



Indicator Analysis 2019

Annual Report of the Certified Neuro-oncology Cancer Centres

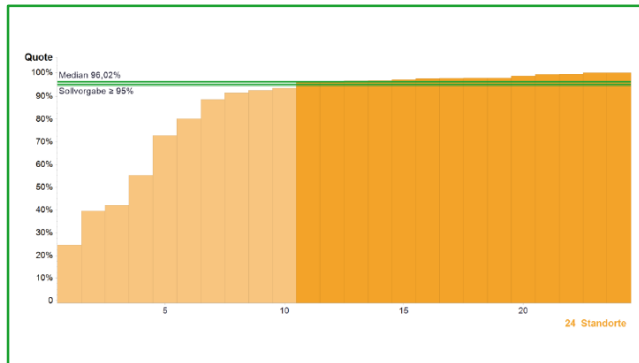
Audit year 2018 / Indicator year 2017

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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.

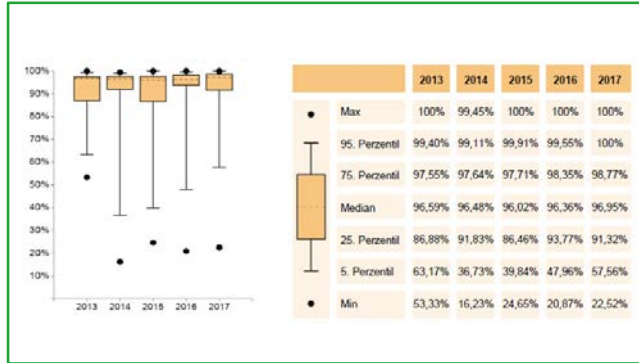
The values for the numerators, populations and rates of all Centres are given under range.

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.

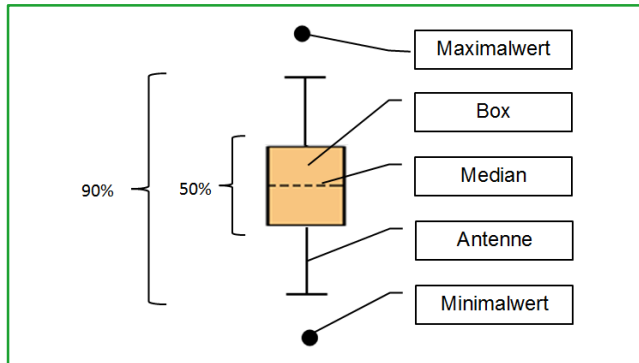


General information



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

	31.12.2018	31.12.2017	31.12.2016	31.12.2015	31.12.2014	31.12.2013
Ongoing procedures	2	5	8	4	5	6
Certified Centres	38	32	26	21	15	7
Certified clinical sites	39	33	27	22	16	8
Neuro-oncology Cancer Centres with						
1 clinical site	37	31	25	20	14	6
2 clinical sites	1	1	1	1	1	1
3 clinical sites	0	0	0	0	0	0
4 clinical sites	0	0	0	0	0	0

Clinical sites taken into account

	31.12.2018	31.12.2017	31.12.2016	31.12.2015	31.12.2014	31.12.2013
Clinical sites included in the Annual Report	38	30	24	19	12	7
equivalent to	97.4%	90.9%	88.9%	86.4%	75.0%	87.5%
Primary cases total*	8,820	7,219	5,067	3,952	2,498	1,526
Primary cases per clinical site (mean)*	232.1	240.6	211.1	208	208.2	218
Primary cases per clinical site (median)*	214	214	202.5	213	196,5	175

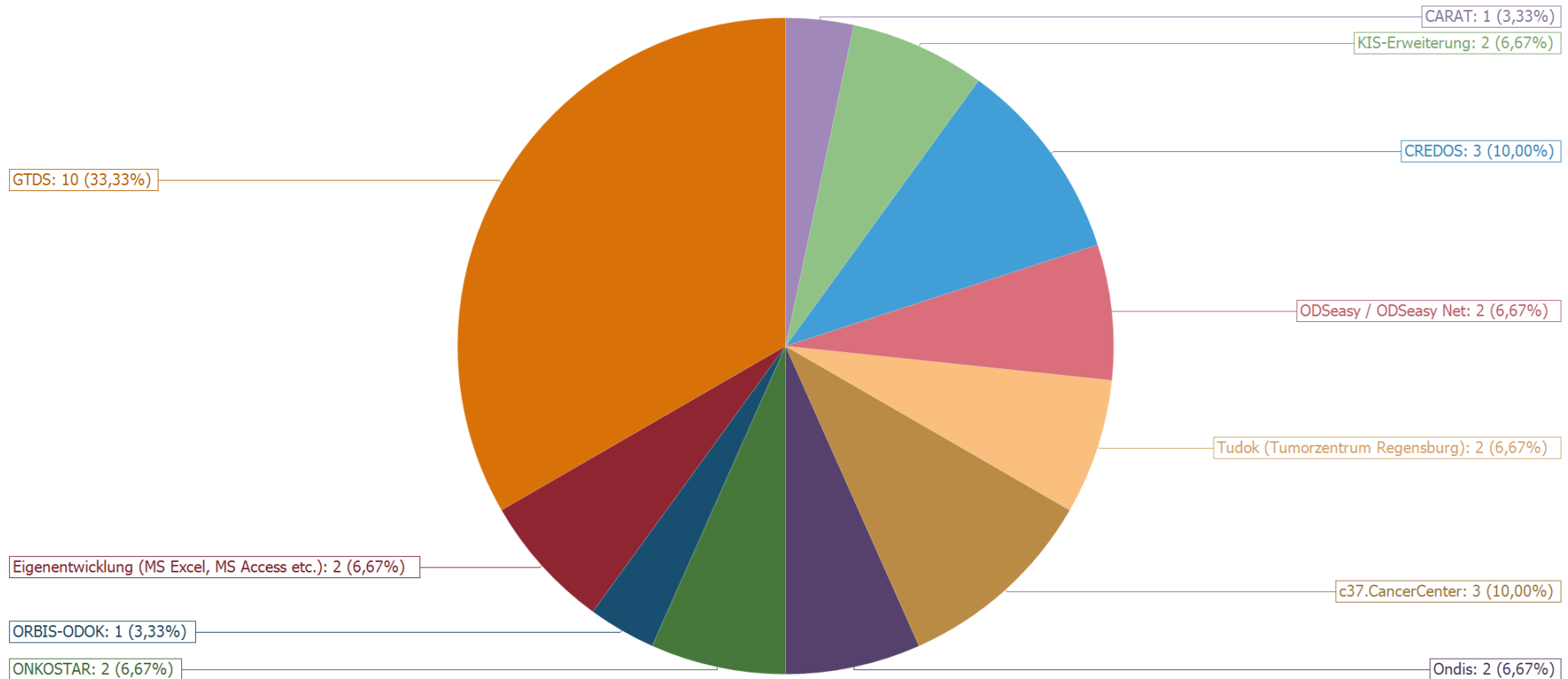
*The figures are based on the clinical sites listed in the Annual Report.

