Annual Report 2018

of the Certified Colorectal Cancer Centres (CRCCs)

Audit year 2017 / Indicator year 2016

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General information

Quality indicators of the guidelines (QI):

In the table of contents and in the respective headings the indicators, which correspond to the quality indicators of the evidence-based guidelines are specifically identified. The quality indicators identified in this way are based on the strong recommendations of the guidelines and were derived from the guidelines groups in the context of the guideline programme oncology. Further information: www.leitlinienprogramm-onkologie.de

	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Operative and endoscopic primary cases presented at the post-operative conference	79*	42 - 246
Population	Operative and endoscopic primary cases	80.5*	43 - 254
Rate	Target ≥ 95%	97.97%	86.15% - 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.
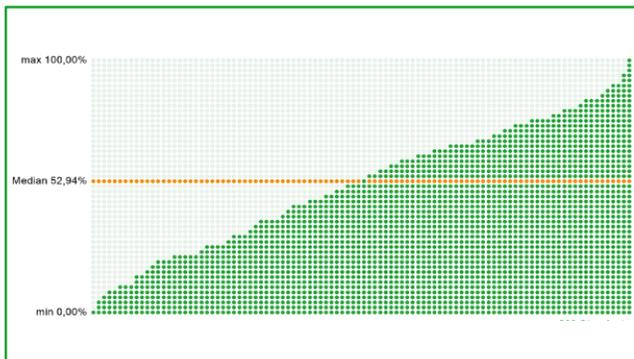
Diagram:

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 organe line. The median, which is also depicted as a orange horizontal line, divides the entire group into two equal halves.

max 100,00%

Median 52,94%

min 0,00%

General information
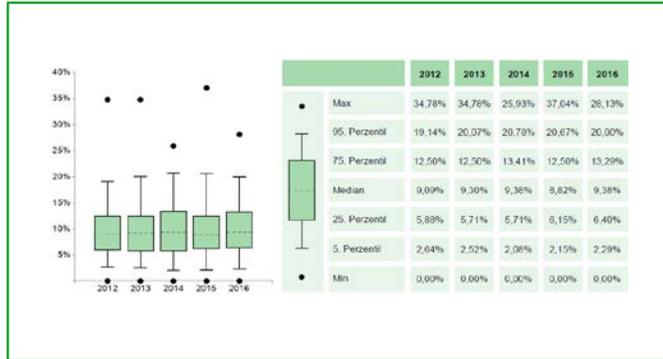
Cohort development:

Cohort development in **2012**, **2013, 2014, 2015 and 2016** is graphically represented with box plots.
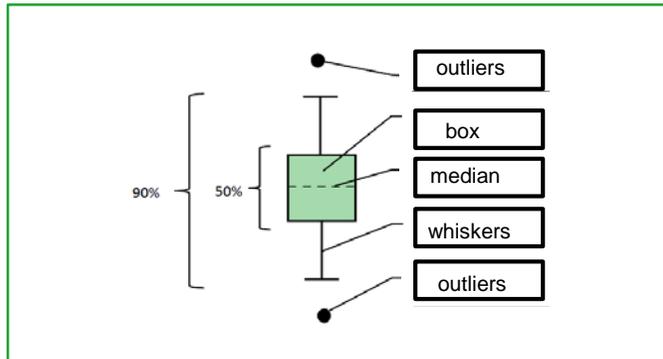
Box plot:

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 Colorectal Cancer Centres 2017

	31.12.2017	31.12.2016	31.12.2015	31.12.2014	31.12.2013
Ongoing procedures	6	7	13	11	12
Certified centres	281	280	265	267	257
Certified clinical sites	290	288	274	276	266
CRCCs with 1 clinical site	275	275	259	261	251
2 clinical sites	4	3	4	4	4
3 clinical sites	1	1	1	1	1
4 clinical sites	1	1	1	1	1

General information

	31.12.2017	31.12.2016	31.12.2015	31.12.2014	31.12.2013
Clinical sites included in the Annual Report	283	273	261	257	253
Equivalent to	97.6%	94.8%	95.3%	93.1%	95.1%
Primary cases total*	26,285	25,214	24,277	23,842	23,182
Primary cases per centre (mean)*	93	92	93	93	92
Primary cases per centre (median)*	87	87	87	87	86

* The figures refer to all certified centres

This Annual Report looks at the Colorectal Cancer Centres certified in the Certification System of the German Cancer Society. The Data sheet, which is part of the Catalogue of Requirements, is the basis for the diagrams.

The Annual Report covers 283 of the 290 clinical sites certified, 7 clinical sites are not included: 4 clinical sites were certified for the first time in 2017 (data depiction of a full calendar year is not mandatory for initial certification), certification had been suspended at 1 clinical site and for 2 clinical sites, verification of the data could not be completed in time.

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

Tumour documentation systems used in CRCCs

Pie chart labels:

- Ondis: 24 (8,48%)
- Andere: 20 (7,07%)
- Eigenentwicklung (MS Excel, MS Access etc.): 4 (1,41%)
- Tumordokumentation des Instituts für Krebsepidemiologie: 5 (1,77%)
- ONKOSTAR: 8 (2,83%)
- ORBIS-ODOK: 14 (4,95%)
- megaMANAGER eDoc: 8 (2,83%)
- Tudok (Tumorzentrum Regensburg): 6 (2,12%)
- c37.CancerCenter: 19 (6,71%)
- StuDoQ: 18 (6,36%)
- KoReDos: 6 (2,12%)
- Alcedis MED: 8 (2,83%)
- ODSeasy / ODSeasy Net: 49 (17,31%)
- onkodok (XAXOA): 12 (4,24%)
- GTDS: 73 (25,80%)
- CREDOS: 9 (3,18%)

Legend:	
Other	System used in less than 4 clinical sites

The details on the tumour documentation system were taken from the EXCEL annex to the Data Sheet (spreadsheet basic data). It is not possible to depict several systems. In many cases support is provided by the cancer registries or there may be a direct connection to the cancer registry via a specific tumour documentation system.

Eigenentwicklung = in-house development

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Basic data

Colon

Operative elective 80.65%
Operative emergency 10.49%
Endoscopic 2.54%
Non-operative palliative 6.27%
Non-operative curative 0.05%

Rectum

Operative emergency 3.09%
Operative TWR 2.54%
Endoscopic 1.83%
Operative elective 81.78%
Non-operative palliative 9.62%
Non-operative, curative 1.14%
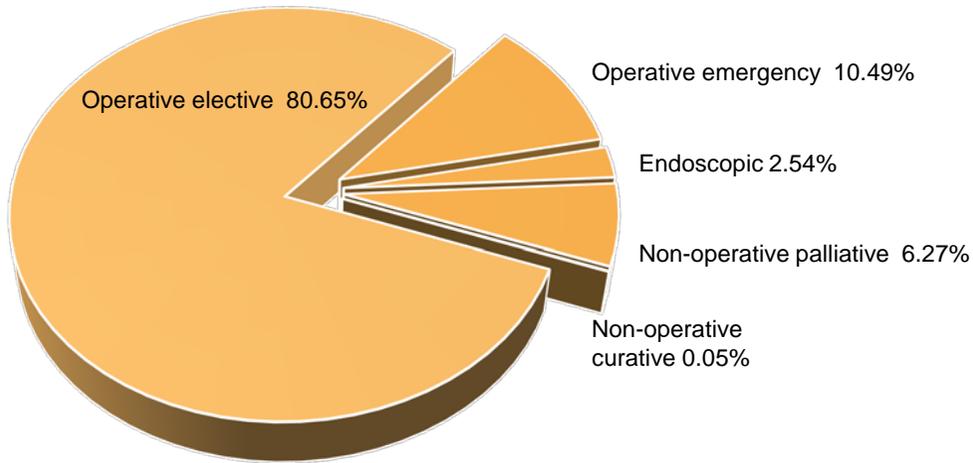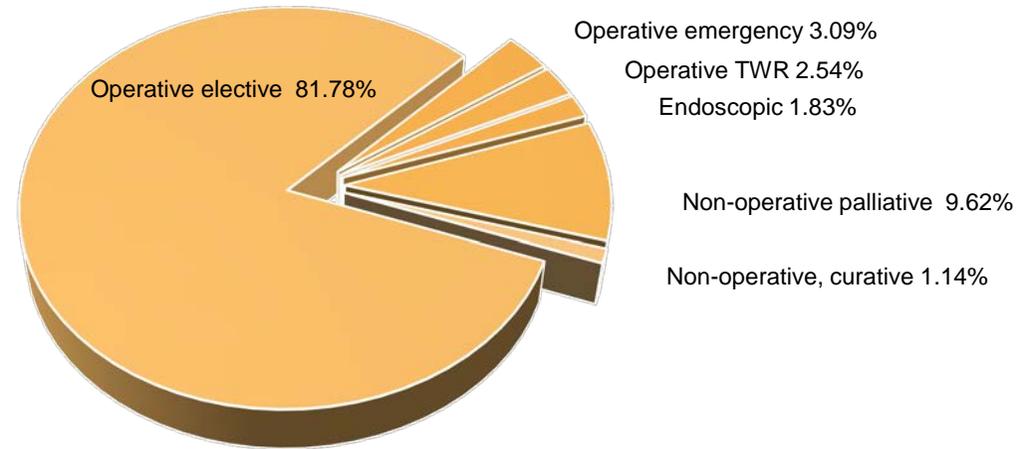
	Operative elective	Operative emergency	Operative TWR*	Endoscopic	Non-operative palliative **	Non-operative/ non-endoscopic curative ***	Total
Colon	13,629 (80.65%)	1,773 (10.49%)	---	429 (2.54%)	1,059 (6.27%)	9 (0.05%)	16,899
Rectum	7,672 (81.78%)	290 (3.09%)	238 (2.54%)	172 (1.83%)	902 (9.62%)	107 (1.14%)	9,381
Primary Cases Total	21,301	2,063	238	601	1,961	116	26,280

* Operative transanal wall resection (TWR)
** Non-operative palliative: no tumour resection; palliative radiotherapy/chemotherapy or best supportive care
*** Watch and Wait (non-operative/non-endoscopic curative): complete tumour remission after planned neoadjuvant therapy and patient's foregoing of surgery

Basic data – Development 2012-2016

Distribution of primary cases by therapy 2012-2016
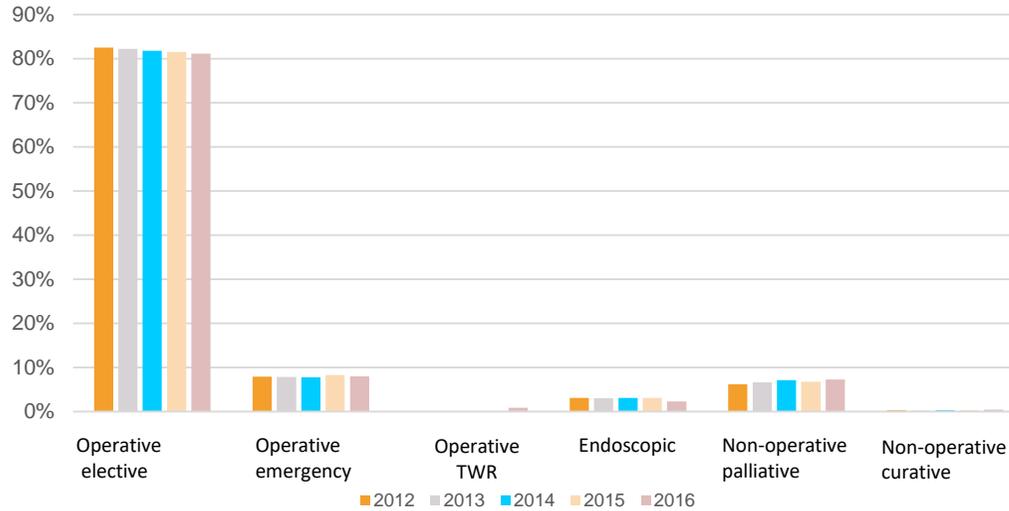
Distribution between primary cases colon and rectum 2012-2016
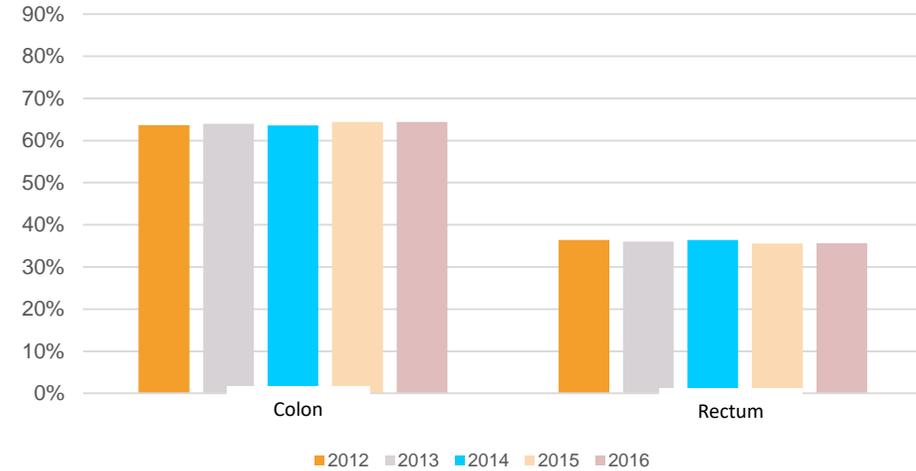
Distribution of primary cases colon by therapy 2012-2016
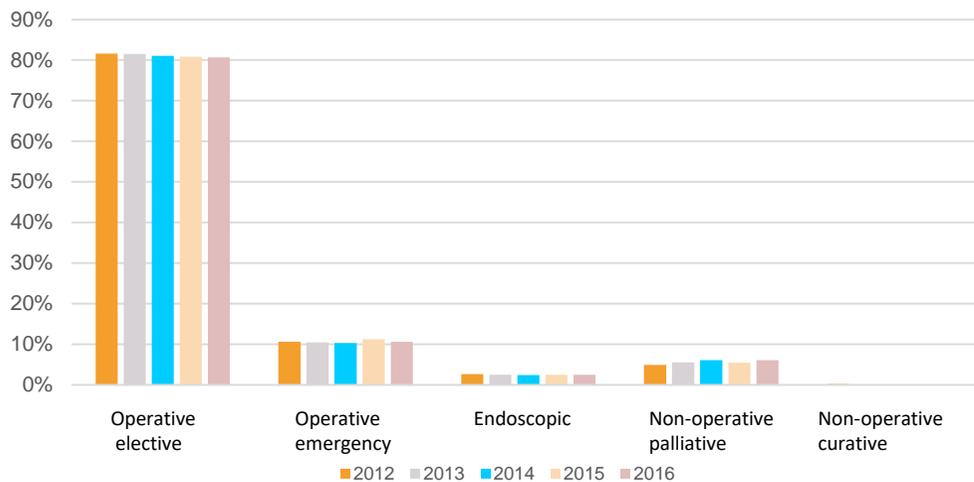
Distribution of primary cases rectum by therapy 2012-2016
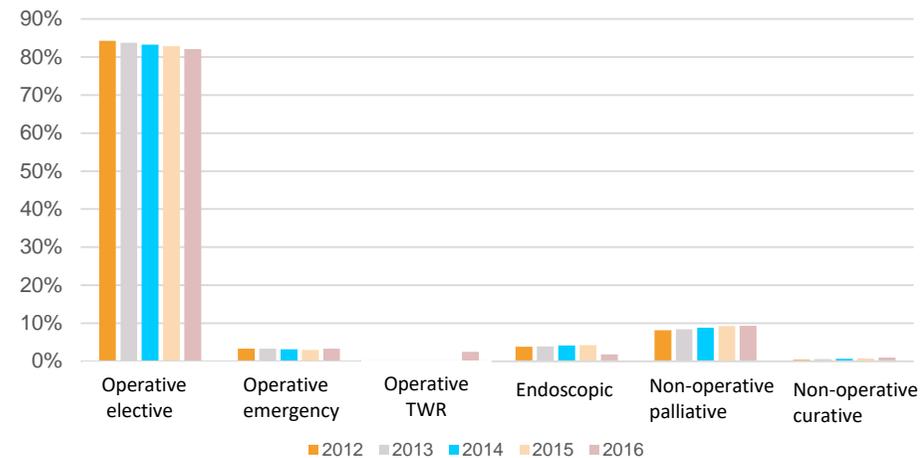
Total primary cases: colon
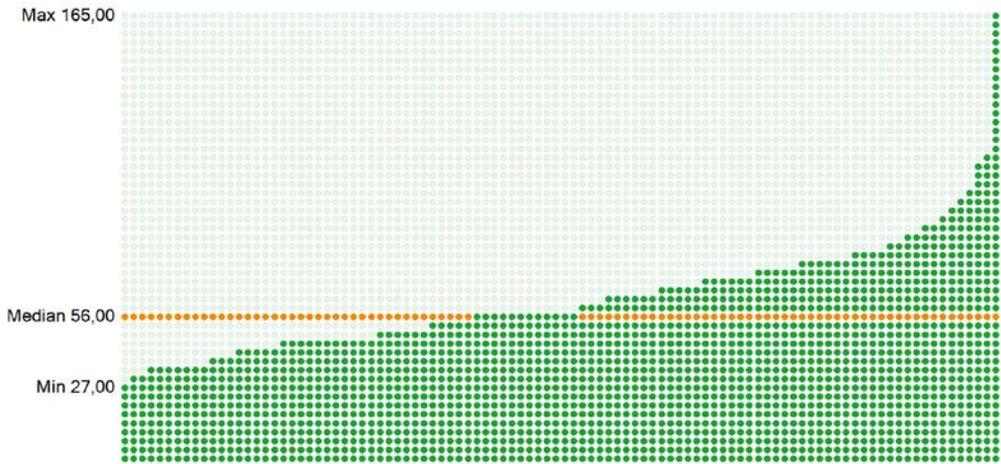
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Number	Total primary cases: colon (Def. Chart 8)	56	27 - 165
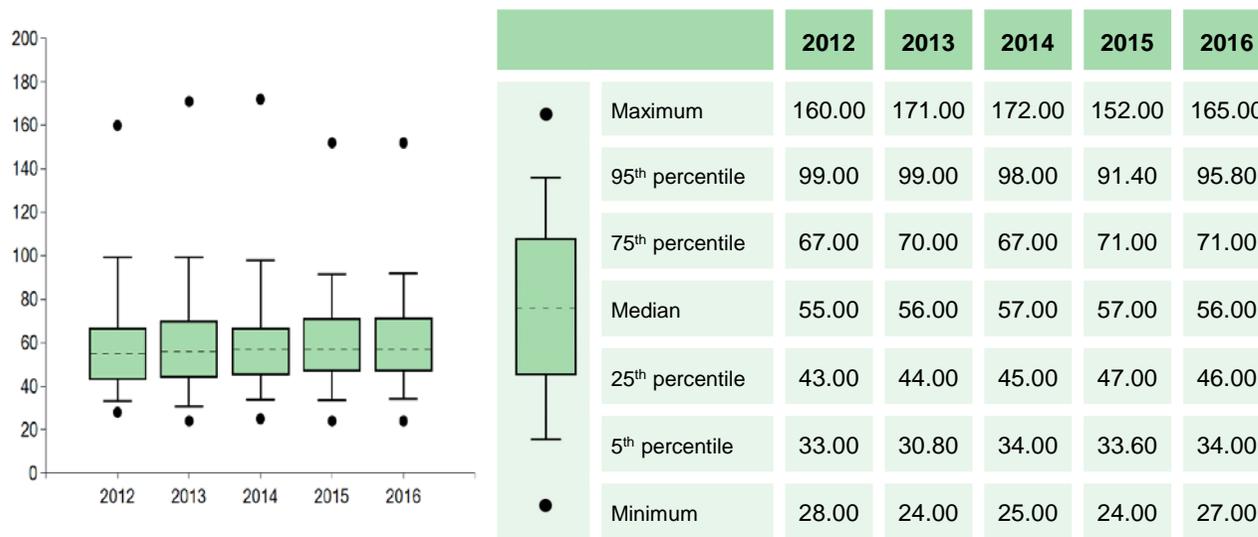
		2012	2013	2014	2015	2016
●	Maximum	160.00	171.00	172.00	152.00	165.00
	95th percentile	99.00	99.00	98.00	91.40	95.80
	75th percentile	67.00	70.00	67.00	71.00	71.00
	Median	55.00	56.00	57.00	57.00	56.00
	25th percentile	43.00	44.00	45.00	47.00	46.00
	5th percentile	33.00	30.80	34.00	33.60	34.00
●	Minimum	28.00	24.00	25.00	24.00	27.00

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	----	----

Comments:
The median of total primary cases with a colon carcinoma has remained steady over the last five years. In total, 16,899 patients with an initial diagnosis of a colon carcinoma were treated in the Colorectal Cancer Centres, 695 patients more than the previous year. In terms of patients with a colorectal carcinoma, 26,280 patients with an initial diagnosis were treated in 2016 in a certified Colorectal Cancer Centre. This corresponds to around 43% of the incident cases (reference: incidence of colorectal carcinomas in 2014: 61,018, www.krebsdaten.de [Access on: 14.02.2018]).

