Munich Cancer Registry

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

Cancer statistics: Survival

C00-C14: HN cancer

Year of diagnosis	1988-2013
Patients	10,744
Diseases	11,142
Cases evaluated	6,560
Creation date	05/13/2015
Export date	12/30/2014
Population	4.64 m

C00-C14: Malignant neoplasms of lip, oral cavity and pharynx
Period of diagnosis
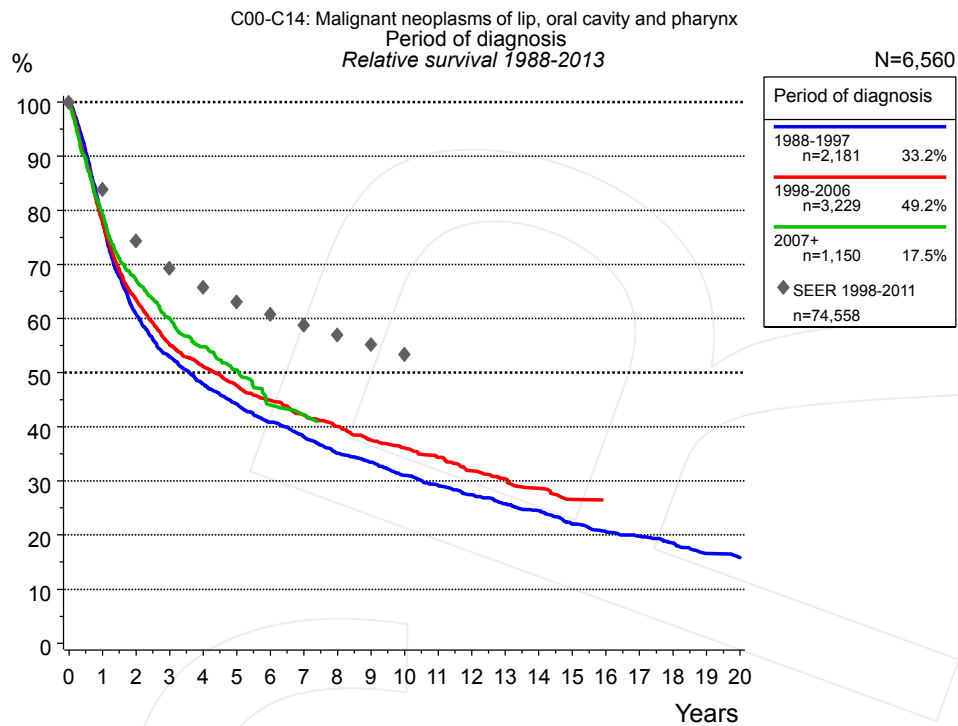*Relative survival 1988-2013*

Figure 1a. Relative survival of patients with HN cancer by period of diagnosis. Included in the evaluation are 6,560 cases diagnosed between 1988 and 2013.

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 1988, 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=2,181 | | 1998-2006 n=3,229 | | 2007+ n=1,150 | |
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	76.7	78.0	76.4	77.7	77.9	79.3
2	58.8	60.8	61.4	63.5	64.7	67.1
3	50.4	53.0	52.5	55.2	56.9	60.0
4	44.7	47.9	47.8	51.1	51.1	54.8
5	40.6	44.2	43.7	47.6	46.4	50.5
6	36.9	40.9	40.5	44.8	39.7	44.0
7	33.8	38.2	37.4	42.2	38.1	42.2
8	30.6	35.1	34.8	40.1		
9	28.6	33.5	32.0	37.5		
10	26.1	31.1	30.1	36.1		
11	24.1	29.2	28.1	34.4		
12	22.3	27.5	25.5	31.9		
13	20.5	25.8	23.7	30.4		
14	19.1	24.5	21.8	28.7		
15	16.8	22.0	19.7	26.6		
16	15.5	20.7	19.1	26.1		
17	14.6	19.8				
18	13.4	18.6				
19	11.7	16.6				
20	11.0	15.8				