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.

38 out of the 39 certified clinical sites of the Centres are included in the Annual Report. 1 clinical site, certified for the first time in 2018, 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 2017. They are the assessment basis for the audits conducted in 2018.

Tumour documentation systems in the Centre's clinical sites

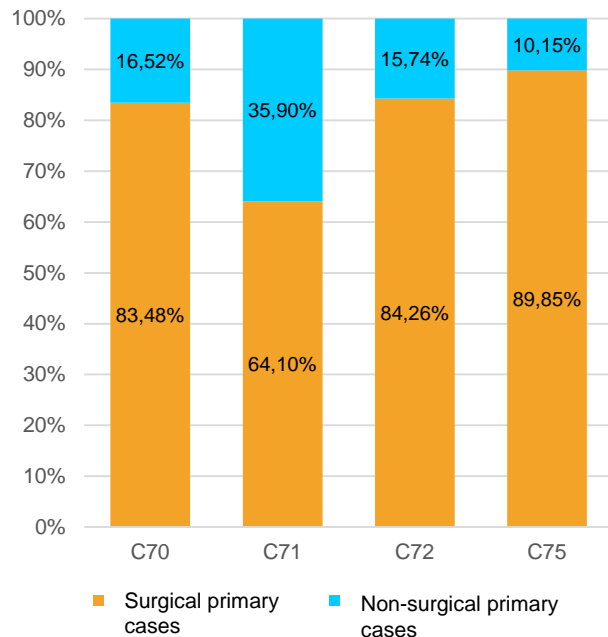


The details on the tumour documentation system were taken from the EXCEL annex to the Data Sheet (Basic Data spread sheet). It is not possible to indicate several systems. In many cases support is provided by the cancer registers or there may be a direct connection to the cancer register via a specific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

Basic data – Stage distribution primary cases

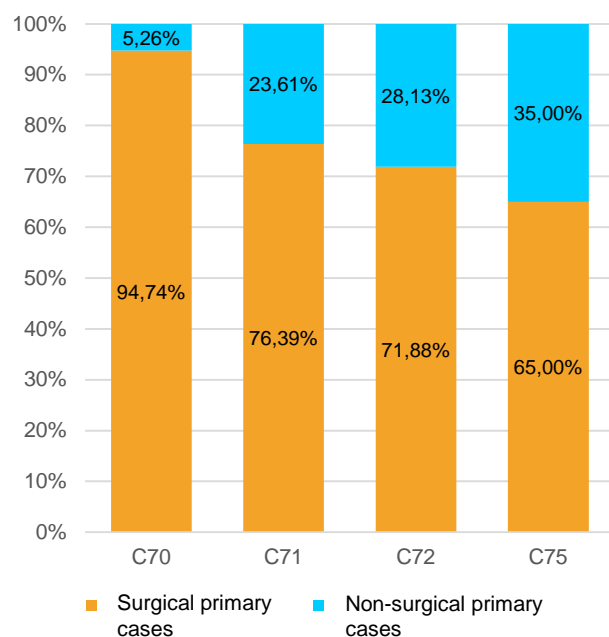
Benign neoplasm

(ICD-O-3 Morphology: .../0)



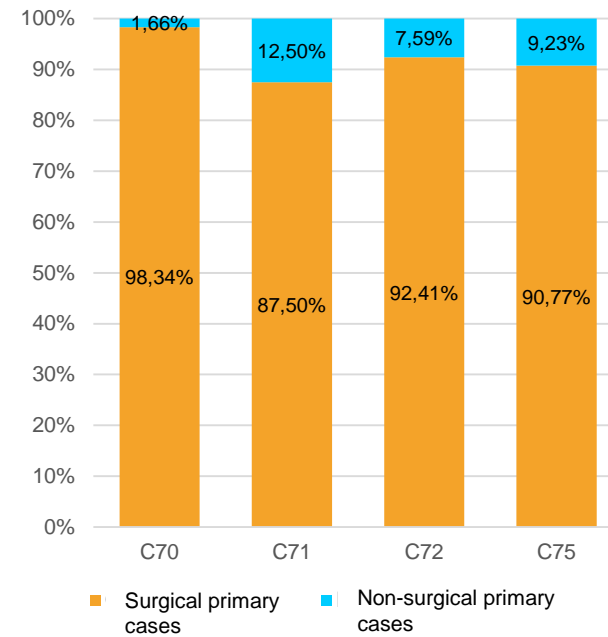
Malignant neoplasms

(ICD-O-3 Morphology: .../3)



Unclear behaviour

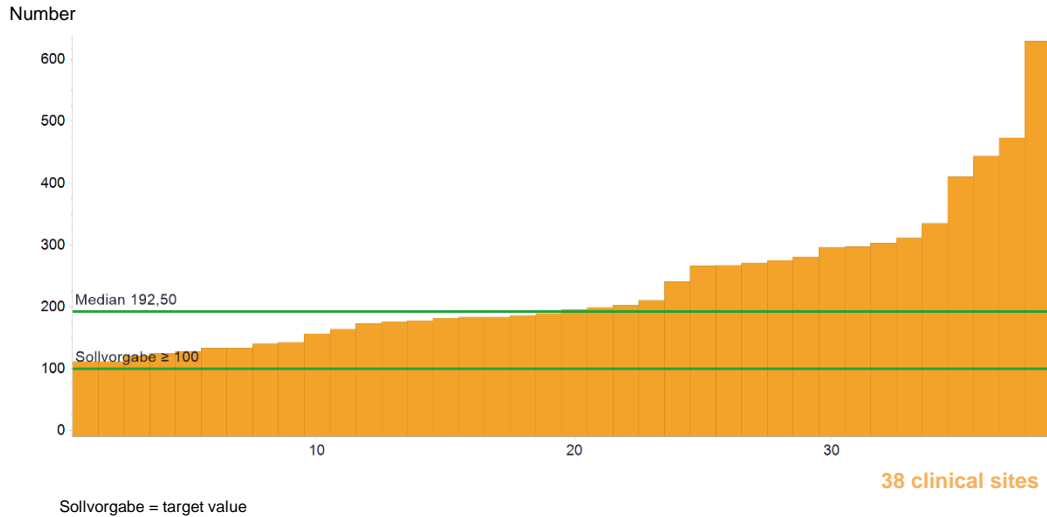
(ICD-O-3 Morphology: .../1)