Total primary cases: rectum
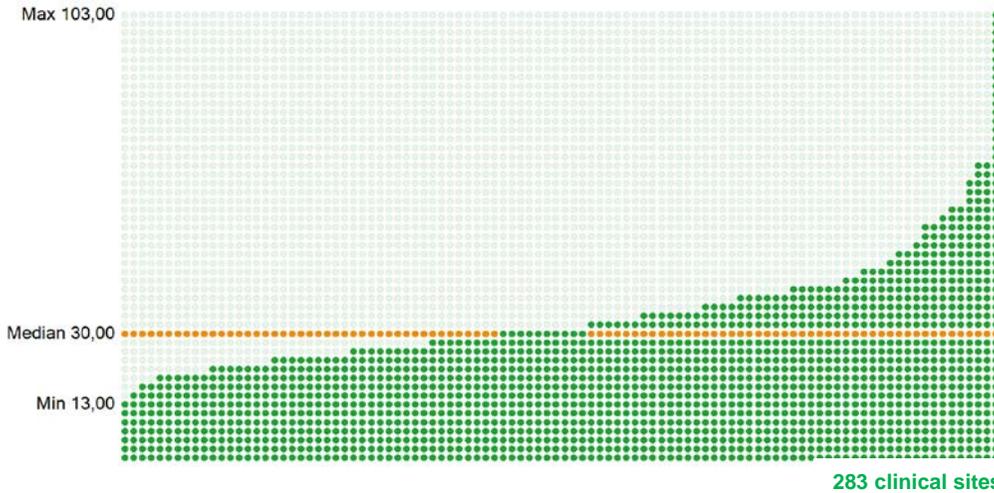
Max 103,00

Median 30,00

Min 13,00

283 clinical sites

	Indicator definition	**All clinical sites 2016**	
		Median	**Range**
Number	Total primary cases: rectum (Def. Chart 8)	30	13 - 103
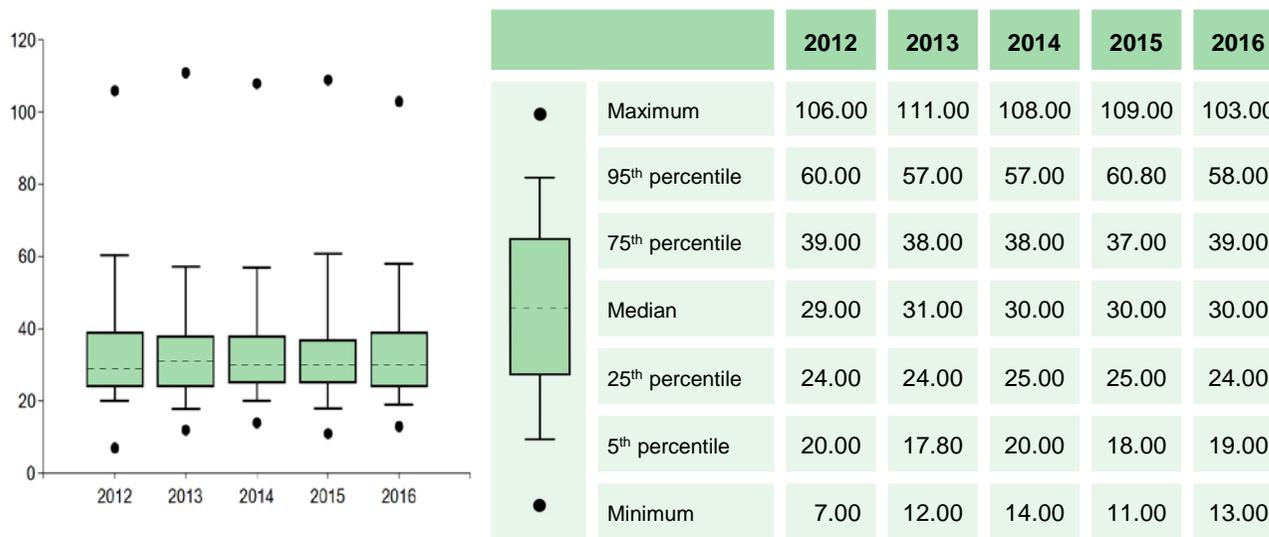
		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	106.00	111.00	108.00	109.00	103.00
	95th percentile	60.00	57.00	57.00	60.80	58.00
	75th percentile	39.00	38.00	38.00	37.00	39.00
	Median	29.00	31.00	30.00	30.00	30.00
	25th percentile	24.00	24.00	25.00	25.00	24.00
	5th percentile	20.00	17.80	20.00	18.00	19.00
●	Minimum	7.00	12.00	14.00	11.00	13.00

Clinical sites with evaluable data		**Clinical sites meeting the target**	
Number	%	Number	%
283	100.00%	----	----

Comments:
The median of total primary cases with a rectal carcinoma has remained the same over the last five years in the Centres. In total, 9,381 primary cases with a rectal carcinoma were treated, 371 patients more than the previous year. For further comments, see chart 10.

1. Pre-therapeutic case presentation (GL QI 5)
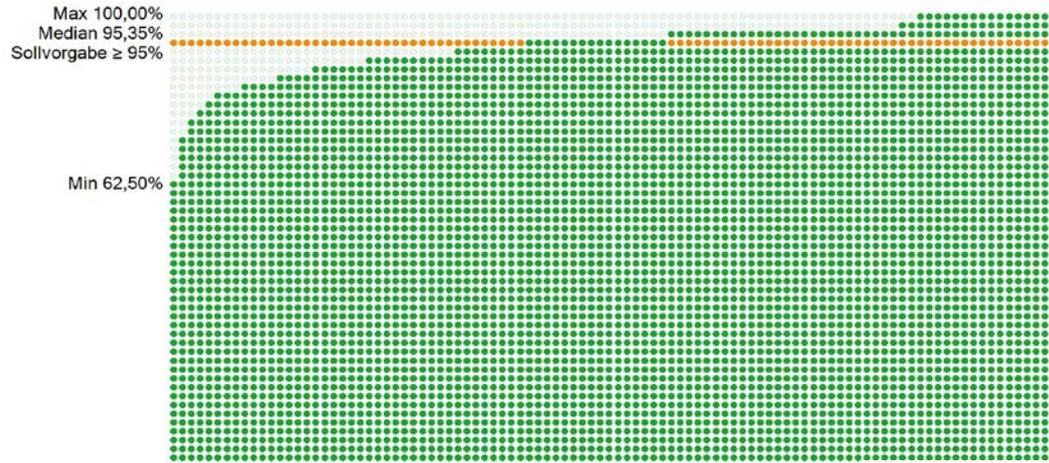
Max 100,00%
Median 95,35%
Sollvorgabe ≥ 95%

Min 62,50%

283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Patient presented at an interdisciplinary tumour conference before therapy	37*	15 - 114
Denomi-nator	Patients with RC and all patients with stage IV CC	40*	17 - 118
Rate	Target value ≥ 95%	95.35%	62.50% - 100%

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

		2012	2013	2014	2015	2016
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	100%	100%	100%	100%	100%
	75th percentile	97.14%	97.78%	97.46%	97.44%	97.47%
	Median	94.44%	95.12%	95.12%	95.45%	95.35%
	25th percentile	87.87%	90.63%	90.59%	91.11%	90.48%
	5th percentile	71.42%	80.00%	82.03%	84.05%	82.15%
●	Minimum	56.00%	55.00%	57.89%	67.39%	62.50%
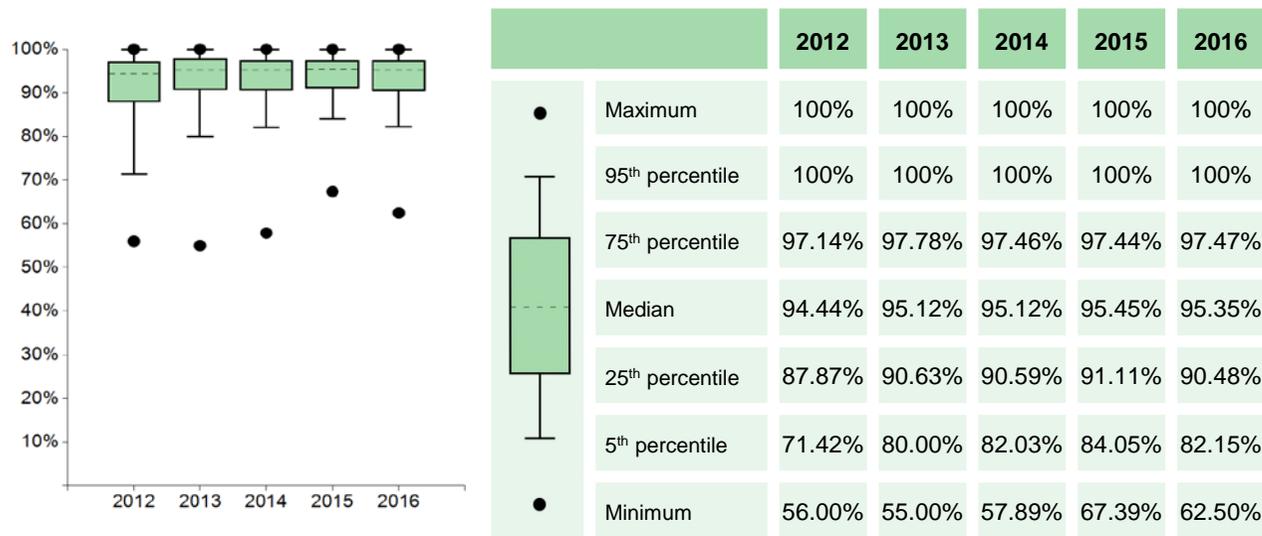
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	150	53.00%

Comments:
Ongoing very good fulfilment of the quality indicator in the guidelines. The reasons given by the Centres for not meeting the target value are: intraoperative diagnosis confirmation (M1 or rectal carcinoma), externally conducted tumour conferences or neoadjuvant therapies with hospital admission directly for surgery, very urgent need for surgery and documentation problems. The following measures for improvements were implemented: procedural instructions for all staff, discussion within quality circles and more preoperative rectoscopies. The Centre with the lowest rate will only be admitted to the repeat audit if it meets the target value. The auditors have made a series of comments and formulated deviations.

Sollvorgabe = target value

2. Pre-therapeutic case presentation: relapses/metachronous metastases
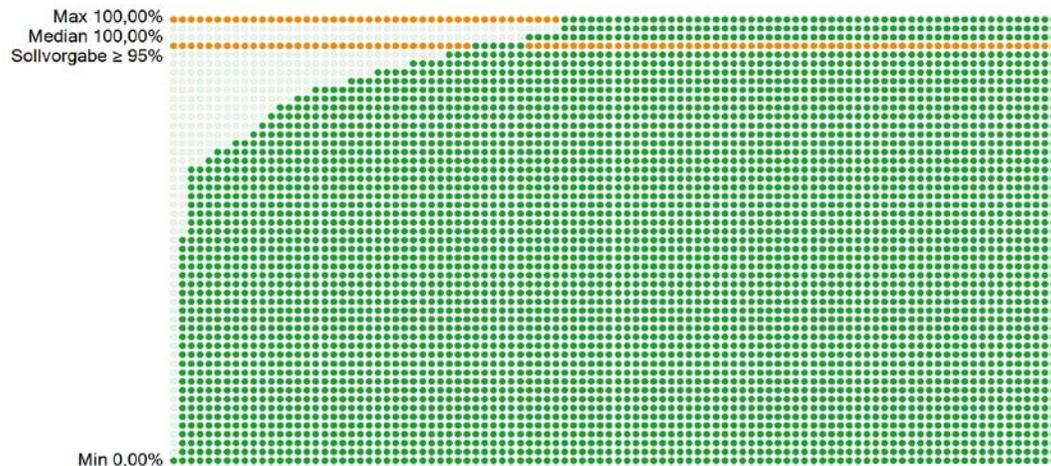
277 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Patients with relapse or new metastases presented at the pre-therapeutic conference	11*	0 - 85
Denomi-nator	Patients with relapse or new metastases	12*	1 - 101
Rate	Target value ≥ 95%	100%	0.00% - 100%

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

		2012	2013	2014	2015	2016
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	100%	100%	100%	100%	100%
	75th percentile	100%	100%	100%	100%	100%
	Median	100%	100%	100%	100%	100%
	25th percentile	81.81%	84.62%	85.71%	87.50%	88.89%
	5th percentile	46.80%	60.00%	59.67%	65.65%	69.85%
●	Minimum	0.00%	0.00%	0.00%	0.00%	0.00%
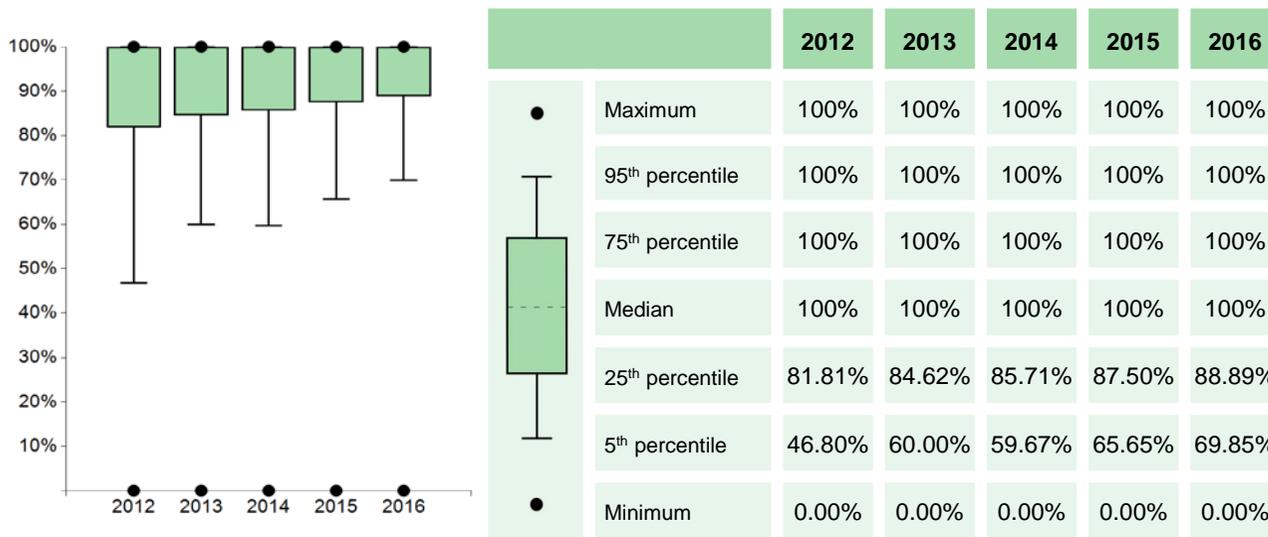
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
277	97.88%	176	63.54%

Comments:
Improved implementation of the indicator over the course of time, more Centres meet the target value. The non-presentation by other specialist disciplines is given as the most frequent reason for the failure to meet the target value, other reasons being the advanced palliative situation and the intraoperative diagnosis of a recurrence or secondary remote metastasis. The staging of quality circles with other specialty units, in which the need for pretherapeutic presentation is discussed, is mentioned as a way of achieving a higher presentation rate. The Centre with no presentation (= 0%) has a small population (n = 3). However, at the next audit the focus will be on the indicator.
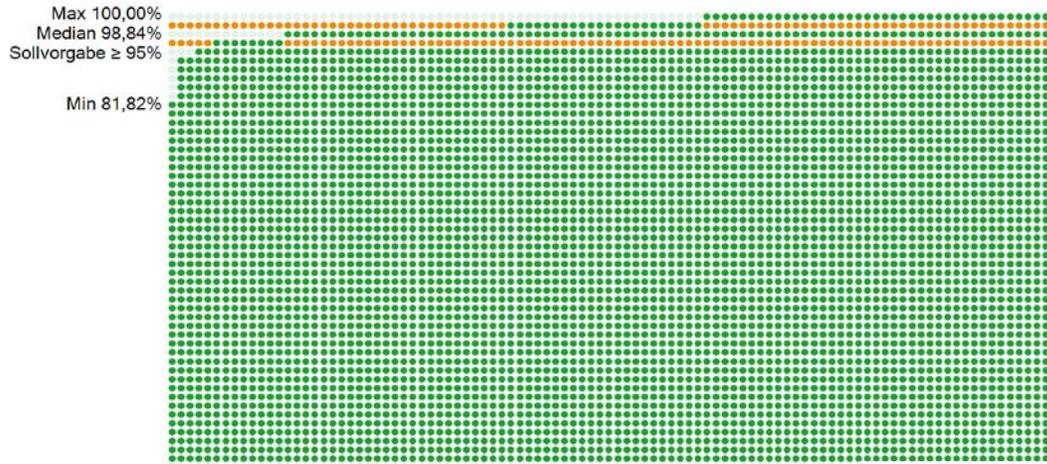
Sollvorgabe = target value

