

Munich Cancer Registry



- ▶ Incidence and Mortality
- ▶ Selection Matrix
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ICD-10 C18: Colon cancer

Survival

Year of diagnosis	1988-1997	1998-2016
Patients	6,305	33,362
Diseases	6,380	34,041
Cases evaluated	5,533	24,956
Creation date	08/22/2018	
Export date	08/09/2018	
Population	4.81 m	



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

https://www.tumorregister-muenchen.de/en/facts/surv/sC18__E-ICD-10-C18-Colon-cancer-survival.pdf

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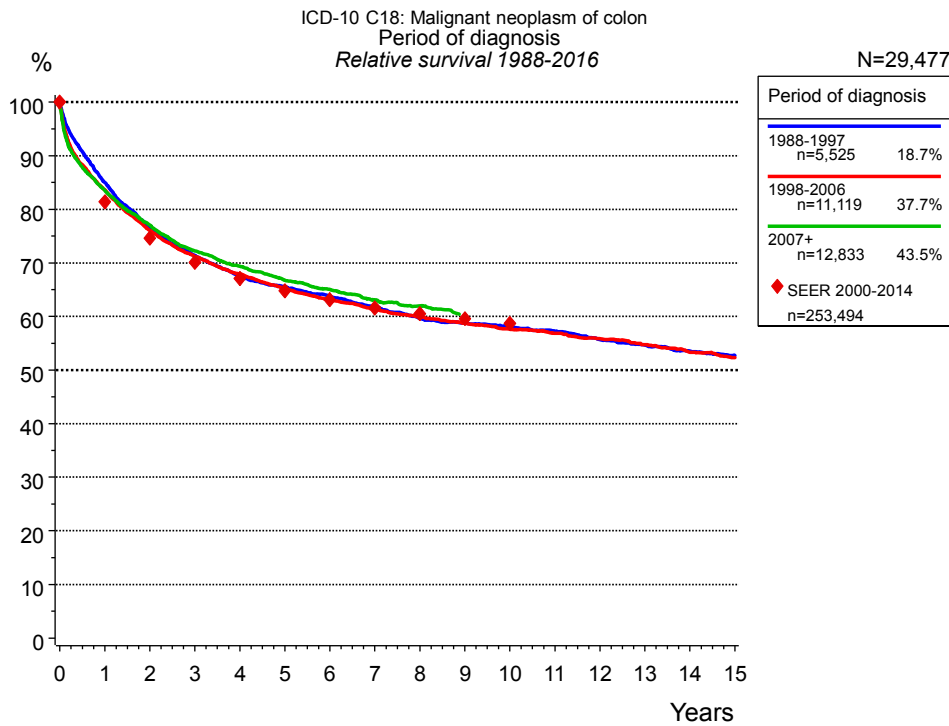


Figure 1a. Relative survival of patients with colon cancer by period of diagnosis. Included in the evaluation are 29,477 cases diagnosed between 1988 and 2016.

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 2014, 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=5,525		1998-2006 n=11,119		2007+ n=12,833	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	81.7	85.0	80.3	83.7	80.3	83.5
2	70.9	76.5	70.4	76.1	71.5	77.0
3	63.7	71.4	63.5	71.2	64.7	72.2
4	58.1	67.5	58.5	67.9	60.0	69.4
5	54.4	65.6	54.2	65.3	55.7	66.8
6	50.8	63.7	50.5	63.1	52.3	65.0
7	47.5	61.8	47.3	61.4	48.9	63.1
8	44.1	59.6	44.5	59.9	46.4	62.0
9	41.9	58.8	42.0	58.7		
10	39.8	58.1	39.6	57.6		
11	37.8	57.3	37.6	56.9		
12	35.4	55.7	35.5	55.8		
13	33.4	54.7	33.5	54.7		
14	31.5	53.5	31.3	53.3		
15	29.8	52.7	29.4	52.3		

Table 1b. Observed (obs.) and relative (rel.) survival of patients with colon cancer by period of diagnosis for period 1988-2016 (N=29,477).

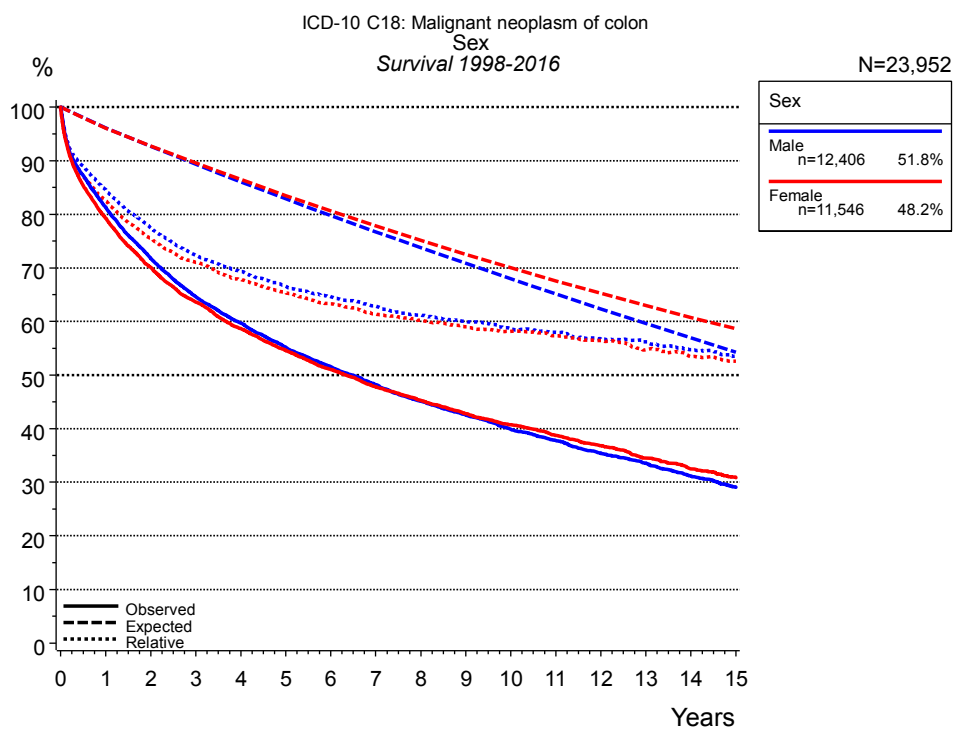


Figure 2a. Survival of patients with colon cancer by sex. Included in the evaluation are 23,952 cases diagnosed between 1998 and 2016.