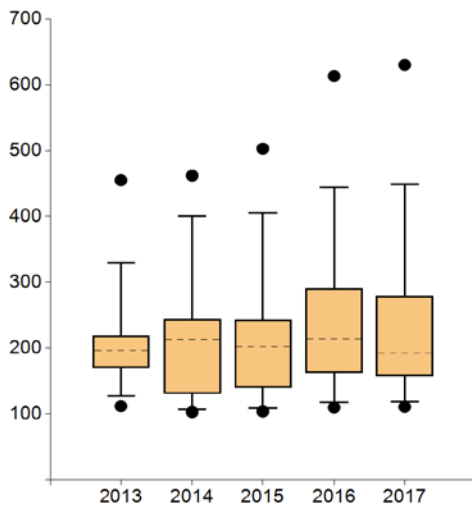
	Benign neoplasms (ICD-O-3 Morphology: .../0)				Malignant neoplasms (ICD-O-3 Morphology: .../3)				Uncertain growth behaviour (ICD-O-3 Morphology: .../1)				Total
	C70	C71	C72	C75	C70	C71	C72	C75	C70	C71	C72	C75	
Non-surgical	433 (16.52%)	70 (35.90%)	136 (15.74%)	110 (10.15%)	2 (5.26%)	732 (23.61%)	36 (28.13%)	7 (35.00%)	6 (1.66%)	33 (12.50%)	6 (7.59%)	6 (9.23%)	1,577
Surgical	2,188 (83.48%)	125 (64.10%)	728 (84.26%)	974 (89.85%)	36 (94.74%)	2,369 (76.39%)	92 (71.88%)	13 (65.00%)	355 (98.34%)	231 (87.50%)	73 (92.41%)	59 (90.77%)	7,243
Primary cases total	2,621 (100%)	195 (100%)	864 (100%)	1,084 (100%)	38 (100%)	3,101 (100%)	128 (100%)	20 (100%)	361 (100%)	264 (100%)	79 (100%)	65 (100%)	8,820

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 2017		
		Median	Range	Patients Total
Number	Primary cases def. in line with 1.2.1	192,5	111 - 630	8,820
	Target value ≥ 100			



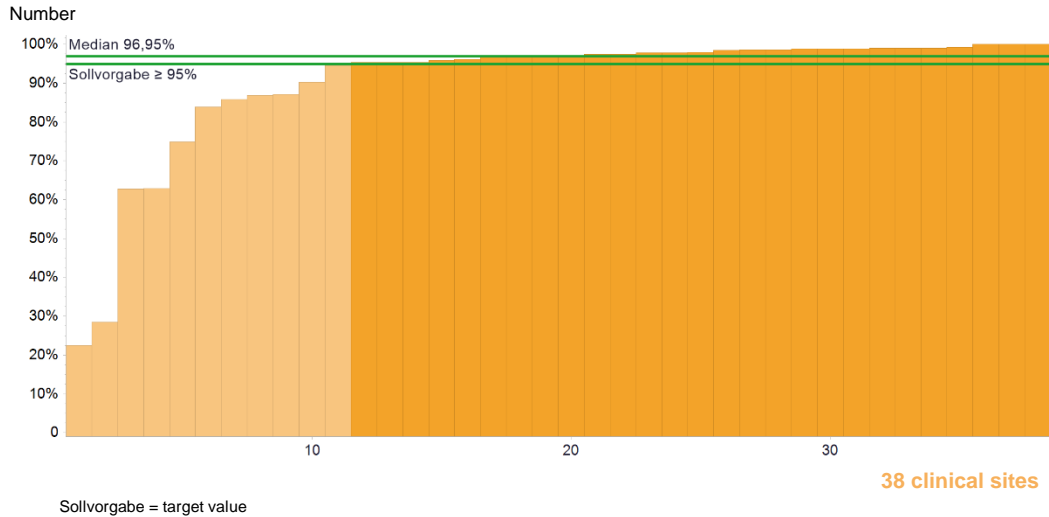
	2013	2014	2015	2016	2017
● Max	455.00	462.00	503.00	613.00	630.00
95 th percentile	329.05	400.80	405.20	444.25	448.35
75 th percentile	219.00	243.50	243.25	290.25	279.50
Median	196.50	213.00	202.50	214.00	192.50
25 th percentile	170.00	130.50	139.75	162.00	158.00
5 th percentile	126.85	106.60	108.75	118.15	118.65
● Min	112.00	103.00	104.00	110.00	111.00

Clinical sites with evaluable data		Clinical sites meeting the target value	
Number	%	Number	%
38	100.00%	38	100.00%

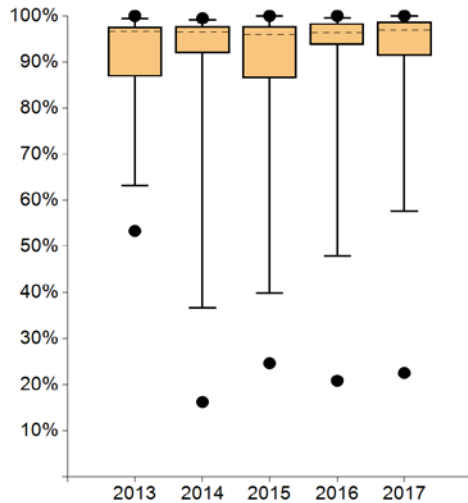
Comments:

All Centres met the minimum target in indicator year 2017. 21 Centres were able to maintain or increase the number of their primary cases compared to the previous year. In total, 8,972 patients with the initial diagnosis of a brain tumour were treated in Neuro-Oncology Centres (NOCs) in 2017 (including 1 Centre that was not included in the annual report. 8,790 of these patients were treated in Centres in Germany. Based on cancer registry data on incidence from North Rhine-Westphalia and in relation to the total German population (Federal Statistics Office - Statistisches Bundesamt), this corresponded to a share of 56.4% incidence cases that were treated in indicator year 2017 in NOCs.

