



Indicator Analysis 2018

Annual Report of the Certified Neuro-oncology Cancer Centres

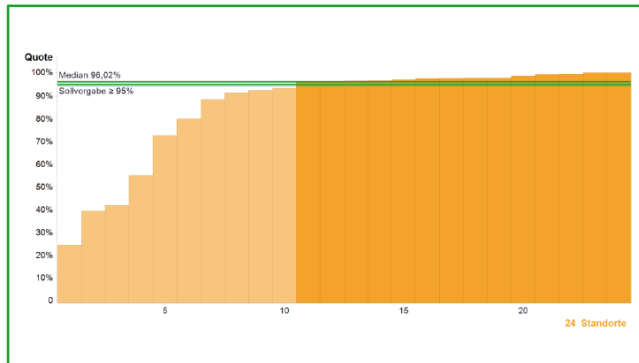
Audit year 2017 / Indicator year 2016

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General information

	Indicator definition	All clinical sites 2016	
		Median	Range
Numerator	Primary cases (elective patients: pre-intervention, emergency patients: post-intervention) who were presented in the tumour conference	202.5*	24 - 442
Denominator	Primary cases (= Indicator 1)	214*	110 - 613
Rate	Target value $\geq 95\%$	96.36%	20.87% - 100%



Basic data indicator:

The definitions of **numerator**, **population (=denominator)** and **target value** are taken from the Data Sheet.

The **medians** for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

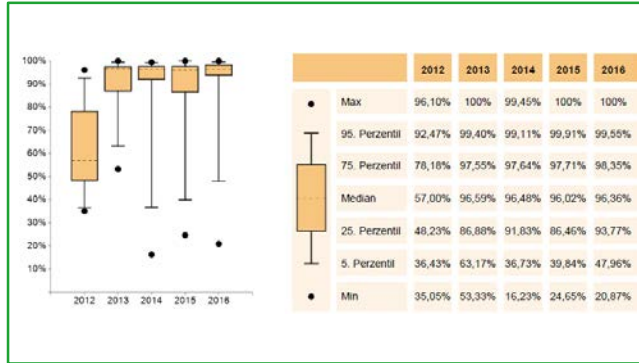
The values for the numerators, populations and rates of all Centres are given under range.

Diagram:

The x-axis indicates the number of Centres, the y-axis gives the values in percent or number (e.g. primary cases). The target value is depicted as a horizontal green line. The median, which is also depicted as a green horizontal line, divides the entire group into two equal halves.

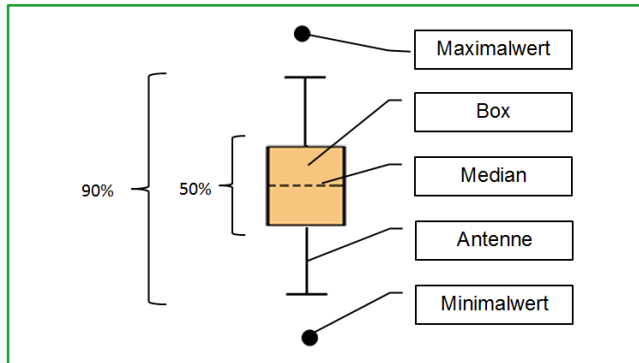


General information



Cohort development:

The **cohort development** in the years **2012**, **2013**, **2014**, **2015** and **2016** is presented in a box plot diagram.



Box plot:

A box plot consists of a **box with median**, **whiskers** and **outliers**. 50 percent of the Centres are within the box. The median divides the entire available cohort into two halves with an equal number of Centres. The whiskers and the box encompass a 90th percentile area/range. The extreme values are depicted here as dots.

Status of the certification system for Neuro-oncology Cancer Centres 2016

	31.12.2017	31.12.2016	31.12.2015	31.12.2014	31.12.2013
Ongoing procedures	5	8	4	5	6
Certified Centres	32	26	21	15	7
Certified clinical sites	33	27	22	16	8
Neuro-oncology Cancer Centres with					
1 clinical site	31	25	20	14	6
2 clinical sites	1	1	1	1	1
3 clinical sites	0	0	0	0	0
4 clinical sites	0	0	0	0	0

Clinical sites taken into account

	31.12.2017	31.12.2016	31.12.2015	31.12.2014	31.12.2013
Clinical sites included in the Annual Report	30	24	19	12	7
equivalent to	90.9%	88.9%	86.4%	75.0%	87.5%
Primary cases total*	7219	5067	3952	2498	1526
Primary cases per clinical site (mean)*	240.6	211.1	208	208.2	218
Primary cases per clinical site (median)*	214	202.5	213	196,5	175

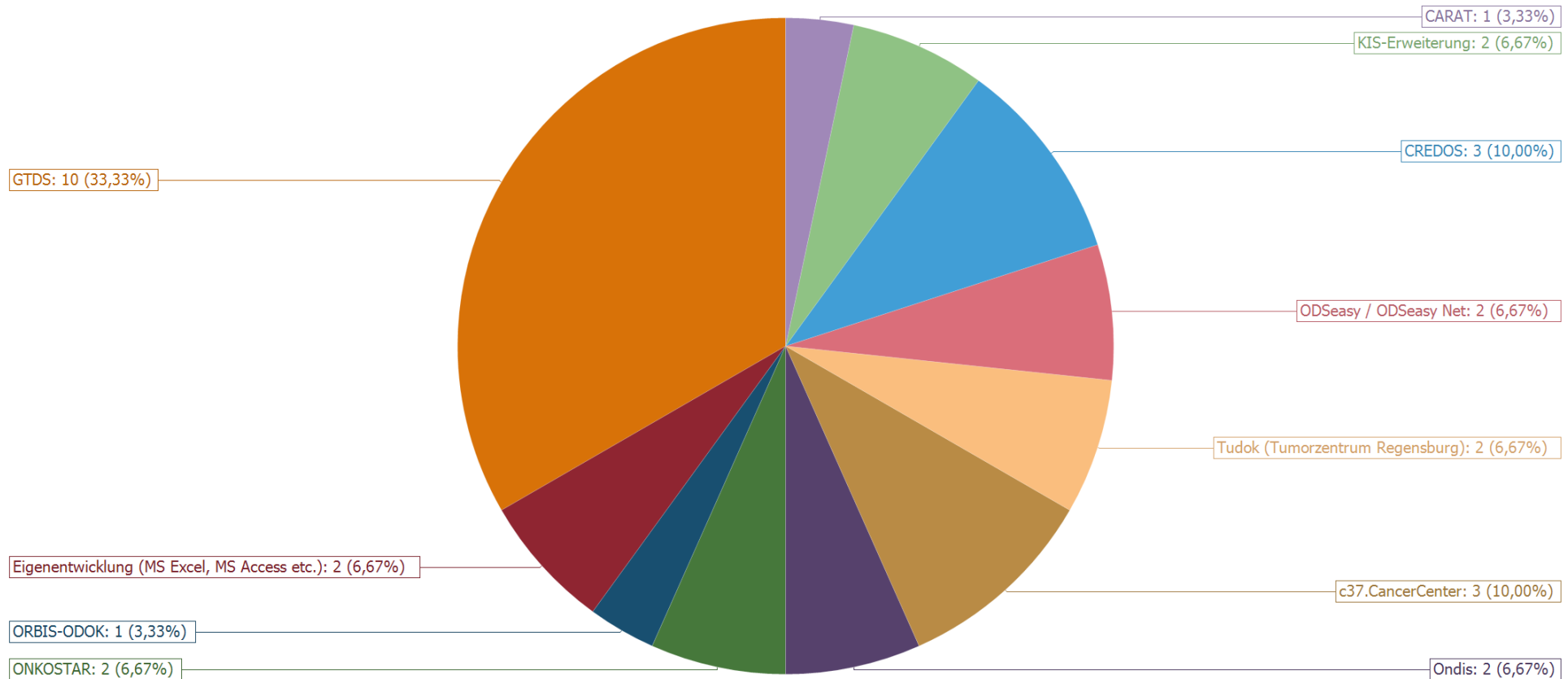
*The figures are based on the clinical sites listed in the Annual Report.

