Munich Cancer Registry

ICD-10 C54: Corpus cancer

Survival

Year of diagnosis	1988-1997	1998-2014
Patients	2,140	8,659
Diseases	2,140	8,660
Cases evaluated	1,926	7,073
Creation date	03/02/2016	
Export date	12/23/2015	
Population (females)	2.36 m	

Munich Cancer Registry at Munich Cancer Center
Marchioninistr. 15
Munich, 81377
Germany

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

http://www.tumorregister-muenchen.de/en/facts/surv/sC54__E-ICD-10-C54-Corpus-cancer-survival.pdf

ICD-10 C54: Malignant neoplasm of corpus uteri
Period of diagnosis
Relative survival 1988-2014   N=8,938

Period of diagnosis

1988-1997
n=1,924   21.5%

1998-2006
n=3,253   36.4%

2007+
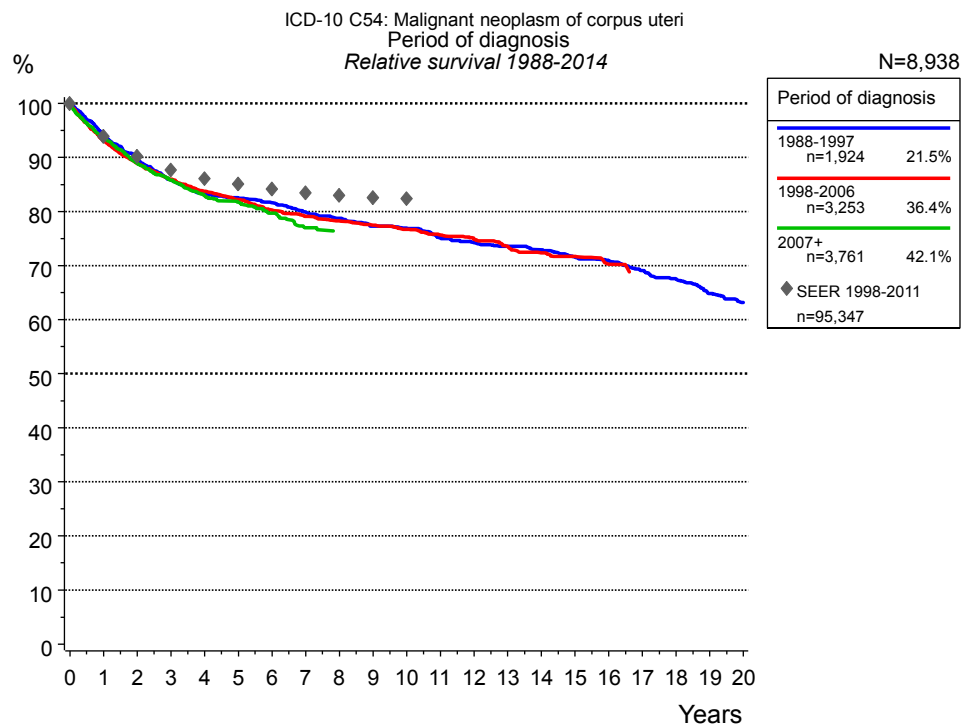n=3,761   42.1%

◆ SEER 1998-2011
n=95,347

Figure 1a. Relative survival of patients with corpus cancer by period of diagnosis. Included in the evaluation are 8,938 cases diagnosed between 1988 and 2014.

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 2011, and are represented by gray 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 | | | | | |
| | 1988-1997 n=1,924 | | 1998-2006 n=3,253 | | 2007+ n=3,761 | |
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	91.9	94.4	90.9	93.1	91.7	93.7
2	85.1	89.7	84.9	88.9	85.3	89.0
3	79.3	85.8	80.3	86.0	80.6	85.8
4	74.8	83.1	76.5	83.7	76.4	82.9
5	72.3	82.5	73.5	82.2	73.8	81.7
6	69.7	81.6	70.1	80.3	70.5	79.7
7	66.4	79.9	67.5	79.1	66.6	77.0
8	63.6	78.7	65.2	78.2		
9	60.7	77.3	63.0	77.5		
10	58.8	76.9	60.9	76.7		
11	55.7	75.2	58.5	75.7		
12	53.5	74.3	56.3	74.9		
13	51.5	73.6	53.8	73.6		
14	49.3	72.9	51.3	72.3		
15	46.8	71.6	49.6	71.7		
16	44.7	70.9	46.7	70.2		
17	42.0	69.1				
18	39.6	67.6				
19	36.6	64.8				
20	34.3	63.2				

Table 1b. Observed (obs.) and relative (rel.) survival of patients with corpus cancer by period of diagnosis for period 1988-2014 (N=8,938).