2. Interdisciplinary case reviews



	Indicator definition	All clinical sites 2017		
		Median	Range	
Numerator	Primary cases (elective patients: pre-intervention, emergency patients: post-intervention) who were presented in the tumour conference	185.5*	25 - 614	8,014
Denominator	Primary cases (= Indicator 1)	192.5*	111 - 630	8,820
Rate	Target value ≥ 95%	96.95%	22.52% - 100%	90.86%**



	2013	2014	2015	2016	2017
● Max	100%	99.45%	100%	100%	100%
95 th percentile	99.40%	99.11%	99.91%	99.55%	100%
75 th percentile	97.55%	97.64%	97.71%	98.35%	98.77%
Median	96.59%	96.48%	96.02%	96.36%	96.95%
25 th percentile	86.88%	91.83%	86.46%	93.77%	91.32%
5 th percentile	63.17%	36.73%	39.84%	47.96%	57.56%
● Min	53.33%	16.23%	24.65%	20.87%	22.52%

Clinical sites with evaluable data		Clinical sites meeting the target value	
Number	%	Number	%
38	100.00%	27	71.05%

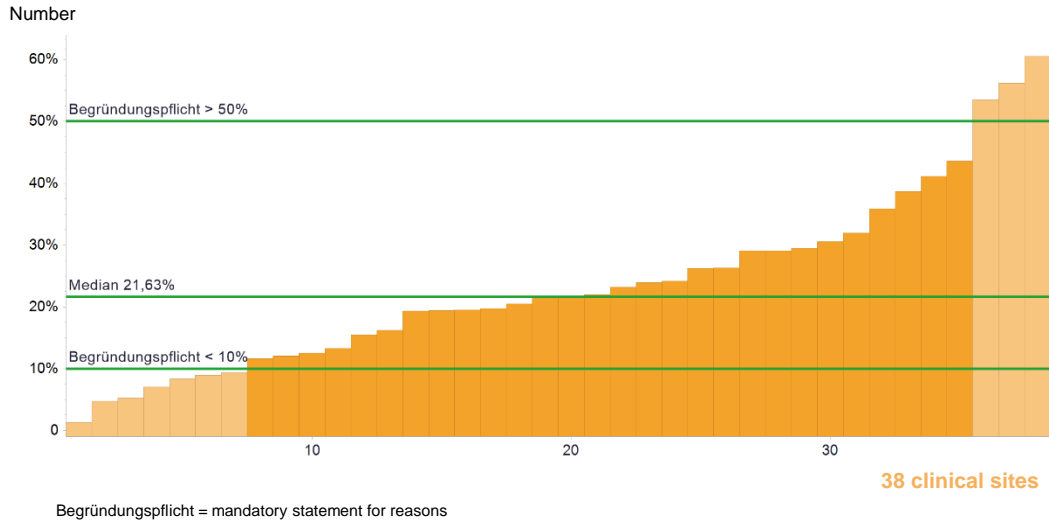
Comments:

11 Centres failed to meet the target value, including 4 Centres with initial certification in 2017 for which the process of pre-therapeutic presentation had still not been fully put in place at the time of the audit. These Centres were able to improve their results in indicator year 2018. The reasons given by the Centres for the low presentation rates were: benign tumours/tumours not requiring adjuvant therapy, presentation in external tumour conferences (e.g. epilepsy board), no tumour conference referral arising from special consultation appointments. The auditors made remarks, in particular about the pre-therapeutic presentation of elective patients. The Centres carried out staff training, introduced SOPs on tumour conference referral, and discussed the SOPs in quality circles to improve their results.

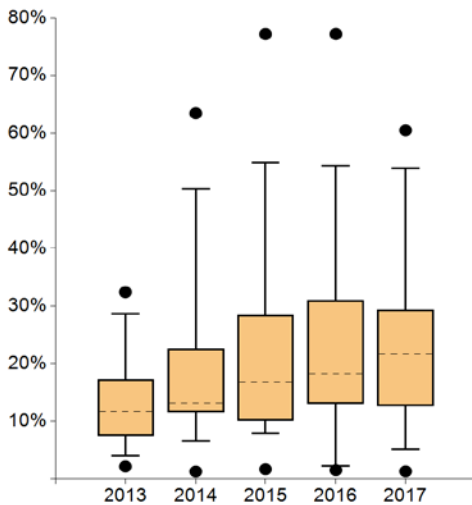
*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

** Percentage of centre patients who were treated according to the indicator.

3. Psycho-oncological care



	Indicator definition	All clinical sites 2017		
		Median	Range	Patients Total
Numerator	Primary cases who received psycho-oncological care in an inpatient or outpatient setting (consultation ≥ 25 min)	48*	2 - 177	2,203
Denominator	Primary cases (= Indicator 1) and patients with recurrence	216*	124 - 788	10,130
Rate	Mandatory statement of reasons*** < 10% and >50%	21,63%	1,31% - 60,49%	21,75%**



	2013	2014	2015	2016	2017
● Max	32.42%	63.45%	77.18%	77.19%	60.49%
95 th percentile	28.58%	50.31%	54.83%	54.36%	53.87%
75 th percentile	17.21%	22.60%	28.36%	31.00%	29.37%
Median	11.72%	13.19%	16.75%	18.24%	21.63%
25 th percentile	7.48%	11.60%	10.11%	13.03%	12.68%
5 th percentile	4.11%	6.58%	7.89%	2.26%	5.16%
● Min	2.16%	1.28%	1.68%	1.52%	1.31%

Clinical sites with evaluable data		Clinical sites within the plausibility limits	
Number	%	Number	%
38	100.00%	28	73.68%

Comments:

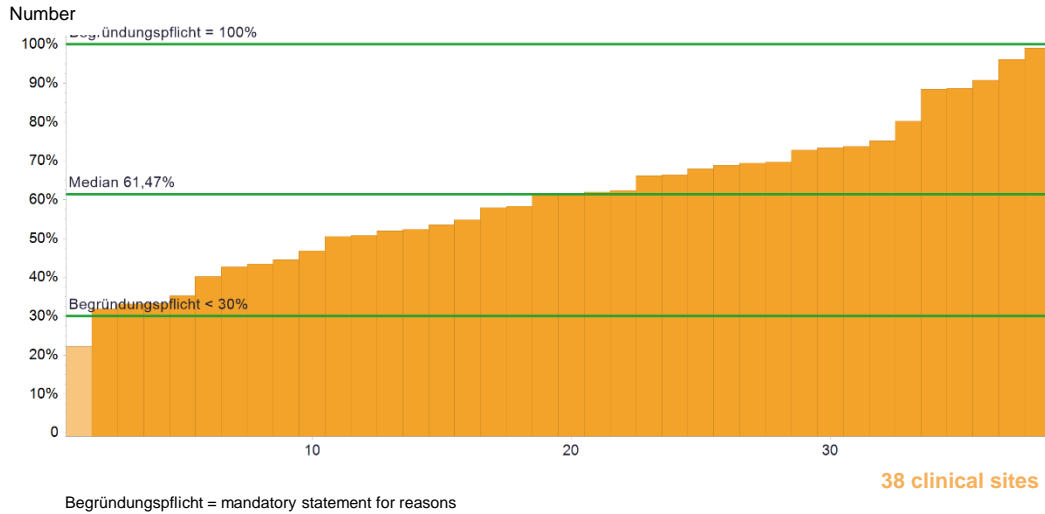
The median for the indicator again rose compared to the previous year and the maximum value fell. 15 Centres were able to increase their psycho-oncological counselling rate compared to the previous year. 7 Centres had a low counselling rate (<10%) requiring substantiation in indicator year 2017. The reasons given by the Centres with low counselling rates were a high proportion of benign tumours with a limited need for psycho-oncological counselling, documentation difficulties and staff bottlenecks. The auditors once again made a series of remarks and formulated one deviation.