3. Post-operative case presentation

Max 100,00%
Median 98,84%
Sollvorgabe ≥ 95%
Min 81,82%

283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Operative and endoscopic primary cases presented at the post-operative conference	79*	40 - 213
Denomi-nator	Operative and endoscopic primary cases	80*	41 - 218
Rate	Target value ≥ 95%	98.84%	81.82% - 100%

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


		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	100%	100%	100%	100%	100%
	75th percentile	100%	100%	100%	100%	100%
	Median	98.19%	98.20%	97.97%	98.51%	98.84%
	25th percentile	96.36%	96.49%	96.36%	96.73%	96.86%
	5th percentile	91.23%	93.81%	92.96%	94.81%	94.50%
●	Minimum	80.95%	90.20%	86.15%	89.58%	81.82%
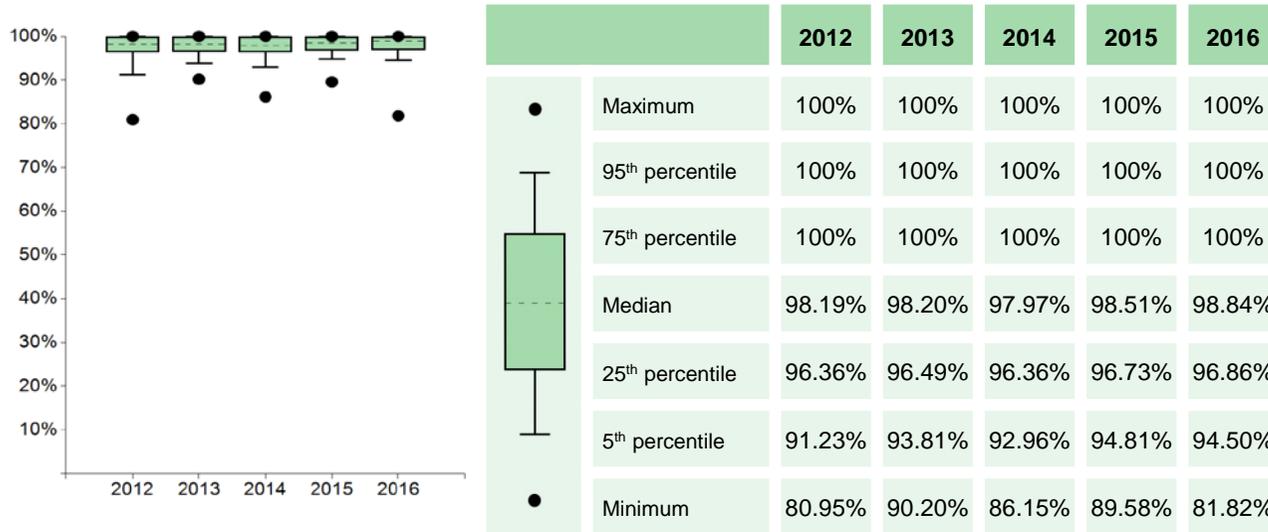
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	268	94.70%

Comments:
Continued, very good fulfilment of the indicator. Almost all Centres meet the target value. For most of the Centres the rate of post-operative case presentation has increased. As in the previous years, the most frequent reasons given for non-presentation are: post-operative therapy concepts were agreed on pre-operatively (particularly in the case of palliative patients), and patients who died post-operatively were not presented in the tumour conference. Instead, the deceased patients were discussed in the morbidity/mortality conference in line with the Catalogue of Requirements. Quality circles and comment fields in the surgery report are mentioned as measures to improve fulfilment of the indicator.

Sollvorgabe = target value

4. Psycho-oncological counselling

Max 98,94%
Begründungspflicht > 95,00%
Median 55,71%
Begründungspflicht < 20,00%
Min 2,06%

283 clinical sites
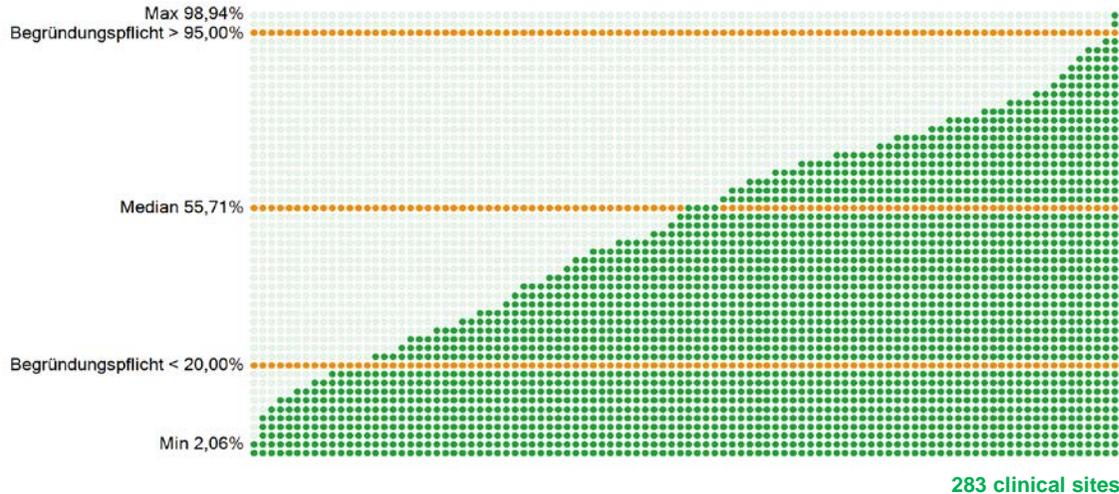
	Indicator definition	All clinical 2016	
		Median	**Range**
Numerator	Patients given inpatient or outpatient psycho-oncological counselling (length of session ≥ 25 min)	52*	2 - 151
Denomi-nator	Total primary cases + patients with relapse/new metastases	102*	52 - 289
Rate	Explanation mandatory** <20% and >95%	55.71%	2.06% - 98.94%

*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.
** If value is outside the plausablilty corridor, centres have to give an explanation.
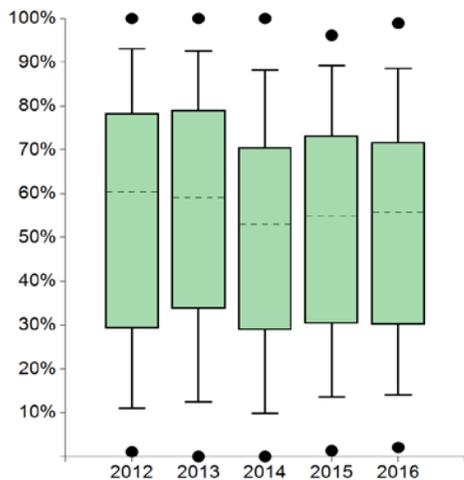
		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	100%	100%	100%	96.15%	98.94%
	95th percentile	93.01%	92.50%	88.17%	89.21%	88.58%
	75th percentile	78.40%	79.10%	70.60%	73.28%	71.73%
	Median	60.41%	59.09%	52.94%	54.88%	55.71%
	25th percentile	29.26%	33.75%	28.83%	30.41%	30.13%
	5th percentile	11.09%	12.45%	9.86%	13.57%	14.03%
●	Minimum	1.07%	0.00%	0.00%	1.33%	2.06%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	250	88.34%

Comments:
The psycho-oncological care rate is the same as the previous year. Most of the Centres which had a rate below 20% the previous year were able to improve the proportion of patients receiving psycho-oncological counselling (21 out of 28 Centres [75%]). Centres frequently give the following reasons for the low rates: patients refuse counselling offering after assessment; care was provided on the phone or for a shorter duration (< 25 minutes) or there were staff bottlenecks. In order to improve the care rate the Centres announced they intend to undertake the assessment more consistently, to hire new psycho-oncologists and stage staff training.

Begründungspflicht = mandatory statement of reasons

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5. Social services counselling

Begründungspflicht = 100,00%
Max 99,18%

Median 74,77%

Begründungspflicht < 45,00%

Min 20,00%
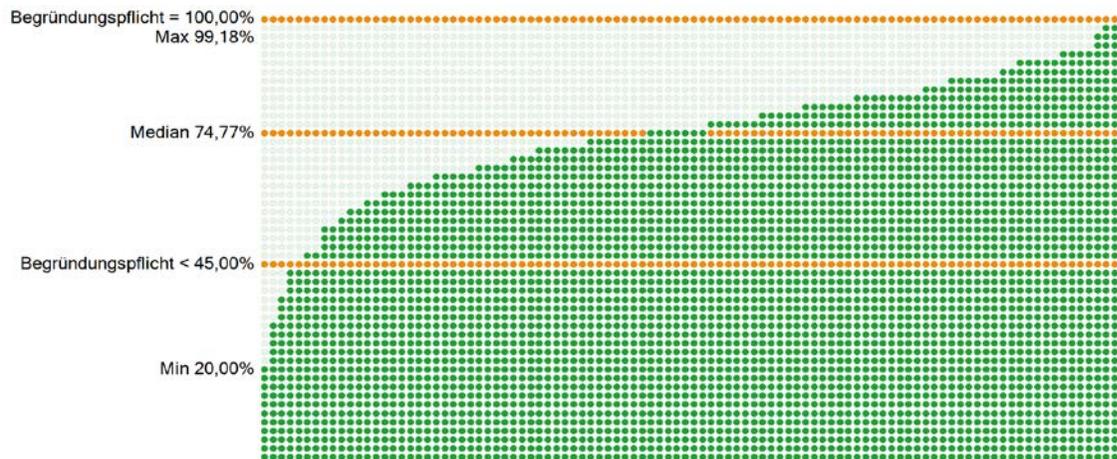
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Inpatients or outpatients who received counselling from the social services	75*	20 - 212
Denomi-nator	Total primary cases + patients with relapse/new metastases	102*	52 - 289
Rate	Explanation mandatory** <45% and =100%	74.77%	20.00% - 99.18%

*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.
** If value is outside the plausablilty corridor centres have to give an explanation.
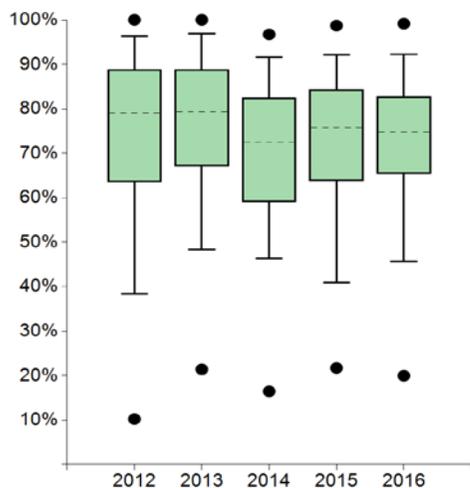
		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	100%	100%	96.74%	98.72%	99.18%
	95th percentile	96.32%	96.89%	91.67%	92.09%	92.25%
	75th percentile	88.88%	88.89%	82.47%	84.31%	82.76%
	Median	79.10%	79.31%	72.37%	75.74%	74.77%
	25th percentile	63.55%	67.07%	59.12%	63.86%	65.46%
	5th percentile	38.42%	48.34%	46.34%	40.95%	45.67%
●	Minimum	10.25%	21.43%	16.49%	21.74%	20.00%

| Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	270	95.41%

Comments:
The median rate of counselling sessions by social services is the same as the previous year. Most of the Centres were able to increase the counselling rate. 8 out of the 13 Centres with a rate requiring explanations are located in German-speaking countries abroad. These Centres stated that they had different care structures to the ones in Germany (outpatient counselling units for the social services) and there are deviating statutory regulations. One reason given by the German Centres for the low rates is that despite the low-threshold offering, there was limited need by patients.

Begründungspflicht = mandatory statement of reasons

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6. Study participation

Max 132,58%

Median 6,58%
Sollvorgabe ≥ 5%
Min 0,00%
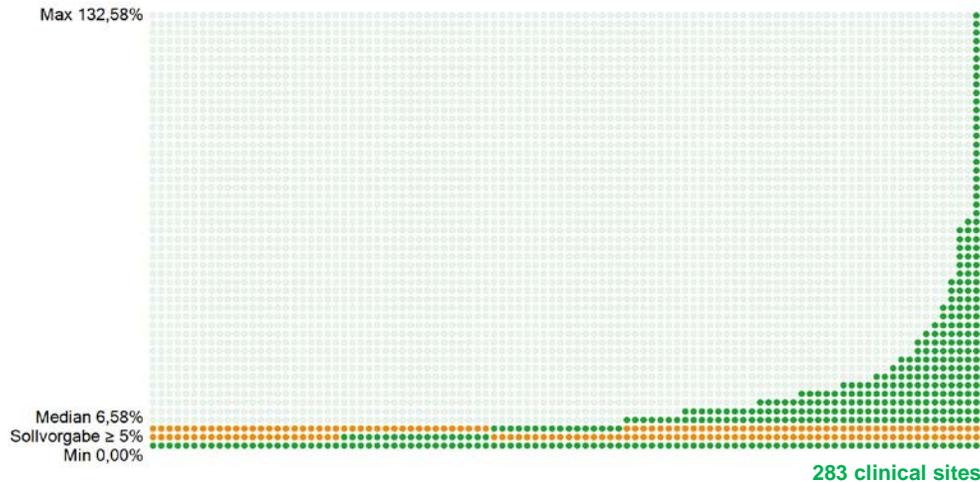
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Patients of the CrCC included in a study or colorectal prevention study	6*	0 - 118
Denomi-nator	Total primary cases	87*	43 - 232
Rate	Target value ≥ 5%	6.58%	0.00% - 132.58%

*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.
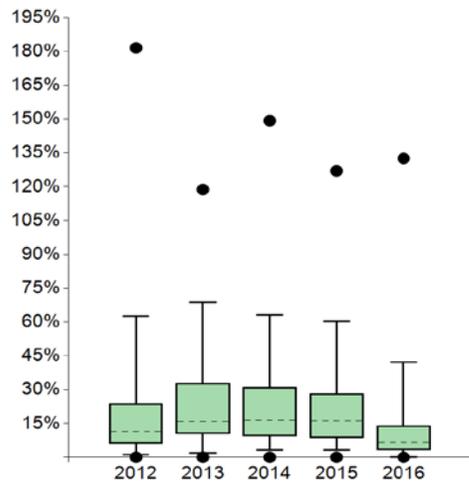
		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	181.56%	118.75%	149.23%	126.98%	132.58%
	95th percentile	62.60%	68.83%	63.10%	60.18%	42.24%
	75th percentile	23.76%	32.89%	31.07%	28.21%	14.00%
	Median	11.49%	15.85%	16.22%	16.00%	6.58%
	25th percentile	5.95%	10.47%	9.35%	8.70%	3.23%
	5th percentile	1.02%	1.82%	3.09%	3.18%	0.00%
●	Minimum	0.00%	0.00%	0.00%	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	175	61.84%

Comments:
The indicator median is lower than the previous year. Far fewer Centres meet the target value. Since 2017 only those patients, who were included in a study accredited by StudyBox, can be counted in the numerator of the indicator. The main reason given by the Centres for not meeting the target value is that patients were included in non-accredited studies. Other reasons were human resources or no study offering. Many Centres stated that they were currently endeavouring to participate in StudyBox studies. This indicator is the only indicator for which the numerator is not a subset of the denominator. This deviation was tolerated in order to also be able to include study participants of the Centre who are not primary cases.

Sollvorgabe = target value

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7. CRC patients with a recorded family history

Max 100,00%
Begründungspflicht = 100,00%

Median 77,78%

Begründungspflicht < 5,00%
Min 0,00%

283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Primary-case patients with a CRC and a completed patient questionnaire (http://www.krebsgesellschaft.de/deutsche-krebsgesellschaft-wtrl/deutsche-krebsgesellschaft/zertifizierung/erhebungsboegen/organkrebszentren.html in the colorectal cancer section)	62*	0 - 199
Denomi-nator	Total primary cases	87*	43 - 232
Rate	Explanation mandatory** <5% and =100%	77.78%	0.00% - 100%

*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.
** If value is outside the plausablilty corridor, centres have to give an explanation.
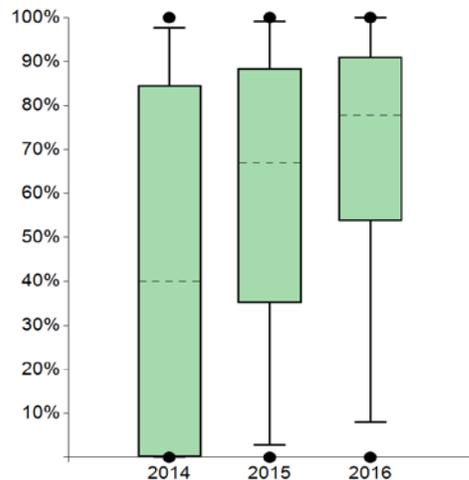

		2012	2013	2014	2015	2016
●	Maximum	-----	-----	100%	100%	100%
	95th percentile	-----	-----	97.63%	99.12%	100%
	75th percentile	-----	-----	84.57%	88.46%	91.07%
	Median	-----	-----	40.00%	66.98%	77.78%
	25th percentile	-----	-----	0.00%	35.14%	53.82%
	5th percentile	-----	-----	0.00%	2.87%	7.96%
●	Minimum	-----	-----	0.00%	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	253	89.40%

Comments:
Better use was made than in previous years of the DKG patient questionnaire to record family medical history. The median has risen and consequently most of the Centres have improved their performance for this indicator (66%). Centres with a low application rate state that they record the Amsterdam/Bethesda criteria in a different questionnaire or record family medical history informally. At the same time, these Centres state their intention to implement the questionnaire by changing their operating procedures (inclusion in the patient folder, integration into the work flows of the consulting hours, etc.)
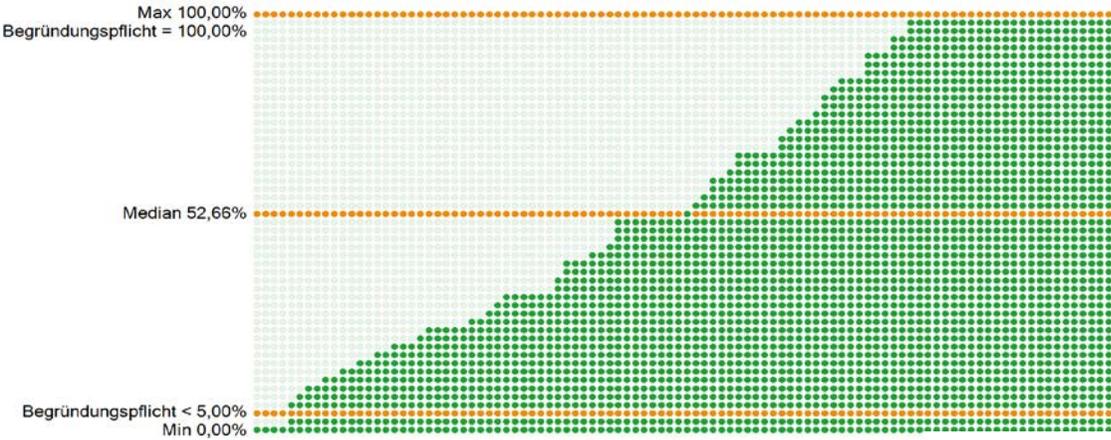
Begründungspflicht = mandatory statement of reasons

