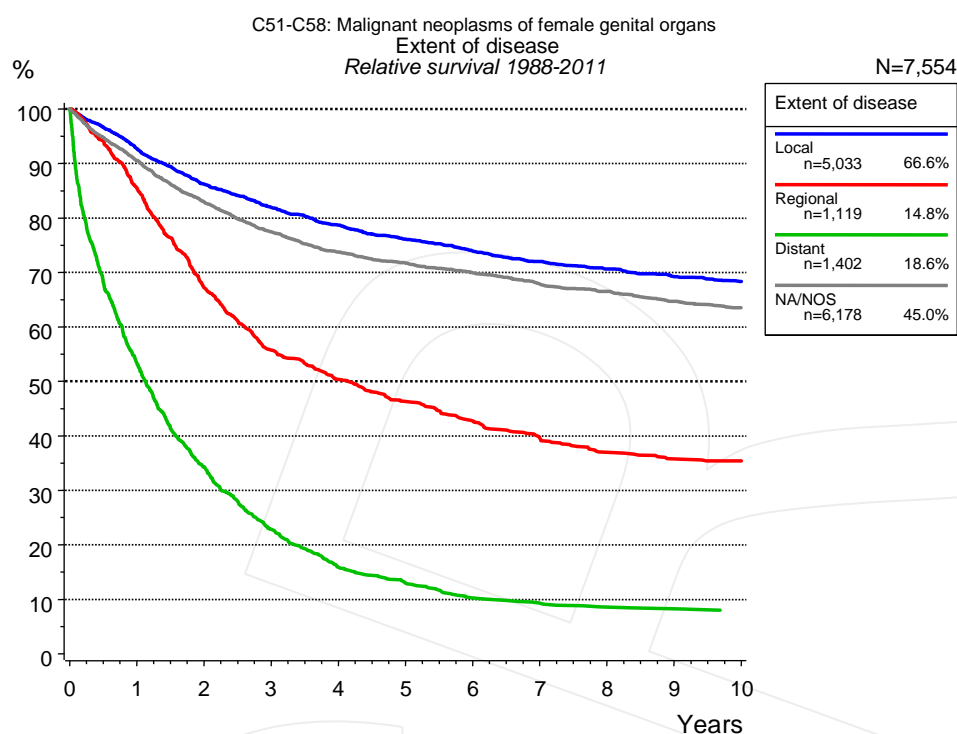Extent of disease
Relative survival 1988-2011

Figure 4e. Relative survival of patients with fem. genitale cancer by extent of disease. For 12,814 of 13,732 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 7,554 cases an evaluable classification was established. The grey line represents the subgroup of 6,178 patients with missing values regarding extent of disease (45.0% of 13,732 patients, the percent values of all other categories are related to n=7,554).

| | **Extent of disease** | | | | | | | |
| | Local n=5,033 | | Regional n=1,119 | | Distant n=1,402 | | NA/NOS n=6,178 | |
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	91.0	92.7	84.3	85.5	51.8	53.2	88.2	90.6
2	83.2	86.2	65.4	67.2	32.9	34.3	78.9	82.9
3	77.8	81.9	53.8	55.8	21.6	22.8	72.0	77.5
4	73.5	78.7	48.0	50.4	14.8	15.9	67.1	73.7
5	69.9	76.1	43.6	46.3	11.9	13.0	63.8	71.7
6	66.8	73.9	39.9	42.7	9.2	10.2	60.9	69.9
7	64.0	72.0	36.5	39.5	8.2	9.3	57.7	67.9
8	61.7	70.7	33.7	37.0	7.5	8.6	55.3	66.5
9	59.4	69.2	32.3	35.8	7.3	8.3	52.5	64.7
10	57.6	68.4	31.6	35.4	6.9	8.0	50.4	63.5

Table 4f. Observed (obs.) and relative (rel.) survival of patients with fem. genitale cancer by extent of disease for period 1988-2011 (N=7,554).