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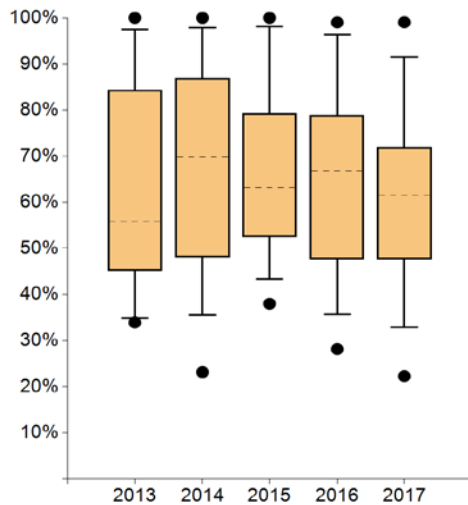
** Percentage of centre patients who were treated according to the indicator.

*** If value is outside the plausibility corridor, centres have to give an explanation.

4. Counselling social services



	Indicator definition	All clinical sites 2017		
		Median	Range	Patients Total
Numerator	Primary cases who received counselling by social services in an inpatient or outpatient setting	129*	48 - 757	6,165
Denominator	Primary cases (= Indicator 1) and patients with recurrence	216*	124 - 788	10,130
Rate	Mandatory statement of reasons*** < 30% and =100%	61.47%	22.26% - 99.04%	60.86%**



	2013	2014	2015	2016	2017
● Max	100%	100%	100%	99.01%	99.04%
95 th percentile	97.44%	97.89%	98.06%	96.35%	91.51%
75 th percentile	84.32%	86.91%	79.37%	78.87%	71.95%
Median	55.87%	69.77%	63.22%	66.75%	61.47%
25 th percentile	45.18%	48.03%	52.49%	47.72%	47.74%
5 th percentile	34.91%	35.54%	43.33%	35.70%	32.92%
● Min	33.93%	23.14%	37.99%	28.14%	22.26%

Clinical sites with evaluable data		Clinical sites within the plausibility limits	
Number	%	Number	%
38	100.00%	37	97.37%

Comments:

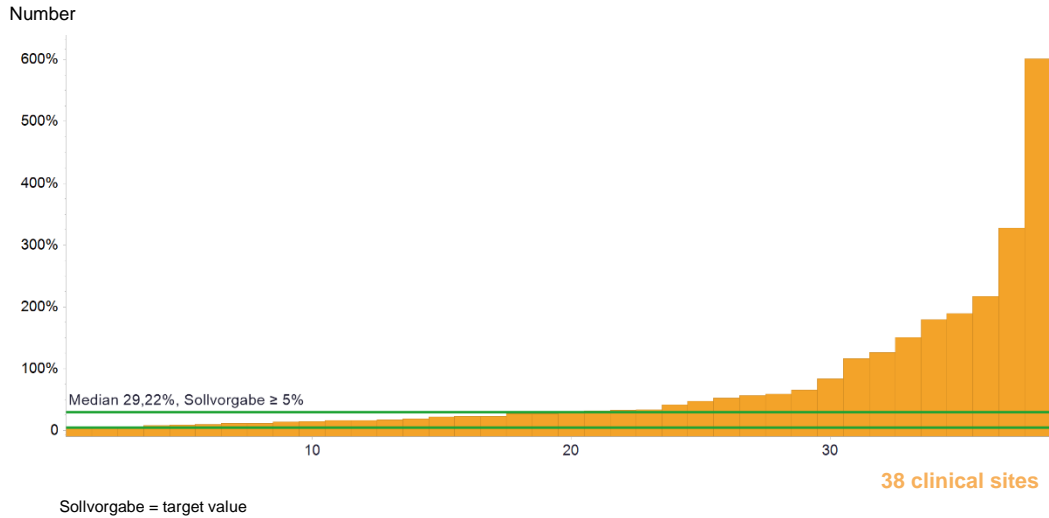
The indicator was implemented well in an ongoing manner over the course of time with a slightly lower median and minimum value in indicator year 2017. In indicator year 2017 all Centres had a social services counselling rate of >30%. 13 Centres were able to increase their counselling rate compared to the previous year.

*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.

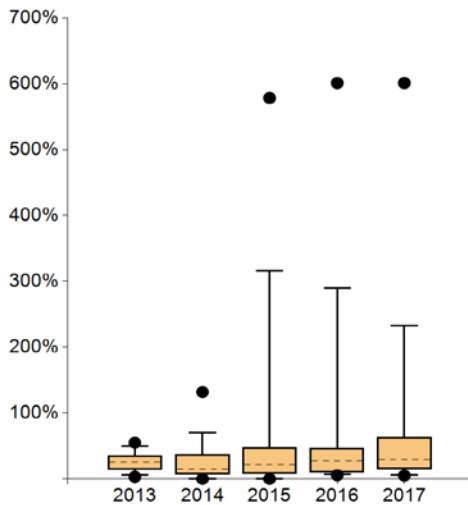
** Percentage of centre patients who were treated according to the indicator.

*** If value is outside the plausibility corridor, centres have to give an explanation.

5. Study participation



	Indicator definition	All clinical sites 2017		
		Median	Range	Patients Total
Numerator	All patients (malignant and benign) included in a study with an ethic vote	19*	4 - 553	2,741
Denominator	Malignant primary cases	78.5*	38 - 169	3,287
Rate	Target value ≥ 5%	29.22%	5.04% - 601.09%	83.39%**



	2013	2014	2015	2016	2017
Max	54.95%	131.94%	578.26%	601.06%	601.09%
95 th percentile	49.17%	70.11%	316.37%	288.98%	233.18%
75 th percentile	35.97%	37.51%	47.95%	46.20%	63.76%
Median	25.01%	14.89%	21.75%	26.87%	29.22%
25 th percentile	14.16%	6.51%	8.14%	9.62%	14.95%
5 th percentile	5.79%	0.00%	0.33%	6.44%	6.19%
Min	3.17%	0.00%	0.00%	5.61%	5.04%

Clinical sites with evaluable data		Clinical sites meeting the target value	
Number	%	Number	%
38	100.00%	38	100.00%