Table 1b. Observed (obs.) and relative (rel.) survival of patients with HN cancer by period of diagnosis for period 1988-2013 (N=6,560).
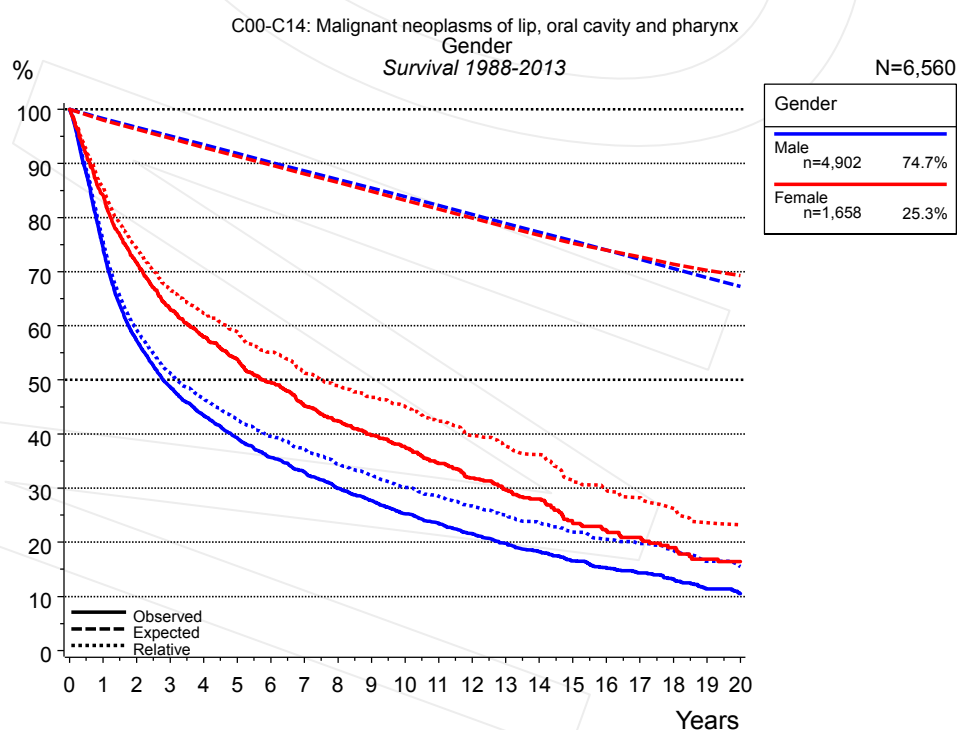

Figure 2a. Survival of patients with HN cancer by gender. Included in the evaluation are 6,560 cases diagnosed between 1988 and 2013.

Years	Gender			
	Male n=4,902		Female n=1,658	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	74.2	75.5	84.1	85.8
2	57.3	59.2	71.7	74.4
3	48.7	51.2	63.0	66.6
4	43.4	46.5	58.0	62.3
5	39.2	42.7	53.8	58.9
6	35.6	39.5	49.5	55.1
7	33.0	37.2	45.3	51.3
8	30.0	34.4	42.4	49.0
9	27.7	32.4	39.7	46.8
10	25.3	30.1	37.6	45.2
11	23.5	28.6	34.6	42.4
12	21.6	26.7	31.9	39.7
13	19.8	25.0	29.6	37.8
14	18.2	23.6	28.0	36.3
15	16.6	21.9	23.5	31.2
16	15.3	20.6	22.1	29.8
17	14.3	19.8	20.9	28.3
18	13.2	18.5	19.0	26.3
19	11.4	16.5	16.9	23.7
20	10.5	15.5	16.4	23.2

Table 2b. Observed (obs.) and relative (rel.) survival of patients with HN cancer by gender for period 1988-2013 (N=6,560).

Figure 3a. Relative survival of patients with HN cancer by age category. Included in the evaluation are 6,560 cases diagnosed between 1988 and 2013.