ICD-10 C54: Malignant neoplasm of corpus uteri
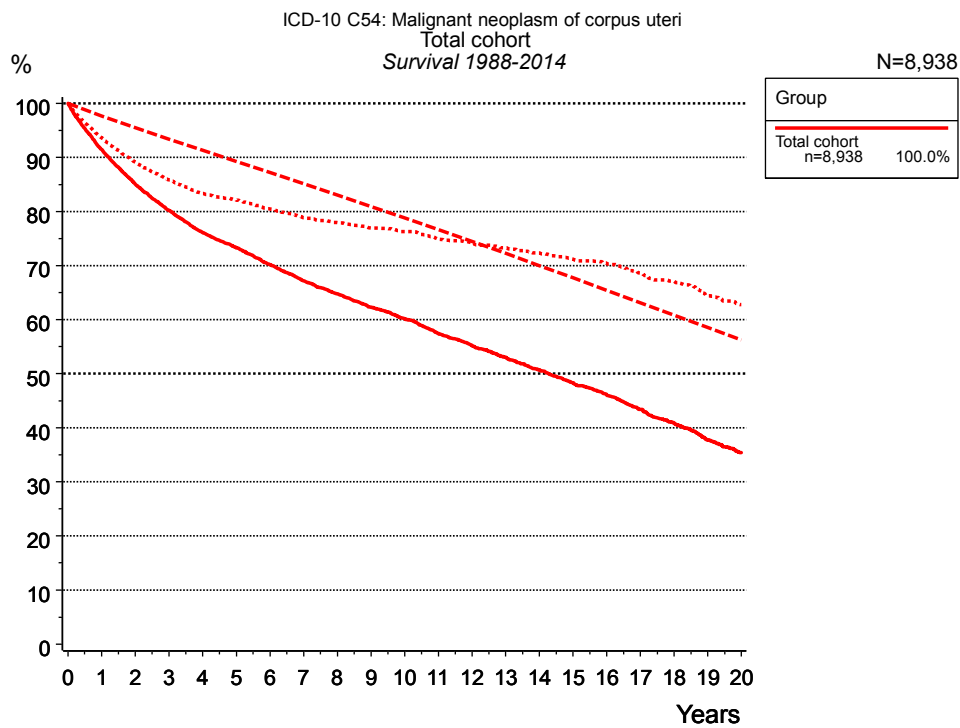Total cohort
Survival 1988-2014

Figure 2a. Observed, expected and relative survival of the total cohort with corpus cancer. Included in the evaluation are 8,938 cases diagnosed between 1988 and 2014.

	Group	
	Total cohort	
	n=8,938	
Years	obs. %	rel. %
0	100.0	100.0
1	91.5	93.6
2	85.1	89.1
3	80.2	85.9
4	76.1	83.3
5	73.3	82.1
6	70.2	80.5
7	67.2	78.9
8	64.8	78.0
9	62.2	76.9
10	60.2	76.3
11	57.4	74.9
12	55.2	74.1
13	53.0	73.3
14	50.7	72.3
15	48.3	71.2
16	46.1	70.3
17	43.4	68.6
18	40.9	67.1
19	37.8	64.4
20	35.4	62.8

Table 2b. Observed (obs.) and relative (rel.) survival of the total cohort with corpus cancer for period 1988-2014 (N=8,938).

ICD-10 C54: Malignant neoplasm of corpus uteri
Age category
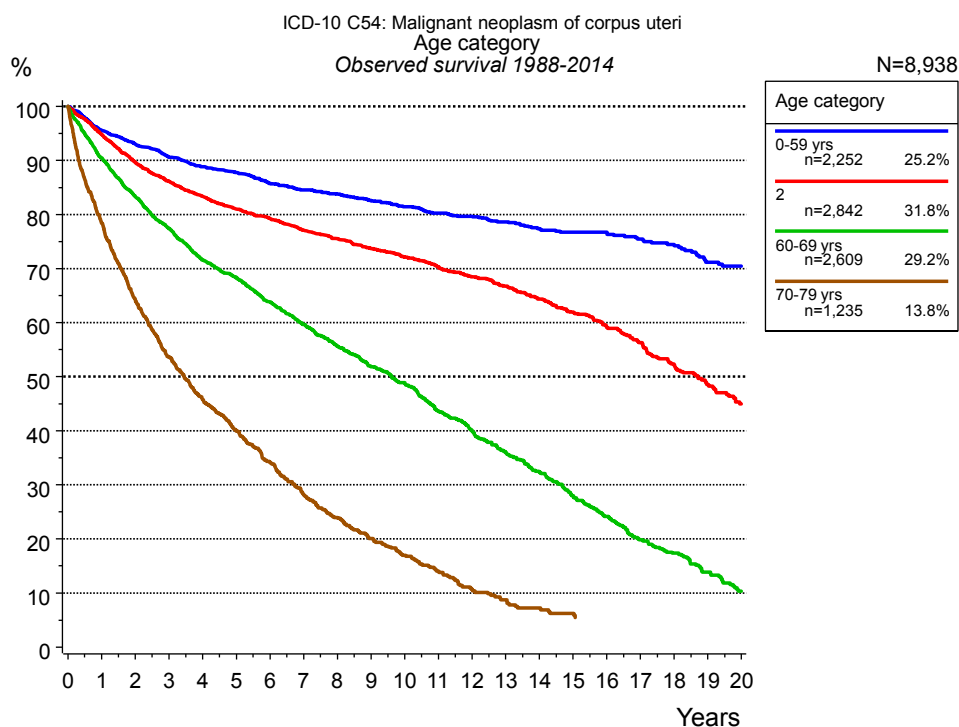*Observed survival 1988-2014*

Figure 3a. Observed survival of patients with corpus cancer by age category. Included in the evaluation are 8,938 cases diagnosed between 1988 and 2014.

