

# Annual Report 2021

## of the Certified Colorectal Cancer Centres (CRCCs)

Audit year 2020 / Indicator year 2019

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## General information

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### Quality indicators of the guidelines (QI):

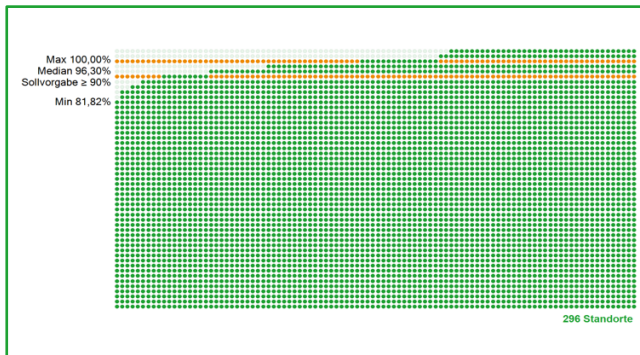
In the table of contents and in the respective headings the indicators, which correspond to the quality indicators of the evidence-based guidelines are specifically identified. The quality indicators identified in this way are based on the strong recommendations of the guidelines and were derived from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

The Quality Indicators (QI's) refer to the version 2.1 of the S3 GGPO Guideline Colorectal Cancer.

	Indicator definition	All clinical sites 2018		
		Median	Range	Patients Total
Numerator	Patients presented at an interdisciplinary tumour conference before therapy	38*	16 - 102	11,755
Denominator	All elective patients with RC and all patients with stage IV CC	40*	16 - 108	12,416
Rate	Target value ≥ 95%	95.96%	72.34% - 100%	94.68%**

### Basic data indicator:

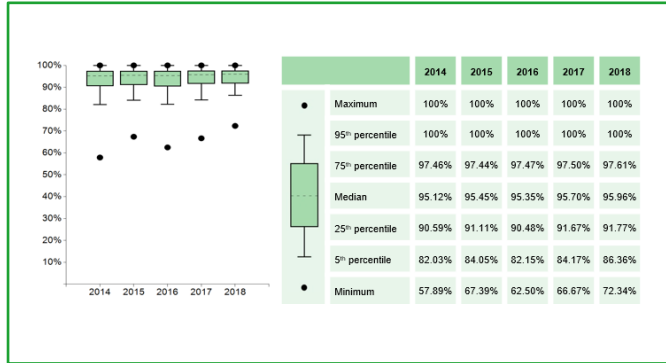
The definition of numerator, denominator and target are taken from the key figure sheet. The specification of the median for numerator and denominator does not refer to an existing centre, but reflects the median of all numerators of the cohort and the median of all denominators of the cohort. Under Range, the range of values for numerator, denominator and rate of all centres is given. The column Total patients shows the sum of all patients treated according to the indicator as well as the corresponding rate.



### Diagram:

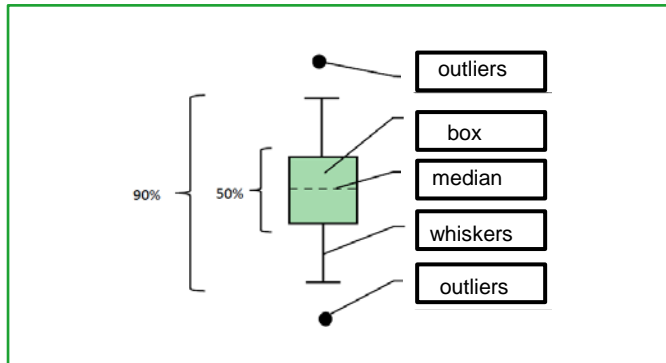
The x-axis indicates the number of Centres, the y-axis gives the values in percent or number (e.g, primary cases). The target value is depicted as a horizontal orange line. The median, which is also depicted as a orange horizontal line, divides the entire group into two equal halves.

## General information



### Cohort development:

Cohort development in 2015, 2016, 2017, 2018, 2019 and 2020 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 90<sup>th</sup> percentile area/range. The extreme values are depicted here as dots.