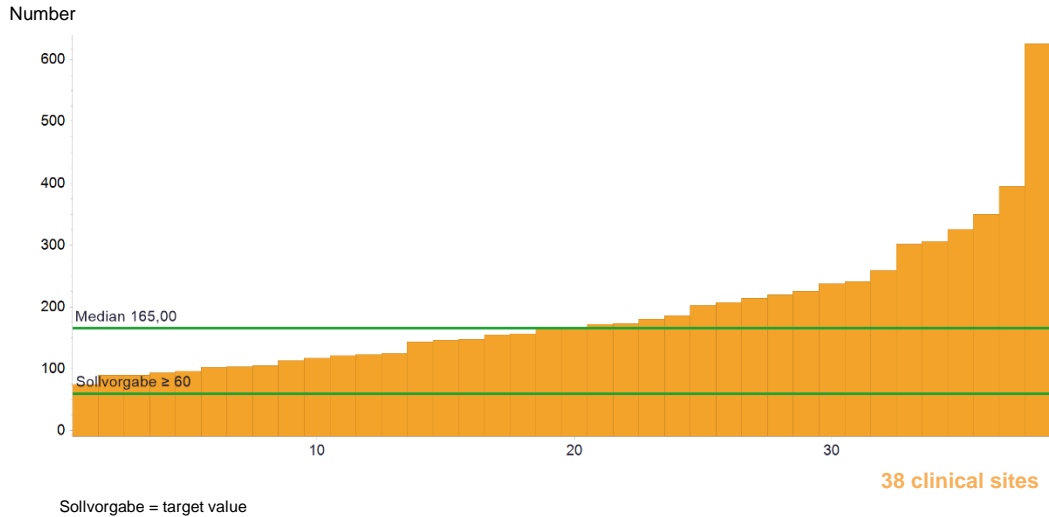
Comments:

The indicator was implemented in the Centres over the course of time with ongoing wide-ranging results. In indicator year 2017 the median for the study rate increased again. In indicator year 2017, too, all Centres met the target value of at least a 5% study inclusion rate. The Centres that included patients in several studies (e.g. tissue banks and psychosocial monitoring studies) achieved particularly high study rates.

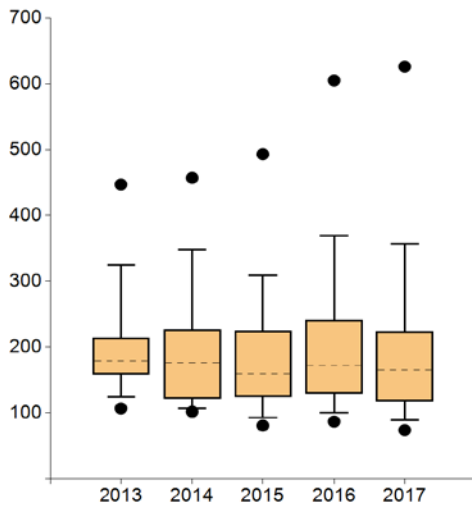
*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

** Percentage of centre patients who were treated according to the indicator.

6a. Surgical primary cases



	Indicator definition	All clinical sites 2017		
		Median	Range	Patients Total
Number	Surgical primary cases def. in line with 5.2.3.a	165	74 - 626	7,243
	Target value ≥ 60			



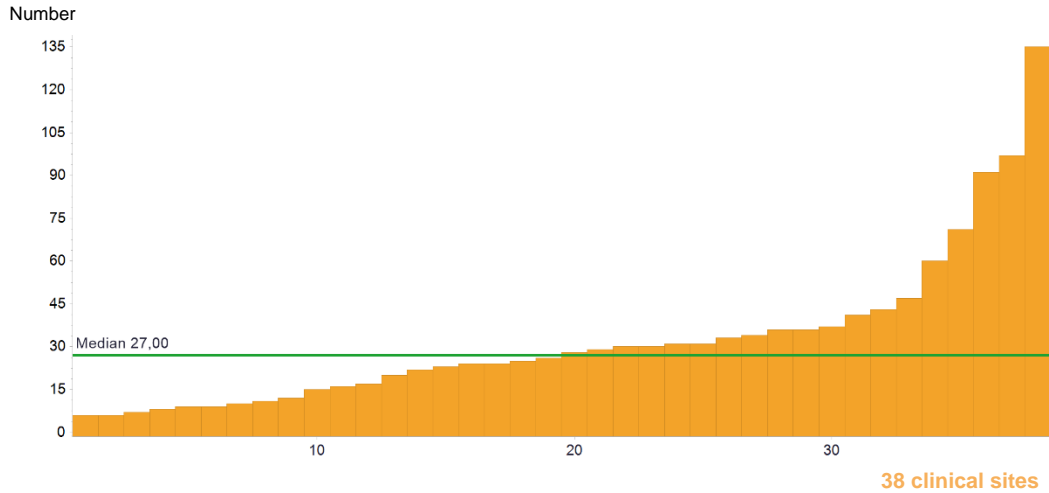
	2013	2014	2015	2016	2017
Max	447.00	457.00	493.00	605.00	626.00
95 th percentile	324.35	348.10	308.35	368.75	356.75
75 th percentile	214.25	226.00	224.50	241.00	223.50
Median	179.50	176.00	159.50	171.50	165.00
25 th percentile	158.25	121.50	124.25	129.00	118.00
5 th percentile	124.60	106.50	92.90	100.35	89.00
Min	107.00	102.00	81.00	87.00	74.00

Clinical sites with evaluable data		Clinical sites meeting the target value	
Number	%	Number	%
38	100.00%	38	100.00%

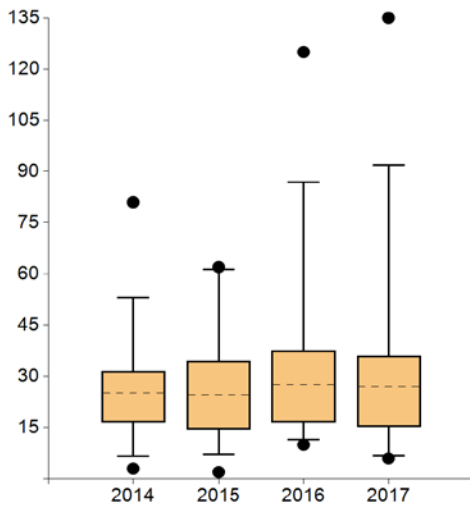
Comments:

The indicator continued to be well implemented in the Centres over the course of time. The median and minimum values were lower than the previous year. In indicator year 2017 all Centres met the target value of at least 60 surgical primary cases a year. In 11 Centres fewer surgical primary cases were treated in indicator year 2017. In 18 Centres the number of surgical primary cases was higher than the previous year. As all Centres met the target value, no explanatory remarks were provided by the Centres about the results.