ICD-10 C54: Malignant neoplasm of corpus uteri
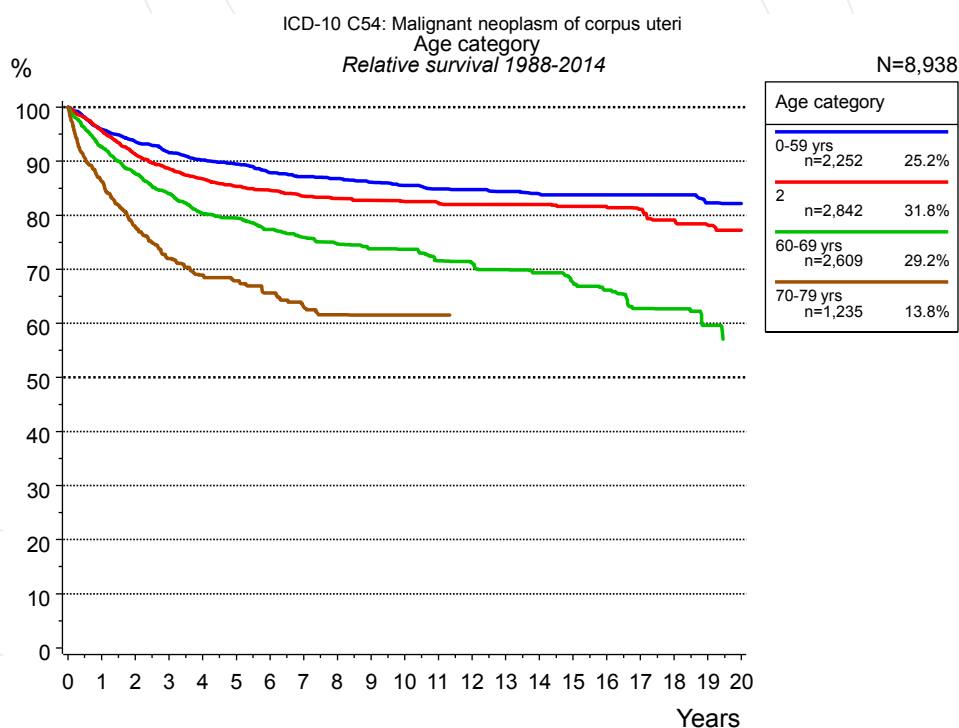Age category
Relative survival 1988-2014

Figure 3b. Relative survival of patients with corpus cancer by age category. Included in the evaluation are 8,938 cases diagnosed between 1988 and 2014.

	Age category							
	0-59 yrs n=2,252		2 n=2,842		60-69 yrs n=2,609		70-79 yrs n=1,235	
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	95.6	95.9	94.8	95.6	90.5	92.7	78.5	86.3
2	93.0	93.6	89.6	91.2	83.3	87.7	64.3	78.0
3	90.6	91.6	86.1	88.6	77.4	84.0	53.7	72.0
4	88.9	90.2	83.4	86.7	71.6	80.3	45.8	68.9
5	87.8	89.5	81.0	85.3	68.2	79.5	39.9	67.9
6	85.8	87.9	79.3	84.6	63.9	77.4	34.2	65.7
7	84.6	87.1	77.1	83.5	59.7	75.9	28.2	63.1
8	83.8	86.8	75.5	83.1	55.7	74.7	24.0	61.6
9	82.5	86.1	73.7	82.7	51.9	73.8	20.1	61.5
10	81.5	85.5	72.1	82.5	48.9	73.7	17.0	61.5
11	80.3	84.8	70.3	82.3	43.6	71.6	14.0	61.5
12	79.7	84.7	68.5	82.0	40.0	71.2		
13	78.6	84.4	66.8	82.0	36.1	70.0		
14	77.4	83.9	64.4	82.0	32.4	69.3		
15	76.8	83.8	62.0	81.6	28.0	67.6		
16	76.8	83.8	59.1	81.5	24.2	66.2		
17	75.5	83.8	56.3	81.1	19.8	62.8		
18	74.5	83.8	52.2	79.1	17.3	62.7		
19	71.2	82.3	48.6	78.2	13.8	59.6		
20	70.5	82.2	45.0	77.2				

Table 3c. Observed (obs.) and relative (rel.) survival of patients with corpus cancer by age category for period 1988-2014 (N=8,938).