This Annual Report looks at the Neuro-oncology Cancer Centres certified in the Certification System of the German Cancer Society. The Data Sheet is the basis for the diagrams.

30 out of the 33 certified clinical sites of the Centres are included in the Annual Report. 3 clinical sites, certified for the first time in 2017, are not included (data depiction of a full calendar year is not mandatory for initial certifications). An up-to-date overview of all certified clinical sites is given on www.oncomap.de.

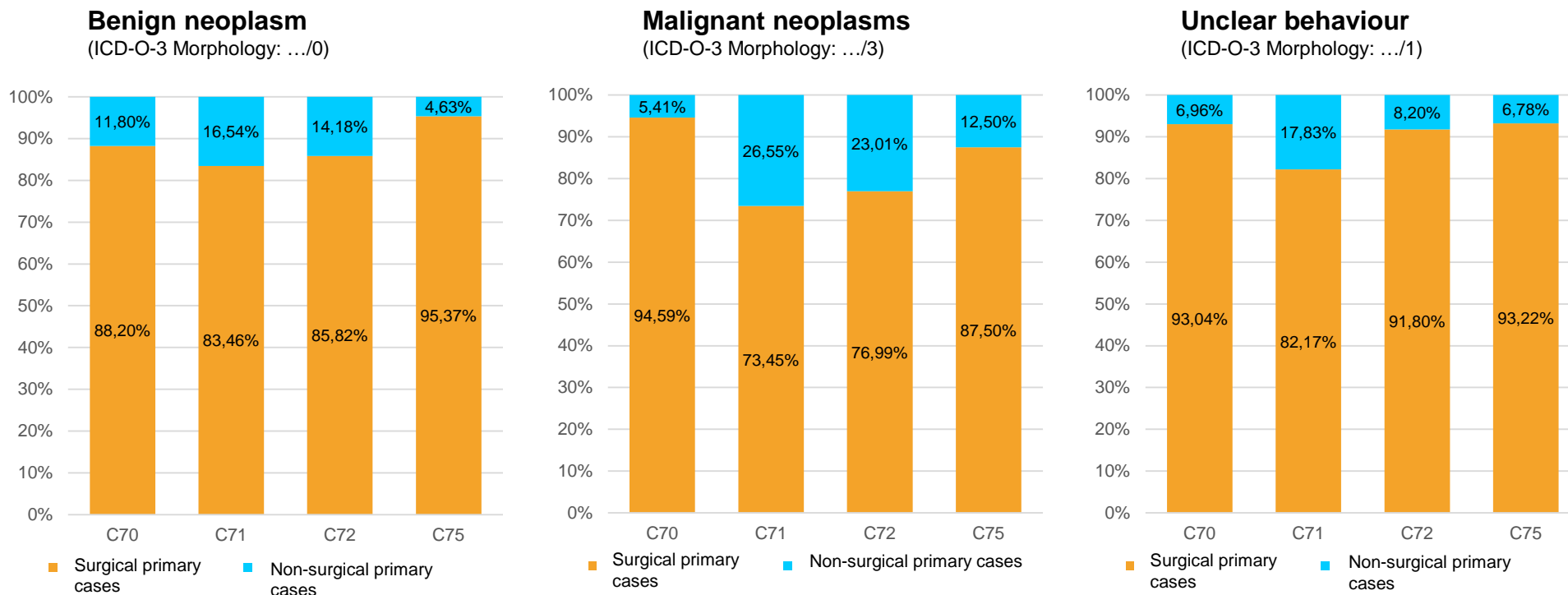
The indicators published here refer to the indicator year 2016. They are the assessment basis for the audits conducted in 2017.

Tumour documentation systems in the Centre's clinical sites



The details on the tumour documentation system were taken from the EXCEL annex to the Data Sheet (Basic Data spread sheet). It is not possible to indicate several systems. In many cases support is provided by the cancer registers or there may be a direct connection to the cancer register via a specific tumour documentation system.

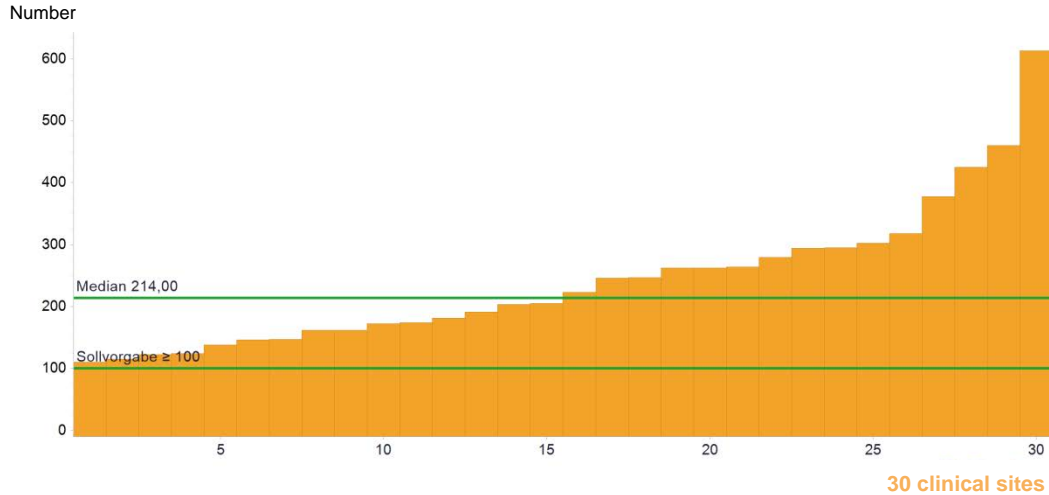
Basic data – Stage distribution primary cases