Years	Sex			
	Male n=12,406		Female n=11,546	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	81.3	84.6	79.2	82.5
2	71.8	77.5	70.1	75.6
3	64.6	72.3	63.6	71.0
4	59.7	69.3	58.7	67.8
5	55.2	66.6	54.6	65.4
6	51.6	64.6	51.0	63.3
7	48.2	62.8	47.8	61.4
8	45.1	61.2	45.3	60.3
9	42.6	60.0	42.8	59.0
10	39.9	58.6	40.7	58.1
11	37.8	58.0	38.7	57.3
12	35.4	56.7	36.9	56.5
13	33.6	56.2	34.5	54.7
14	31.2	54.7	32.5	53.4
15	29.1	53.6	30.9	52.6

Table 2b. Observed (obs.) and relative (rel.) survival of patients with colon cancer by sex for period 1998-2016 (N=23,952).

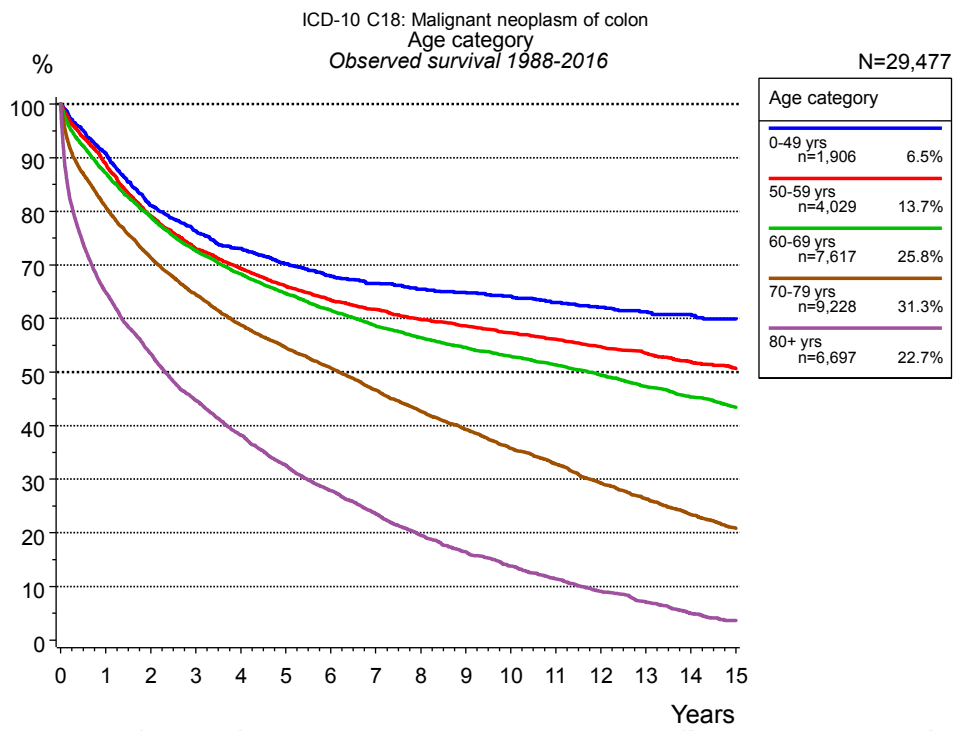


Figure 3a. Observed survival of patients with colon cancer by age category. Included in the evaluation are 29,477 cases diagnosed between 1988 and 2016.

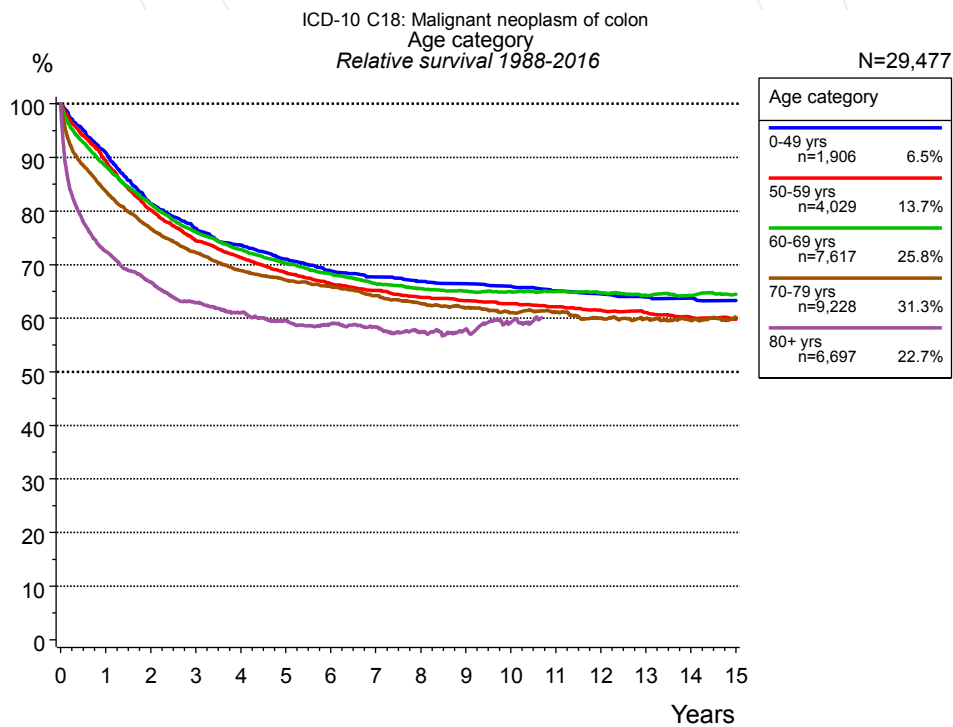


Figure 3b. Relative survival of patients with colon cancer by age category. Included in the evaluation are 29,477 cases diagnosed between 1988 and 2016.