## Status of the certification system for Colorectal Cancer Centres 2020

	31.12.2020	31.12.2019	31.12.2018	31.12.2017	31.12.2016	31.12.2015
Ongoing procedures	5	9	4	6	7	13
Certified centres	298	285	283	281	280	265
Certified clinical sites	305	292	291	290	288	274
CRCCs with 1 clinical site	293	280	278	275	275	259
2 clinical sites	3	3	3	4	3	4
3 clinical sites	2	2	1	1	1	1
4 clinical sites	0	0	1	1	1	1

## Included clinical sites

	31.12.2020	31.12.2019	31.12.2018	31.12.2017	31.12.2016	31.12.2015
Clinical sites included in the Annual Report	296	284	284	283	273	261
Equivalent to	97.1%	97.3%	97.6%	97.6%	94.8%	95.3%
Primary cases total*	28,595	27,802	26,804	26,285	25,214	24,277
Primary cases per centre (mean)*	97	98	94	93	92	93
Primary cases per centre (Median)*	92	90	88	87	87	87

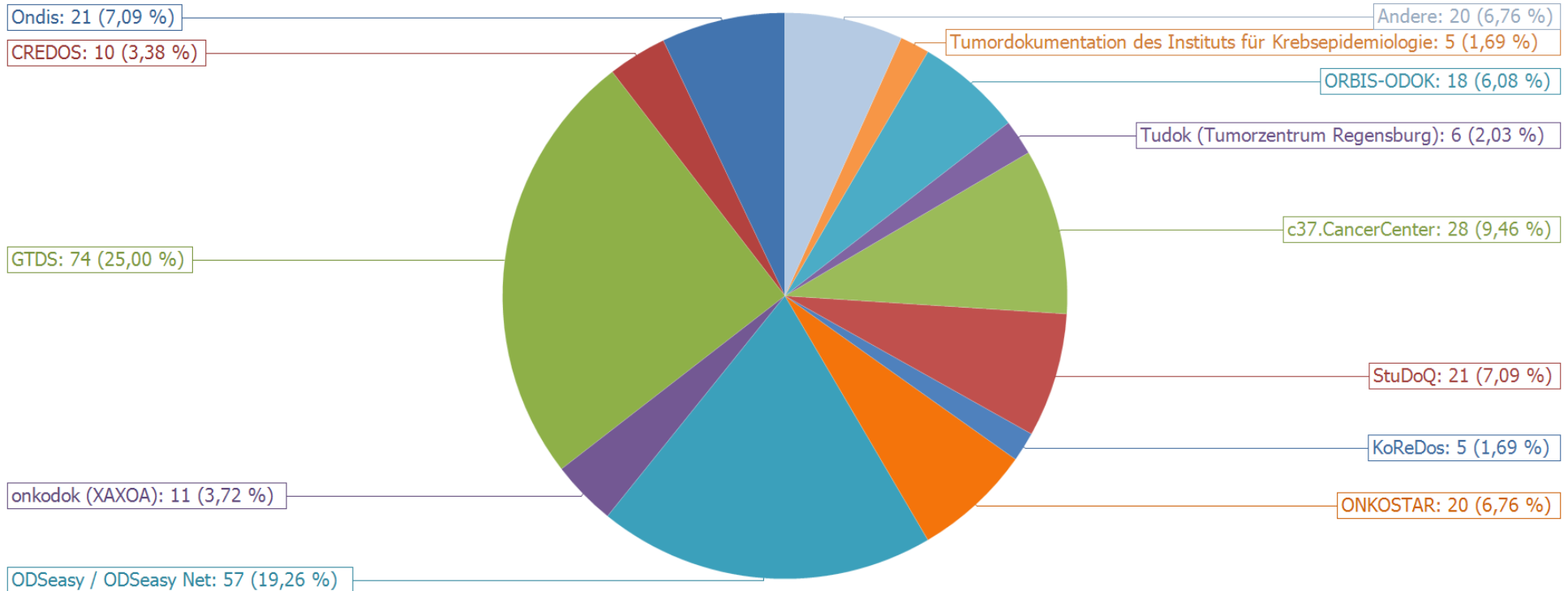
\* The figures refer to all certified centres

This annual report looks at the colorectal cancer centres certified in the certification system of the German Cancer Society. The basis for the diagrams in the annual report is the data sheet.