C00-C14: Malignant neoplasms of lip, oral cavity and pharynx
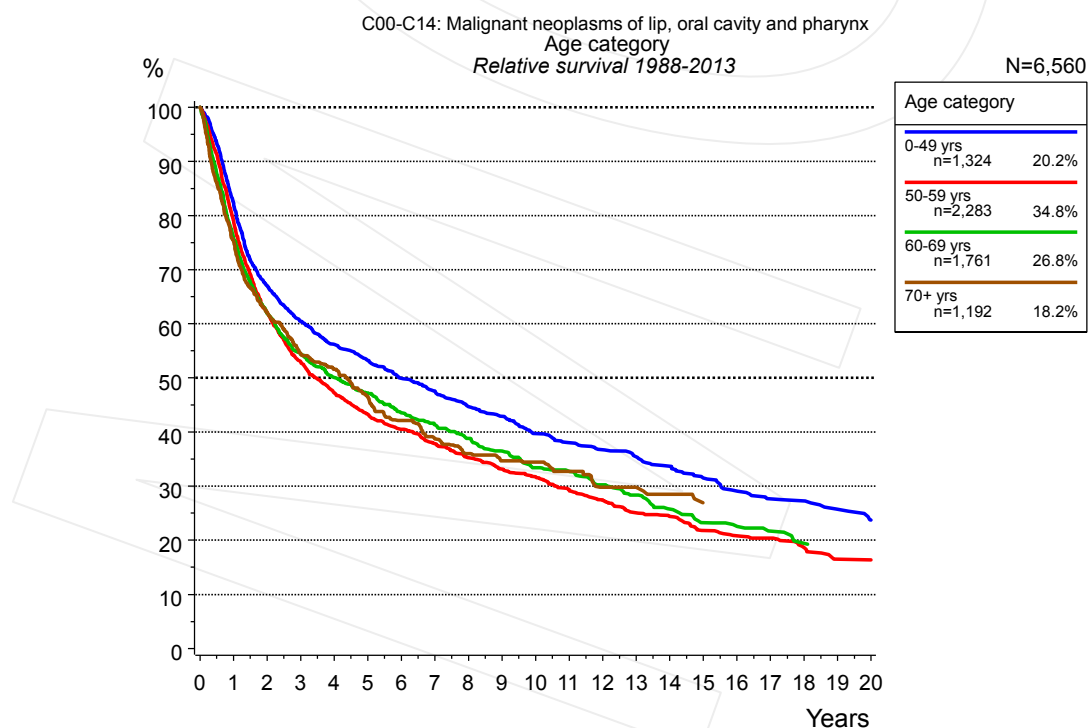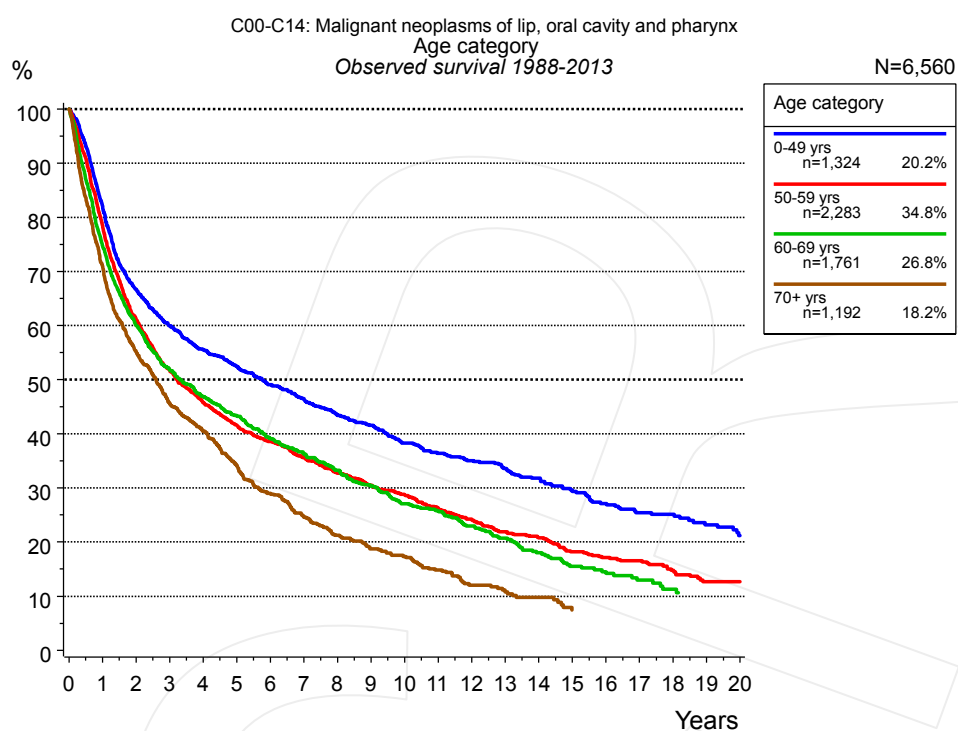Age category
Observed survival 1988-2013

Figure 3b. Observed survival of patients with HN cancer by age category. Included in the evaluation are 6,560 cases diagnosed between 1988 and 2013.

	Age category							
	0-49 yrs n=1,324		50-59 yrs n=2,283		60-69 yrs n=1,761		70+ yrs n=1,192	
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	81.8	82.0	78.3	78.9	74.7	75.8	70.9	75.2
2	66.7	67.0	61.3	62.1	60.0	61.9	55.2	62.1
3	60.0	60.5	51.8	53.0	51.8	54.3	45.6	54.5
4	55.6	56.2	45.8	47.2	46.8	50.1	40.5	51.6
5	52.4	53.3	41.6	43.3	43.3	47.2	34.2	46.5
6	49.1	49.9	38.5	40.5	39.1	43.6	29.0	42.1
7	46.5	47.5	35.6	37.8	36.3	41.3	24.6	38.7
8	43.4	44.7	32.8	35.3	33.3	38.8	21.2	36.0
9	41.5	42.9	30.5	33.2	30.4	36.5	18.7	34.7
10	38.3	39.7	28.7	31.8	27.1	33.4	17.3	34.5
11	36.4	38.0	26.3	29.4	25.7	32.8	14.8	32.8
12	35.1	36.7	24.2	27.5	23.0	30.3	12.1	29.9
13	33.6	35.4	21.9	25.1	20.7	28.3	10.8	29.8
14	31.8	33.7	20.8	24.4	18.0	25.7	9.8	28.5
15	29.4	31.5	18.2	21.8	15.5	23.3	7.4	26.9
16	27.1	29.1	17.1	20.9	14.5	22.6		
17	25.4	27.7	16.5	20.4	12.9	21.7		
18	25.1	27.3	14.8	18.7	11.3	19.4		
19	23.2	25.7	12.7	16.5				
20	21.2	23.7	12.7	16.4				