Years	Age category									
	0-49 yrs n=1,906		50-59 yrs n=4,029		60-69 yrs n=7,617		70-79 yrs n=9,228		80+ yrs n=6,697	
	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	90.7	90.9	88.9	89.4	87.1	88.4	80.8	83.7	64.9	72.5
2	81.0	81.3	79.2	80.2	79.0	81.3	71.3	76.7	53.5	66.8
3	76.3	76.7	73.0	74.5	72.7	76.1	64.5	72.3	44.7	62.9
4	73.0	73.6	69.3	71.3	68.3	72.8	58.8	68.9	38.3	61.0
5	70.2	71.0	66.0	68.5	64.7	70.3	54.6	67.1	32.7	59.7
6	67.8	68.8	63.4	66.4	61.6	68.3	50.7	65.9	27.9	58.9
7	66.6	67.7	61.7	65.2	58.6	66.4	46.6	64.2	23.6	58.3
8	65.5	66.9	59.8	63.9	56.4	65.5	42.7	62.7	19.6	57.5
9	64.9	66.4	58.6	63.3	54.6	65.1	39.3	62.0	16.4	58.0
10	64.1	66.0	57.3	62.7	52.9	65.0	35.7	61.0	13.8	59.2
11	63.0	65.1	56.1	62.2	51.3	65.0	32.8	61.1	11.4	60.9
12	62.1	64.5	54.7	61.5	49.5	64.8	29.3	59.9	9.0	61.3
13	61.3	64.0	53.5	61.0	47.3	64.3	26.4	59.9	7.2	62.4
14	60.7	63.7	51.9	60.2	45.3	64.2	23.4	59.6	5.0	58.0
15	59.9	63.3	50.6	59.8	43.4	64.5	20.9	60.2	3.7	57.2

Table 3c. Observed (obs.) and relative (rel.) survival of patients with colon cancer by age category for period 1988-2016 (N=29,477).

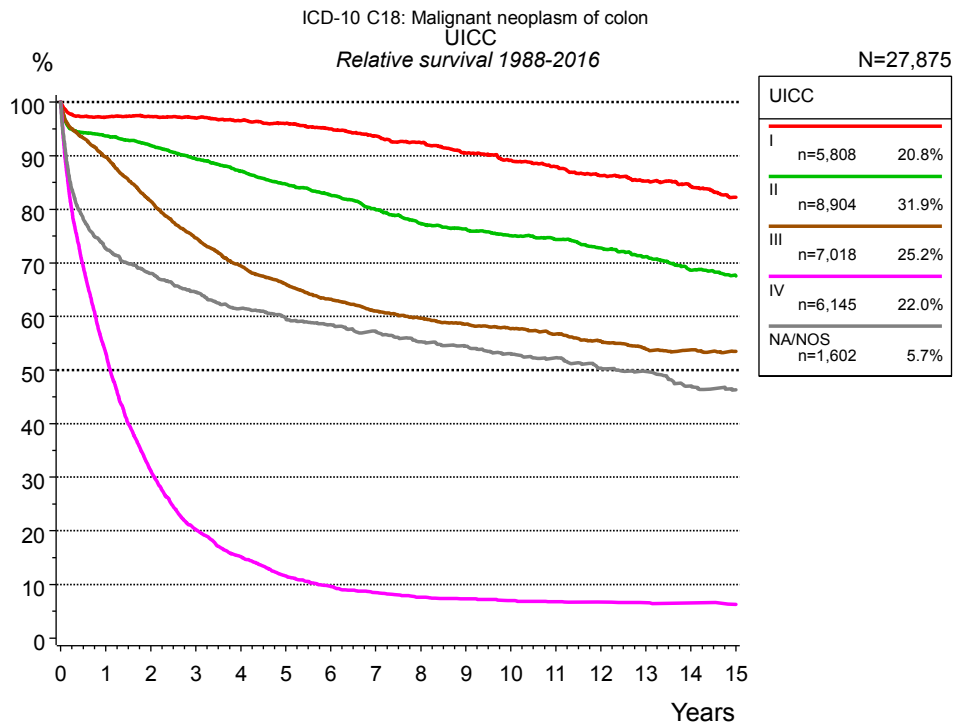


Figure 4a. Relative survival of patients with colon cancer by UICC. For 28,000 of 29,477 cases diagnosed between 1988 and 2016 valid data could be obtained for this item. For a total of 27,875 cases an evaluable classification was established. The grey line represents the subgroup of 1,602 patients with missing values regarding UICC (5.4 % of 29,477 patients, the percent values of all other categories are related to n=27,875).

Years	UICC									
	I n=5,808		II n=8,904		III n=7,018		IV n=6,145		NA/NOS n=1,602	
	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	94.0	97.2	89.7	93.7	86.3	89.8	51.3	53.2	69.0	72.7
2	91.0	97.3	84.4	91.9	75.6	81.5	29.3	31.3	61.9	68.0
3	87.8	97.1	78.9	89.4	66.8	74.6	18.5	20.2	56.7	64.6
4	84.3	96.5	73.8	87.1	60.0	69.5	13.5	15.2	52.2	61.5
5	81.0	96.0	68.9	84.7	55.1	66.1	10.1	11.6	49.0	59.8
6	77.3	95.0	64.5	82.6	50.9	63.2	8.2	9.6	46.3	58.5
7	73.5	93.7	59.9	79.9	47.5	61.0	7.0	8.5	43.9	57.2
8	69.9	92.5	55.7	77.4	44.9	59.7	6.1	7.6	40.9	55.3
9	65.9	90.5	52.7	76.3	42.6	58.6	5.8	7.3	38.9	54.5
10	62.5	89.1	49.7	75.1	40.5	57.7	5.3	7.0	36.6	53.1
11	59.3	88.0	47.2	74.3	38.3	56.7	5.0	6.8	34.8	52.3
12	56.0	86.3	44.4	72.7	36.1	55.4	4.8	6.7	32.3	50.4
13	53.2	85.3	41.7	71.2	33.9	53.9	4.6	6.6	30.7	49.8
14	50.5	84.3	38.6	68.6	32.5	53.8	4.4	6.6	28.1	47.0
15	47.2	82.2	36.4	67.5	31.2	53.5	4.0	6.3	26.6	46.3

Table 4b. Observed (obs.) and relative (rel.) survival of patients with colon cancer by UICC for period 1988-2016 (N=27,875).