8. Genetic counselling

Max 100,00%
Begründungspflicht = 100,00%

Median 52,66%

Begründungspflicht < 5,00%
Min 0,00%

266 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Primary-case patients with a positive patient questionnaire advised to visit a centre for familial colorectal cancer	3*	0 - 54
Denomi-nator	Primary cases with a positive patient questionnaire	8*	1 - 56
Rate	Explanation mandatory** <5% and =100%	52.66 %	0.00% - 100%

*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.
** If value is outside the plausablilty corridor, centres have to give an explanation.
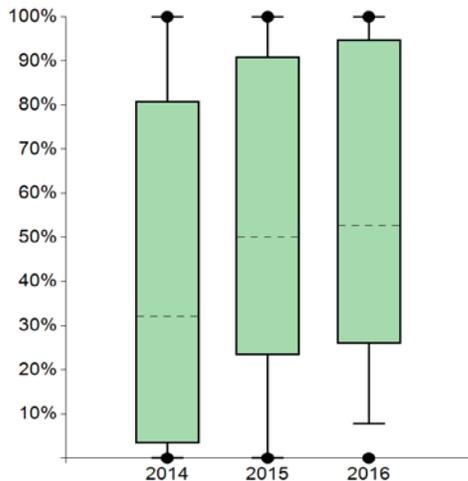
		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	-----	-----	100%	100%	100%
	95th percentile	-----	-----	100%	100%	100%
	75th percentile	-----	-----	80.83%	90.91%	94.78%
	Median	-----	-----	32.05%	50.00%	52.66%
	25th percentile	-----	-----	3.41%	23.30%	25.95%
	5th percentile	-----	-----	0.00%	0.00%	7.85%
●	Minimum	-----	-----	0.00%	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
266	93.99%	193	72.56%

Comments:
The median of the indicator has improved slightly compared to 2015. Most of the Centres have increased the rate of recommendations for genetic counselling in the case of positive family medical history (centres with a higher rate: n=134, lower rate: n=86). The Centres with no recommendations for genetic counselling have low denominators (1-11) which means that individual cases are weighted more when calculating the rate. Frequent reasons for low rates are the foregoing of making a recommendation after discussion with a clinical geneticist or in the case of normal results in the microsatellite analysis and the analysis of the mismatch repair proteins.
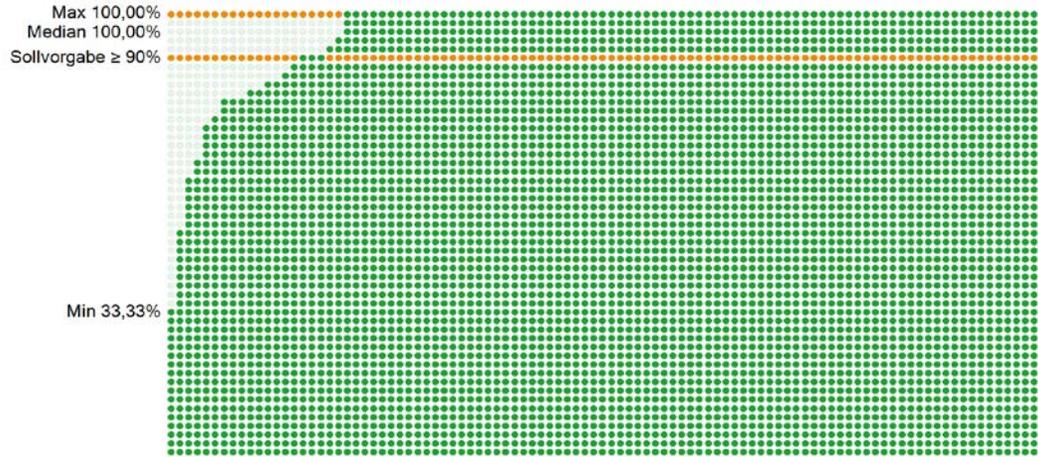
Begründungspflicht = mandatory statement of reasons

9. MMR-assessment

Max 100,00%
Median 100,00%
Sollvorgabe ≥ 90%

Min 33,33%

277 clinical sites

		Indicator definition	All clinical sites 2016	
			Median	**Range**
Numerator		Patients with immunohisto-chemical assessment of mismatch repair (MMR) proteins	4*	1 - 24
Denomi-nator		Patients with initial CRC diagnosis < 50 years old	5*	1 - 24
Rate		Target value ≥ 90%	100%	33.33% - 100%

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

		2012	2013	2014	2015	2016
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	100%	100%	100%	100%	100%
	75th percentile	100%	100%	100%	100%	100%
	Median	100%	100%	100%	100%	100%
	25th percentile	90.23%	88.89%	92.67%	92.31%	100%
	5th percentile	50.00%	50.00%	50.00%	64.85%	75.00%
●	Minimum	0.00%	0.00%	0.00%	0.00%	33.33%
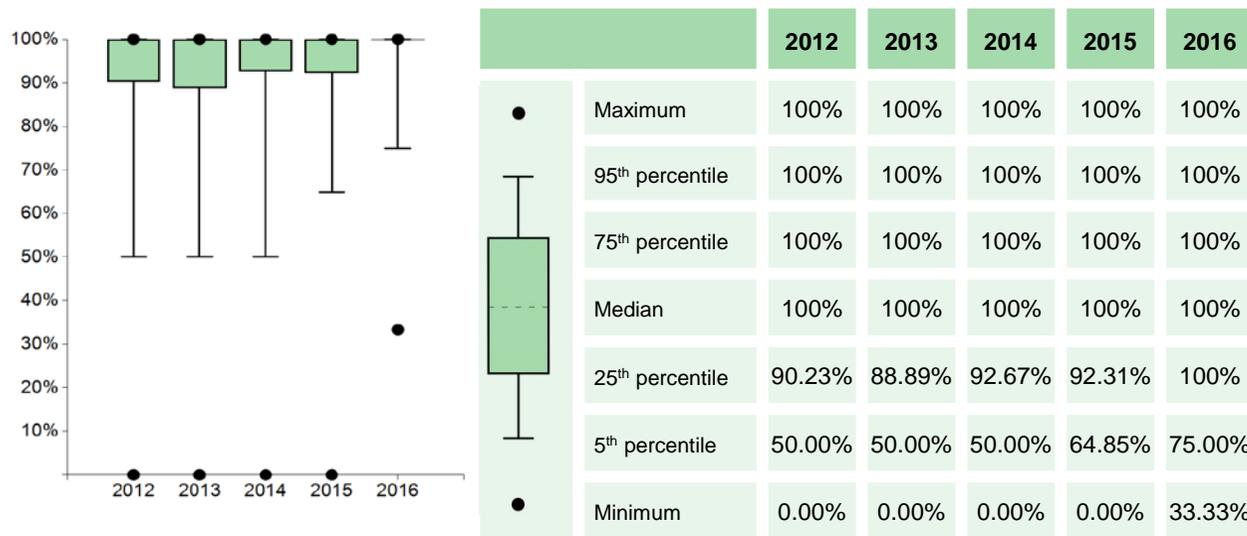
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
277	97.88%	236	85.20%

Comments:
Overall, the immunohistochemical assay of MMR proteins has been implemented well in the case of patients under the age of 50. The proportion of Centres (85.2%) who meet the target value has increased (78.4% in 2015). 91% of the Centres who did not meet the target value the previous year, improved the indicator. Centres with rates below the target value mostly gave as the reasons that sufficient tissue was not available for analysis, no tissue had been taken (e.g. in the case of palliative patients) or no tumour cells could be detected in the tissue. For this indicator, too, the Centres with the low rates generally have low denominators.

Sollvorgabe = target value

10. Complication rate therapeutic colonoscopies

Max 3,86%

Sollvorgabe ≤ 1%

Median 0,64%

Min 0,00%
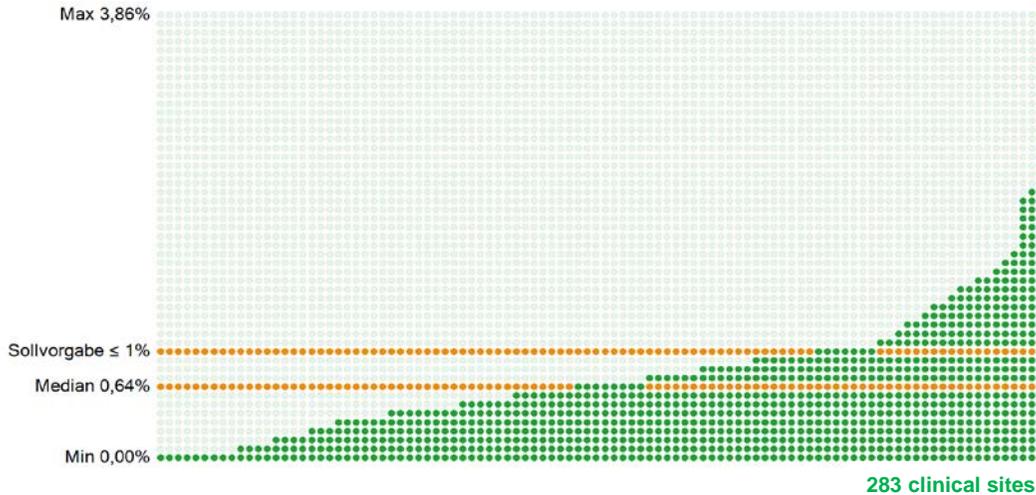
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Therapeutic colonoscopies with complications (bleeding requiring re-intervention (recolonoscopy. operation) or a transfusion and/or perforation)	3*	0 - 20
Denomi-nator	Therapeutic colonoscopies per colonoscopy unit (not only CrCC patients)	445*	103 - 2928
Rate	Target value ≤ 1%	0.64%	0.00% - 3.86%

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


		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	5.01%	5.16%	4.42%	3.59%	3.86%
	95th percentile	2.19%	1.92%	1.93%	1.83%	1.69%
	75th percentile	0.91%	0.96%	0.95%	0.95%	0.95%
	Median	0.62%	0.62%	0.72%	0.67%	0.64%
	25th percentile	0.28%	0.35%	0.38%	0.33%	0.38%
	5th percentile	0.00%	0.00%	0.00%	0.00%	0.00%
●	Minimum	0.00%	0.00%	0.00%	0.00%	0.00%
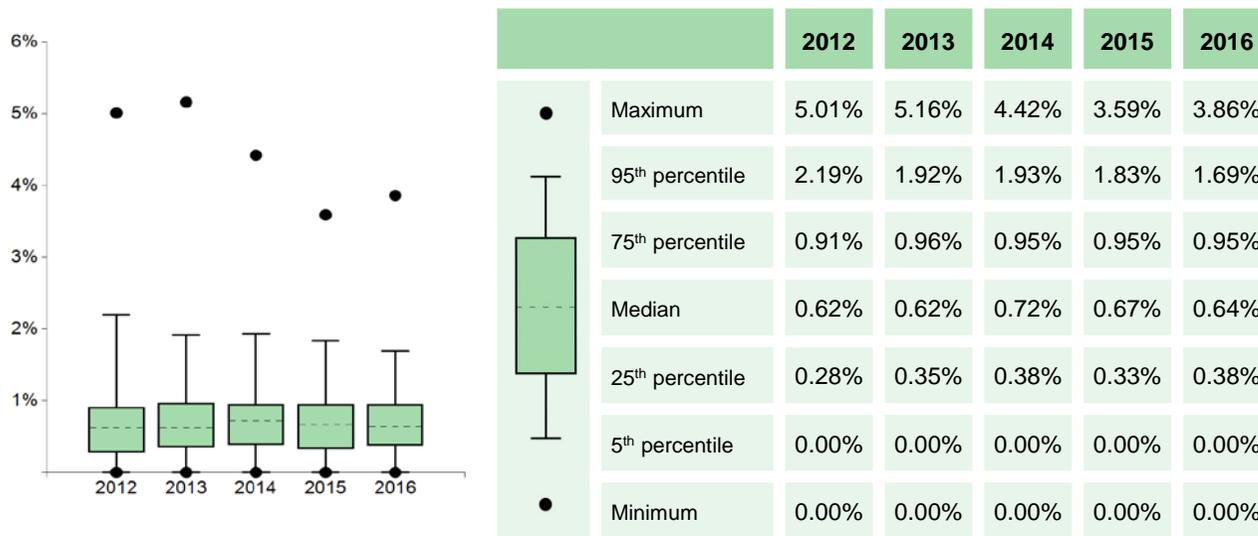
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	228	80.57%

Comments:
The median complication rate for therapeutic coloscopies remains almost unchanged over the years. Most of the Centres who did not meet the target value the previous year, achieved improved complication rates in 2016 (78%). The reason given by the Centres for the high complication rates is that complicated cases (large polyps, multimorbid patients (frequently with anticoagulatory therapy)) were referred to them from the outpatient sector. Secondary bleeding is mentioned as the most frequent complication. Surgical procedures are not often needed. The following measures, *inter alia*, were agreed with the auditors: Inclusion of a second experienced coloscopist or more frequent prophylactic stypsis using a clip.

Sollvorgabe = target value

11. Complete elective colonoscopies

Max 100,00%
Median 97,86%
Sollvorgabe ≥ 95%

Min 80,91%
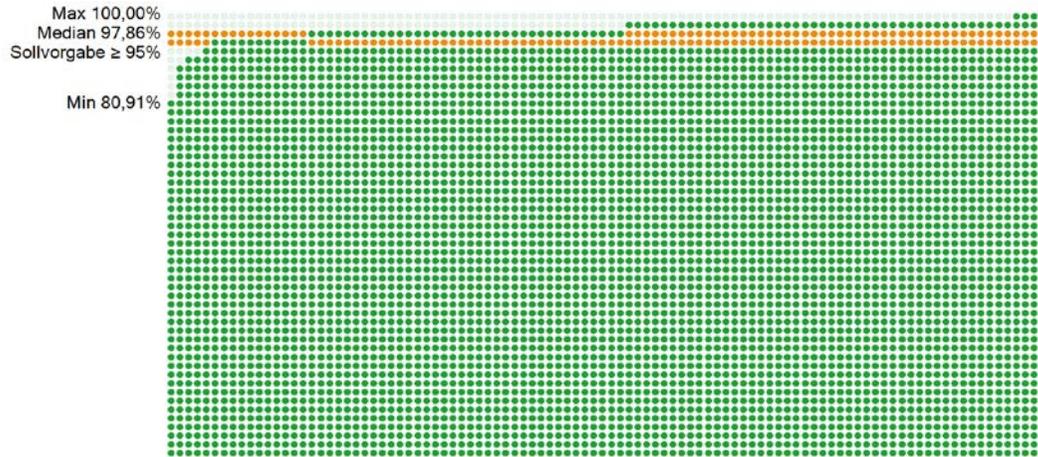
282 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Complete elective colonoscopies	1395.5*	458 - 11157
Denomi-nator	Elective colonoscopies for each colonoscopy unit of the CrCC (not only CrCC patients) (Are counted: intention: complete colonoscopy)	1417*	470 - 11199
Rate	Target value ≥ 95%	97.86%	80.91% - 100%

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

		2012	2013	2014	2015	2016
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	99.73%	99.81%	99.83%	99.81%	99.89%
	75th percentile	98.82%	98.86%	98.92%	99.04%	99.07%
	Median	97.55%	97.49%	97.80%	97.87%	97.86%
	25th percentile	95.98%	95.96%	96.64%	96.69%	96.53%
	5th percentile	91.15%	92.60%	93.96%	94.12%	94.02%
●	Minimum	68.22%	50.09%	86.61%	75.94%	80.91%
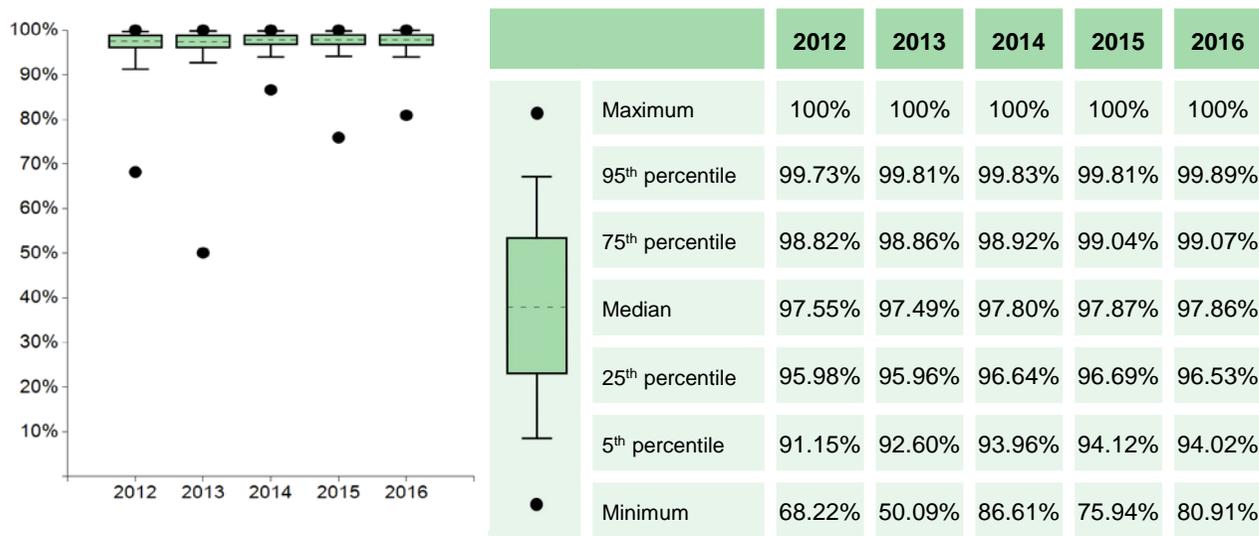
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
282	99.65%	265	93.97%

Comments:
The rate of complete colonoscopies has been consistently good over the years in the Centres. Here, the indicator improved compared with 2015 in the majority of the Centres. Out of the 17 Centres that failed to meet the target value the previous year, 9 achieved the target value (52%) in 2016. In total, 13 Centres were able to improve their rate (76.4%). Centres who did not achieve the target value give as the reasons: referral of complicated cases (e.g. stenosis processes, unstable cardiopulmonary patients with sedation problems), incomplete rectal cleansing and documentation problems.