Table 3c. Observed (obs.) and relative (rel.) survival of patients with HN cancer by age category for period 1988-2013 (N=6,560).

C00-C14: Malignant neoplasms of lip, oral cavity and pharynx
ICD-10 classification
Relative survival 1988-2013   N=6,560

ICD-10 classification

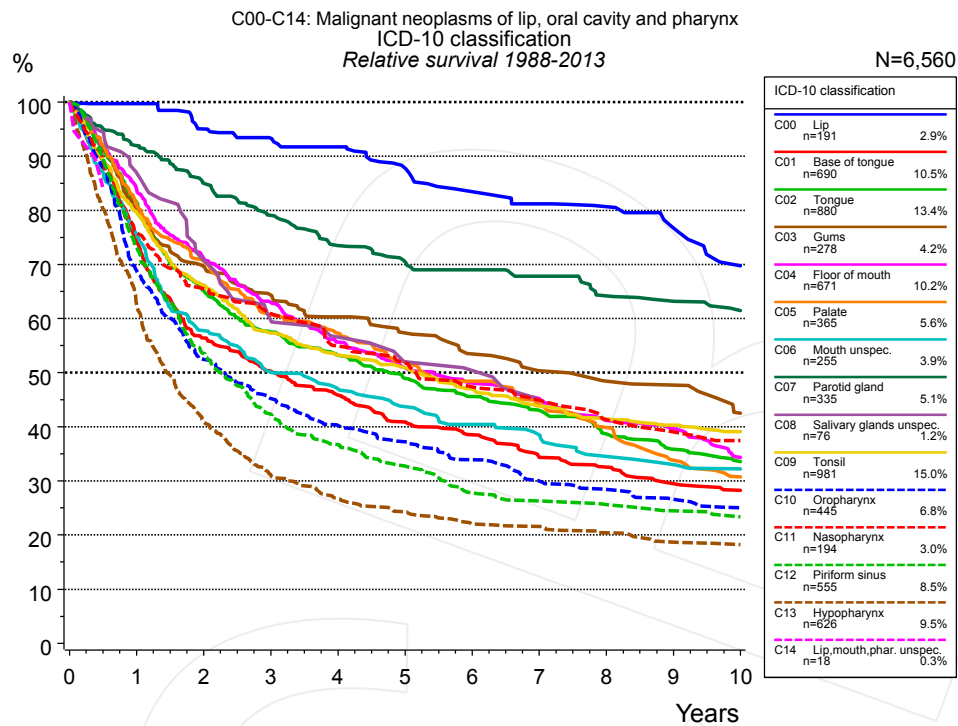| C00 | Lip | n=191 | 2.9% |
C01	Base of tongue	n=690	10.5%
C02	Tongue	n=880	13.4%
C03	Gums	n=278	4.2%
C04	Floor of mouth	n=671	10.2%
C05	Palate	n=365	5.6%
C06	Mouth unspec.	n=255	3.9%
C07	Parotid gland	n=335	5.1%
C08	Salivary glands unspec.	n=76	1.2%
C09	Tonsil	n=981	15.0%
C10	Oropharynx	n=445	6.8%
C11	Nasopharynx	n=194	3.0%
C12	Piriform sinus	n=555	8.5%
C13	Hypopharynx	n=626	9.5%
C14	Lip,mouth,phar. unspec.	n=18	0.3%

Figure 4a. Relative survival of patients with HN cancer by ICD-10 classification. Included in the evaluation are 6,560 cases diagnosed between 1988 and 2013.