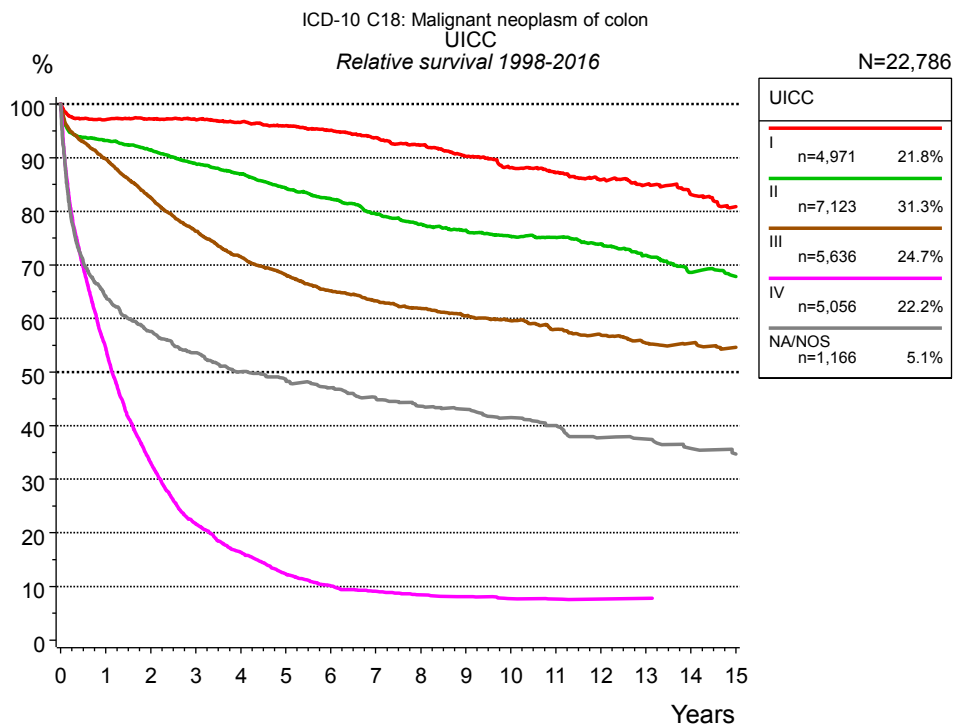


Figure 4c. Relative survival of patients with colon cancer by UICC. For 22,893 of 23,952 cases diagnosed between 1998 and 2016 valid data could be obtained for this item. For a total of 22,786 cases an evaluable classification was established. The grey line represents the subgroup of 1,166 patients with missing values regarding UICC (4.9 % of 23,952 patients, the percent values of all other categories are related to n=22,786).

Years	UICC									
	I n=4,971		II n=7,123		III n=5,636		IV n=5,056		NA/NOS n=1,166	
	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	93.9	97.1	89.2	93.2	86.3	89.8	52.5	54.4	60.5	64.1
2	91.0	97.2	84.0	91.4	76.6	82.6	31.1	33.1	52.0	57.6
3	87.9	97.1	78.3	88.8	68.3	76.3	19.9	21.7	46.6	53.6
4	84.5	96.6	73.6	87.0	61.8	71.5	14.6	16.3	42.1	50.1
5	81.1	96.0	68.6	84.4	56.9	68.2	10.8	12.3	39.5	48.7
6	77.5	95.1	64.2	82.3	52.5	65.1	8.6	10.1	37.1	47.0
7	73.6	93.8	59.6	79.5	49.3	63.3	7.5	9.1	34.6	45.2
8	69.9	92.3	55.8	77.6	46.6	61.9	6.8	8.4	32.4	43.6
9	65.8	90.3	52.7	76.5	44.0	60.5	6.4	8.1	30.9	43.0
10	61.9	88.2	49.8	75.4	41.8	59.6	5.9	7.7	29.1	41.5
11	58.9	87.2	47.6	75.1	39.2	57.9	5.7	7.6	27.2	40.1
12	55.7	85.9	45.0	73.9	37.1	56.9	5.5	7.6	24.8	37.8
13	52.9	85.0	41.9	71.8	34.8	55.4	5.5	7.8	23.9	37.5
14	49.6	83.1	38.3	68.6	33.5	55.4	5.4	7.8	22.3	35.8
15	46.2	80.9	36.3	67.8	32.0	54.6			20.9	34.7

Table 4d. Observed (obs.) and relative (rel.) survival of patients with colon cancer by UICC for period 1998-2016 (N=22,786).

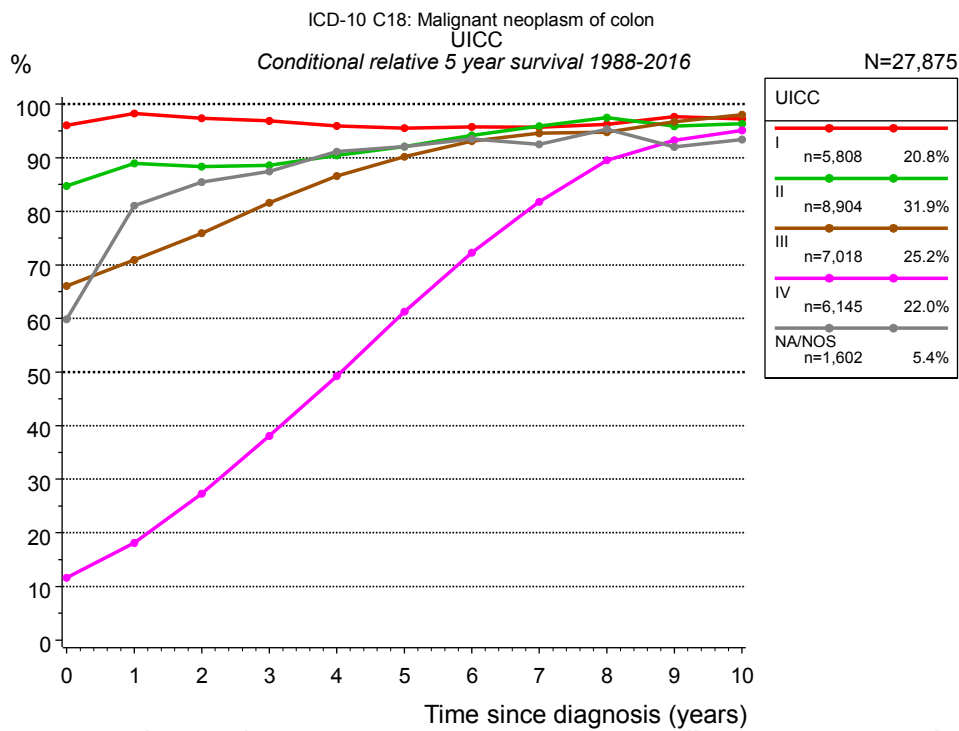


Figure 4e. Conditional relative 5-year survival of patients with colon cancer by UICC. For 28,000 of 29,477 cases diagnosed between 1988 and 2016 valid data could be obtained for this item. For a total of 27,875 cases an evaluable classification was established. The grey line represents the subgroup of 1,602 patients with missing values regarding UICC (5.4 % of 29,477 patients, the percent values of all other categories are related to n=27,875).