ICD-10 C54: Malignant neoplasm of corpus uteri
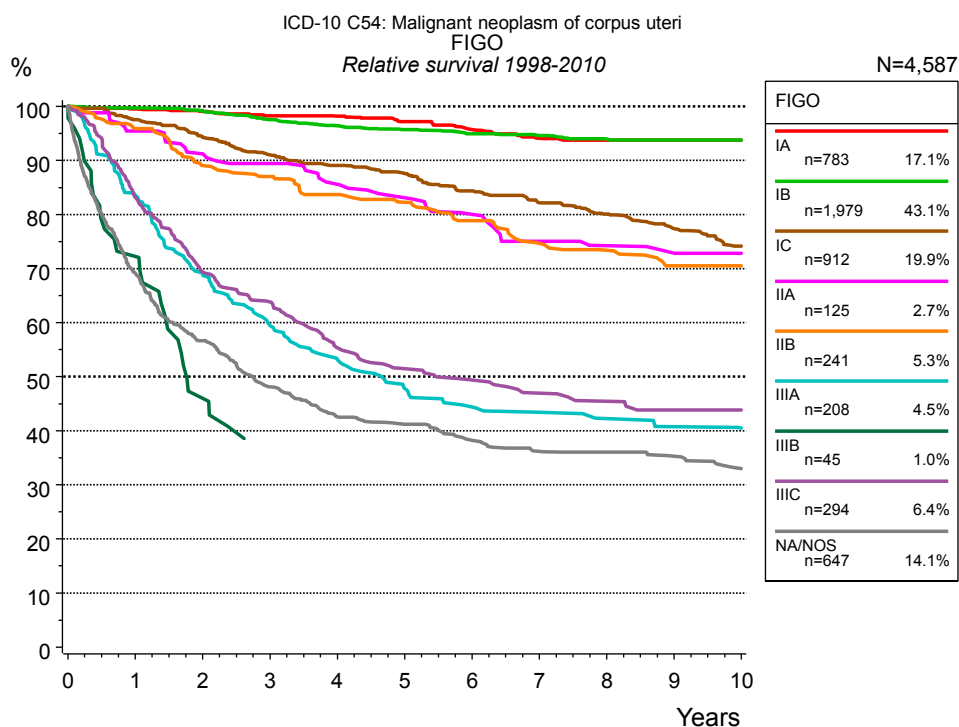FIGO
Relative survival 1998-2010

Figure 4a. Relative survival of patients with corpus cancer by FIGO. For 5,019 of 5,234 cases diagnosed between 1998 and 2010 valid data could be obtained for this item. For a total of 4,587 cases an evaluable classification was established. The grey line represents the subgroup of 647 patients with missing values regarding FIGO (12.4% of 5,234 patients, the percent values of all other categories are related to n=4,587).

Due to substantial changes in stage classification schemes long-term survival statistics over decades could not be created.

		FIGO												
	IA n=783		IB n=1,979		IC n=912		IIA n=125		IIB n=241		IIIA n=208		IIIB n=45	
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	98.2	99.5	98.1	99.7	94.8	97.5	93.5	95.5	93.7	95.9	80.6	83.5	70.8	72.2
2	96.2	99.1	95.8	99.2	88.8	94.3	87.8	91.2	85.2	89.0	64.9	69.0	43.4	46.0
3	93.8	98.2	92.5	97.5	83.3	91.0	84.5	89.4	81.7	87.0	54.4	59.5	34.2	37.0
4	92.0	98.2	89.7	96.4	79.2	89.1	78.6	85.6	76.9	83.7	47.8	53.2		
5	89.5	97.2	87.3	95.7	75.3	87.6	74.3	83.1	73.8	82.3	42.1	47.9		
6	86.5	95.7	84.9	95.0	70.4	84.4	69.9	80.0	69.2	78.9	38.6	44.4		
7	83.6	94.1	82.8	94.6	66.4	82.2	64.3	75.0	63.9	74.6	36.7	43.4		
8	82.3	93.7	80.4	94.0	62.6	80.1	61.6	74.2	61.6	73.4	35.1	42.3		
9	80.9	93.7	78.7	93.8	58.4	77.4	60.1	72.8	57.6	70.5	33.3	40.8		
10	80.3	93.7	76.4	93.8	54.2	74.2	58.5	72.8	56.8	70.5	32.2	40.5		

	FIGO			
cont'd	IIIC		NA/NOS	
	n=294		n=647	
Years	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	82.2	83.2	66.8	69.1
2	67.4	69.4	53.3	56.7
3	61.2	63.8	44.1	48.1
4	52.2	55.4	38.1	42.6
5	47.9	51.5	36.3	41.2
6	45.4	49.4	32.9	38.2
7	42.3	47.0	30.6	36.2
8	40.5	45.5	30.1	36.0
9	38.2	43.9	28.7	35.3
10	38.2	43.9	26.4	33.0

Table 4b. Observed (obs.) and relative (rel.) survival of patients with corpus cancer by FIGO for period 1998-2010 (N=4,587).