ICD-10 classification

	C00 Lip n=191		C01 Base of tongue n=690		C02 Tongue n=880		C03 Gums n=278		C04 Floor of mouth n=671		C05 Palate n=365		C06 Mouth unspec. n=255	
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	97.4	99.7	73.3	74.4	80.1	81.4	78.3	80.1	82.6	83.8	80.3	81.0	73.8	75.5
2	87.6	95.0	54.9	56.4	63.1	65.1	66.7	69.6	69.3	71.1	68.8	70.6	55.6	57.8
3	83.0	93.3	48.2	50.3	54.8	57.5	60.3	64.3	60.5	62.9	58.3	60.7	47.3	50.1
4	79.4	91.7	43.1	45.8	49.8	53.2	55.1	60.3	52.8	55.6	54.4	57.3	43.5	47.0
5	72.6	87.8	38.0	40.9	45.2	49.0	51.2	57.3	47.9	50.9	48.8	52.1	39.5	43.7
6	66.4	83.4	35.0	38.5	41.4	45.6	46.5	53.5	44.5	48.1	44.6	48.4	35.9	40.5
7	63.0	81.2	30.5	34.3	38.4	43.0	42.7	50.4	41.5	45.2	40.1	44.2	33.7	38.5
8	60.2	80.7	28.6	32.5	33.9	38.6	40.3	48.4	37.1	41.2	35.8	39.9	29.7	34.6
9	55.3	76.8	25.3	29.5	30.9	35.9	39.4	47.7	35.3	39.7	29.7	33.8	27.9	33.0
10	49.5	69.7	23.9	28.3	28.4	33.6	33.8	42.5	30.1	34.4	26.6	30.8	26.6	32.2

ICD-10 classification

cont'd	C07 Parotid gland n=335		C08 Salivary glands unspec. n=76		C09 Tonsil n=981		C10 Oropharynx n=445		C11 Nasopharynx n=194		C12 Piriform sinus n=555		C13 Hypopharynx n=626	
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	89.3	92.0	85.1	86.9	78.2	79.6	68.2	68.9	75.2	75.8	72.3	73.1	61.5	62.5
2	80.3	85.0	67.8	70.8	64.0	66.2	51.3	52.4	64.1	65.5	52.3	53.6	39.8	40.9
3	73.0	79.1	57.1	59.6	54.4	57.3	43.5	45.2	58.8	60.9	40.7	42.3	30.0	31.2
4	66.1	73.5	52.2	56.6	49.8	53.2	38.3	40.2	52.4	54.9	35.0	36.7	25.3	26.7
5	62.3	70.5	46.7	52.0	46.8	51.0	35.0	37.2	49.1	51.8	30.6	32.8	22.7	24.3
6	60.0	69.0	44.8	50.4	42.6	47.0	31.4	33.9	44.3	47.4	25.7	27.8	20.1	22.0
7	57.4	67.8	38.9	45.3	39.0	43.8	27.3	30.0	41.3	44.9	24.1	26.3	19.6	21.6
8	53.0	64.2	38.9	45.3	36.2	41.5	25.5	28.4	37.3	41.3	23.1	25.6	18.1	20.5
9	51.2	63.2	38.9	45.3	34.7	40.3	23.6	26.6	34.8	39.0	21.7	24.5	16.5	18.7
10	48.5	61.5	38.9	45.3	33.1	39.1	21.8	25.0	32.9	37.5	20.4	23.4	15.9	18.3

ICD-10 classification		
	C14	
cont'd	Lip,mouth,phar. unspec.	
	n=18	
Years	obs. %	rel. %
0	100.0	100.0

Table 4b. Observed (obs.) and relative (rel.) survival of patients with HN cancer by ICD-10 classification for period 1988-2013 (N=6,560).
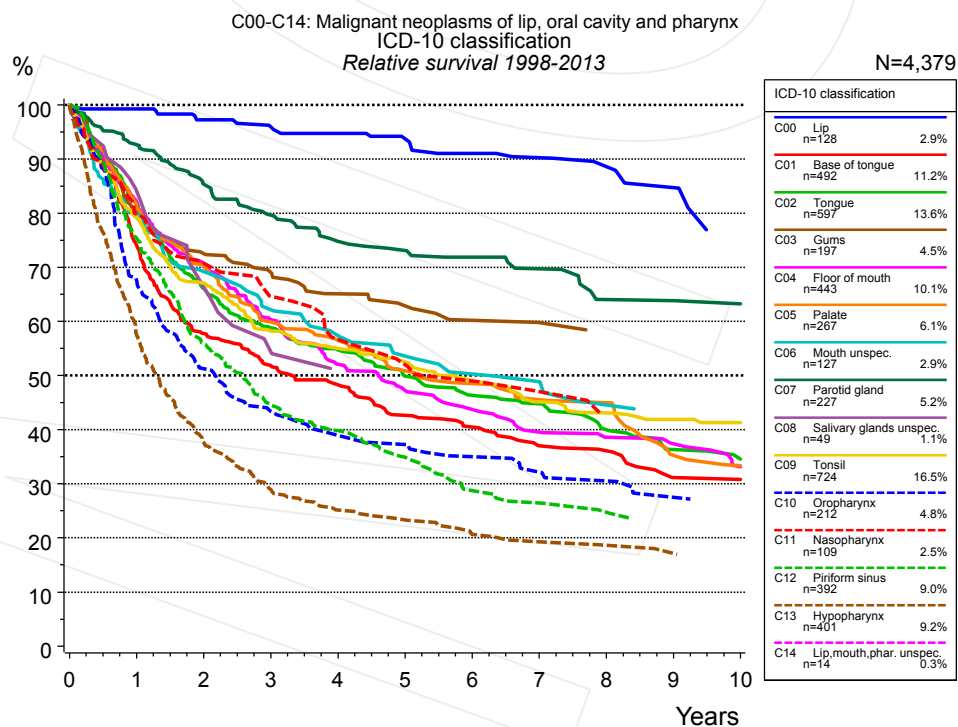