Sollvorgabe = target value

12. Information on distance to mesorectal fascia in the diagnostic report (GL QI1)

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Max 100,00%
Begründungspflicht = 100,00%
Median 90,00%
Begründungspflicht < 90,00%

Min 0,00%
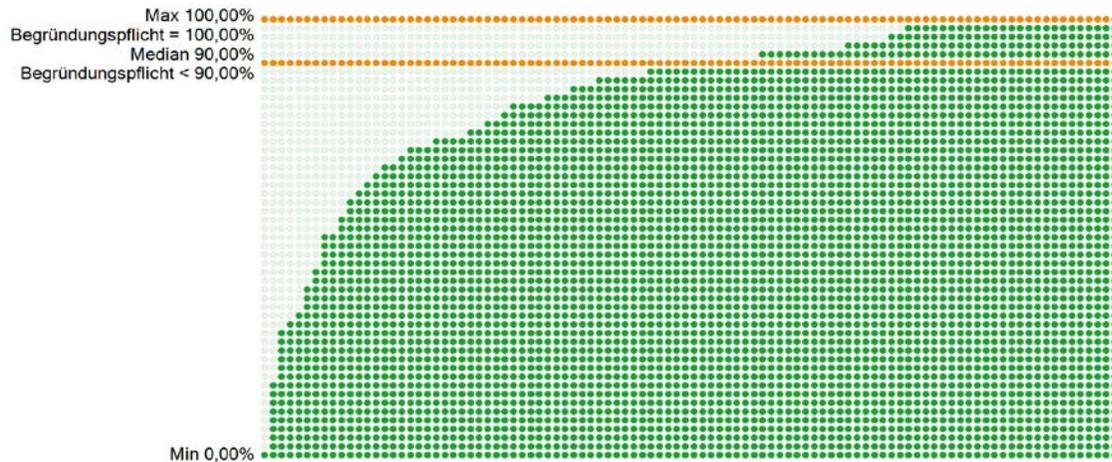
281 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Patients with information on distance to mesorectal fascia in the diagnostic report	14*	0 - 57
Denomi-nator	Patients with RC of the middle and lower third and MRI or thin-slice CT of the pelvis	16*	3 - 74
Rate	Explanation mandatory** <90% and =100%	90.00%	0.00% - 100%

*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.
** If value is outside the plausablilty corridor, centres have to give an explanation.
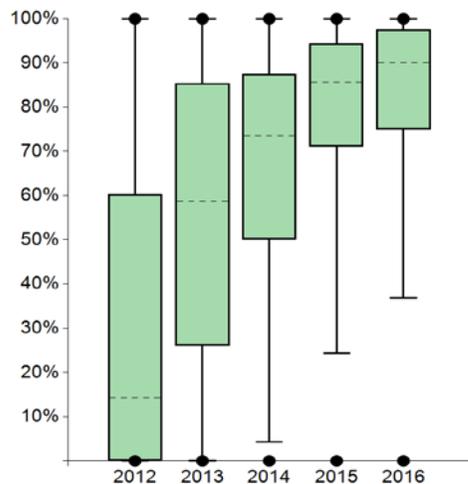
		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	100%	100%	100%	100%	100%
	75th percentile	60.28%	85.36%	87.50%	94.33%	97.56%
	Median	14.32%	58.62%	73.53%	85.71%	90.00%
	25th percentile	0.00%	26.13%	50.00%	71.07%	75.00%
	5th percentile	0.00%	0.00%	4.28%	24.34%	36.84%
●	Minimum	0.00%	0.00%	0.00%	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
281	99.29%	80	28.47%

Comments:
The QI of the guidelines has steadily improved over the years. Compared to the previous years the median has continued to increase; the same applies to the 5th, 25th and 75th percentiles. Consequently, most of the Centres were able to improve their rate compared to 2015. Centres with a low number of patients with rectal carcinomas in the lower and middle thirds, for whom the distance to the mesorectal fascia is indicated in the radiological test report, frequently stated that the radiological diagnostics were undertaken outside the Centre. They listed as improvement measures the coordination processes with the radiologists and the drawing up of service or procedural instructions.
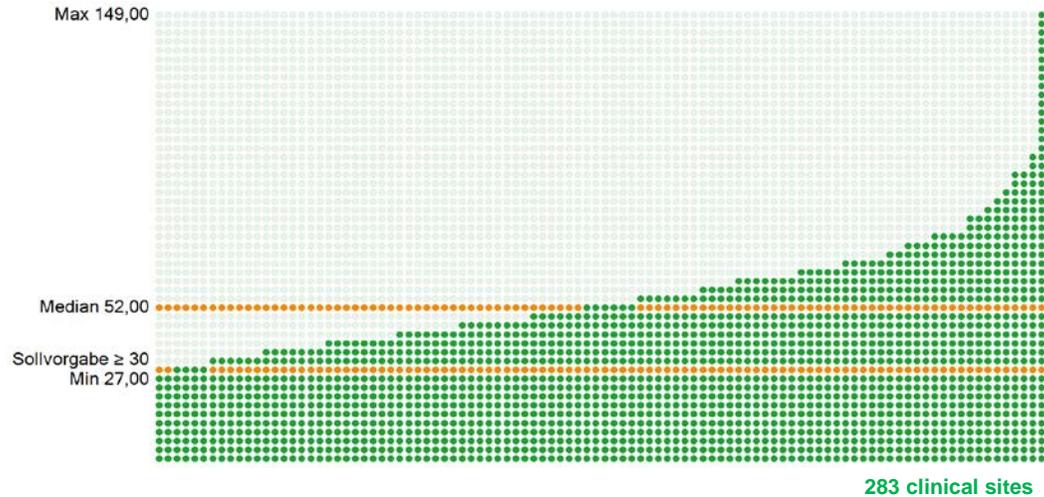
Begründungspflicht = mandatory statement of reasons

13. Operative primary cases: colon

Max 149,00

Median 52,00

Sollvorgabe ≥ 30
Min 27,00

283 clinical sites

		Indicator definition	All clinical sites 2016	
			Median	**Range**
Number		Operative primary cases: colon	52	27 - 149
		Target value ≥ 30		
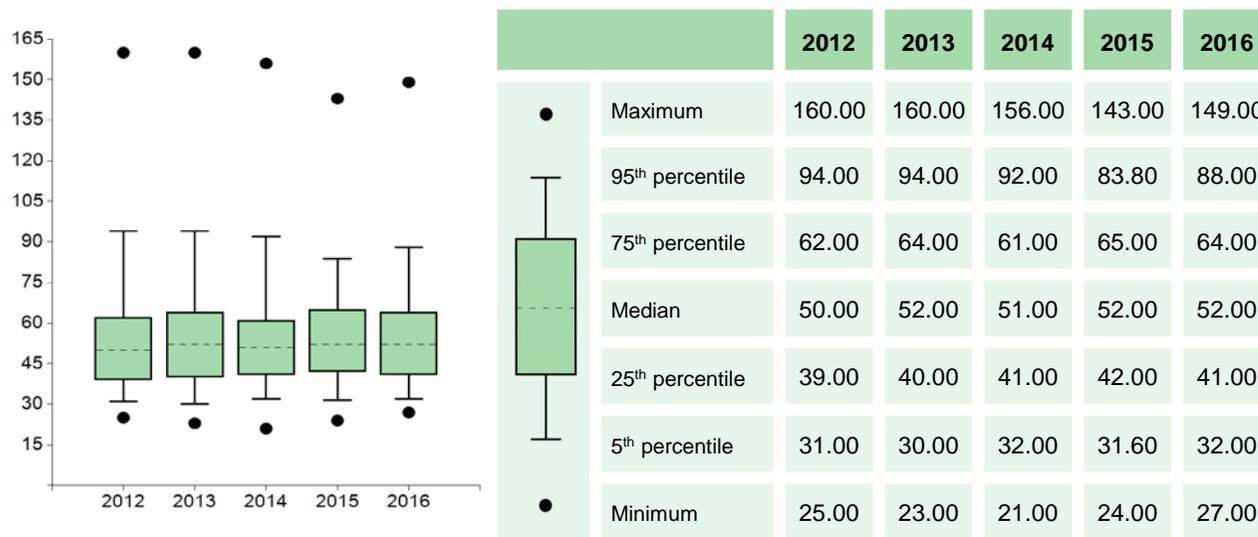
|		**2012**	**2013**	**2014**	**2015**	**2016**
●	Maximum	160.00	160.00	156.00	143.00	149.00
	95th percentile	94.00	94.00	92.00	83.80	88.00
	75th percentile	62.00	64.00	61.00	65.00	64.00
	Median	50.00	52.00	51.00	52.00	52.00
	25th percentile	39.00	40.00	41.00	42.00	41.00
	5th percentile	31.00	30.00	32.00	31.60	32.00
●	Minimum	25.00	23.00	21.00	24.00	27.00

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	276	97.53%

Comments:
The median of the operated primary cases with a colon carcinoma has remained the same in the Centres over the years. The rate of clinical sites that reach the minimum number of 30 operations on colon carcinomas is almost unchanged (96.3% in 2015). For initial certification and recertification Centres must prove that they meet the minimum requirement. Out of the 29,677 operations performed on patients with colon carcinomas that were conducted in Germany in 2016 (source: DESTATIS), 14,858 were done in a certified Centre (50%). In the previous year 14,520 patients with an initial diagnosis of a colon carcinoma underwent surgery in a Colorectal Cancer Centre (Centres outside Germany and Centres not included in the annual report are excluded).

Sollvorgabe = target value

14. Operative primary cases: rectum

Max 91,00

Median 26,00

Sollvorgabe ≥ 20

Min 11,00
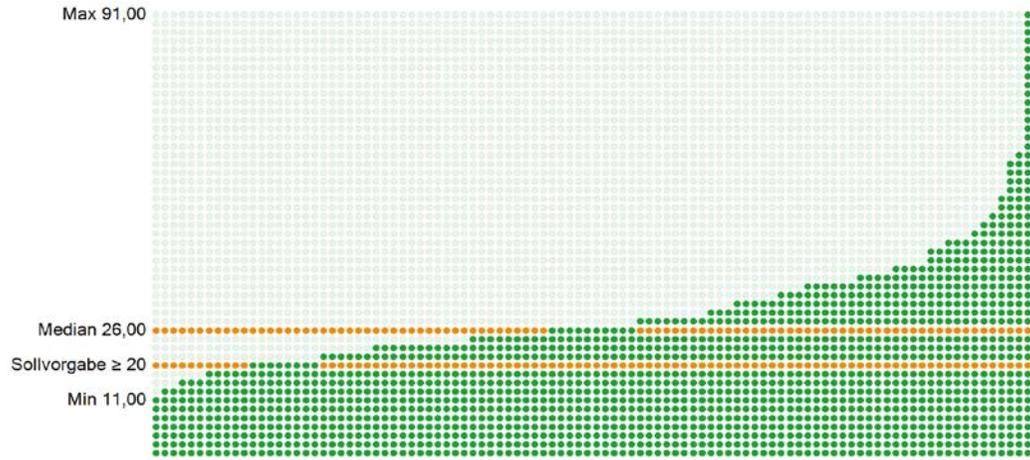
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Number	Operative primary cases: rectum	26	11 - 91
	Target value ≥ 20		
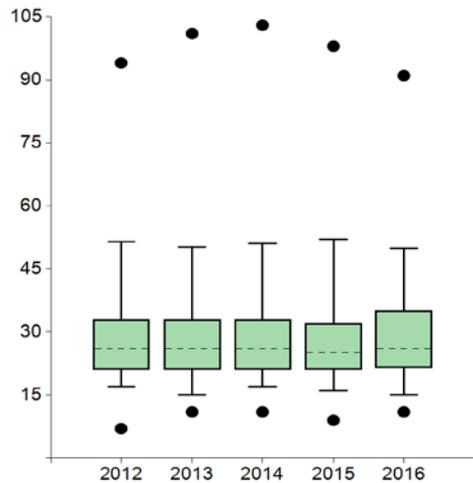
		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	94.00	101.00	103.00	98.00	91.00
	95th percentile	51.40	50.20	51.00	52.00	49.90
	75th percentile	33.00	33.00	33.00	32.00	35.00
	Median	26.00	26.00	26.00	25.00	26.00
	25th percentile	21.00	21.00	21.00	21.00	21.50
	5th percentile	17.00	15.00	17.00	16.00	15.10
●	Minimum	7.00	11.00	11.00	9.00	11.00

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	242	85.51%

Comments:

Likewise, the results of the operated primary cases of rectal carcinoma are unchanged over the years. 41 Centres did not reach the minimum number of 20 operations in 2016. 34 Centres were undergoing a surevillance audit (proof of meeting the target value is needed for a repeat audit), 7 further Centres were recertified in 2016 and were able to prove that the target value on average had been met over the last three years. Out of the 13,684 operations for rectal carcinomas that were conducted throughout Germany in 2016 (source: Federal Statistics Office), 7,889 were done in a certified Colorectal Cancer Centre (57.6%) (Centres outside Germany and Centres not included in the annual report are excluded).

Sollvorgabe = target value

15. Revision surgery: colon
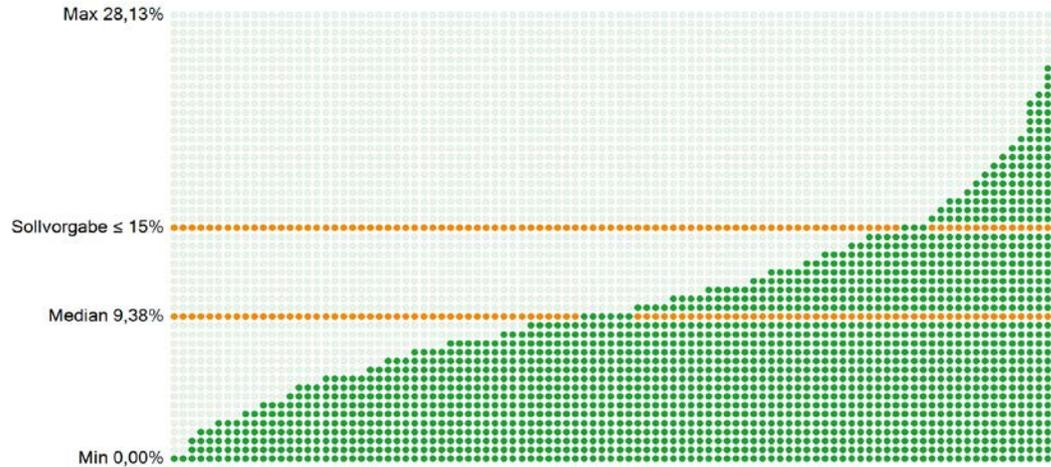
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Revision surgery due to perioperative complications within 30d of elective surgery	4*	0 - 19
Denomi-nator	Elective colon surgery	46*	17 - 122
Rate	Target value ≤ 15%	9.38%	0.00% - 28.13%

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

		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	34.78%	34.78%	25.93%	37.04%	28.13%
	95th percentile	19.14%	20.07%	20.78%	20.67%	20.00%
	75th percentile	12.50%	12.50%	13.41%	12.50%	13.29%
	Median	9.09%	9.30%	9.38%	8.82%	9.38%
	25th percentile	5.88%	5.71%	5.71%	6.15%	6.40%
	5th percentile	2.64%	2.52%	2.08%	2.15%	2.29%
●	Minimum	0.00%	0.00%	0.00%	0.00%	0.00%
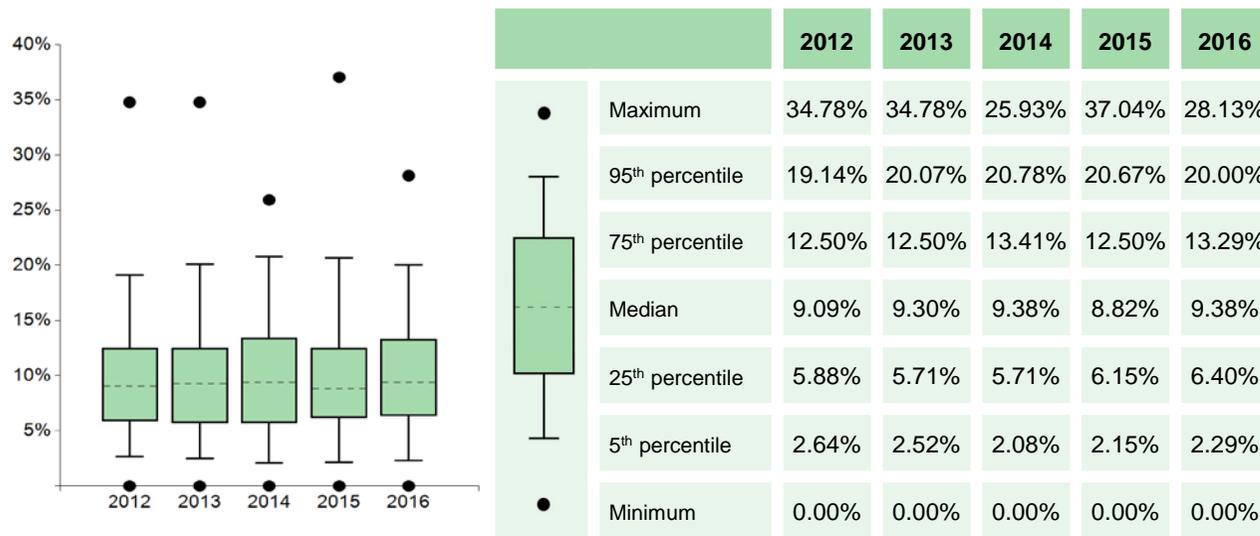
Clinical sites with evaluable data		Clinical sites meeting the target	
Anzahl	%	Anzahl	%
283	100.00%	239	84.45%

Comments:
The median of the rate of revision surgeries for colon carcinomas has remained steady over the last five years in the Centres. Here the maximum value compared with treatment year 2015 has improved. Out of the 44 Centres that failed to meet the target value the previous year, 37 were able to reduce their revision rate (corresponds to 84.1%). The most frequent reasons for revision surgeries are anastomosis insufficiencies and wound healing disorders. The individual cases were analysed during the audits and measures agreed to make improvements (e.g. standardisation of the suturing techniques or more consistent rectal decontamination).