Years	UICC									
	I		II		III		IV		NA/NOS	
	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs
0	5,808	96.0	8,904	84.7	7,018	66.1	6,145	11.6	1,602	59.8
1	5,185	98.3	7,539	88.9	5,736	70.9	2,969	18.1	1,056	81.0
2	4,776	97.4	6,755	88.4	4,801	75.9	1,588	27.3	930	85.4
3	4,335	96.9	5,974	88.6	4,009	81.6	932	38.1	829	87.4
4	3,899	95.9	5,278	90.4	3,363	86.6	627	49.2	741	91.1
5	3,494	95.5	4,647	92.1	2,884	90.2	421	61.2	672	92.1
6	3,097	95.8	4,031	94.1	2,465	93.1	307	72.3	614	93.5
7	2,680	95.7	3,449	95.9	2,093	94.6	231	81.8	561	92.5
8	2,282	96.2	2,958	97.5	1,763	94.7	177	89.5	501	95.3
9	1,920	97.7	2,545	95.9	1,506	96.7	147	93.3	452	92.0
10	1,621	97.2	2,186	96.3	1,279	98.0	119	95.1	410	93.4

Table 4f. Conditional relative 5-year survival of patients with colon cancer by UICC for period 1988-2016 (N=27,875).

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 UICC="I", who are alive at least 3 years after cancer diagnosis, the conditional relative 5-year survival rate is 96.9% (n=4,335).

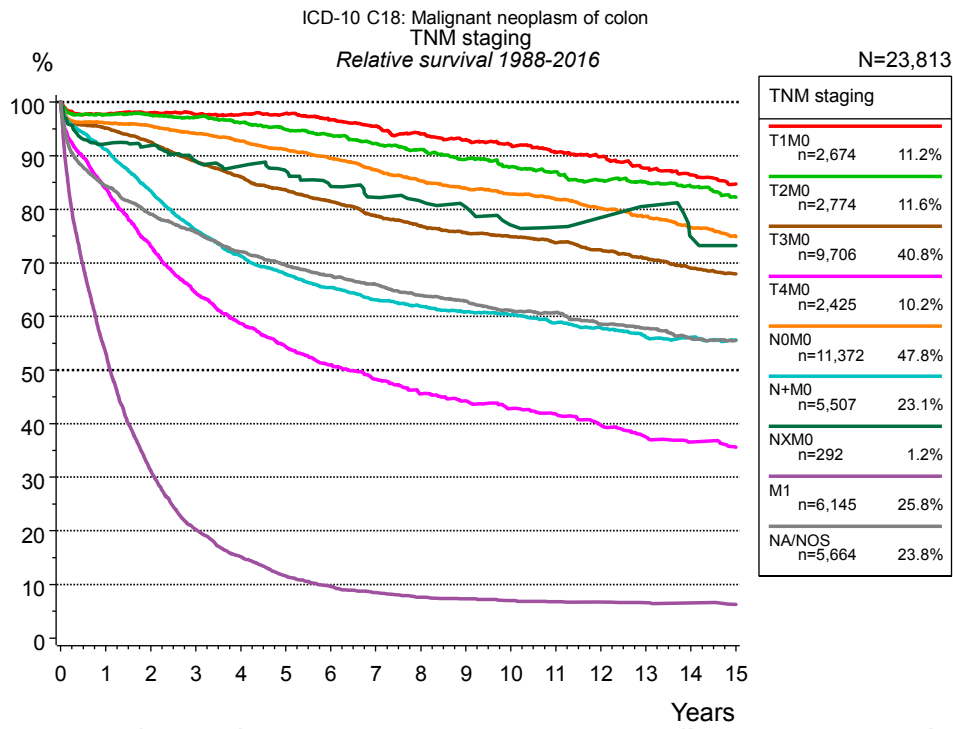


Figure 4g. Relative survival of patients with colon cancer by TNM staging. For 28,000 of 29,477 cases diagnosed between 1988 and 2016 valid data could be obtained for this item. For a total of 23,813 cases an evaluable classification was established. The accumulated percentage exceeds the 100 % value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 5,664 patients with missing values regarding TNM staging (19.2 % of 29,477 patients, the percent values of all other categories are related to n=23,813).

Years	TNM staging													
	T1M0 n=2,674		T2M0 n=2,774		T3M0 n=9,706		T4M0 n=2,425		NOM0 n=11,372		N+M0 n=5,507		NXM0 n=292	
	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	94.9	97.7	94.2	97.6	91.4	95.2	80.1	83.9	92.5	96.1	87.8	91.2	89.3	92.2
2	92.4	98.0	91.0	97.5	85.6	92.6	67.1	73.1	88.6	95.6	77.5	83.4	86.6	91.9
3	89.5	97.7	87.5	97.2	79.2	88.9	56.8	64.4	84.1	94.2	68.4	76.1	81.5	89.0
4	86.7	97.6	83.6	96.2	73.8	86.1	49.9	58.7	79.8	92.7	61.9	71.3	78.2	88.1
5	84.2	97.9	79.6	94.9	69.0	83.7	44.5	54.4	75.6	91.2	57.1	68.0	74.7	87.2
6	80.5	96.7	75.9	93.8	64.6	81.4	40.3	51.0	71.5	89.5	53.1	65.4	69.4	84.3
7	77.0	95.5	72.0	92.3	60.1	78.7	36.8	48.3	67.1	87.3	49.6	63.1	65.7	82.2
8	73.3	94.1	68.4	91.1	56.5	76.9	33.5	45.6	63.1	85.3	47.0	61.9	62.5	81.5
9	70.0	93.0	64.7	89.3	53.4	75.7	31.3	44.3	59.7	84.0	44.6	60.8	60.0	80.4
10	66.9	92.1	61.3	87.9	50.9	74.9	29.2	42.8	56.7	82.8	42.7	60.3	54.6	77.1
11	63.5	90.6	58.5	87.0	48.1	73.7	27.5	41.8	53.9	81.9	40.2	58.8	52.5	76.7
12	60.7	89.8	55.1	85.4	45.5	72.4	25.2	39.7	50.7	80.2	38.3	57.9	51.5	78.4
13	57.0	87.7	52.8	85.1	42.8	70.9	23.0	37.5	47.9	78.7	35.8	56.2	50.3	80.5
14	54.0	86.4	50.2	84.3	40.0	69.0	21.6	36.6	44.8	76.6	34.4	56.1	44.6	74.9
15	50.9	84.7	47.0	82.2	37.9	68.0	20.3	35.6	42.0	74.9	32.8	55.6	43.1	73.3