6b. Biopsy



	Indicator definition	All clinical sites 2017		
		Median	Range	Patients Total
Number	Biopsies def. in line with 5.2.3b	27	6 - 135	1,230
	No target value			



	2013	2014	2015	2016	2017
Max	-----	81.00	62.00	125.00	135.00
95 th percentile	-----	53.10	61.25	86.80	91.90
75 th percentile	-----	31.50	34.50	37.50	36.00
Median	-----	25.00	24.50	27.50	27.00
25 th percentile	-----	16.50	14.50	16.50	15.25
5 th percentile	-----	6.60	7.15	11.45	6.85
Min	-----	3.00	2.00	10.00	6.00

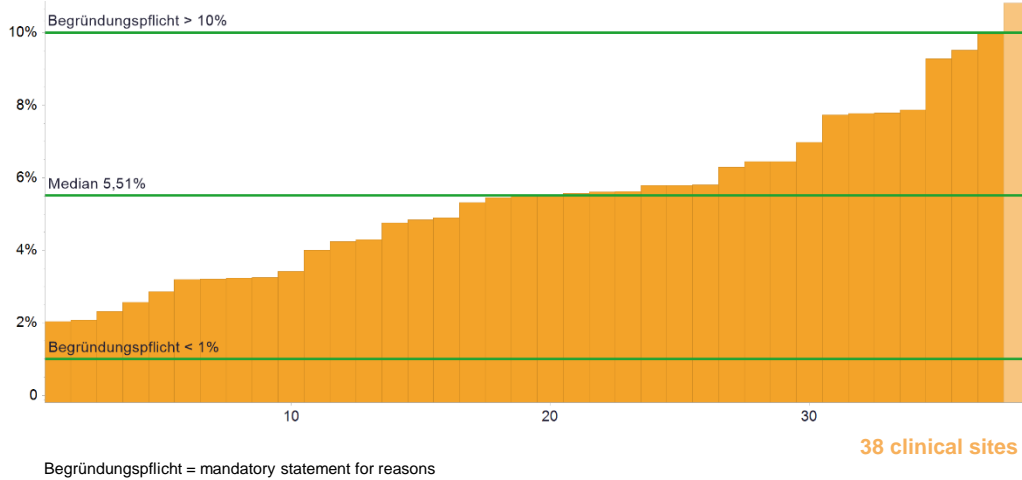
Clinical sites with evaluable data		Clinical sites meeting the target value	
Number	%	Number	%
38	100.00%	-----	-----

Comments:

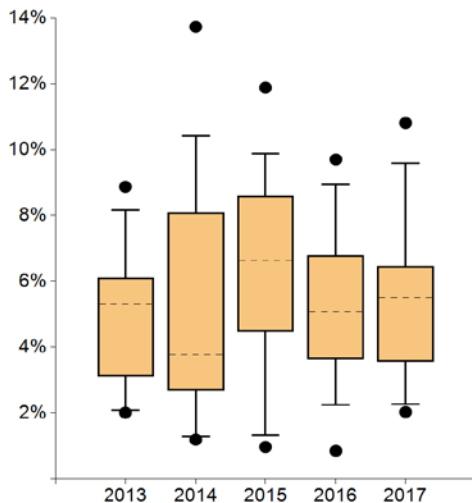
The total number of biopsies (in accordance with the OPS classification 1-510. - 1-512.; 1-514 - 1-515) has risen by 218 surgical interventions compared to the previous year (from 976 in 2016 to 1,194 biopsies in indicator year 2017). As the indicator is recorded without the target value, no explanatory remarks were provided by the Centres about the results.

7a. Revision surgeries

Number



	Indicator definition	All clinical sites 2017		
		Median	Range	Patients Total
Numerator	Revision surgeries as a consequence of post-surgical complications within 30d after surgery (for surgical primary cases)	8*	2 - 24	378
Denominator	Surgical primary cases (= Indicator 6a)	165*	74 - 626	7,243
Rate	Mandatory statement of reasons*** < 1% and >10%	5.51%	2.03% - 10.81%	5.22%**



	2013	2014	2015	2016	2017
● Max	8.87%	13.73%	11.88%	9.70%	10.81%
95 th percentile	8.17%	10.42%	9.87%	8.94%	9.59%
75 th percentile	6.10%	8.08%	8.58%	6.79%	6.45%
Median	5.31%	3.76%	6.63%	5.09%	5.51%
25 th percentile	3.13%	2.70%	4.47%	3.64%	3.57%
5 th percentile	2.09%	1.28%	1.31%	2.26%	2.28%
● Min	2.01%	1.19%	0.97%	0.85%	2.03%

Clinical sites with evaluable data		Clinical sites within the plausibility limits	
Number	%	Number	%
38	100.00%	37	97.37%

Comments:

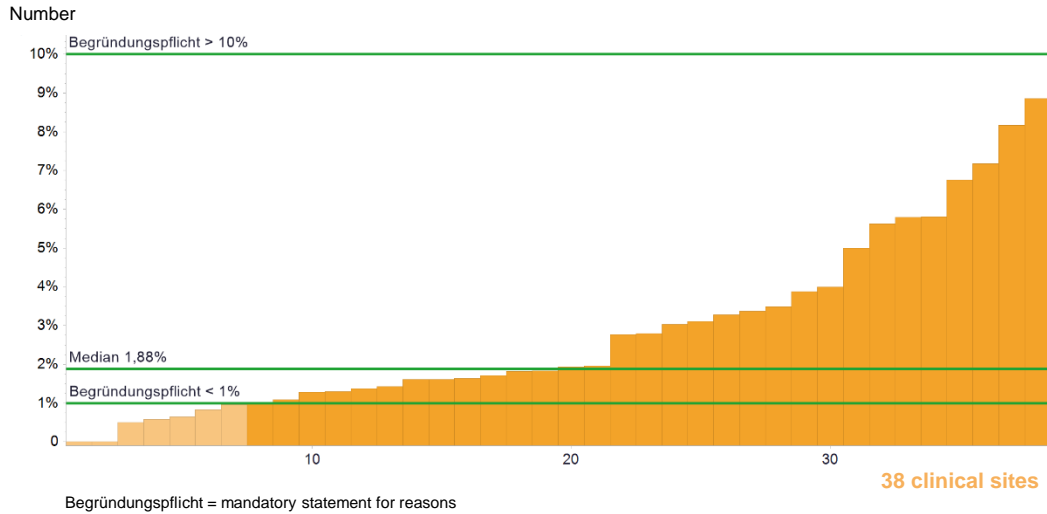
Compared to the previous year, the median, minimum and maximum values increased. 14 Centres were able to reduce their revision rate compared to the previous year. In 15 Centres the rate of revision surgeries increased. The two Centres with the highest rates (>9%) the previous year were able to markedly reduce them in indicator year 2017. 1 Centre had a high rate (>10%) requiring substantiation. The previous year the value had been normal (2016: 3.70%). The result was checked in the audit on the basis of individual cases. High revisions rates are discussed in addition in the Centres in the morbidity/mortality conferences.