C51-C58: Malignant neoplasms of female genital organs
Extent of disease
Relative survival 1998-2011   N=4,697
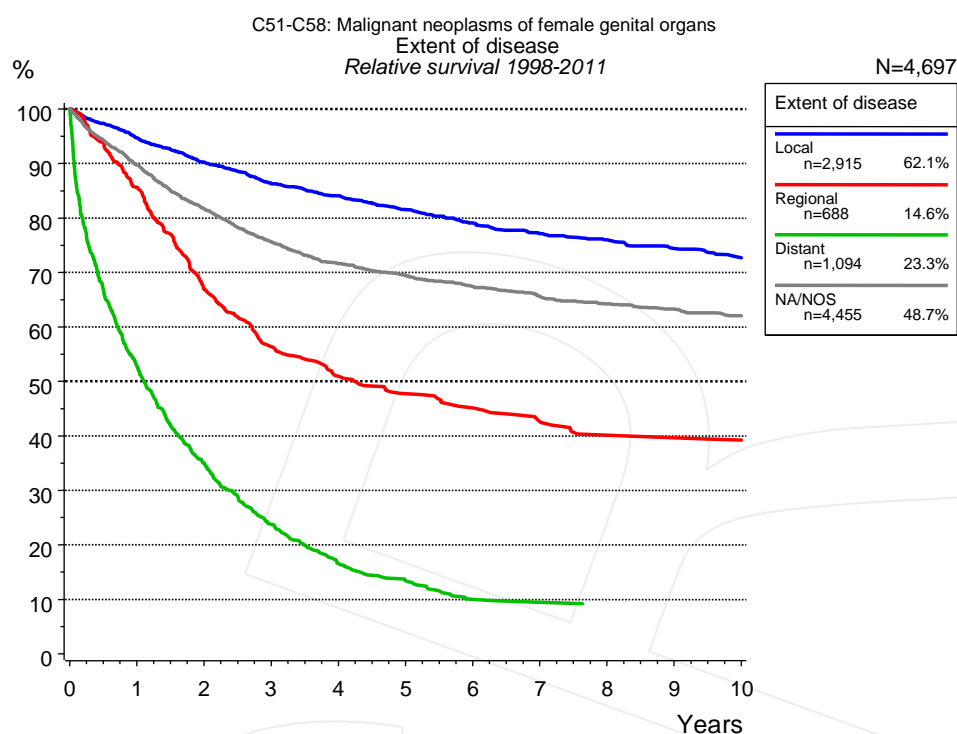

Figure 4g. Relative survival of patients with fem. genitale cancer by extent of disease. For 8,578 of 9,152 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 4,697 cases an evaluable classification was established. The grey line represents the subgroup of 4,455 patients with missing values regarding extent of disease (48.7% of 9,152 patients, the percent values of all other categories are related to n=4,697).

	Extent of disease							
	Local n=2,915		Regional n=688		Distant n=1,094		NA/NOS n=4,455	
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	93.1	94.7	84.4	85.6	51.4	52.8	87.3	89.7
2	87.4	90.3	65.0	66.8	33.5	35.0	77.8	81.7
3	82.3	86.3	54.3	56.4	22.4	23.8	70.5	75.7
4	79.0	84.0	48.6	50.9	15.4	16.6	65.4	71.6
5	75.5	81.6	45.0	47.7	12.3	13.4	62.2	69.5
6	72.0	79.0	42.5	45.1	9.0	10.0	59.2	67.4
7	69.1	77.1	39.6	42.6	8.4	9.5	56.5	65.6
8	67.1	76.0	36.9	40.1	8.0	9.1	54.2	64.2
9	64.5	74.4	36.2	39.6	8.0	8.7	52.4	63.3
10	62.0	72.7	35.2	39.2			50.4	62.1

Table 4h. Observed (obs.) and relative (rel.) survival of patients with fem. genitale cancer by extent of disease for period 1998-2011 (N=4,697).