<i>cont'd</i>	TNM staging			
	M1		NA/NOS	
	n=6,145		n=5,664	
Years	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	51.3	53.2	80.4	84.3
2	29.3	31.3	72.3	79.1
3	18.5	20.2	66.5	75.7
4	13.5	15.2	60.8	72.1
5	10.1	11.6	56.5	69.6
6	8.2	9.6	52.8	67.6
7	7.0	8.5	49.5	66.0
8	6.1	7.6	46.1	63.9
9	5.8	7.3	43.6	62.8
10	5.3	7.0	40.7	61.1
11	5.0	6.8	38.8	60.7
12	4.8	6.7	36.0	58.6
13	4.6	6.6	34.1	57.8
14	4.4	6.6	31.7	55.9
15	4.0	6.3	30.1	55.5

Table 4h. Observed (obs.) and relative (rel.) survival of patients with colon cancer by TNM staging for period 1988-2016 (N=23,813).

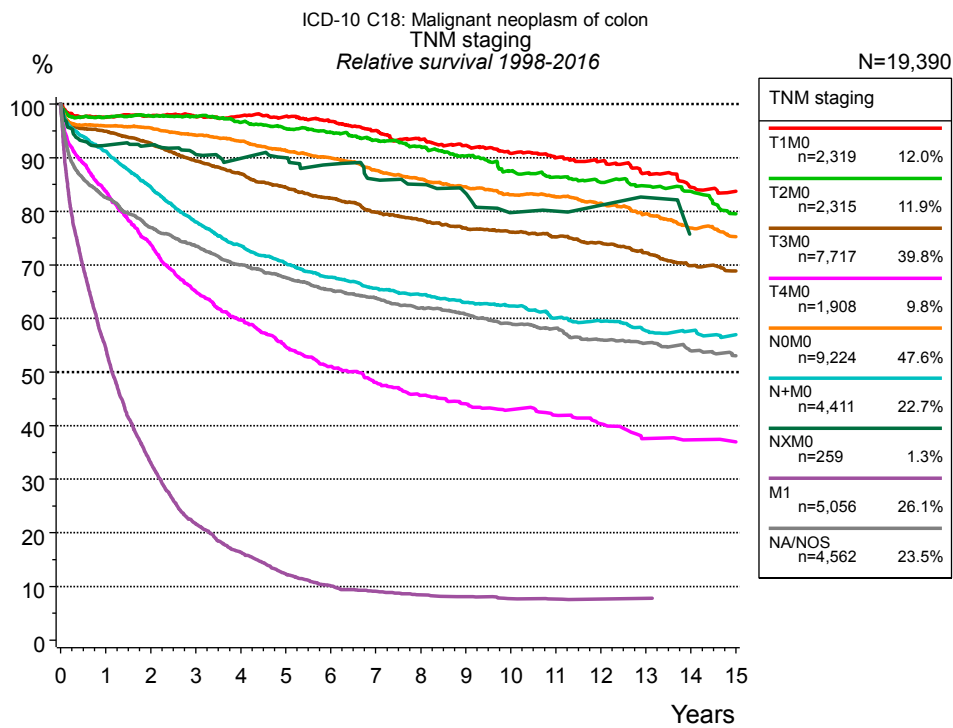


Figure 4i. Relative survival of patients with colon cancer by TNM staging. For 22,893 of 23,952 cases diagnosed between 1998 and 2016 valid data could be obtained for this item. For a total of 19,390 cases an evaluable classification was established. The accumulated percentage exceeds the 100 % value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 4,562 patients with missing values regarding TNM staging (19.0 % of 23,952 patients, the percent values of all other categories are related to n=19,390).

Years	TNM staging													
	T1M0 n=2,319		T2M0 n=2,315		T3M0 n=7,717		T4M0 n=1,908		NOM0 n=9,224		N+M0 n=4,411		NXM0 n=259	
	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	94.8	97.5	94.2	97.6	91.2	94.9	80.1	83.8	92.3	95.9	87.8	91.2	89.5	92.3
2	92.4	97.8	91.2	97.8	85.7	92.7	67.9	73.9	88.6	95.5	78.6	84.6	87.3	92.4
3	89.6	97.7	88.0	97.7	79.6	89.4	57.5	65.0	84.3	94.2	70.1	78.0	83.4	90.6
4	87.0	97.8	84.0	96.6	74.5	87.0	51.0	59.7	80.2	93.1	63.9	73.6	79.9	89.9
5	84.3	97.7	80.1	95.5	69.6	84.5	45.0	54.7	75.8	91.3	59.0	70.3	77.7	90.0
6	80.8	96.8	76.6	94.7	65.3	82.4	40.6	51.0	71.9	90.0	54.9	67.7	73.7	88.8
7	76.8	95.1	72.8	93.3	60.8	79.8	37.0	48.1	67.4	87.6	51.5	65.6	69.0	85.9
8	73.0	93.4	69.1	92.0	57.4	78.5	33.9	45.7	63.7	86.0	48.8	64.5	65.9	85.0
9	69.7	92.3	65.3	90.3	54.1	76.9	31.5	44.1	60.2	84.6	46.1	63.0	62.6	83.4
10	66.2	90.8	60.9	87.5	51.4	76.1	29.7	43.0	56.9	83.1	44.1	62.3	56.5	79.7
11	63.2	90.0	58.0	86.4	48.7	75.2	28.1	41.9	54.4	82.7	41.0	60.1	55.1	80.0
12	60.5	89.4	55.0	85.4	46.2	74.1	26.2	40.3	51.5	81.5	39.2	59.5	53.7	81.1
13	56.8	87.1	52.6	84.7	43.2	72.3	23.5	37.6	48.2	79.5	36.7	57.7	51.9	82.6
14	52.7	84.5	49.7	83.7	40.0	69.8	22.7	37.3	44.7	76.8	35.3	57.7		
15	50.2	83.7	45.5	79.5	37.8	68.9	21.6	36.9	42.0	75.2	33.6	57.0		