296 of the 305 certified centre sites are included in the annual report. Excluded are 5 sites that were certified for the first time in 2020 (data mapping of complete calendar year not mandatory for first-time certifications), one site for which the certificate was reinstated in 2020 and for which verification of the data did not take place for a complete calendar year, as well as 3 sites in non-European countries (connection to OncoBox not mandatory). A total of 30,333 primary cases were treated at the 305 sites. A current overview of all certified sites is shown at [www.oncomap.de](http://www.oncomap.de).

The indicators published here refer to the indicator year 2019. They represent the basis for evaluation for the audits carried out in 2020.

## Tumour documentation systems used in CRCCs



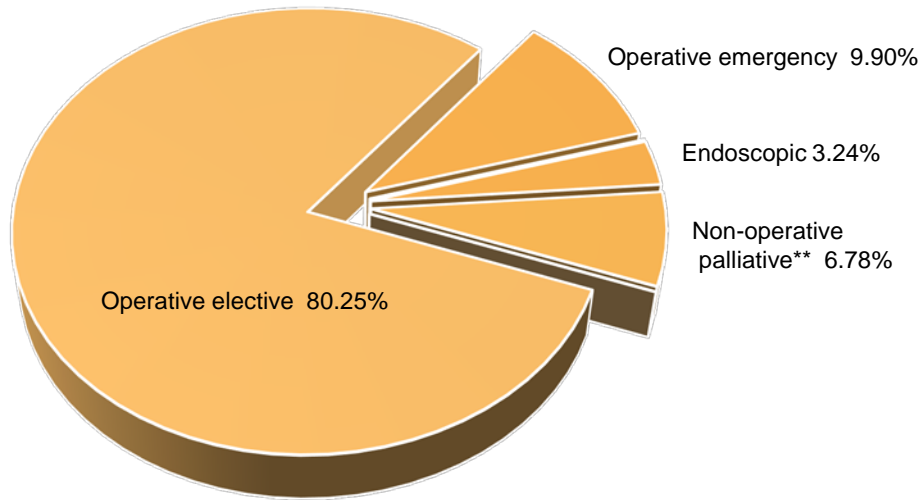
Andere = other

Legend:	
Other	System used in less than 4 clinical sites

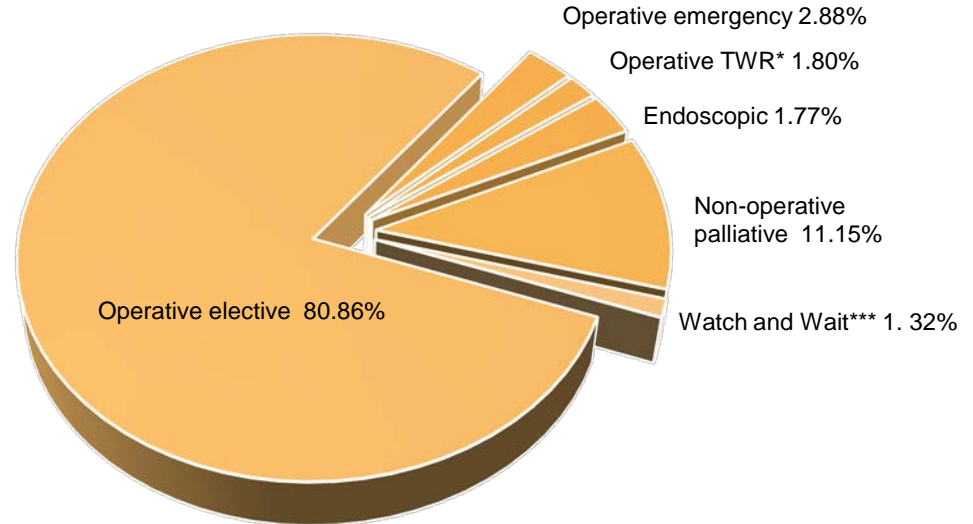
The details on the tumour documentation system were taken from the EXCEL annex to the Data Sheet (spreadsheet basic data). It is not possible to depict several systems. In many cases support is provided by the cancer registries or there may be a direct connection to the cancer registry via a specific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