C00-C14: Malignant neoplasms of lip, oral cavity and pharynx
ICD-10 classification
Relative survival 1998-2013　　　　　N=4,379

ICD-10 classification

C00	Lip	n=128	2.9%
C01	Base of tongue	n=492	11.2%
C02	Tongue	n=597	13.6%
C03	Gums	n=197	4.5%
C04	Floor of mouth	n=443	10.1%
C05	Palate	n=267	6.1%
C06	Mouth unspec.	n=127	2.9%
C07	Parotid gland	n=227	5.2%
C08	Salivary glands unspec.	n=49	1.1%
C09	Tonsil	n=724	16.5%
C10	Oropharynx	n=212	4.8%
C11	Nasopharynx	n=109	2.5%
C12	Piriform sinus	n=392	9.0%
C13	Hypopharynx	n=401	9.2%
C14	Lip,mouth,phar. unspec.	n=14	0.3%

Figure 4c. Relative survival of patients with HN cancer by ICD-10 classification. Included in the evaluation are 4,379 cases diagnosed between 1998 and 2013. Subgroups with sample size <15 are dropped from the chart.

ICD-10 classification

Years	C00 Lip n=128 obs. %	rel. %	C01 Base of tongue n=492 obs. %	rel. %	C02 Tongue n=597 obs. %	rel. %	C03 Gums n=197 obs. %	rel. %	C04 Floor of mouth n=443 obs. %	rel. %	C05 Palate n=267 obs. %	rel. %	C06 Mouth unspec. n=127 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	97.6	99.3	72.9	74.0	80.7	82.0	78.5	80.3	80.7	81.9	80.6	81.1	77.6	79.9
2	89.4	97.2	56.2	57.8	64.2	66.1	69.5	72.5	68.4	70.1	68.5	70.3	66.2	69.2
3	84.9	95.9	49.6	51.8	56.2	58.8	64.9	69.0	57.9	60.3	57.5	59.9	58.4	62.2
4	83.0	94.7	45.4	48.3	51.5	54.7	59.7	65.1	49.5	52.1	53.7	56.5	52.8	57.4
5	77.1	93.7	39.5	42.7	46.3	49.9	56.7	62.9	44.8	47.2	47.9	50.9	47.9	53.6
6	72.8	91.0	36.8	40.5	42.4	46.3	53.1	60.1	40.5	43.7	44.8	48.5	43.8	50.3
7	69.4	90.2	32.7	37.0	40.6	44.8	51.3	59.7	36.5	39.5	41.6	45.5	42.3	48.8
8	65.5	88.6	31.6	36.1	35.7	40.0	49.4	58.0	34.7	38.6	40.7	45.0	37.1	44.6
9	61.5	84.7	26.3	31.1	31.7	36.3	49.4	56.7	33.2	37.4	31.0	35.3	35.2	43.9
10			26.3	30.8	29.5	34.6			29.1	33.1	28.9	33.4	35.2	43.9

ICD-10 classification

cont'd Years	C07 Parotid gland n=227 obs. %	rel. %	C08 Salivary glands unspec. n=49 obs. %	rel. %	C09 Tonsil n=724 obs. %	rel. %	C10 Oropharynx n=212 obs. %	rel. %	C11 Nasopharynx n=109 obs. %	rel. %	C12 Piriform sinus n=392 obs. %	rel. %	C13 Hypopharynx n=401 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	90.0	92.6	83.2	84.1	78.0	79.3	67.2	67.5	79.0	79.8	74.5	75.3	56.4	57.3
2	80.7	85.4	64.8	66.3	65.0	67.1	50.3	51.3	69.5	70.8	54.5	55.9	36.6	37.6
3	73.7	79.6	54.6	54.2	55.4	58.2	41.9	43.3	62.5	64.7	42.9	44.6	28.0	28.9
4	67.3	74.7	48.8	51.1	51.6	55.0	37.2	39.0	54.6	56.6	37.9	39.8	23.7	25.1
5	65.0	73.1	48.8	49.6	48.3	52.5	35.7	37.3	50.2	52.0	32.4	34.9	22.0	23.3
6	62.4	71.9			44.7	49.0	32.7	35.0	47.2	49.0	26.6	28.7	18.9	20.7
7	59.2	69.7			40.1	45.1	30.2	32.2	43.5	47.0	24.3	26.4	17.8	19.3
8	52.7	64.0			37.9	43.1	28.4	30.5	39.1	42.9	22.4	24.7	16.6	18.6
9	52.7	63.8			36.1	41.9	25.3	27.5	39.1	41.1	20.8	23.5	15.7	17.1
10	50.9	63.2			35.1	41.3	24.0	26.5			20.8	23.3	14.7	15.8