<i>cont'd</i>	TNM staging			
	M1		NA/NOS	
	n=5,056		n=4,562	
Years	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	52.5	54.4	78.6	82.6
2	31.1	33.1	70.3	77.0
3	19.9	21.7	64.4	73.4
4	14.6	16.3	59.1	70.0
5	10.8	12.3	54.9	67.7
6	8.6	10.1	50.9	65.3
7	7.5	9.1	47.9	63.8
8	6.8	8.4	44.8	62.0
9	6.4	8.1	42.2	60.7
10	5.9	7.7	39.4	59.0
11	5.7	7.6	37.3	58.2
12	5.5	7.6	34.5	56.0
13	5.5	7.8	32.9	55.4
14	5.4	7.8	30.8	54.0
15			29.1	53.0

Table 4j. Observed (obs.) and relative (rel.) survival of patients with colon cancer by TNM staging for period 1998-2016 (N=19,390).

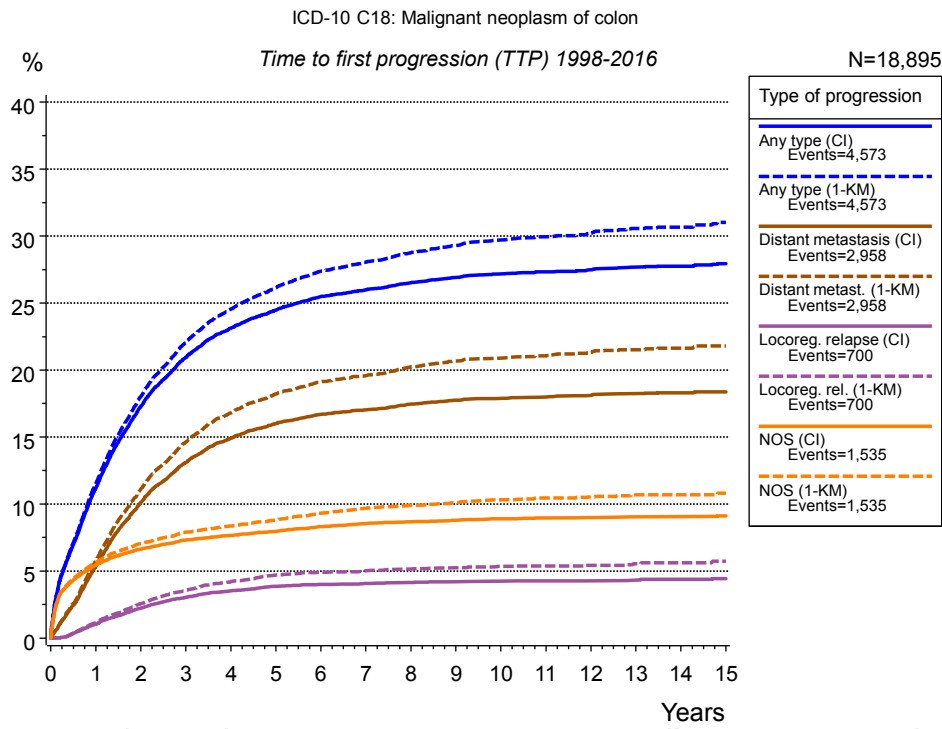


Figure 5a. Time to first progression of 18,895 patients with colon cancer diagnosed between 1998 and 2016 (in solid cancers M0 only) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

Years	Type of progression						
	Any type (CI)	Any type (1-KM)	Distant metastasis (CI)	Distant metast. (1-KM)	Locoreg. relapse (CI)	Locoreg. rel. (1-KM)	NOS (CI)
	n=18,895 %	n=18,895 %	n=18,895 %	n=18,895 %	n=18,895 %	n=18,895 %	n=18,895 %
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	11.2	11.5	5.3	5.8	1.0	1.1	5.5
2	17.3	18.0	10.1	11.1	2.2	2.6	6.6
3	20.9	22.1	13.1	14.6	3.0	3.6	7.3
4	23.1	24.6	14.9	16.8	3.5	4.2	7.7
5	24.5	26.1	16.0	18.2	3.9	4.7	8.0
6	25.5	27.4	16.7	19.1	4.0	4.9	8.3
7	26.0	28.0	17.0	19.6	4.1	5.0	8.5
8	26.5	28.7	17.5	20.2	4.1	5.1	8.7
9	26.9	29.3	17.8	20.7	4.2	5.2	8.8
10	27.2	29.7	17.9	20.9	4.3	5.3	8.9
11	27.3	29.9	18.0	21.1	4.3	5.4	9.0
12	27.5	30.2	18.1	21.3	4.3	5.4	9.0
13	27.7	30.6	18.2	21.5	4.3	5.5	9.1
14	27.8	30.7	18.3	21.6	4.4	5.6	9.1
15	27.9	31.0	18.4	21.8	4.4	5.7	9.1

Type of progression	
<i>cont'd</i>	NOS (1-KM) n=18,895
Years	%
0	0.0
1	5.7
2	7.0
3	7.9
4	8.4
5	8.8
6	9.3
7	9.7
8	9.9
9	10.1
10	10.3
11	10.4
12	10.5
13	10.7
14	10.7
15	10.8

Table 5b. Time to first progression of patients with colon cancer for period 1998-2016 (N=18,895).