ICD-10 C54: Malignant neoplasm of corpus uteri
Extent of disease
Relative survival 1988-2014 N=4,209

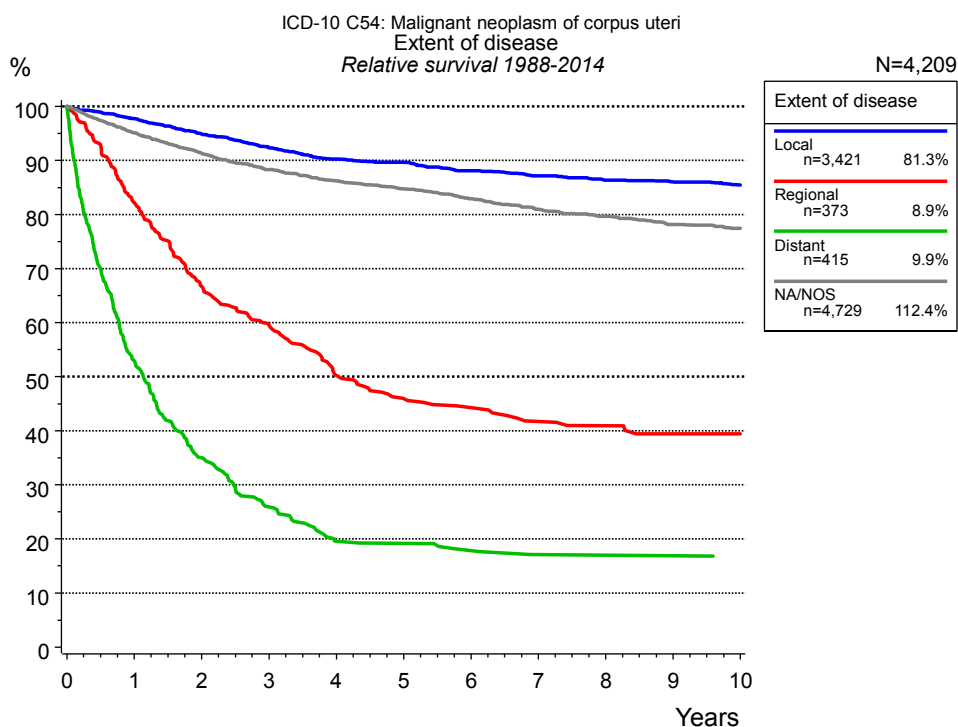| Extent of disease		
Local		
n=3,421	81.3%	
Regional		
n=373	8.9%	
Distant		
n=415	9.9%	
NA/NOS		
n=4,729	112.4%	

Figure 4c. Relative survival of patients with corpus cancer by extent of disease. For 8,542 of 8,938 cases diagnosed between 1988 and 2014 valid data could be obtained for this item. For a total of 4,209 cases an evaluable classification was established. The grey line represents the subgroup of 4,729 patients with missing values regarding extent of disease (52.9% of 8,938 patients, the percent values of all other categories are related to n=4,209).

	Extent of disease							
	Local n=3,421		Regional n=373		Distant n=415		NA/NOS n=4,729	
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	95.8	97.7	80.9	82.2	51.7	52.9	92.6	95.1
2	91.4	94.9	64.5	66.7	33.6	35.0	86.7	91.3
3	87.2	92.4	56.6	59.5	24.3	25.9	81.8	88.3
4	83.6	90.2	46.9	50.3	17.9	19.6	77.9	86.2
5	81.4	89.6	42.1	46.0	17.4	19.2	74.6	84.7
6	78.4	88.1	40.3	44.3	16.0	17.9	71.2	82.9
7	75.8	87.1	37.2	41.7	14.9	17.2	67.7	81.0
8	73.4	86.3	36.0	40.9	14.9	17.0	65.0	79.7
9	71.4	86.0	34.0	39.5	14.9	16.9	62.0	78.2
10	69.2	85.5	34.0	39.5	14.0	16.0	59.7	77.4

Table 4d. Observed (obs.) and relative (rel.) survival of patients with corpus cancer by extent of disease for period 1988-2014 (N=4,209).