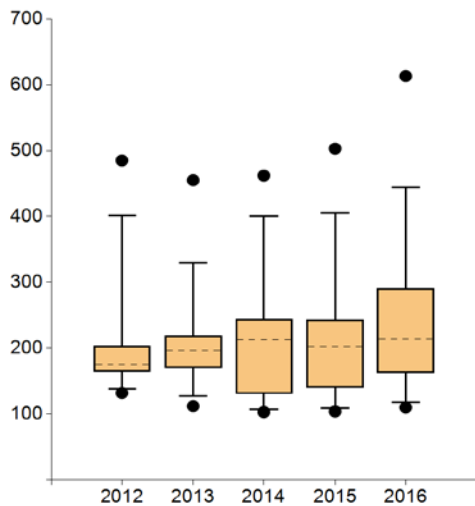
	Benign neoplasms (ICD-O-3 Morphology: .../0)				Malignant neoplasms (ICD-O-3 Morphology: .../3)				Uncertain growth behaviour (ICD-O-3 Morphology: .../1)				Total
	C70	C71	C72	C75	C70	C71	C72	C75	C70	C71	C72	C75	
Non-surgical	265 (11.80%)	22 (16.54%)	96 (14.18%)	36 (4.63%)	2 (5.41%)	678 (26.55%)	26 (23.01%)	2 (12.50%)	22 (6.96%)	41 (17.83%)	5 (8.20%)	4 (6.78%)	1,199
Surgical	1,981 (88.20%)	111 (83.46%)	581 (85.82%)	741 (95.37%)	35 (94.59%)	1,876 (73.45%)	87 (76.99%)	14 (87.50%)	294 (93.04%)	189 (82.17%)	56 (91.80%)	55 (93.22%)	6,020
Primary cases total	2,246 (100%)	133 (100%)	677 (100%)	777 (100%)	37 (100%)	2,554 (100%)	113 (100%)	16 (100%)	316 (100%)	230 (100%)	61 (100%)	59 (100%)	7,219

C70: neoplasm of meninges; **C71:** neoplasm of brain; **C72:** neoplasm of medulla and cerebral nerves; **C75:** Other endocrine glands and related structures in line with ICD-O-3 topography

1. Number of primary cases



	Indicator definition	All clinical sites 2016	
		Median	Range
Number	Primary cases def. in line with 1.2.1	214	110 - 613
	Target value ≥ 100		



	2012	2013	2014	2015	2016
● Max	485.00	455.00	462.00	503.00	613.00
95 th percentile	401.60	329.05	400.80	405.20	444.25
75 th percentile	203.00	219.00	243.50	243.25	290.25
Median	175.00	196.50	213.00	202.50	214.00
25 th percentile	164.00	170.00	130.50	139.75	162.00
5 th percentile	138.60	126.85	106.60	108.75	118.15
● Min	132.00	112.00	103.00	104.00	110.00

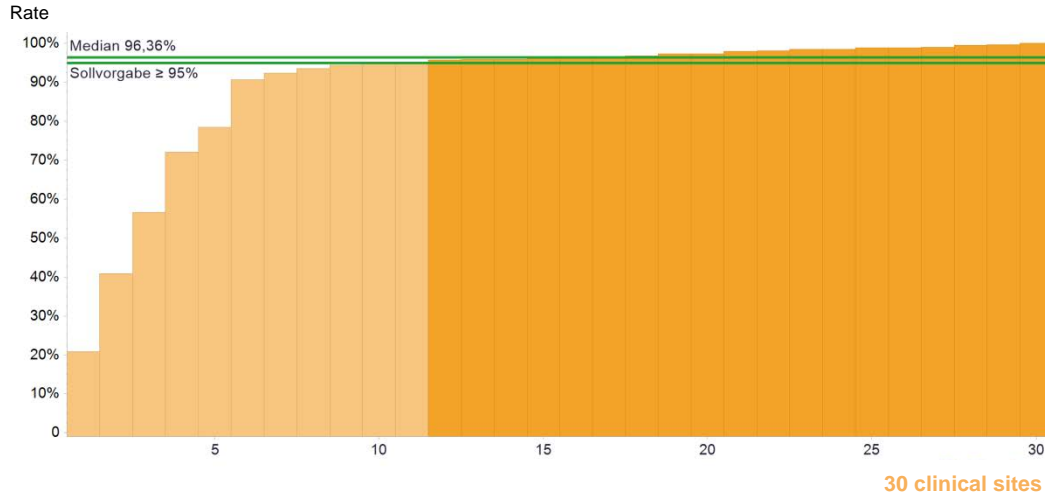
Clinical sites with evaluable data		Clinical sites meeting the target value	
Number	%	Number	%
30	100.00%	30	100.00%

Comments:

In 2016, too, all Centres met the annual requirement for primary cases. 20 Centres were able to maintain or increase the number of their primary cases compared with the previous year.

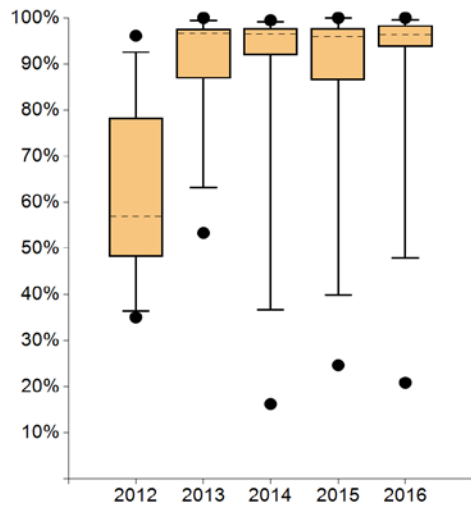
In total, 7,439 patients with the initial diagnosis of a brain tumour were treated in a certified centre in 2016 (including 3 Centres that were not listed in the annual report). Based on American incidence data this corresponded to a rate of 41% (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4623240/>).

2. Interdisciplinary case reviews



	Indicator definition	All clinical sites 2016	
		Median	Range
Numerator	Primary cases (elective patients:pre-intervention, emergency patients: post-intervention) who were presented in the tumour conference	202.5*	24 - 442
Denominator	Primary cases (= Indicator 1)	214*	110 - 613
Rate	Target value ≥ 95%	96.36%	20.87% - 100%

*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.