C51-C58: Malignant neoplasms of female genital organs
Extent of disease
Conditional relative 5 year survival 1988-2011

N=7,554

Extent of disease

Local
n=5,033 · · · 66.6%

Regional
n=1,119 · · · 14.8%

Distant
n=1,402 · · · 18.6%
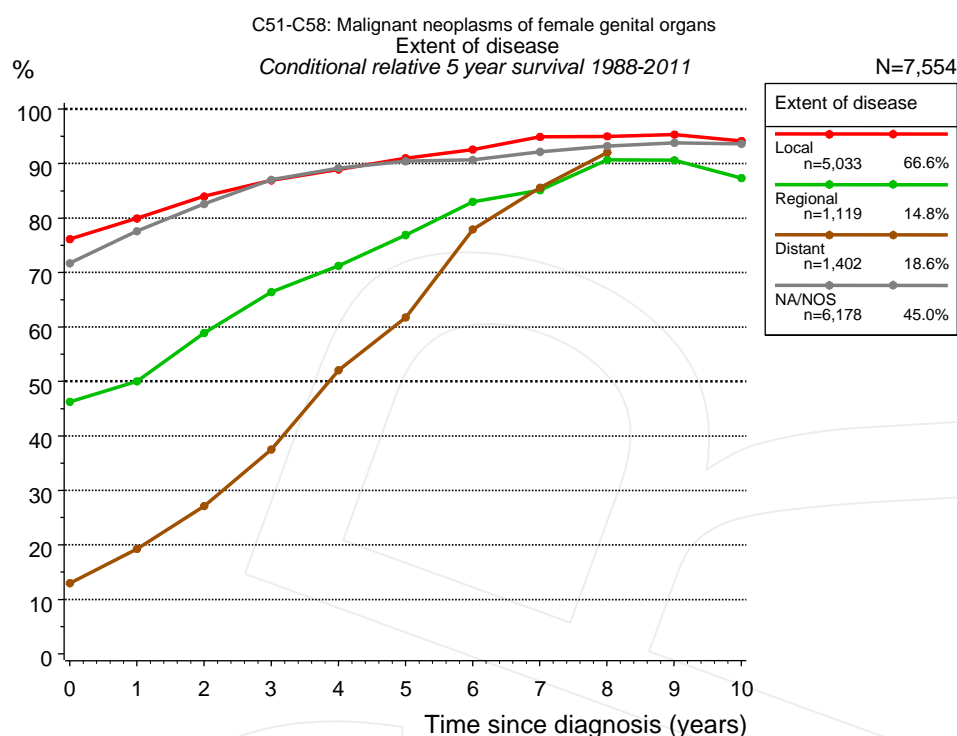
NA/NOS
n=6,178 · · · 45.0%

Figure 4i. Conditional relative 5-year survival of patients with fem. genitale cancer by extent of disease. For 12,814 of 13,732 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 7,554 cases an evaluable classification was established. The grey line represents the subgroup of 6,178 patients with missing values regarding extent of disease (45.0% of 13,732 patients, the percent values of all other categories are related to n=7,554).

	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	5,033	76.1	1,119	46.3	1,402	13.0	6,178	71.7
1	4,330	79.9	882	50.0	672	19.3	5,217	77.6
2	3,659	83.9	599	58.9	380	27.1	4,383	82.6
3	3,159	86.9	444	66.4	226	37.5	3,667	87.0
4	2,773	88.9	374	71.2	132	52.1	3,098	89.2
5	2,384	91.0	311	76.9	92	61.7	2,656	90.4
6	2,064	92.6	255	83.0	60	77.9	2,280	90.6
7	1,860	94.9	217	85.1	48	85.6	1,952	92.1
8	1,660	95.0	188	90.7	41	92.0	1,688	93.2
9	1,474	95.3	163	90.6			1,444	93.8
10	1,309	94.1	146	87.3			1,225	93.6

Table 4j. Conditional relative 5-year survival of patients with fem. genitale cancer by extent of disease for period 1988-2011 (N=7,554).