ICD-10 C54: Malignant neoplasm of corpus uteri
Extent of disease
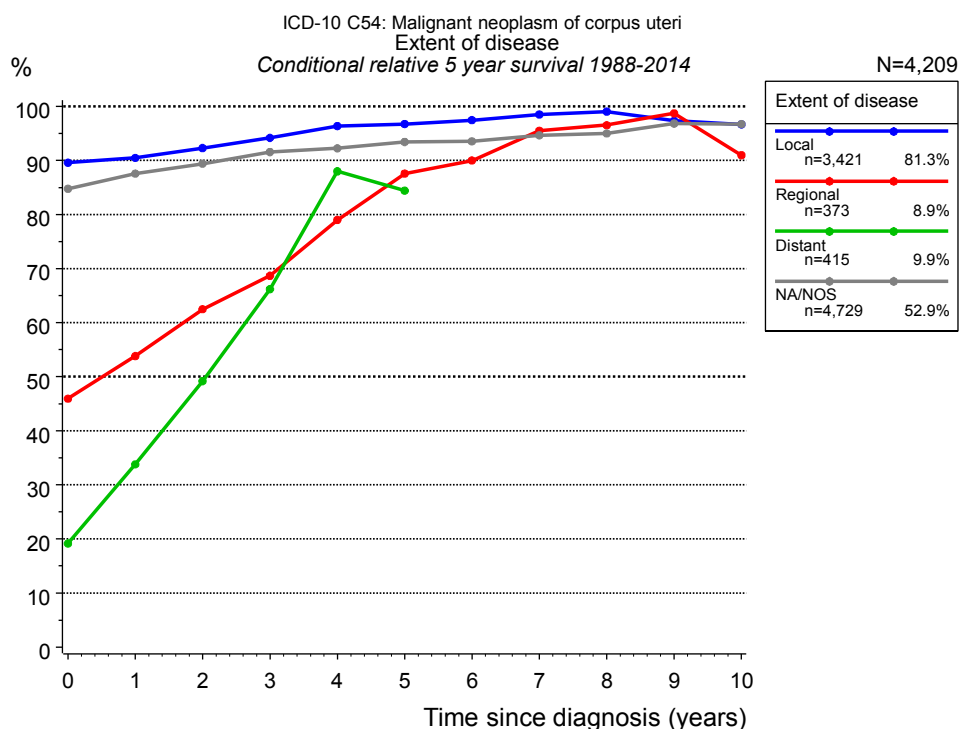*Conditional relative 5 year survival 1988-2014*

Figure 4e. Conditional relative 5-year survival of patients with corpus cancer by extent of disease. For 8,542 of 8,938 cases diagnosed between 1988 and 2014 valid data could be obtained for this item. For a total of 4,209 cases an evaluable classification was established. The grey line represents the subgroup of 4,729 patients with missing values regarding extent of disease (52.9% of 8,938 patients, the percent values of all other categories are related to n=4,209).

	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	3,421	89.6	373	46.0	415	19.2	4,729	84.8
1	3,091	90.5	285	53.8	198	33.8	4,156	87.6
2	2,725	92.3	211	62.5	118	49.2	3,697	89.4
3	2,430	94.2	169	68.7	70	66.2	3,288	91.5
4	2,151	96.4	123	79.0	44	88.0	2,948	92.2
5	1,908	96.7	98	87.6	39	84.4	2,651	93.4
6	1,708	97.4	84	90.0			2,300	93.5
7	1,528	98.5	67	95.5			1,981	94.7
8	1,319	99.0	55	96.5			1,739	95.0
9	1,171	97.3	44	98.7			1,509	96.8
10	1,034	96.7	38	91.0			1,311	96.7

Table 4f. Conditional relative 5-year survival of patients with corpus cancer by extent of disease for period 1988-2014 (N=4,209).

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 4c). 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 94.2% (n=2,430).
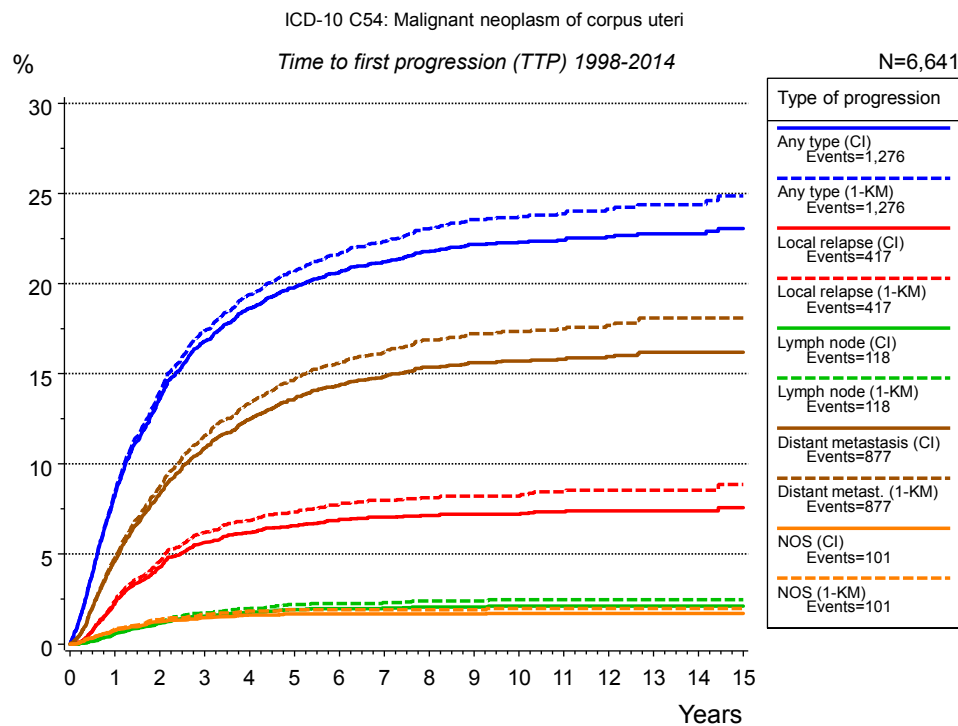
ICD-10 C54: Malignant neoplasm of corpus uteri