*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.

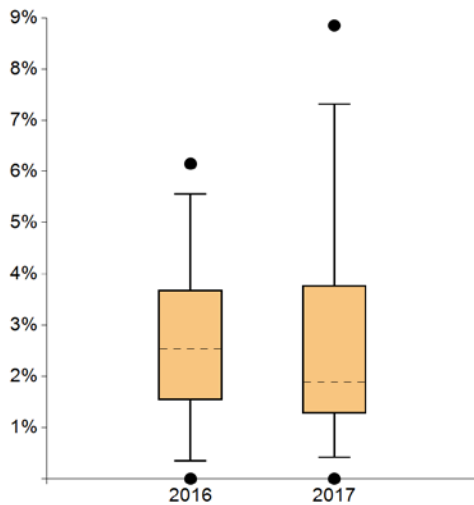
** Percentage of centre patients who were treated according to the indicator.

*** If value is outside the plausibility corridor, centres have to give an explanation.

7b. Clinically symptomatic secondary bleeding



	Indicator definition	All clinical sites 2017		
		Median	Range	Patients Total
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)	4*	0 - 27	210
Denominator	Surgical primary cases (= Indicator 6a)	165*	74 - 626	7,243
Rate	Mandatory statement of reasons*** < 1% and >10%	1.88%	0.00% - 8.85%	2.90%**



	2013	2014	2015	2016	2017
● Max	----	----	----	6.15%	8.85%
95 th percentile	----	----	----	5.56%	7.32%
75 th percentile	----	----	----	3.68%	3.78%
Median	----	----	----	2.54%	1.88%
25 th percentile	----	----	----	1.54%	1.28%
5 th percentile	----	----	----	0.35%	0.43%
● Min	----	----	----	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites within the plausibility limits	
Number	%	Number	%
38	100.00%	31	81.58%

Comments:

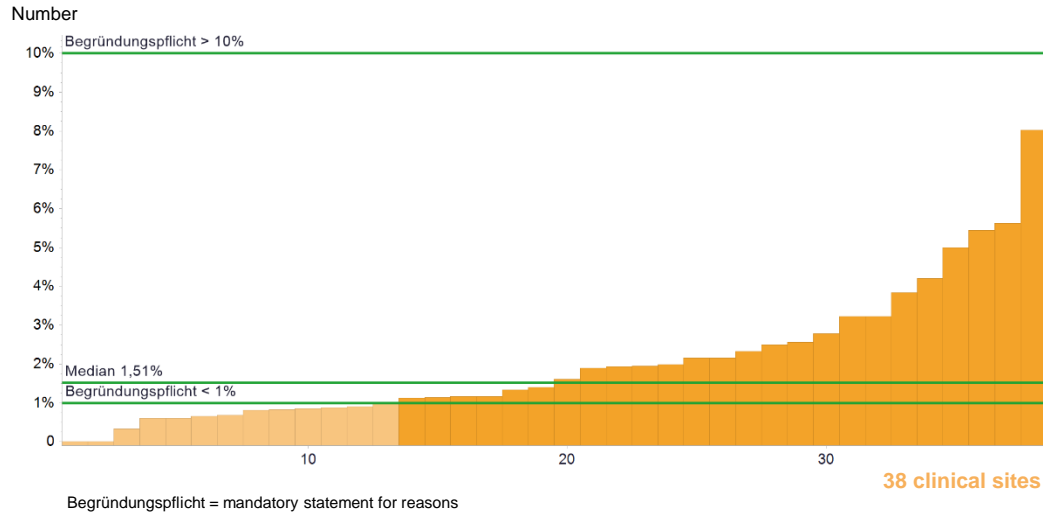
This indicator was introduced for the first time in 2016 in order to record the rate of clinically symptomatic secondary bleeding separately from post-operative complications requiring revision. In indicator year 2017 29 Centres had a secondary bleeding rate <5%, including 7 Centres with <1% clinically symptomatic secondary bleeding (2016: 5 Centres <1% secondary bleeding rate). No Centre had a high rate (>10%) requiring substantiation of symptomatic secondary bleeding.

*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.

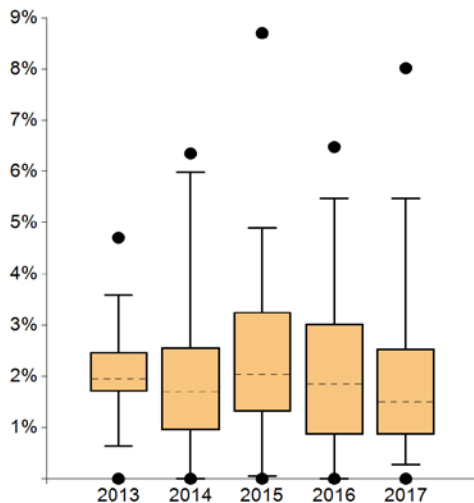
** Percentage of centre patients who were treated according to the indicator.

*** If value is outside the plausibility corridor, centres have to give an explanation.

8. Post-surgical wound infections



	Indicator definition	All clinical sites 2017		
		Median	Range	Patients Total
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 - 24	159
Denominator	Surgical primary cases (= Indicator 6a)	165*	74 - 626	7,243
Rate	Mandatory statement of reasons*** < 1% and >10%	1.51%	0.00% - 8.02%	2.20%**



	2013	2014	2015	2016	2017
● Max	4.71%	6.35%	8.70%	6.48%	8.02%
95 th percentile	3.59%	5.98%	4.90%	5.47%	5.47%
75 th percentile	2.47%	2.57%	3.26%	3.03%	2.54%
Median	1.95%	1.70%	2.04%	1.85%	1.51%
25 th percentile	1.71%	0.96%	1.32%	0.86%	0.86%
5 th percentile	0.64%	0.00%	0.05%	0.00%	0.28%
● Min	0.00%	0.00%	0.00%	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites within the plausibility limits	
Number	%	Number	%
38	100.00%	25	65.79%

Comments:

Compared to the previous year the median of the rate of post-operative wound infections fell further and the maximum value increased. 16 Centres were able to maintain their rate of post-operative wound infections at 0% or further reduce it compared to the previous year. The 2 Centres with the highest wound infection rates (>6%) the previous year, were able to markedly reduce them in indicator year 2018. In 33 Centres the rate of post-operative wound infections in indicator year 2017 was <5%, including 13 Centres with fewer than 1% wound infections in conjunction with surgical primary cases.

*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.

** Percentage of centre patients who were treated according to the indicator.

*** If value is outside the plausibility corridor, centres have to give an explanation.

WISSEN AUS ERSTER HAND (FIRST-HAND KNOWLEDGE)



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