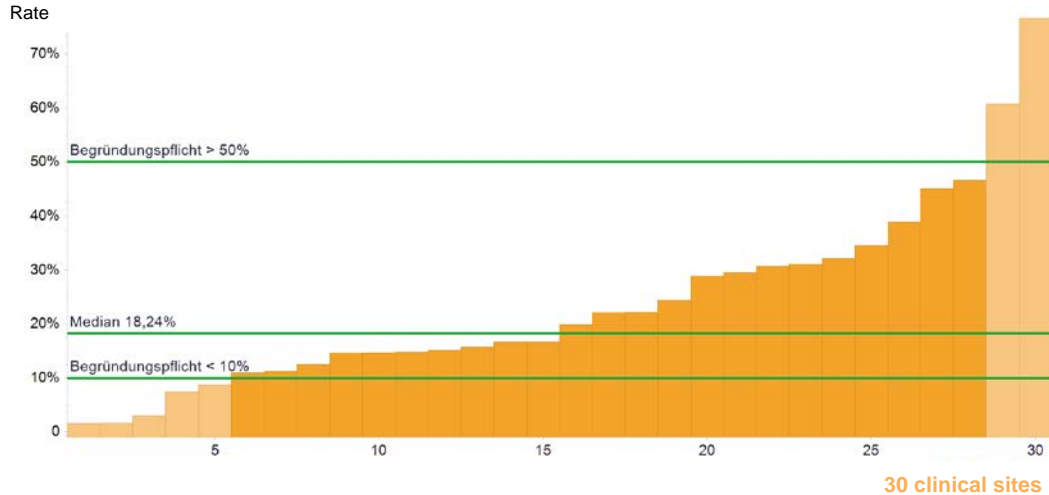
	2012	2013	2014	2015	2016
● Max	96.10%	100%	99.45%	100%	100%
95 th percentile	92.47%	99.40%	99.11%	99.91%	99.55%
75 th percentile	78.18%	97.55%	97.64%	97.71%	98.35%
Median	57.00%	96.59%	96.48%	96.02%	96.36%
25 th percentile	48.23%	86.88%	91.83%	86.46%	93.77%
5 th percentile	36.43%	63.17%	36.73%	39.84%	47.96%
● Min	35.05%	53.33%	16.23%	24.65%	20.87%

Clinical sites with evaluable data		Clinical sites meeting the target value	
Number	%	Number	%
30	100.00%	19	63.33%

Comments:

Continued, very good fulfilment of the indicator over the course of time 12 Centres recorded an increase in the presentation rate compared with the previous year. 11 Centres did not meet the target value. The reasons for this were the still incomplete pre-operative presentation and the non-systematic presentation of primary case patients with benign results in a few Centres. The auditors once again made a series of remarks. Patients with an urgent surgical indication should be presented after surgery in the tumour conference. After optimising internal procedures, the Centre with the lowest rate already achieved a far better result in the course of 2017.

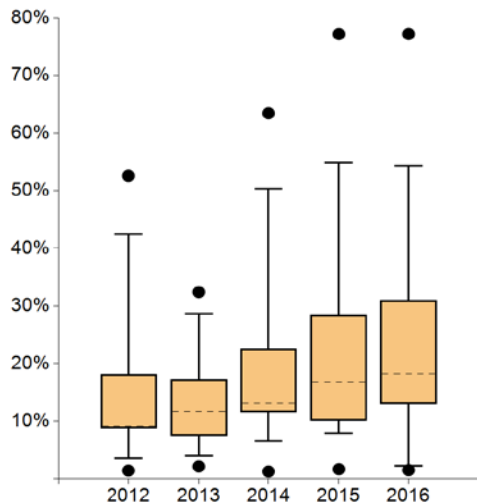
3. Psycho-oncological care



	Indicator definition	All clinical sites 2016	
		Median	Range
Numerator	Primary cases who received psycho-oncological care in an inpatient or outpatient setting (consultation ≥ 25 min)	45.5*	4 - 220
Denominator	Primary cases (= Indicator 1) and patients with recurrence	223.5*	110 - 829
Rate	Mandatory statement of reasons** < 10% and >50%	18.24%	1.52% - 77.19%

*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

** For values outside the plausibility limit(s) the Centres must give the reasons.



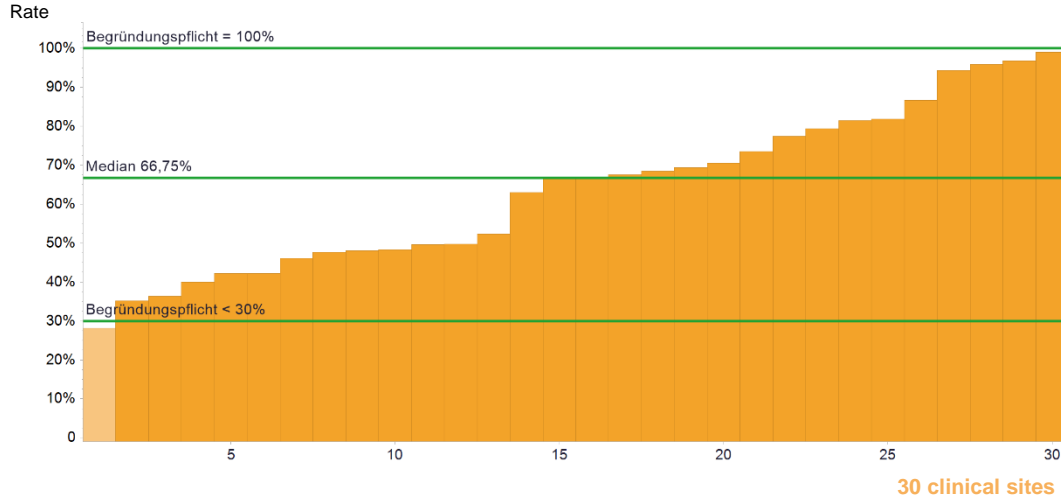
	2012	2013	2014	2015	2016
● Max	52.59%	32.42%	63.45%	77.18%	77.19%
95 th percentile	42.47%	28.58%	50.31%	54.83%	54.36%
75 th percentile	18.12%	17.21%	22.60%	28.36%	31.00%
Median	9.19%	11.72%	13.19%	16.75%	18.24%
25 th percentile	8.82%	7.48%	11.60%	10.11%	13.03%
5 th percentile	3.57%	4.11%	6.58%	7.89%	2.26%
● Min	1.44%	2.16%	1.28%	1.68%	1.52%

Clinical sites with evaluable data		Clinical sites within the plausibility limits	
Number	%	Number	%
30	100.00%	23	76.67%

Comments:

The median continues to rise over the course of time. 15 Centres were able to increase psycho-oncological counselling compared with the previous year; only 5 Centres were below the lower plausibility limit (= counselling rate <10%). The reasons given by the Centres for the low counselling rates are: limited uptake by patients, a high proportion of benign tumours with limited need for psycho-oncological counselling, no indications in the case of normal screening results, and a lack of depictability of outpatient treatment. The auditors once again made a series of remarks.