Figure 5a. Time to first progression of 6,641 patients with corpus cancer diagnosed between 1998 and 2014 (M0 only in solid cancers) 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=6,641	n=6,641	n=6,641	n=6,641	n=6,641	n=6,641	n=6,641
Years	%	%	%	%	%	%	%
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	8.2	8.3	2.2	2.3	0.6	0.6	4.6
2	13.6	14.0	4.3	4.6	1.2	1.3	8.4
3	16.8	17.4	5.6	6.2	1.6	1.7	10.9
4	18.6	19.4	6.2	6.8	1.7	2.0	12.5
5	19.8	20.7	6.6	7.3	1.9	2.2	13.6
6	20.6	21.7	6.9	7.8	2.0	2.3	14.4
7	21.2	22.3	7.0	8.0	2.0	2.3	14.8
8	21.8	23.0	7.1	8.1	2.1	2.4	15.4
9	22.2	23.6	7.2	8.2	2.1	2.4	15.6
10	22.3	23.7	7.2	8.2	2.1	2.5	15.7
11	22.4	23.9	7.3	8.4	2.1	2.5	15.8
12	22.6	24.1	7.4	8.5	2.1	2.5	15.9
13	22.8	24.4	7.4	8.5	2.1	2.5	16.2
14	22.8	24.4	7.4	8.5	2.1	2.5	16.2
15	23.1	24.9	7.6	8.9	2.1	2.5	16.2

cont'd	Type of progression		
	Distant metast. (1-KM)	NOS (CI)	NOS (1-KM)
	n=6,641	n=6,641	n=6,641
Years	%	%	%
0	0.0	0.0	0.0
1	4.8	0.8	0.8
2	8.8	1.2	1.4
3	11.6	1.5	1.7
4	13.4	1.6	1.8
5	14.6	1.7	1.9
6	15.6	1.7	1.9
7	16.2	1.7	1.9
8	16.9	1.7	1.9
9	17.2	1.7	1.9
10	17.3	1.7	2.0
11	17.5	1.7	2.0
12	17.7	1.7	2.0
13	18.1	1.7	2.0
14	18.1	1.7	2.0
15	18.1	1.7	2.0

Table 5b. Time to first progression of patients with corpus cancer for period 1998-2014 (N=6,641).

ICD-10 C54: Malignant neoplasm of corpus uteri
Progression type
Observed post-progression survival 1998-2014
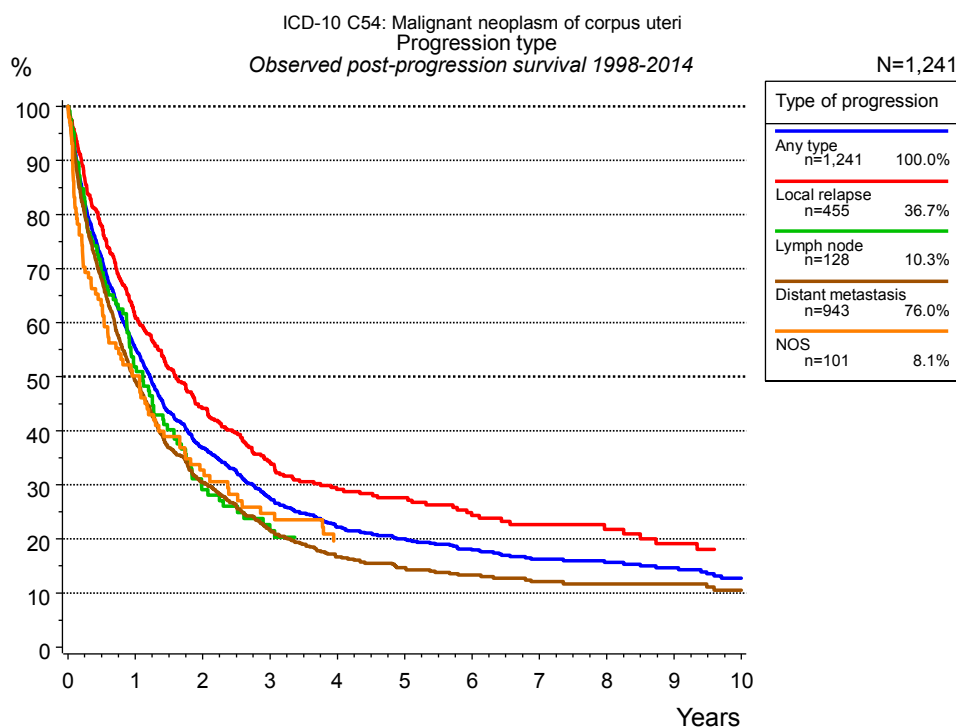
Figure 5c. Observed post-progression survival of 1,241 patients with corpus cancer diagnosed between 1998 and 2014. These 1,241 patients with documented progression events during their course of disease represent 17.8 % of the totally 6,991 evaluated cases (incl. M1, n=350, 5.0 %). Patients with cancer relapse documented via death certificates only were excluded (n=385, 5.5 %). 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 potientially considered in more than one subgroup.