Sollvorgabe = target value

16. Revision surgery: rectum
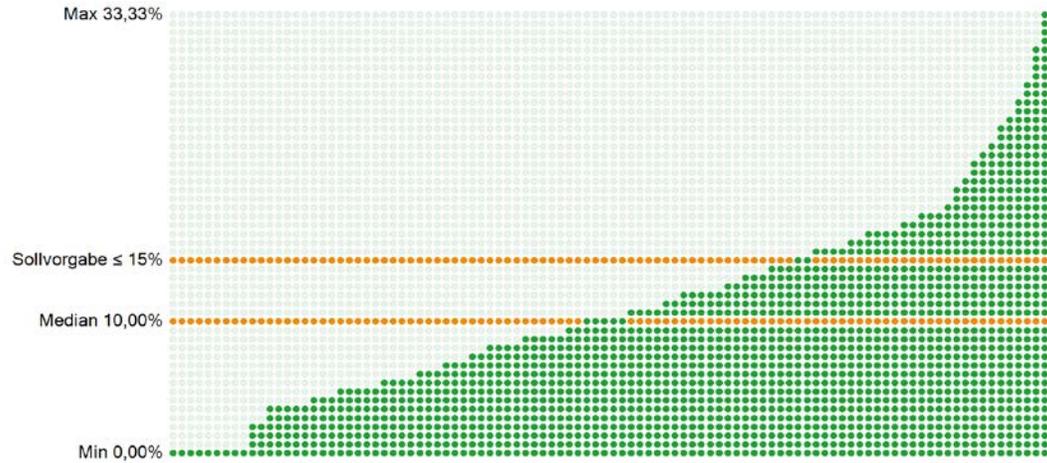
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Revision surgery after perioperative complications within 30d of elective surgery	3*	0 - 10
Denomi-nator	Elective rectum surgery (without TWR)	25*	10 - 86
Rate	Target value ≤ 15%	10.00 %	0.00% - 33.33%

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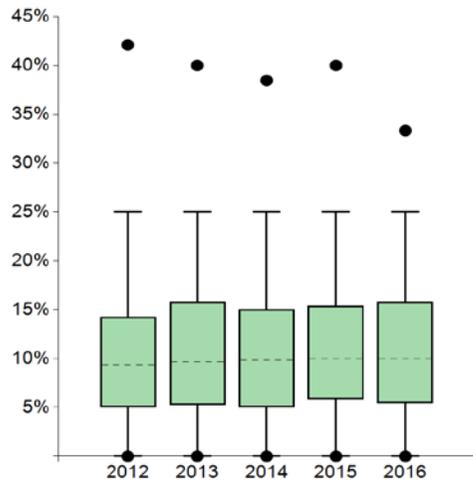

		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	42.10%	40.00%	38.46%	40.00%	33.33%
	95th percentile	25.00%	25.00%	25.00%	25.00%	25.00%
	75th percentile	14.28%	15.79%	15.00%	15.38%	15.79%
	Median	9.37%	9.68%	9.86%	10.00%	10.00%
	25th percentile	5.00%	5.26%	5.00%	5.88%	5.43%
	5th percentile	0.00%	0.00%	0.00%	0.00%	0.00%
●	Minimum	0.00%	0.00%	0.00%	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	205	72.44%

Comments:
The median rate for revision surgeries in patients with rectal carcinomas is unchanged compared to the previous year. Most of the Centres who did not meet the target value the previous year were able to improve their revision rate in 2016 (74.3%). The revision surgeries were conducted most frequently because of anastomosis insufficiencies or wound healing disorders. Centres with high rates often give as the reason a multimorbid patient cohort. The auditors made several comments and formulated deviations. Agreed improvement measures include, *inter alia*, changes to the surgical techniques and more further training schemes and training.

Sollvorgabe = target value

17. Post-operative wound infection
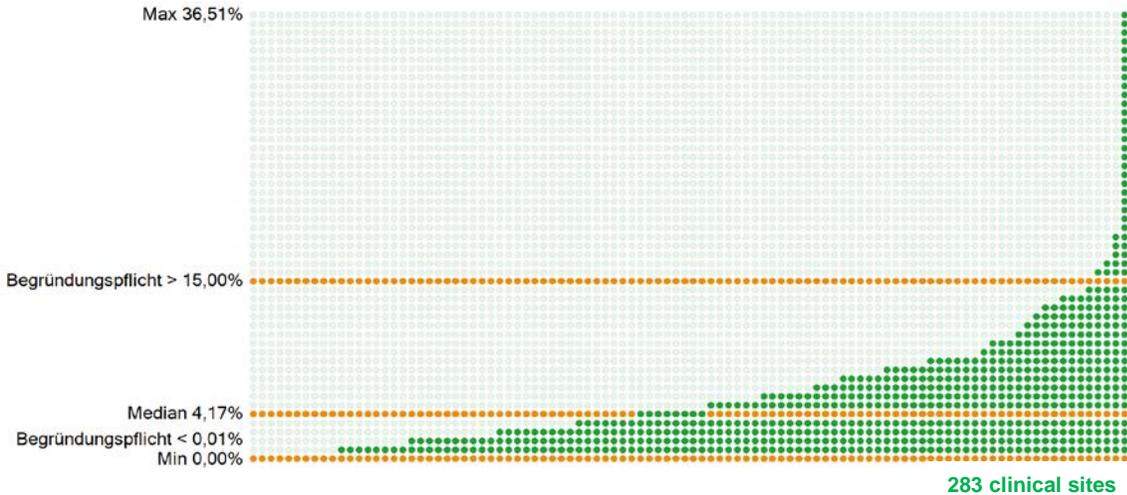
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Post-operative wound infection within 30 d of elective surgery requiring surgical wound revision (rinsing. spreading. VAC bandage)	3*	0 - 23
Denomi-nator	Operations of the CrCC (without TWR)	71*	34 - 182
Rate	Explanation mandatory** <0.01% and >15%	4.17%	0.00% - 36.51%

*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.
** If value is outside the plausablilty corridor, centres have to give an explanation.
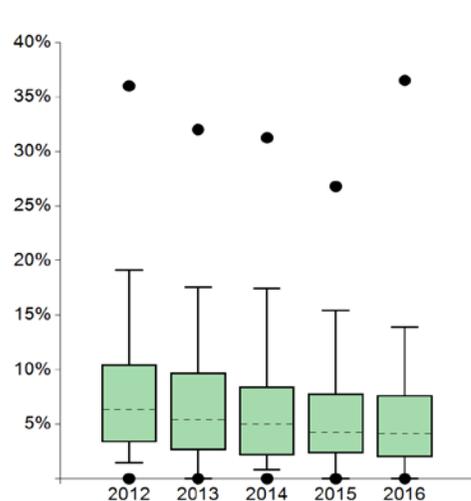
		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	36.00%	32.00%	31.25%	26.79%	36.51%
	95th percentile	19.13%	17.56%	17.44%	15.41%	13.89%
	75th percentile	10.43%	9.72%	8.45%	7.81%	7.64%
	Median	6.34%	5.41%	5.00%	4.26%	4.17%
	25th percentile	3.33%	2.61%	2.13%	2.33%	1.97%
	5th percentile	1.45%	0.00%	0.82%	0.00%	0.00%
●	Minimum	0.00%	0.00%	0.00%	0.00%	0.00%

| Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	243	85.87%

Comments:

The indicator shows a good development over the course of time and is almost unchanged in terms of the median compared with the previous year coupled with the parallel improvement in the 95th and 75th percentiles. Out of the 16 Centres, which showed a wound infection rate requiring explanations higher than 15% in 2015, 14 were able to lower their rate. The Centres with the highest rates gave, *inter alia*, as the reason that the wound healing procedures are documented in great detail or that the Centre looks after a particularly multimorbid patient cohort. The following measures for improvements were agreed: hygiene measures (amended disinfection procedures or antibiotic prophylaxis), introduction of nutrition screening, higher number of laparoscopies.

Begründungspflicht = mandatory statement of reasons

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18. Anastomotic insufficiencies: colon (GL QI 9)
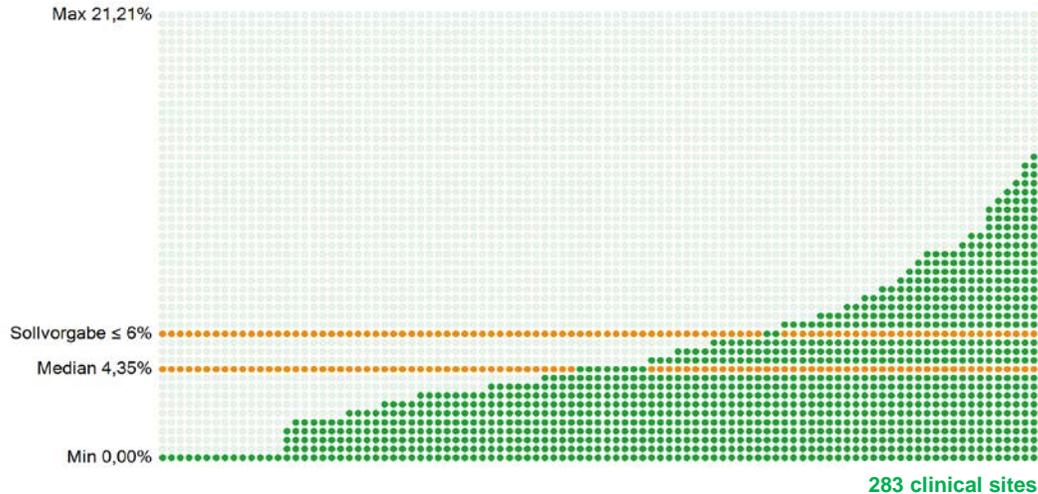
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Colon anastomotic insufficiencies requiring re-intervention after elective surgery	2*	0 - 10
Denomi-nator	Patients with CC in whom anastomosis was performed in an elective tumour resection	44*	16 - 112
Rate	Target value ≤ 6%	4.35%	0.00% - 21.21%

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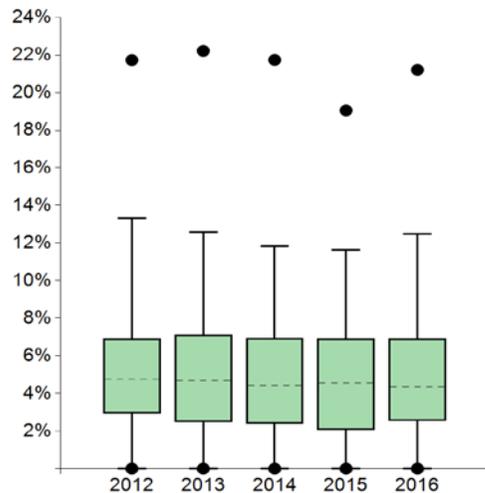

		2012	2013	2014	2015	2016
●	Maximum	21.73%	22.22%	21.74%	19.05%	21.21%
	95th percentile	13.33%	12.59%	11.83%	11.63%	12.50%
	75th percentile	6.89%	7.14%	6.94%	6.90%	6.90%
	Median	4.76%	4.67%	4.44%	4.55%	4.35%
	25th percentile	2.94%	2.50%	2.38%	2.08%	2.56%
	5th percentile	0.00%	0.00%	0.00%	0.00%	0.00%
●	Minimum	0.00%	0.00%	0.00%	0.00%	0.00%

| Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	193	68.20%

Comments:
The median of results for the QI of the guidelines has more or less remained the same over the years. Likewise, the proportion of Centres that meet the target value is unchanged compared with the previous year (68.1% in 2015). The Centres with the highest insufficiency rates for colon surgeries in 2016 have worse rates than the previous year. At the same time, however, many of the Centres who had high rates in 2015 showed an improvement. The main reason given by the Centres for the high rates is a large proportion of complex cases (multimorbidity, immune suppression, etc.). The improvement measures agreed with the auditors are: consistent discussion in the M&M conference, standardised rectal decontamination, two specialists for the performance of the surgery.

Sollvorgabe = target value

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19. Anastomotic insufficiencies: rectum (GL QI 8)

283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Patients with grade B (requiring antibiotic administration but not interventional drainage or transanal lavage/drainage or grade C (re-)laparotomy) anastomotic insufficiency	2*	0 - 8
Denomi-nator	Patients with RC in whom anastomosis was performed in an elective tumour resection (without TWR)	18*	4 - 77
Rate	Target value ≤ 15%	8.33%	0.00% - 50.00%

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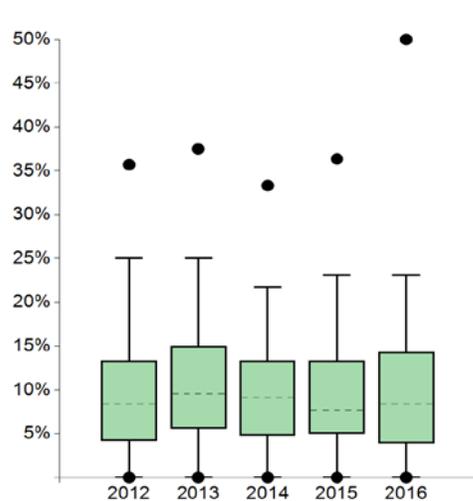

		2012	2013	2014	2015	2016
•	Maximum	35.71%	37.50%	33.33%	36.36%	50.00%
	95th percentile	25.00%	25.00%	21.74%	23.08%	23.08%
	75th percentile	13.33%	15.00%	13.33%	13.33%	14.29%
	Median	8.33%	9.52%	9.09%	7.69%	8.33%
	25th percentile	4.16%	5.56%	4.76%	5.00%	3.94%
	5th percentile	0.00%	0.00%	0.00%	0.00%	0.00%
•	Minimum	0.00%	0.00%	0.00%	0.00%	0.00%

| Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	225	79.51%

Comments:
The median of the quality indicator in the guidelines is slightly higher than the previous year. The proportion of clinical sites that meet the target value is lower than in 2015 (82.8%). The Centre with the highest rate had normal values the previous years. The Centre has taken various measures (changes to the surgical techniques, new stapler material, etc.). In the audit a clear improvement in the rate for the first half of 2017 was visible. Also in the other Centres with elevated rates, individual case analyses were undertaken during the audit. Systematic errors were ruled out and improvement measures agreed (e.g. training, quality circles, second assessment of anastomosis at the end of surgery).

Sollvorgabe = target value

20. Post-operative mortality
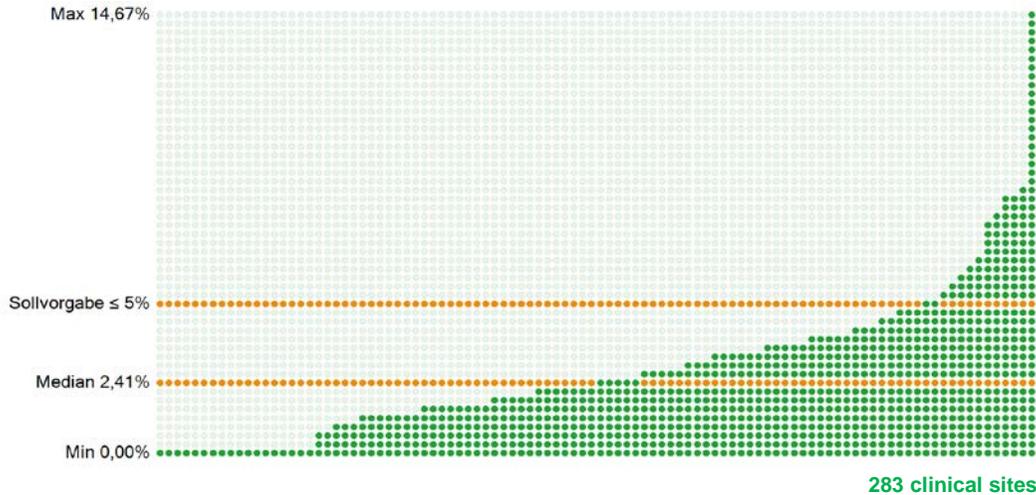
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Post-operative patient deaths with 30d of elective surgery	2*	0 - 11
Denomi-nator	Electively operated patients (without TWR)	71*	34 - 182
Rate	Target value ≤ 5%	2.41%	0.00% - 14.67%

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


		2012	2013	2014	2015	2016
●	Maximum	18.42%	14.29%	10.53%	13.46%	14.67%
	95th percentile	6.41%	8.15%	7.58%	6.27%	7.87%
	75th percentile	4.16%	4.30%	4.41%	3.92%	3.94%
	Median	3.06%	2.78%	2.68%	2.41%	2.41%
	25th percentile	1.58%	1.52%	1.39%	1.15%	1.21%
	5th percentile	0.00%	0.00%	0.00%	0.00%	0.00%
●	Minimum	0.00%	0.00%	0.00%	0.00%	0.00%
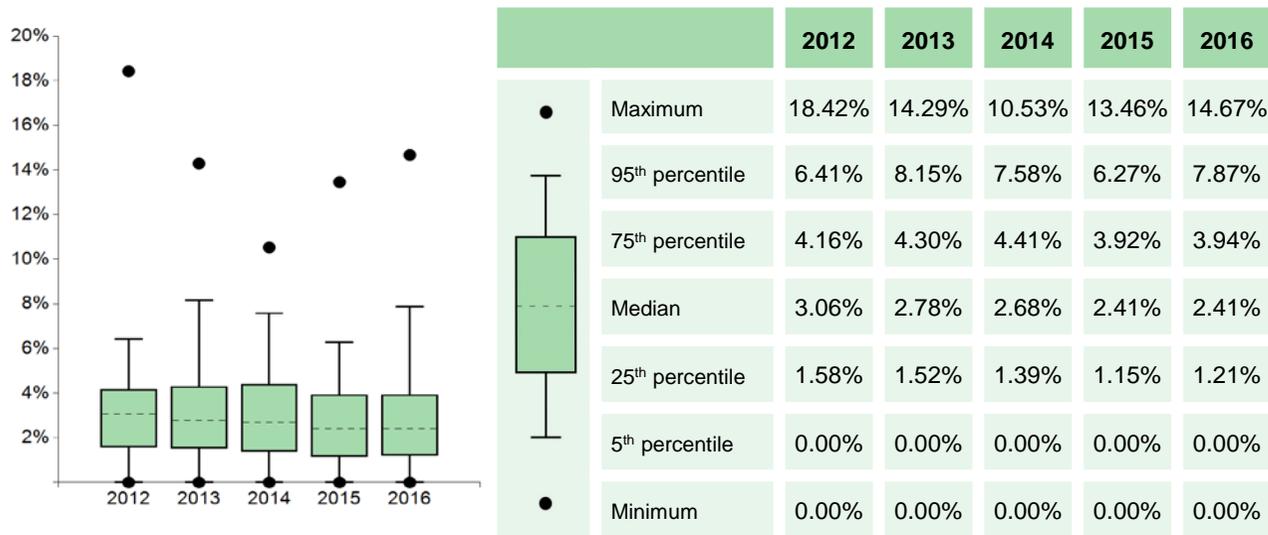
| Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	247	87.28%