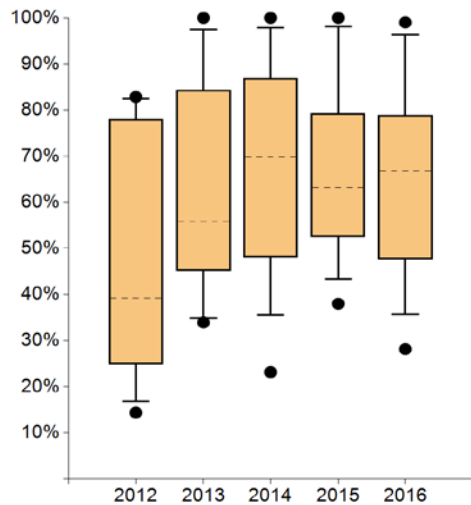
4. Counselling social services



	Indicator definition	All clinical sites 2016	
		Median	Range
Numerator	Primary cases who received counselling by social services in an inpatient or outpatient setting	139.5*	57 - 795
Denominator	Primary cases (= Indicator 1) and patients with recurrence	223.5*	110 - 829
Rate	Mandatory statement of reasons** < 30% and =100%	66.75%	28.14% - 99.01%

*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

** For values outside the plausibility limit(s) the Centres must give the reasons.



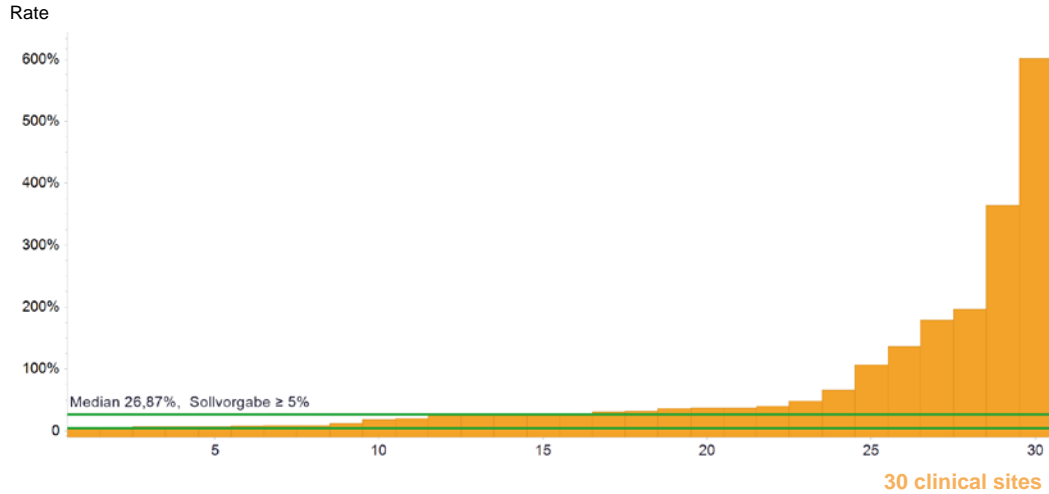
	2012	2013	2014	2015	2016
● Max	82.85%	100%	100%	100%	99.01%
95 th percentile	82.54%	97.44%	97.89%	98.06%	96.35%
75 th percentile	78.02%	84.32%	86.91%	79.37%	78.87%
Median	39.19%	55.87%	69.77%	63.22%	66.75%
25 th percentile	24.99%	45.18%	48.03%	52.49%	47.72%
5 th percentile	16.86%	34.91%	35.54%	43.33%	35.70%
● Min	14.36%	33.93%	23.14%	37.99%	28.14%

Clinical sites with evaluable data		Clinical sites within the plausibility limits	
Number	%	Number	%
30	100.00%	29	96.67%

Comments:

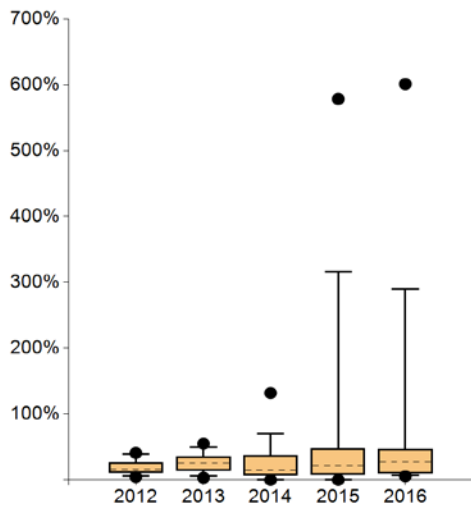
Ongoing good fulfilment of the indicator in the Centres One Centre was below the lower plausibility limit (= social services counselling rate < 30%); this Centre received its initial certification in 2016 and developed an action plan to improve the counselling rate. 13 Centres were able to maintain or increase their counselling rate compared with the previous year.

5. Study participation



	Indicator definition	All clinical sites 2016	
		Median	Range
Numerator	All patients (malignant and benign) included in a study with an ethic vote	31*	3 - 565
Denominator	Malignant primary cases	89*	44 - 174
Rate	Target value $\geq 5\%$	26.87%	5.61% - 601.06%

*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.



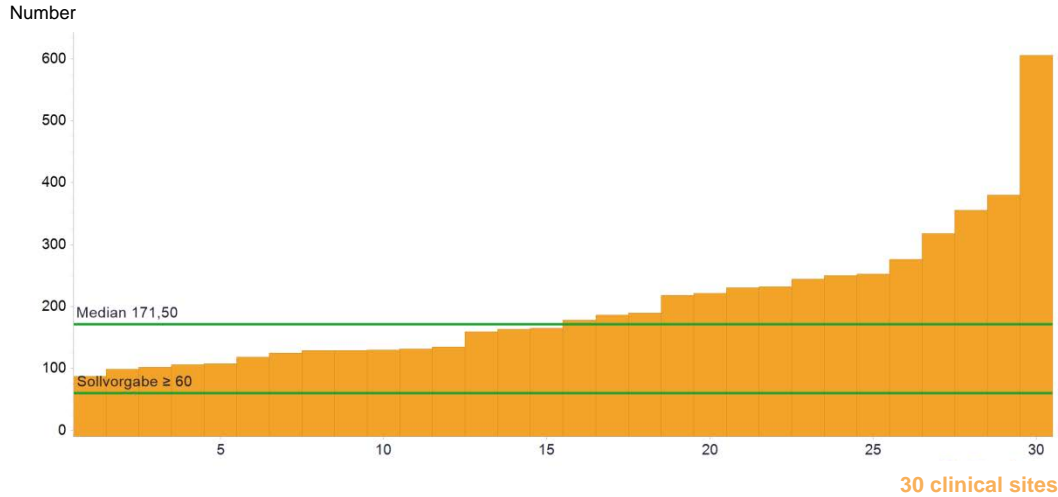
	2012	2013	2014	2015	2016
Max	40.81%	54.95%	131.94%	578.26%	601.06%
95 th percentile	39.00%	49.17%	70.11%	316.37%	288.98%
75 th percentile	26.69%	35.97%	37.51%	47.95%	46.20%
Median	15.90%	25.01%	14.89%	21.75%	26.87%
25 th percentile	10.66%	14.16%	6.51%	8.14%	9.62%
5 th percentile	5.79%	5.79%	0.00%	0.33%	6.44%
Min	4.57%	3.17%	0.00%	0.00%	5.61%