	Type of progression				
	Any type n=1,241	Local relapse n=455	Lymph node n=128	Distant metastasis n=943	NOS n=101
Years	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
1	55.2	61.0	51.9	49.1	50.2
2	36.8	44.2	29.1	30.4	32.8
3	27.5	34.1	21.5	21.6	24.7
4	22.2	29.2	20.3	16.7	19.6
5	20.0	27.6		14.7	
6	18.0	24.4		13.3	
7	16.2	22.7		12.1	
8	15.7	21.8		11.7	
9	14.7	19.1		11.7	
10	12.8			10.5	

Table 5d. Observed post-progression survival of patients with corpus cancer for period 1998-2014 (N=1,241).

ICD-10 C54: Malignant neoplasm of corpus uteri
Type of Progression: Distant metastasis
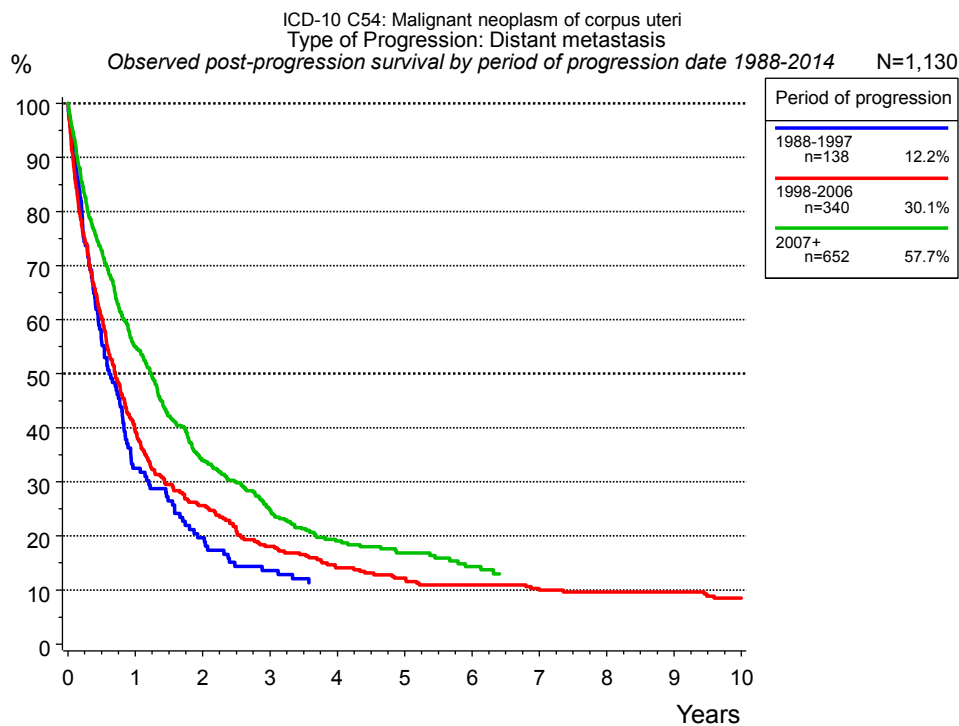*Observed post-progression survival by period of progression date 1988-2014*   N=1,130

Figure 5e. Observed post-progression (distant metastasis) survival of 1,130 patients with corpus cancer diagnosed between 1988 and 2014 by period of progression.

	Period of progression		
	1988-1997 n=138	1998-2006 n=340	2007+ n=652
Years	%	%	%
0	100.0	100.0	100.0
1	32.5	39.2	55.1
2	19.7	25.6	33.9
3	13.6	18.1	24.8
4		14.1	19.0
5		12.2	16.9
6		10.9	14.3
7		10.0	
8		9.7	
9		9.7	
10		8.5	

Table 5f. Observed post-progression (distant metastasis) survival of patients with corpus cancer for period 1988-2014 by period of progression (N=1,130).

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 C54: Corpus cancer [Internet]. 2016 [updated 2016 Mar 2; cited 2016 May 1]. Available from: http://www.tumorregister-muenchen.de/en/facts/surv/sC54__E-ICD-10-C54-Corpus-cancer-survival.pdf

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Index of figures and tables