Comments:
The median for postoperative mortality was unchanged compared with the previous year. The maximum value and the 95th percentile have increased slightly. The proportion of Centres who meet the target value is slightly lower than in 2015 (88.3%). Centres with post-operative mortality above the target value in 2015 were able to improve their rates (mean reduction of 2.24%). The frequent reasons given for postoperative fatalities are cardiopulmonary complications or sepsis with multiple organ failure, e.g. after intestinal perforation. The fatalities were discussed in the morbidity/mortality conferences in the Centres. Individual case analyses were undertaken during the audits and experts ruled out systematic errors.
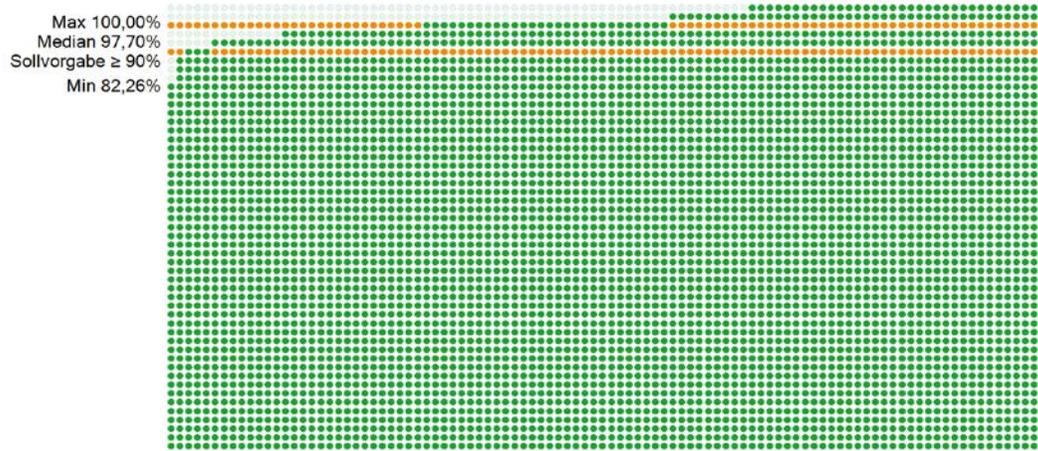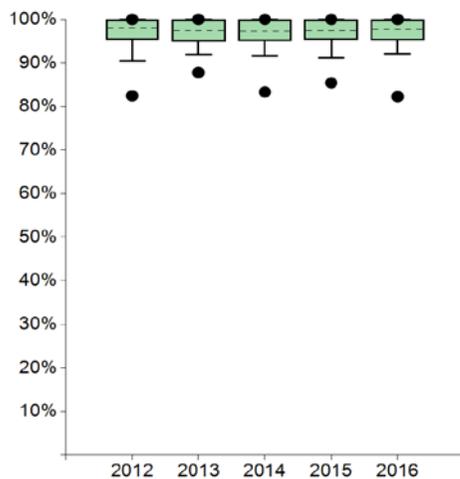
Sollvorgabe = target value

21. Local R0 resections: colon

Max 100,00%
Median 97,70%
Sollvorgabe ≥ 90%
Min 82,26%

283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Local R0 resections - colon -after completion of surgical treatment	44*	16 - 121
Denomi-nator	Colon operations according to primary case definition (operative)	46*	17 - 122
Rate	Target value ≥ 90%	97.70%	82.26% - 100%

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

	2012	2013	2014	2015	2016
Maximum	100%	100%	100%	100%	100%
95th percentile	100%	100%	100%	100%	100%
75th percentile	100%	100%	100%	100%	100%
Median	97.91%	97.37%	97.30%	97.47%	97.70%
25th percentile	95.34%	94.87%	95.00%	95.35%	95.24%
5th percentile	90.47%	91.83%	91.67%	91.22%	91.95%
Minimum	82.45%	87.80%	83.33%	85.42%	82.26%

| Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	278	98.23%

Comments:
The indicator has not changed over the years and continues to be very well implemented in the Centres. Only five Centres fail to achieve the target value for local R0 resections after surgery on colon carcinomas. The reasons given by the Centres for non-fulfilment are cases at an advanced stage, for instance with peritoneal carcinosis.

Sollvorgabe = target value

22. Local R0 resections: rectum

Max 100,00%
Median 95,83%
Sollvorgabe ≥ 90%

Min 77,42%

283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Local R0 resections – rectum - after completion of surgical treatment	24*	10 - 84
Denomi-nator	Rectum operations according to primary case definition (operative) (without TWR)	25*	10 - 86
Rate	Target value ≥ 90%	95.83%	77.42% - 100%

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

		2012	2013	2014	2015	2016
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	100%	100%	100%	100%	100%
	75th percentile	100%	100%	100%	100%	100%
	Median	95.91%	95.83%	96.00%	96.00%	95.83%
	25th percentile	93.10%	92.86%	93.02%	92.68%	93.02%
	5th percentile	88.88%	87.50%	88.24%	88.72%	86.26%
●	Minimum	64.28%	72.73%	66.67%	80.00%	77.42%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	254	89.75%

Comments:
Also the indicator for local R0 resections for rectal carcinoma surgery is well implemented in the Centres and has remained steady over the years. The proportion of Centres that meet the target value is slightly lower than the previous year (91.9% in 2015). The most frequent reasons given for low R0 resection rates were infiltrations into adjacent organs, tumour-free frozen sections with later observation of tumour cells in the resection margin and very advanced tumour diseases. The auditors conducted individual case analyses, systematic errors could be ruled out.

Sollvorgabe = target value

23. Marking of stoma position (GL QI 10)

Max 100,00%
Begründungspflicht = 100,00%
Median 97,30%

Begründungspflicht < 40,00%

Min 0,00%
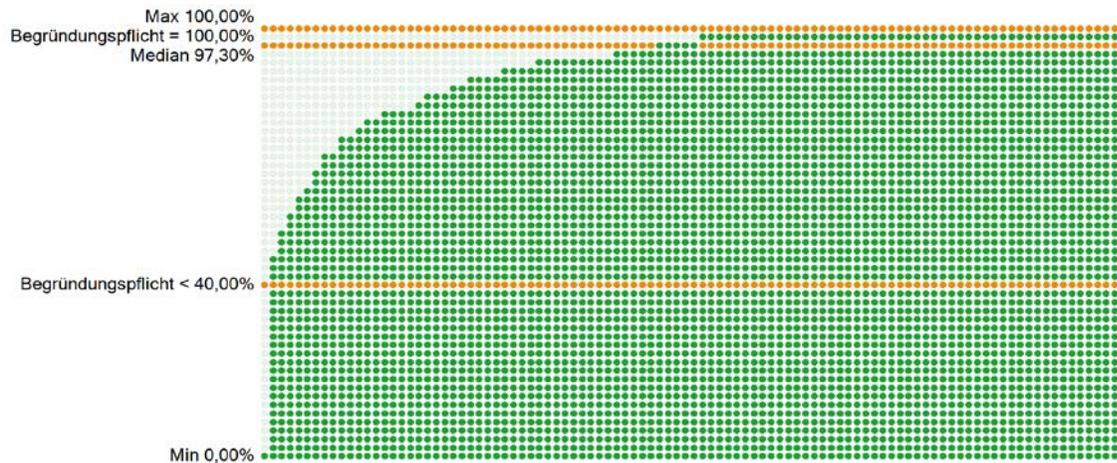
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Patients with preoperative marking of stoma position	18*	0 - 85
Denomi-nator	Patients with RC who had surgery to install a stoma (without TWR)	19*	4 - 86
Rate	Explanation mandatory** <40% and >100%	97.30 %	0.00% - 100%

*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.
** If value is outside the plausablilty corridor, centres have to give an explanation.
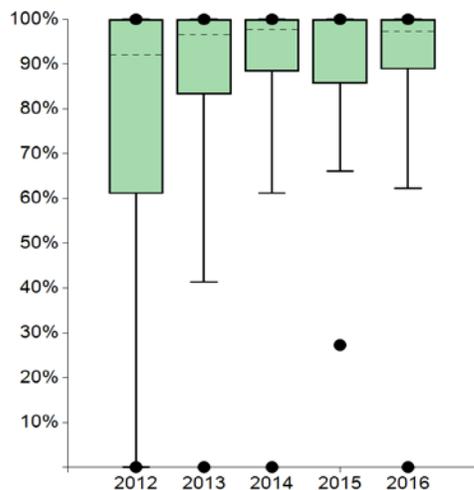
		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	100%	100%	100%	100%	100%
	75th percentile	100%	100%	100%	100%	100%
	Median	92.00%	96.55%	97.73%	100%	97.30%
	25th percentile	60.99%	83.33%	88.24%	85.71%	88.89%
	5th percentile	0.00%	41.34%	61.11%	66.02%	62.23%
●	Minimum	0.00%	0.00%	0.00%	27.27%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	143	50.53%

Comments:
The quality indicator of the guidelines for marking the site for the stoma in elective rectal carcinoma surgery continues to be well implemented in the Centres. The Centre with no documented cases of stoma site marking has stated that the marking was done for all patients prior to planned stoma installation and henceforth would be consistently documented. Likewise the other Centres with low rates gave documentation problems as the reasons.

Begründungspflicht = mandatory statement of reasons

24. Primary resection of liver metastases (UICC stage IV CRC)
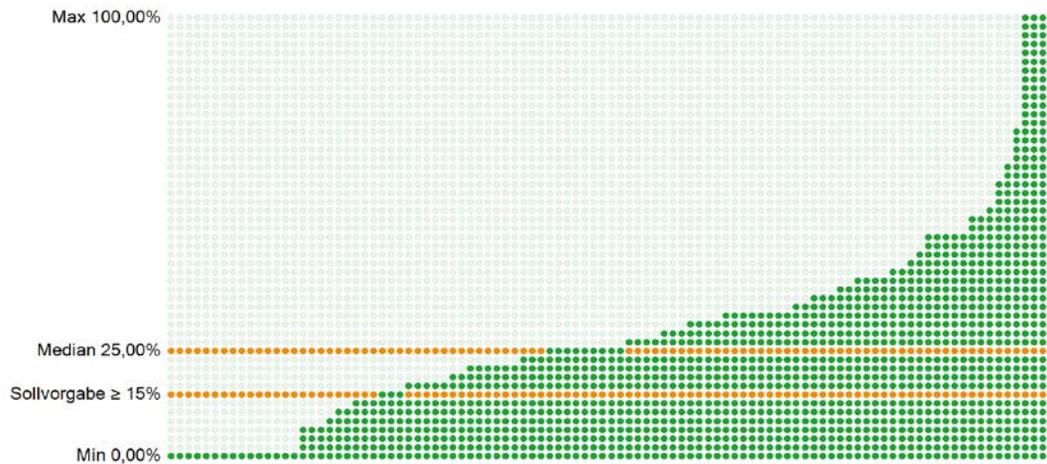
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280 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Primary-case patients with UICC stage IV CRC who underwent resection of liver metastases	2*	0 - 9
Denomi-nator	Primary-case patients with UICC stage IV CRC who only have metastases (without TWR)	9*	1 - 32
Rate	Target value ≥ 15%	25.00%	0.00% - 100%

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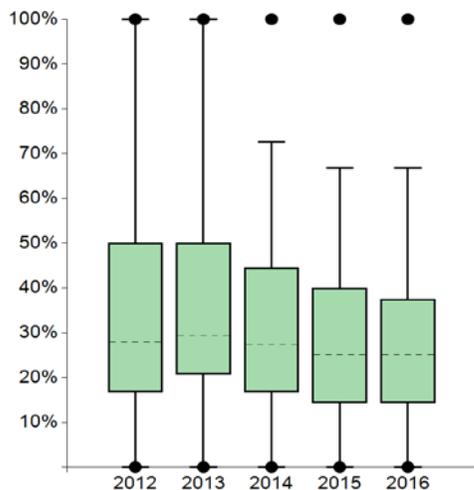

		2012	**2013**	**2014**	**2015**	**2016**
●	Maximum	100%	100%	100%	100%	100%
⊤	95th percentile	100%	100%	72.50%	66.67%	66.67%
	75th percentile	50.00%	50.00%	44.44%	40.00%	37.50%
	Median	27.92%	29.41%	27.27%	25.00%	25.00%
	25th percentile	16.66%	20.72%	16.67%	14.29%	14.29%
⊥	5th percentile	0.00%	0.00%	0.00%	0.00%	0.00%
●	Minimum	0.00%	0.00%	0.00%	0.00%	0.00%

| Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
280	98,94%	206	73,57%

Comments:
The indicator compared with the previous year in terms of the median and the percentile is unchanged. In 2016 689 primary liver metastasis resections were carried out in the Colorectal Cancer Centres (671 in 2015). The number of Centres that did not perform any resections (= 0%) is almost the same (43 in 2016, 44 in 2015). The reasons given by these Centres for not carrying out metastasis resections were extensive liver metastases, patients having to undergo emergency surgery and no surgery being performed on multimorbid patients. The individual cases were analysed and replayed by the experts during the audits.
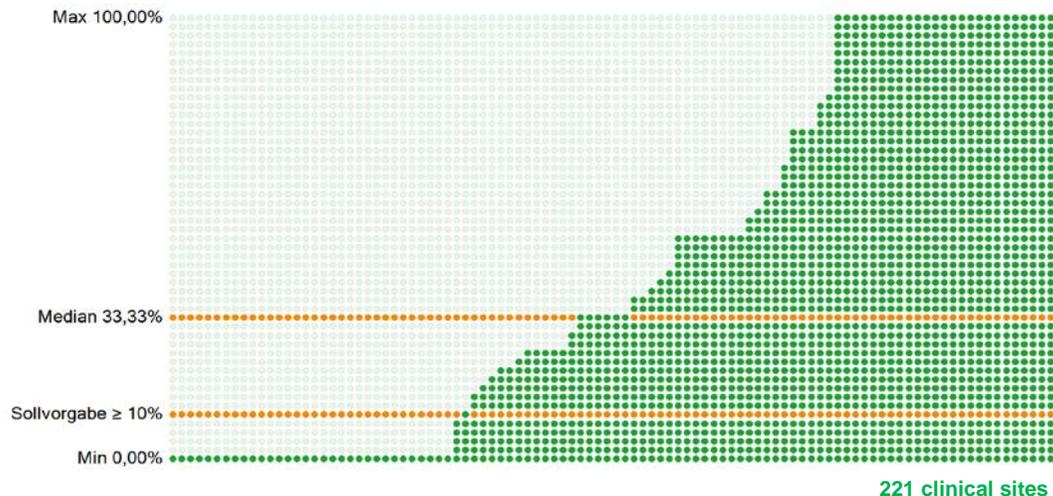
Sollvorgabe = target value

35

25. Secondary resection of liver metastases (UICC stage IV CRC)

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Primary-case patients with UICC stage IV CRC who underwent secondary resection of liver metastases after chemotherapy	1*	0 - 10
Denomi-nator	Primary-case patients with UICC stage IV CRC with primarily non-resectable only liver metastases who received chemotherapy (without TWR)	3*	1 - 26
Rate	Target value ≥ 10%	33.33%	0.00% - 100%

221 clinical sites

*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.
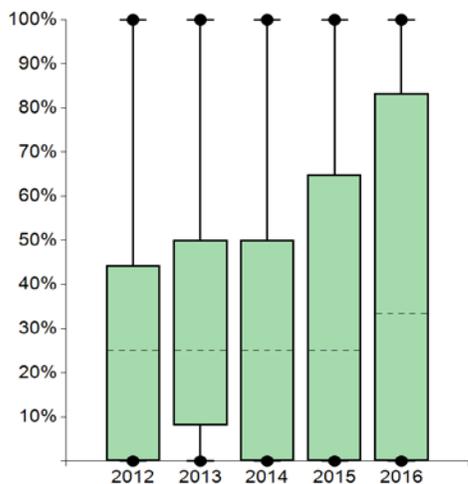
		2012	2013	2014	2015	2016
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	100%	100%	100%	100%	100%
	75th percentile	44.36%	50.00%	50.00%	64.92%	83.33%
	Median	25.00%	25.00%	25.00%	25.00%	33.33%
	25th percentile	0.00%	8.11%	0.00%	0.00%	0.00%
	5th percentile	0.00%	0.00%	0.00%	0.00%	0.00%
●	Minimum	0.00%	0.00%	0.00%	0.00%	0.00%

| Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
221	78.09%	148	66.97%

Comments:
In 2016 more patients with a colorectal carcinoma underwent secondary liver metastasis resection than the previous year (307 in 2016, 282 in 2015). 72 Centres did not perform any secondary resections of liver metastasis (70 in 2015). The reasons frequently given for the non-performance of resections are that patients died during chemotherapy, were in a palliative treatment situation, had diffuse liver metastasis or chemotherapy was not yet completed.

Sollvorgabe = target value

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26. Adjuvant chemotherapies: colon (UICC stage III) (GL QI 6)
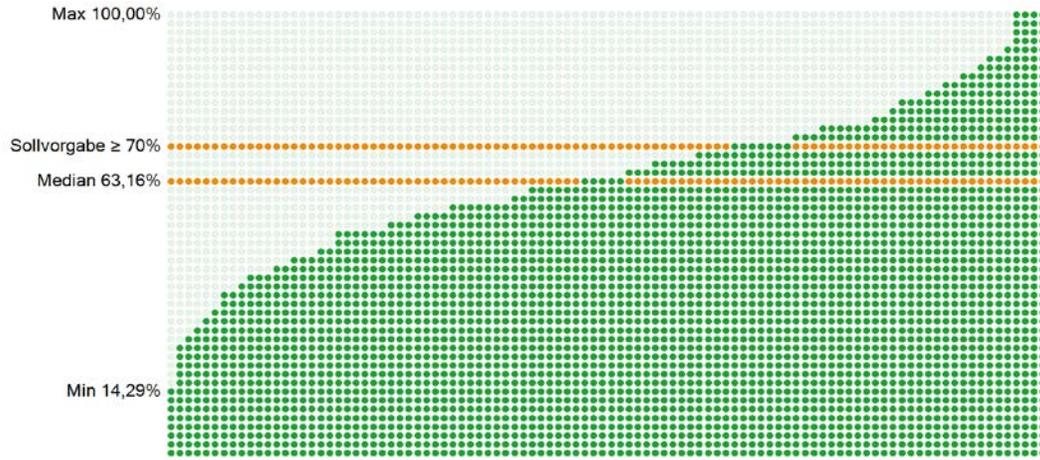
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Patients with a UICC stage III colon carcinoma who received adjuvant chemotherapy	8*	1 - 27
Denomi-nator	Patients with a UICC stage III colon carcinoma who had a R0 resection of the primary tumour	13*	3 - 41
Rate	Target value ≥ 70%	63.16%	14.29% - 100%

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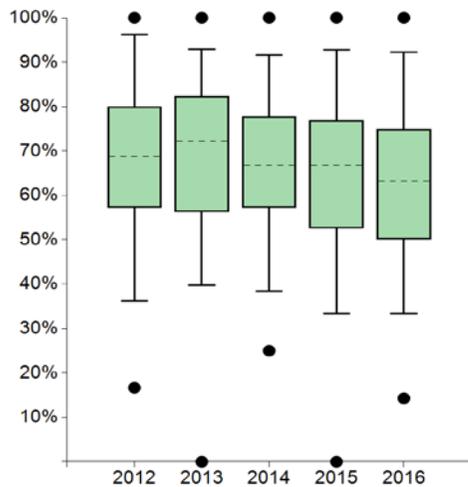

		2012	2013	2014	2015	2016
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	96.25%	92.95%	91.67%	92.86%	92.25%
	75th percentile	80.00%	82.35%	77.78%	76.92%	75.00%
	Median	68.75%	72.22%	66.67%	66.67%	63.16%
	25th percentile	57.14%	56.25%	57.14%	52.63%	50.00%
	5th percentile	36.11%	39.69%	38.46%	33.33%	33.33%
●	Minimum	16.66%	0.00%	25.00%	0.00%	14.29%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	103	36.40%

Comments:
The median of the indicator fell slightly over the course of time and far fewer Centres met the target value than in the previous year (36% versus 46% in 2015). Also the total number of adjuvant chemotherapies (2,340 versus 2,465 in 2015) was slightly lower with more or less the same population. The reasons given for the non-conducted chemotherapy are age and multimorbidity of patients and patients' refusal of therapy.