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 86.9% (n=3,159).
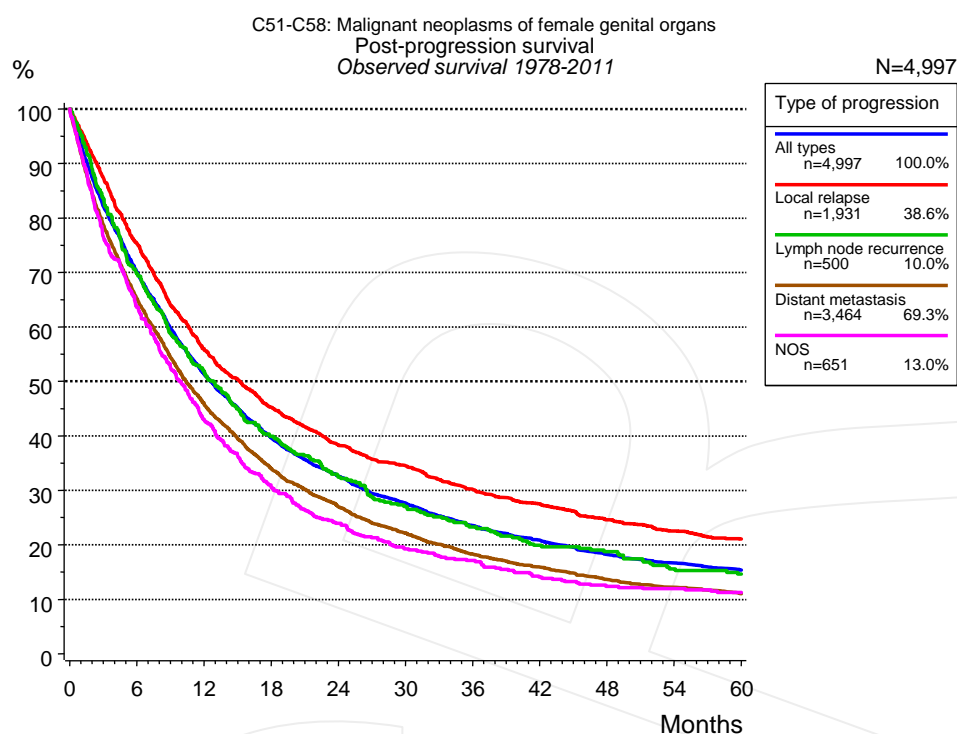
C51-C58: Malignant neoplasms of female genital organs
Post-progression survival
Observed survival 1978-2011   N=4,997

Figure 5a. Observed post-progression survival of 4,997 patients with fem. genitale cancer diagnosed between 1978 and 2011 (incl. M1). These 4,997 patients with documented progression events during their course of disease represent 29.1% of the totally 17,165 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=1,255, 7.3%). 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 "All types" 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 potientially considered in more than one subgroup.

	Type of progression				
	All types	Local relapse	Lymph node recurrence	Distant metastasis	NOS
	n=4,997	n=1,931	n=500	n=3,464	n=651
Months	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
12	51.3	55.9	51.8	45.9	43.0
24	32.6	38.3	32.4	27.0	24.0
36	23.5	30.1	23.3	18.3	17.1
48	18.2	24.6	18.7	13.6	12.4
60	15.4	21.1	14.6	11.0	11.3

Table 5b. Observed post-progression survival of patients with fem. genitale cancer for period 1978-2011 (N=4,997).

Shortcuts

AS	Assembled survival chart (observed, expected, relative)
CS	Conditional survival
DCO	Death certificate only. The death certificate provides the only notification to the registry.
MCR	Munich Cancer Registry, Germany (Tumorregister München)
NA	Not available
NCI	National Cancer Institute, USA
NOS	Not otherwise specified
OS	Observed/overall survival (Kaplan-Meier estimate)
PPS	Post-progression survival
RS	Relative Survival. Ratio of observed and expected survival (derived from the normal population)
SEER	Surveillance, Epidemiology, and End Results, USA
TTP	Time to progression
	Date of entry: Date of diagnosis
	Event (Progression): First local recurrence, lymph node relapse or distant metastasis, unspecified recurrence
	First all-cause recurrence is illustrated by survival curves (Kaplan-Meier estimate).
	First local recurrence, lymph node relapse or distant metastasis are depicted cumulatively, where applicable ("reverse" Kaplan-Meier estimate).
UICC	Union for International Cancer Control, Geneva

Recommended Citation

Munich Cancer Registry. Survival C51-C58: Fem. genitale cancer [Internet]. 2013 [updated 2013 Apr 1; cited 2013 May 1]. Available from: http://www.tumorregister-muenchen.de/en/facts/surv/surv_C5158E.pdf

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