ICD-10 classification

cont'd Years	C14 Lip,mouth,phar. unspec. n=14 obs. %	rel. %
0	100.0	100.0

Table 4d. Observed (obs.) and relative (rel.) survival of patients with HN cancer by ICD-10 classification for period 1998-2013 (N=4,379).

C00-C14: Malignant neoplasms of lip, oral cavity and pharynx
Extent of disease
Conditional relative 2 year survival 1988-2013
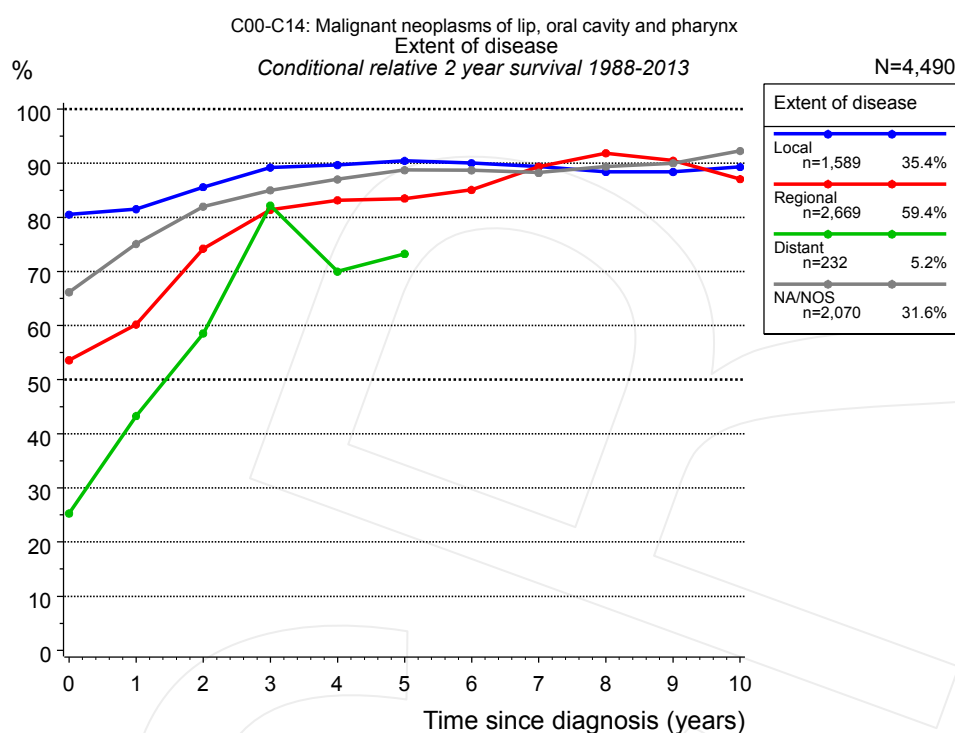
N=4,490

Figure 4e. Conditional relative 2-year survival of patients with HN cancer by extent of disease. For 6,017 of 6,560 cases diagnosed between 1988 and 2013 valid data could be obtained for this item. For a total of 4,490 cases an evaluable classification was established. The grey line represents the subgroup of 2,070 patients with missing values regarding extent of disease (31.6% of 6,560 patients, the percent values of all other categories are related to n=4,490).

	Extent of disease							
	Local		Regional		Distant		NA/NOS	
		Cond. surv. %		Cond. surv. %		Cond. surv. %		Cond. surv. %
Years	n	2 yrs	n	2 yrs	n	2 yrs	n	2 yrs
0	1,589	80.5	2,669	53.6	232	25.3	2,070	66.2
1	1,348	81.5	1,858	60.2	81	43.3	1,519	75.1
2	1,136	85.6	1,251	74.2	50	58.6	1,183	82.0
3	947	89.2	935	81.4	28	82.2	975	85.0
4	797	89.7	756	83.2	23	70.0	802	87.0
5	668	90.4	612	83.5	20	73.3	659	88.7
6	568	90.0	499	85.1			536	88.7
7	508	89.4	418	89.4			448	88.2
8	446	88.4	360	91.9			376	89.4
9	400	88.4	304	90.5			305	90.0
10	337	89.3	256	87.1			238	92.2

Table 4f. Conditional relative 2-year survival of patients with HN cancer by extent of disease for period 1988-2013 (N=4,490).