Sollvorgabe = target value

27. Neoadjuvant radiotherapies or radiochemotherapies (clinical UICC stages II-III) (GL QI 7)

283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Patients who received neoadjuvant radiotherapy or radiochemotherapy.	9*	2 - 37
Denomi-nator	Patients with RC of the middle and lower third (= up to 12 cm from anus) and the TNM categories cT3. 4/cM0 and/or cN1. 2/cM0. who received surgery (= clinical UICC stages II and III) (without TWR)	11*	2 - 42
Rate	Target value ≥ 80%	84.62%	31.25% - 100%

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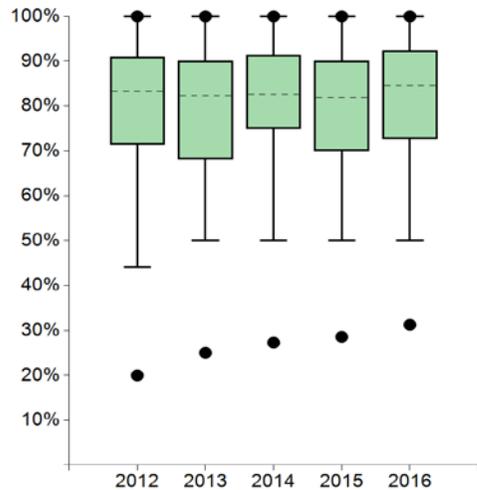

		2012	2013	2014	2015	2016
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	100%	100%	100%	100%	100%
	75th percentile	90.90%	90.00%	91.30%	90.00%	92.31%
	Median	83.33%	82.35%	82.61%	81.82%	84.62%
	25th percentile	71.42%	68.18%	75.00%	70.00%	72.73%
	5th percentile	44.16%	50.00%	50.00%	50.00%	50.00%
●	Minimum	20.00%	25.00%	27.27%	28.57%	31.25%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	187	66.08%

Comments:
More Centres met the target value of 80% than the previous year (66% versus 59% in 2015) and more Centres recorded an increase in the rate of neoadjuvant therapies increased compared with the previous year (2,756 versus 2,723). The reasons given by the Centres for not meeting the target value were rejection by the patients, participation in the OCUM study, multimorbidity and imminent ileus with a need for surgery. One step initiated when therapy was refused was, *inter alia*, the conversation with the radio-oncologist. The quality indicator was deleted from the set of quality indicators in the updated guidelines because the revised recommendation was not able to define the patient cohort in a sufficiently differentiated manner.

Sollvorgabe = target value

28. Quality of the TME rectum specimen (information from pathology) (GL QI 3)
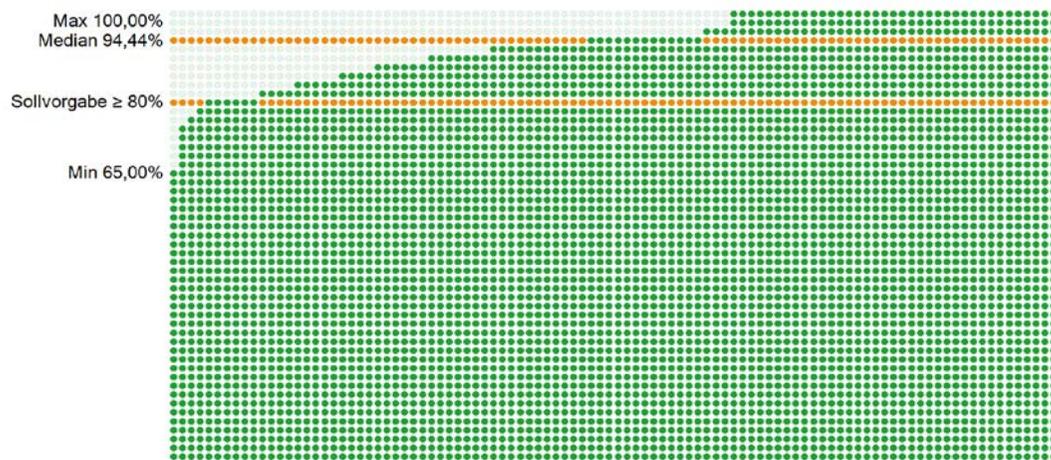
283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Patients with good-to-moderate quality (grade 1: mesorectal fascia or grade 2: intramesorectal excisions) TME	15*	4 - 74
Denomi-nator	Patients with radically operated RC (without TWR)	17*	4 - 74
Rate	Target value ≥ 70%	94.44%	65.00% - 100%

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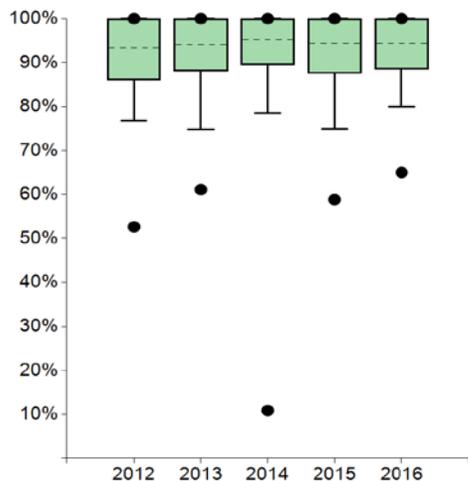

		2012	2013	2014	2015	2016
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	100%	100%	100%	100%	100%
	75th percentile	100%	100%	100%	100%	100%
	Median	93.33%	94.12%	95.24%	94.44%	94.44%
	25th percentile	86.04%	88.00%	89.47%	87.50%	88.46%
	5th percentile	76.74%	74.84%	78.57%	75.00%	80.00%
●	Minimum	52.63%	61.11%	10.87%	58.82%	65.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	272	96.11%

Comments:
This quality indicator in the guidelines, too, is very well implemented in the Centres. 96% of the Centres meet the target value of 80%. The Centres with the lowest values give difficult extirpations as the reason. The auditors looked at the individual cases and ruled out systematic errors.

Sollvorgabe = target value

29. Information on resection edge (GL QI 4)

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Max 100,00%
Begründungspflicht = 100,00%
Median 93,75%

Min 23,08%
Begründungspflicht < 15,00%

283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Patients in whom the distance from the aboral edge of the tumour to the aboral resection margin and the distance from the tumour to the circumferential mesorectal resection level was documented in mm.	20*	3 - 83
Denomi-nator	Patients with RC in whom the primary tumor was resected in the form of a TME or PME. (without TWR)	23*	5 - 86
Rate	Explanation mandatory** <15% and =100%	93.75 %	23.08% - 100%

*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.
** If value is outside the plausablilty corridor, centres have to give an explanation.
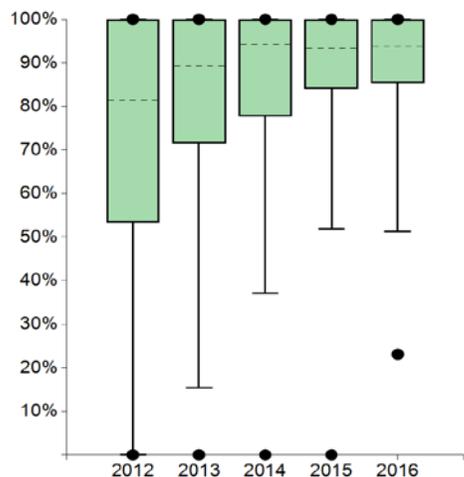
		2012	2013	2014	2015	2016
●	Maximum	100%	100%	100%	100%	100%
	95th percentile	100%	100%	100%	100%	100%
	75th percentile	100%	100%	100%	100%	100%
	Median	81.45%	89.29%	94.29%	93.33%	93.75%
	25th percentile	53.39%	71.43%	77.78%	84.00%	85.45%
	5th percentile	0.00%	15.39%	37.14%	51.95%	51.31%
●	Minimum	0.00%	0.00%	0.00%	0.00%	23.08%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	204	72.08%

Comments:
The meeting of the quality indicator in the guidelines is steadily improving. In the updated guidelines the quality indicator has been integrated into a new quality indicator. This means that the quality indicator in this form will only be documented up to 2018. The Centres with the most irregular values the previous year have improved considerably.

Begründungspflicht = mandatory statement of reasons

30. Lymph node examination (GL QI 2)
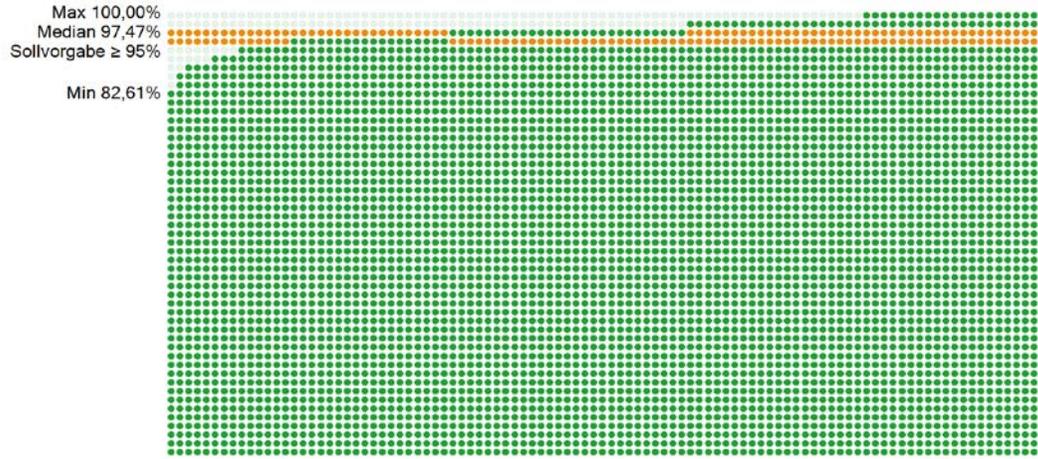
Max 100,00%
Median 97,47%
Sollvorgabe ≥ 95%
Min 82,61%

283 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Patients with pathological examination of lymph nodes ≥ 12	68*	32 - 173
Denomi-nator	Patients with CRC who underwent an lymphadenectomy (without TWR)	70*	34 - 182
Rate	Target value ≥ 95%	97.47%	82.61% - 100%

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

		2012	**2013**	**2014**	**2015**	**2016**
	Maximum	100%	100%	100%	100%	100%
	95th percentile	100%	100%	100%	100%	100%
	75th percentile	98.03%	98.25%	98.48%	98.61%	98.91%
	Median	96.00%	96.34%	96.61%	97.18%	97.47%
	25th percentile	93.15%	94.44%	94.12%	94.92%	95.45%
	5th percentile	86.10%	86.53%	88.64%	89.18%	90.66%
	Minimum	63.54%	72.84%	69.39%	79.25%	82.61%
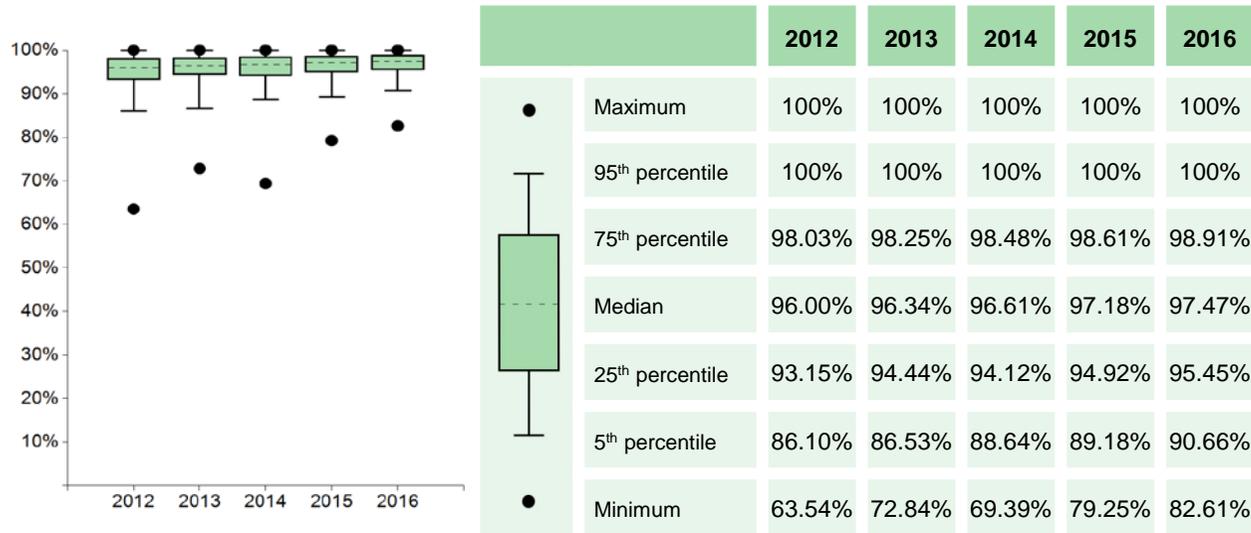
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
283	100.00%	226	79.86%

Comments:
The quality indicator in the guidelines is very well met. Given the very good results of the Centres, the guidelines group decided in the update to delete the quality indicator from the set of quality indicators. The Centre with the lowest rate had a value below the 5th percentile the previous year, too. This will be a focus in the 2018 audit. The Centres mainly give prior neoadjuvant treatments as the reason for not meeting the target value. The values and processes are discussed by surgeons and pathologists and corresponding measures specified.

Sollvorgabe = target value

31. Beginning of the adjuvant chemotherapy
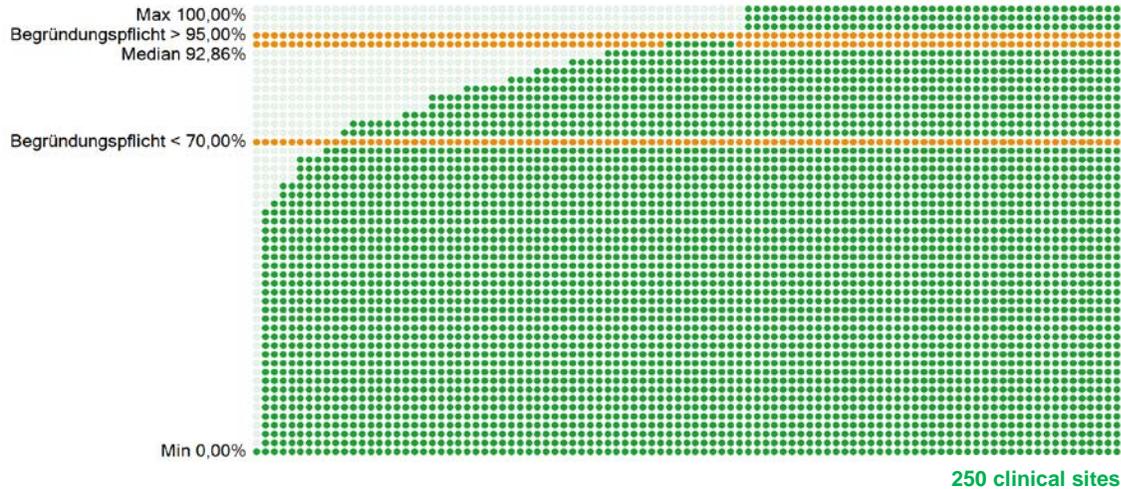
250 clinical sites

	Indicator definition	All clinical sites 2016	
		Median	**Range**
Numerator	Patients with beginning of chemotherapy within 8 weeks after surgery	7*	0 - 21
Denomi-nator	Patients with UICC stage III colon carcinoma who had received adjuvant chemotherapy	8*	1 - 23
Rate	Explanation mandatory** <70% and >95%	92.86%	0.00% - 100%

*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.
** If value is outside the plausablilty corridor, centres have to give an explanation.
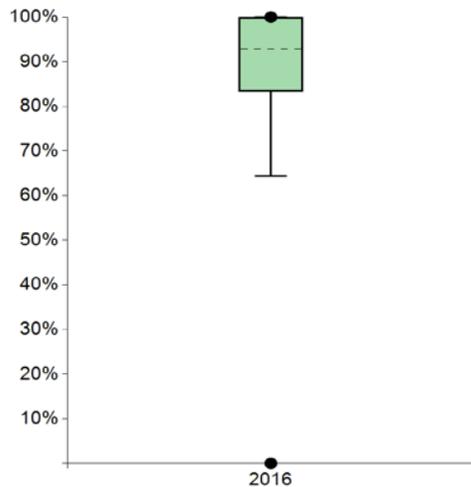
		2012	2013	2014	2015	2016
●	Maximum	-----	-----	-----	-----	100%
	95th percentile	-----	-----	-----	-----	100%
	75th percentile	-----	-----	-----	-----	100%
	Median	-----	-----	-----	-----	92.86%
	25th percentile	-----	-----	-----	-----	83.33%
	5th percentile	-----	-----	-----	-----	64.38%
●	Minimum	-----	-----	-----	-----	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
250	88.34%	116	46.40%

Comments:
The provision of details in indicator year 2016 is voluntary. If chemotherapy did not begin within 8 weeks of surgery, the Centres mainly give as the reasons post-operative complications, the advanced age of patients and a longer reconvalescence phase after surgery.

Begründungspflicht = mandatory statement of reasons

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