Clinical sites with evaluable data		Clinical sites meeting the target value	
Number	%	Number	%
30	100.00%	30	100.00%

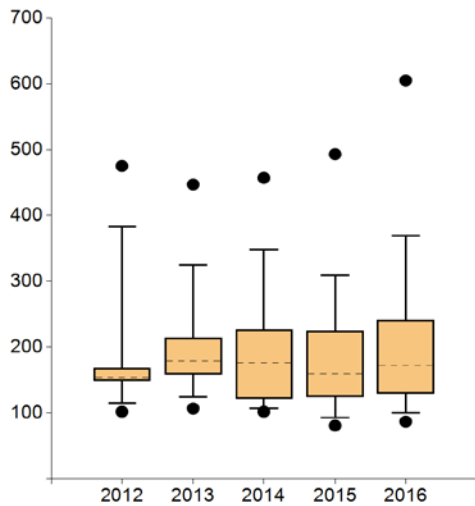
Comments:

Further increase in the median over the course of time All Centres met the target value. The 3 Centres that failed to meet the target value the previous year were able to markedly increase their study inclusion rate in 2016. Centres with particularly high study rates achieved this by including patients in several studies (e.g. biobanking and observational studies of quality of life and psychosocial support needs).

6a. Surgical primary cases



	Indicator definition	All clinical sites 2016	
		Median	Range
Number	Surgical primary cases def. in line with 5.2.3.a	171.5	87 - 605
	Target value ≥ 60		



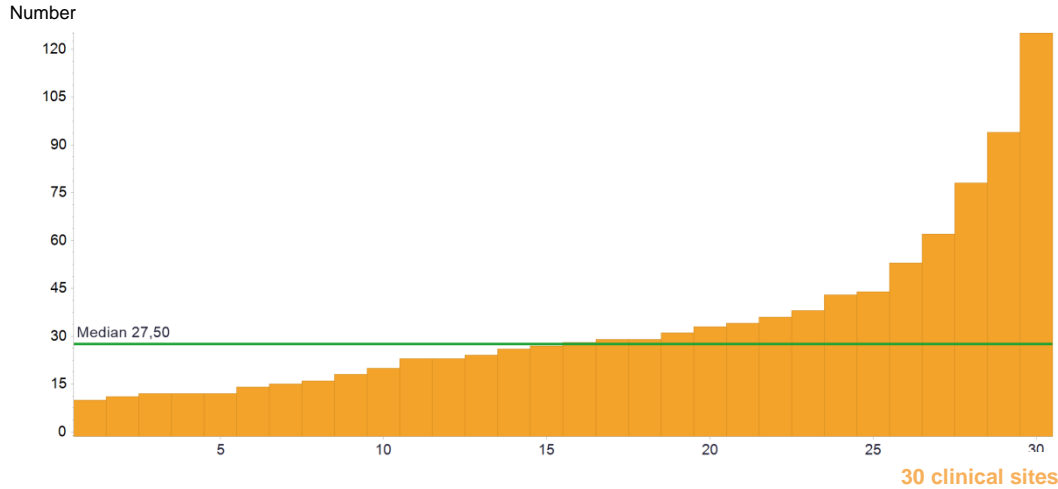
	2012	2013	2014	2015	2016
● Max	475.00	447.00	457.00	493.00	605.00
95 th percentile	383.20	324.35	348.10	308.35	368.75
75 th percentile	168.00	214.25	226.00	224.50	241.00
Median	154.00	179.50	176.00	159.50	171.50
25 th percentile	148.50	158.25	121.50	124.25	129.00
5 th percentile	115.20	124.60	106.50	92.90	100.35
● Min	102.00	107.00	102.00	81.00	87.00

Clinical sites with evaluable data		Clinical sites meeting the target value	
Number	%	Number	%
30	100.00%	30	100.00%

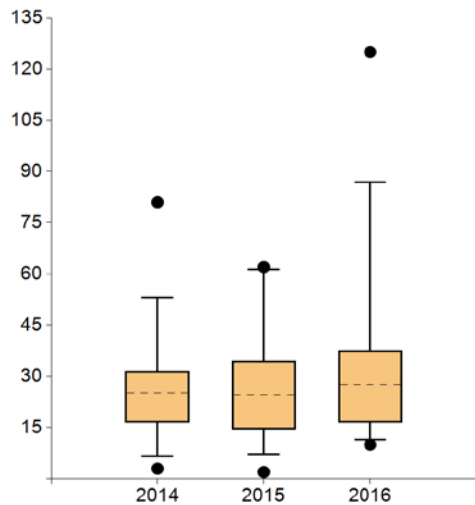
Comments:

Ongoing good fulfilment of the requirement in the Centres All Centres meet the target value of 60 surgical primary cases during the year. In the 6 Centres that received their initial certification in 2016/2017, a median of 175 surgical primary cases were treated (n=1,195 in total). As all Centres meet the target value, no explanatory remarks have been provided by the Centres about the results.

6b. Biopsy



	Indicator definition	All clinical sites 2016	
		Median	Range
Number	Biopsies def. in line with 5.2.3b	27.5	10 - 125
	No target value		



	2012	2013	2014	2015	2016
● Max	-----	-----	81.00	62.00	125.00
95 th percentile	-----	-----	53.10	61.25	86.80
75 th percentile	-----	-----	31.50	34.50	37.50
Median	-----	-----	25.00	24.50	27.50
25 th percentile	-----	-----	16.50	14.50	16.50
5 th percentile	-----	-----	6.60	7.15	11.45
● Min	-----	-----	3.00	2.00	10.00