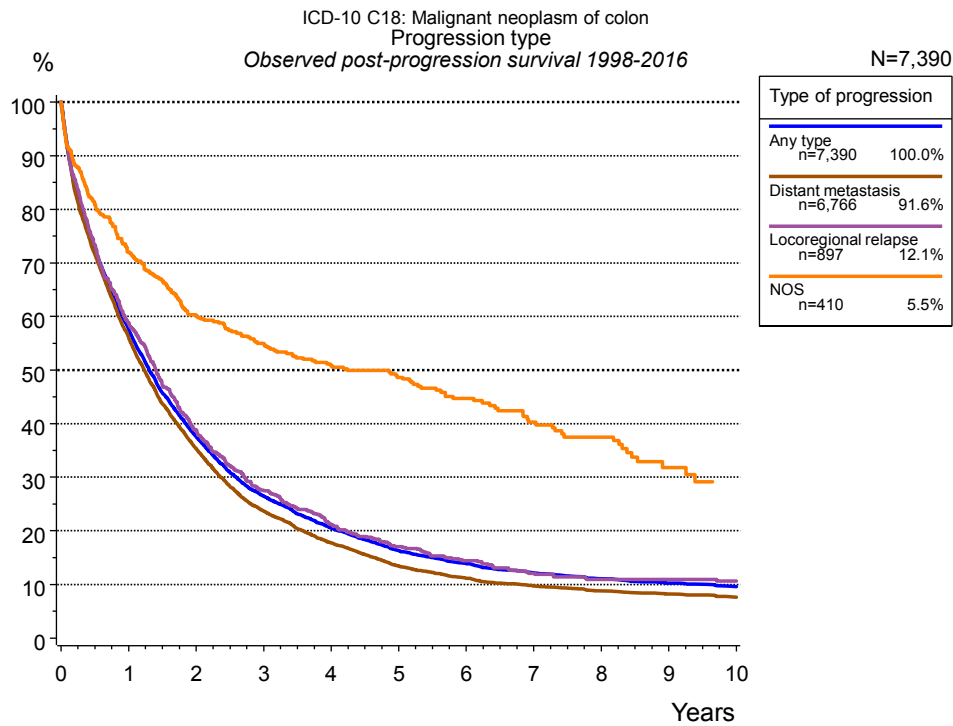


Figure 5c. Observed post-progression survival of 7,390 patients with colon cancer diagnosed between 1998 and 2016. These 7,390 patients with documented progression events during their course of disease represent 31.0 % of the totally 23,854 evaluated cases (incl. M1, n=4,959, 20.8 %). Patients with cancer relapse documented via death certificates only were excluded (n=2,142, 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=7,390 %	Distant metastasis n=6,766 %	Locoregional relapse n=897 %	NOS n=410 %
0	100.0	100.0	100.0	100.0
1	57.6	56.1	58.6	72.1
2	37.6	35.4	38.8	60.1
3	26.5	23.7	27.6	55.0
4	20.5	17.7	21.1	50.8
5	16.3	13.4	17.1	48.7
6	13.9	11.2	14.4	44.7
7	12.1	9.7	12.1	40.3
8	11.0	8.8	10.9	37.5
9	10.2	8.2	10.9	31.8
10	9.6	7.6	10.6	

Table 5d. Observed post-progression survival of patients with colon cancer for period 1998-2016 (N=7,390).

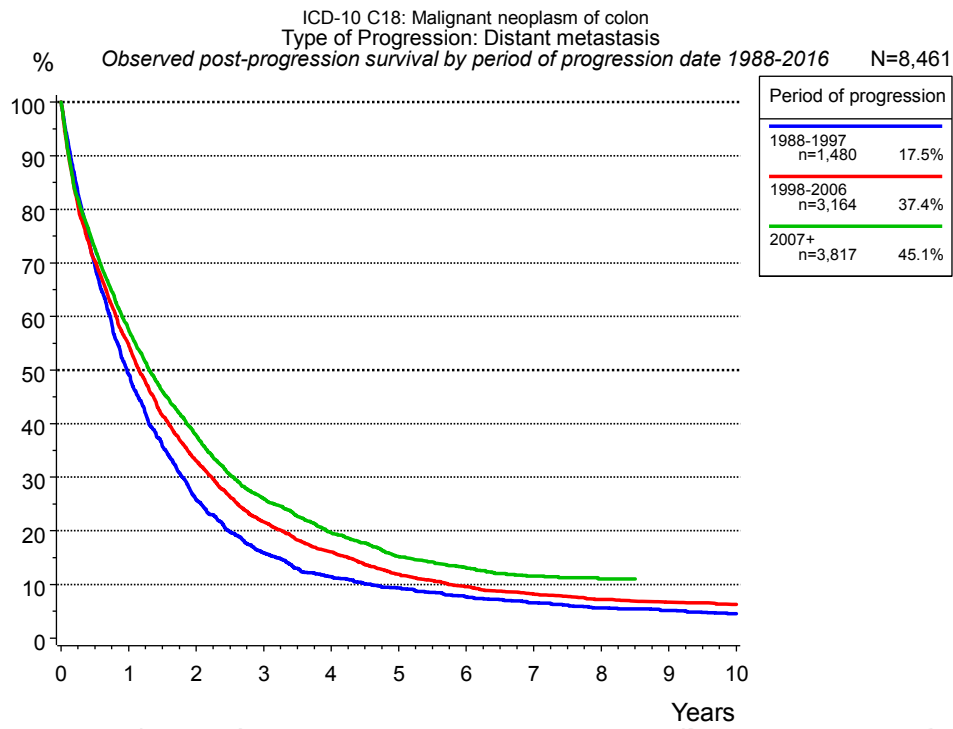


Figure 5e. Observed post-progression (distant metastasis) survival of 8,461 patients with colon cancer diagnosed between 1988 and 2016 by period of progression.

Years	Period of progression		
	1988-1997 n=1,480 %	1998-2006 n=3,164 %	2007+ n=3,817 %
0	100.0	100.0	100.0
1	49.2	54.8	57.5
2	25.8	33.1	37.8
3	15.9	21.7	26.0
4	11.4	16.0	19.6
5	9.3	11.9	15.2
6	7.7	9.6	13.1
7	6.6	8.2	11.5
8	5.6	7.2	11.0
9	5.2	6.7	
10	4.6	6.2	

Table 5f. Observed post-progression (distant metastasis) survival of patients with colon cancer for period 1988-2016 by period of progression (N=8,461).

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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