Conditional relative survival rates refer to the relative survival probability, in this case for 2 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 2-year survival rate is 89.2% (n=947).
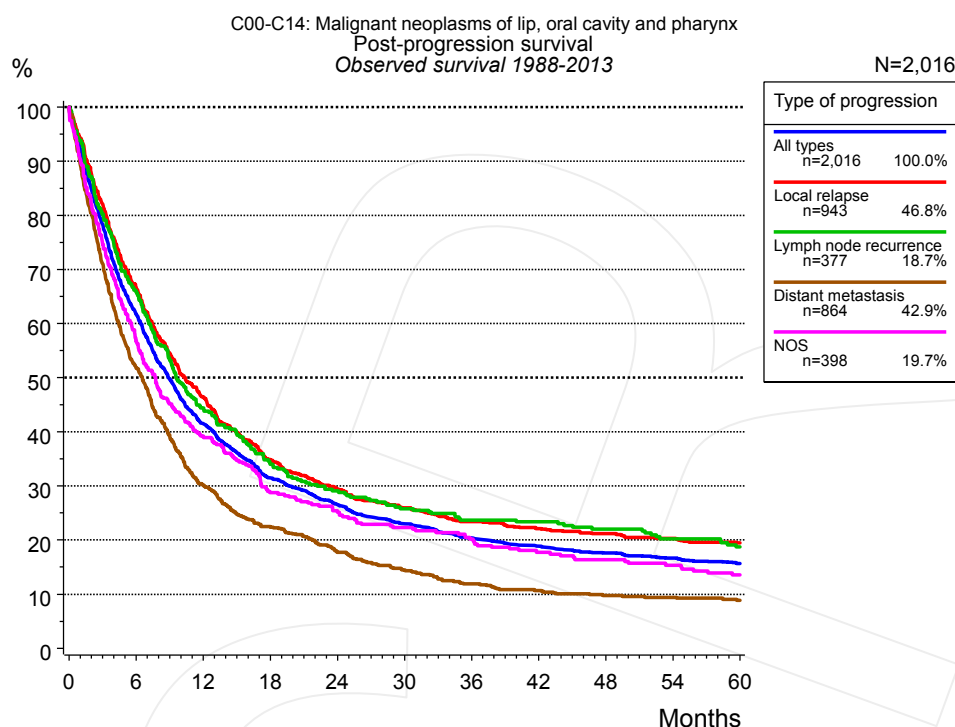
C00-C14: Malignant neoplasms of lip, oral cavity and pharynx
Post-progression survival
Observed survival 1988-2013

Figure 5a. Observed post-progression survival of 2,016 patients with HN cancer diagnosed between 1988 and 2013 (incl. M1). These 2,016 patients with documented progression events during their course of disease represent 30.7% of the totally 6,560 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=899, 13.7%). 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 n=2,016	Local relapse n=943	Lymph node recurrence n=377	Distant metastasis n=864	NOS n=398
Months	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
12	41.5	46.4	44.4	30.2	39.0
24	26.6	29.4	29.1	17.7	25.4
36	20.4	23.5	23.7	11.9	20.2
48	17.6	21.2	22.0	9.7	16.4
60	15.7	19.5	18.7	8.9	13.5

Table 5b. Observed post-progression survival of patients with HN cancer for period 1988-2013 (N=2,016).

Shortcuts

MCR   Munich Cancer Registry, Germany (Tumorregister München)
NCI   National Cancer Institute, USA
SEER   Surveillance, Epidemiology, and End Results, USA
UICC   Union for International Cancer Control, Geneva

DCO   Death certificate only. The death certificate provides the only notification to the registry.
NA   Not available
NOS   Not otherwise specified

OS   Observed/overall survival (Kaplan-Meier estimate)
RS   Relative survival, compared to the general population,
         ratio of observed to expected survival (Ederer II method),
         reflecting excess mortality among cancer patients
AS   Assembled survival chart (observed, expected, relative)
PPS   Post-progression survival, survival since first relapse (Kaplan-Meier estimate)
         Date of entry: Date of first locoregional recurrence, distant metastasis, unspecified
progression
         Event: Death of all causes
CS   Conditional survival, survival probability under the condition of surviving a given period of time

Recommended Citation

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Index of figures and tables