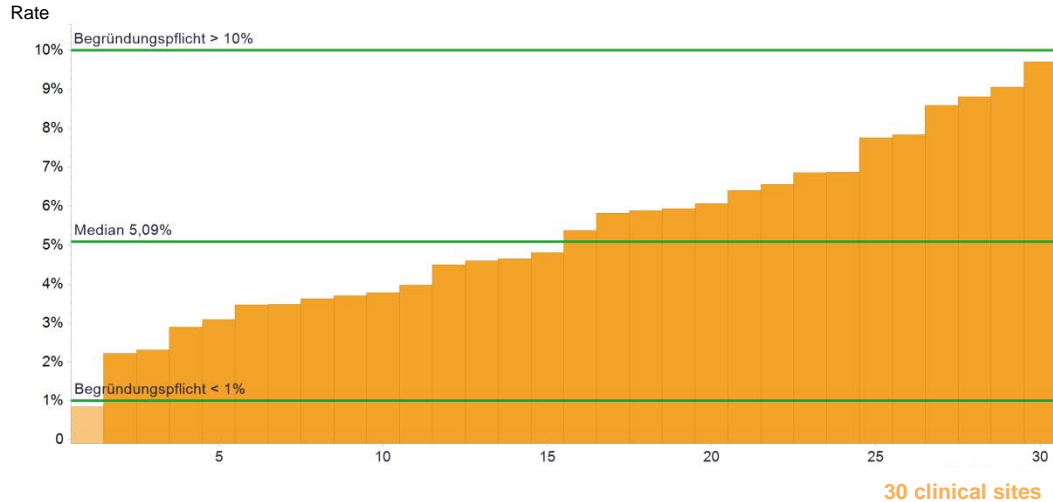
Clinical sites with evaluable data		Clinical sites meeting the target value	
Number	%	Number	%
30	100.00%	-----	-----

Comments:

Continuing stable implementation in the Centres, coupled with a sharp increase in the maximum value as a consequence of the major increase in the number of biopsies in one Centre.

In the 6 Centres that received their initial certification in 2016/2017, a median of 30 biopsies (in line with OPS classification 1-1510. - 1-512.; 1-514 - 1-515) were conducted (n=233 biopsies in total).

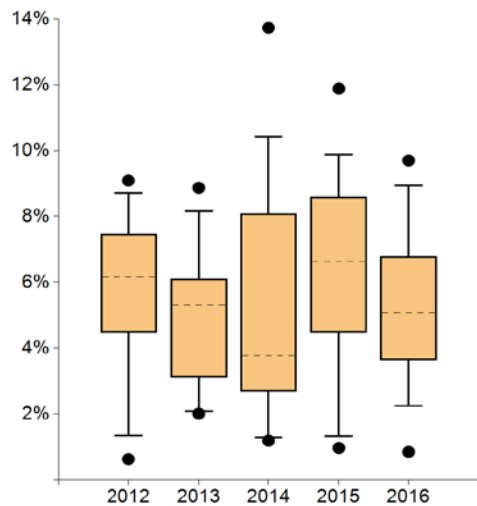
7a. Revision surgeries



	Indicator definition	All clinical sites 2016	
		Median	Range
Numerator	Revision surgeries as a consequence of post-surgical complications within 30d after surgery (for surgical primary cases)	10*	2 - 21
Denominator	Surgical primary cases (= Indicator 6a)	171.5*	87 - 605
Rate	Mandatory statement of reasons** < 1% and >10%	5.09%	0.85% - 9.70%

*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

** For values outside the plausibility limit(s) the Centres must give the reasons.



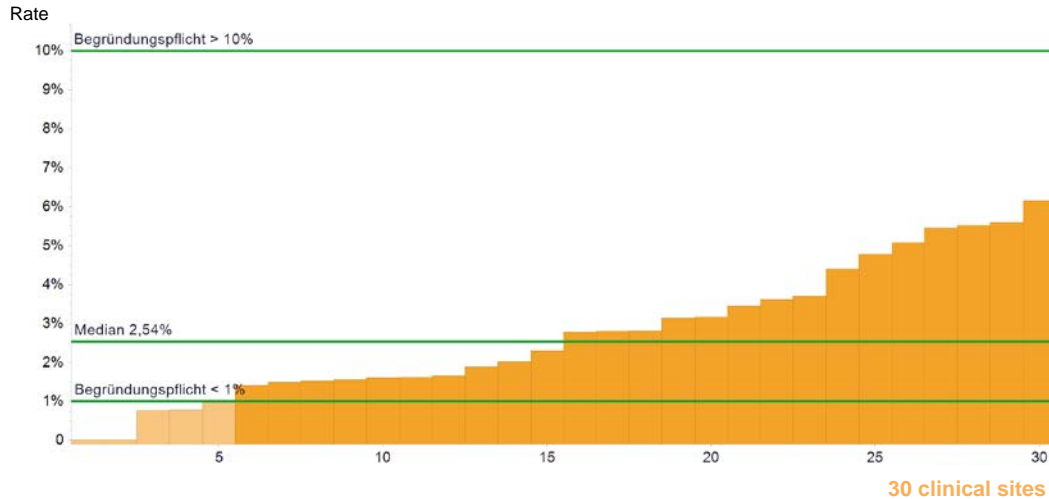
	2012	2013	2014	2015	2016
● Max	9.09%	8.87%	13.73%	11.88%	9.70%
95 th percentile	8.72%	8.17%	10.42%	9.87%	8.94%
75 th percentile	7.47%	6.10%	8.08%	8.58%	6.79%
Median	6.16%	5.31%	3.76%	6.63%	5.09%
25 th percentile	4.48%	3.13%	2.70%	4.47%	3.64%
5 th percentile	1.34%	2.09%	1.28%	1.31%	2.26%
● Min	0.63%	2.01%	1.19%	0.97%	0.85%

Clinical sites with evaluable data		Clinical sites within the plausibility limits	
Number	%	Number	%
30	100.00%	29	96.67%

Comments:

Improved implementation in the Centres compared with the previous year. 14 Centres were able to increase the rate of revision surgeries compared with the previous year. The Centre with the highest revision rate the previous year (11.88%) was able to considerably reduce this in audit year 2017. In the 6 Centres that received their initial certification in 2016/2017, the median of the revision rate was 4.75%. Revision surgeries are defined by the documentation of an OPS code and include liquor fistula requiring revision; second-look resections were not included in the numerator for this indicator.

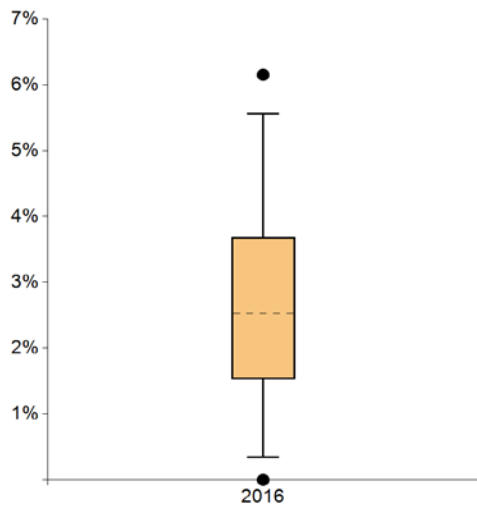
7b. Clinically symptomatic secondary bleeding



	Indicator definition	All clinical sites 2016	
		Median	Range
Numerator	If possible low rate of clinically symptomatic secondary bleeding Surgical primary cases with clinically symptomatic secondary bleeding (= new onset or worsening of an existing neurological disorder)	5*	0 - 15
Denominator	Surgical primary cases (= Indicator 6a)	171.5*	87 - 605
Rate	Mandatory statement of reasons** < 1% and >10%	2.54%	0.00% - 6.15%

*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

** For values outside the plausibility limit(s) the Centres must give the reasons.



	2012	2013	2014	2015	2016
● Max	----	----	----	----	6.15%
95 th percentile	----	----	----	----	5.56%
75 th percentile	----	----	----	----	3.68%
Median	----	----	----	----	2.54%
25 th percentile	----	----	----	----	1.54%
5 th percentile	----	----	----	----	0.35%
● Min	----	----	----	----	0.00%

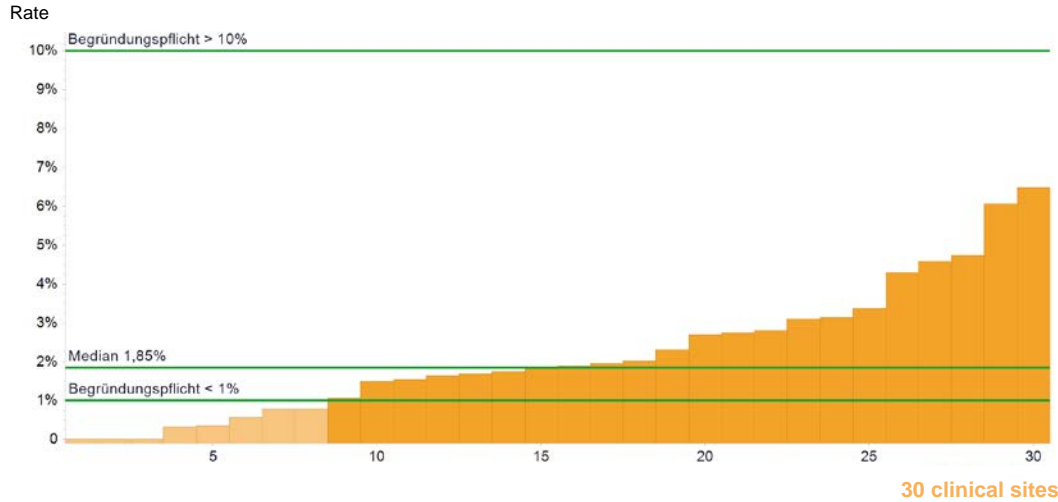
Clinical sites with evaluable data		Clinical sites within the plausibility limits	
Number	%	Number	%
30	100.00%	25	83.33%

Comments:

The indicator was introduced for the first time in 2016 in order to record the rate of clinically symptomatic secondary bleeding separately from postoperative complications requiring revision. The secondary bleeding rate in all Centres was <7%.

25 Centres indicated a decrease in the rate of symptomatic secondary bleeding < 5%. A median of 5 patients per Centre with clinically symptomatic secondary bleeding was recorded.

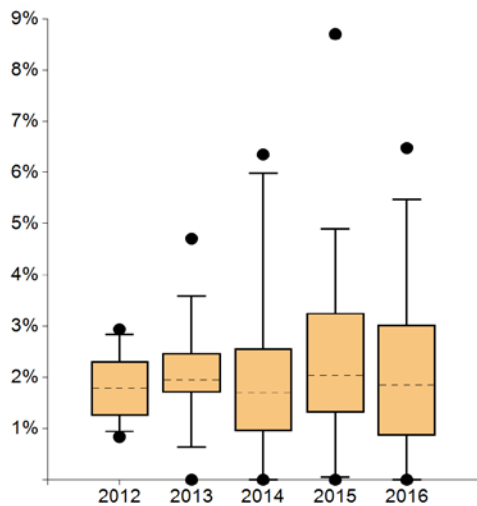
8. Post-surgical wound infections



	Indicator definition	All clinical sites 2016	
		Median	Range
Numerator	Surgical primary cases with post-surgical meningitis confirmed by laboratory tests and/or a wound infection requiring surgical revision within 30d of surgery	2.5*	0 - 19
Denominator	Surgical primary cases (= Indicator 6a)	171.5*	87 - 605
Rate	Mandatory statement of reasons** < 1% and >10%	1.85%	0.00% - 6.48%

*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

** For values outside the plausibility limit(s) the Centres must give the reasons.



	2012	2013	2014	2015	2016
● Max	2.94%	4.71%	6.35%	8.70%	6.48%
95 th percentile	2.84%	3.59%	5.98%	4.90%	5.47%
75 th percentile	2.32%	2.47%	2.57%	3.26%	3.03%
Median	1.79%	1.95%	1.70%	2.04%	1.85%
25 th percentile	1.25%	1.71%	0.96%	1.32%	0.86%
5 th percentile	0.94%	0.64%	0.00%	0.05%	0.00%
● Min	0.84%	0.00%	0.00%	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites within the plausibility limits	
Number	%	Number	%
30	100.00%	22	73.33%

Comments:

Fall in the median and maximum value over time The numerator definition of this indicator was specified for the audit year 2017. In 11 Centres the rate of postoperative wound infections of 0% could be maintained or in other cases further reduced. The auditors once again advised the systematic recording of postoperative complications; this is implemented for instance through SOPs. The Centre with the highest rate of postoperative wound infections the previous year was able to considerably reduce this in audit year 2017.

WISSEN AUS ERSTER HAND (FIRST-HAND KNOWLEDGE)



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Authors

German Cancer Society (DKG)
Certification Committee for Neuro-oncology Cancer Centres
Uwe Schlegel, Spokesman Certification Committee
Walter Stummer, Deputy Spokesman Certification Committee
Simone Wesselmann, German Cancer Society (DKG)
Christoph Kowalski, German Cancer Society (DKG)
Jumana Mensah, German Cancer Society (DKG)
Ellen Griesshammer, German Cancer Society (DKG)
Julia Ferencz, OnkoZert GmbH

Imprint

Publisher and responsible for content:
Deutsche Krebsgesellschaft (DKG)
Kuno-Fischer-Straße 8
14057 Berlin
Tel.: +49 (030) 322 93 29 0
Fax: +49 (030) 322 93 29 66
Vereinsregister Amtsgericht Charlottenburg,
Vereinsregister-Nr.: VR 27661 B
V.i.S.d.P.: Dr. Johannes Bruns

in cooperation with:
OnkoZert, Neu-Ulm
www.onkozert.de

Version e-A1-en; status 22.03.2018

ISBN: 978-3-946714-79-8