**Basic data**

**Colon**



**Rectum**



	Operative elective	Operative emergency	Operative TWR*	Endoscopic	Non-operative palliative **	Watch and Wait (Non-operative/non-endoscopic curative) ***	Total
<b>Colon</b>	14.948 (80,09%)	1.847 (9,90%)	---	605 (3,24%)	1.265 (6,78%)	0 (0,00%)	18.665 (100%)
<b>Rectum</b>	7.926 (79,82%)	286 (2,88%)	179 (1,80%)	301 (3,03%)	1.107 (11,15%)	131 (1,32%)	9.930 (100%)
<b>Primary Cases Total</b>	22.874	2.133	179	906	2.372	131	28.595

\* Operative transanal wall resection (TWR)

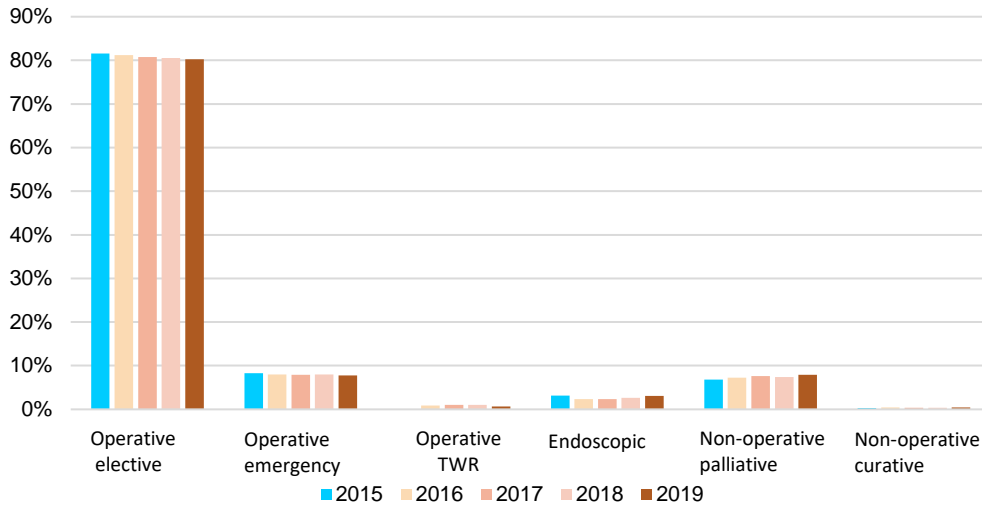
\*\* Non-operative palliative: no tumour resection; palliative radiotherapy/chemotherapy or best supportive care

\*\*\* Watch and Wait (non-operative/non-endoscopic curative): complete tumour remission after planned neoadjuvant therapy and patient's foregoing of surgery

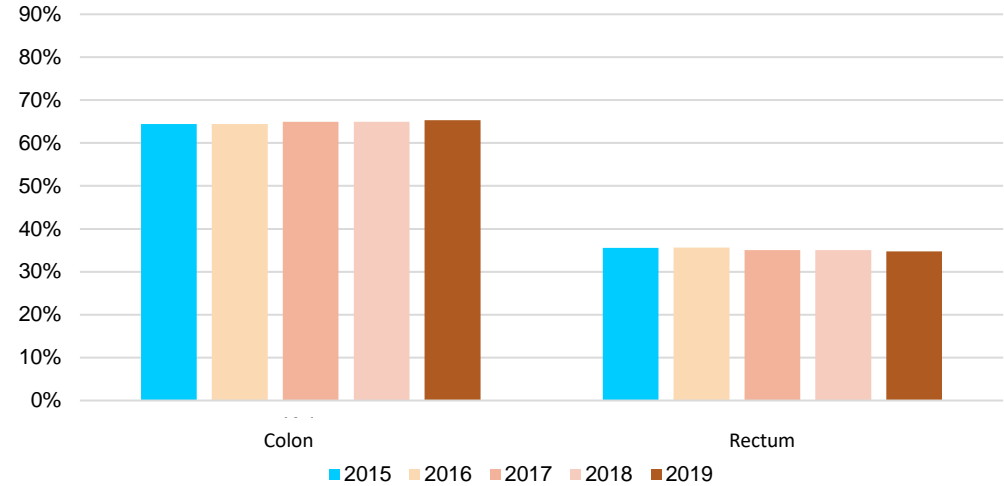


## Basic data – Development 2015-2019

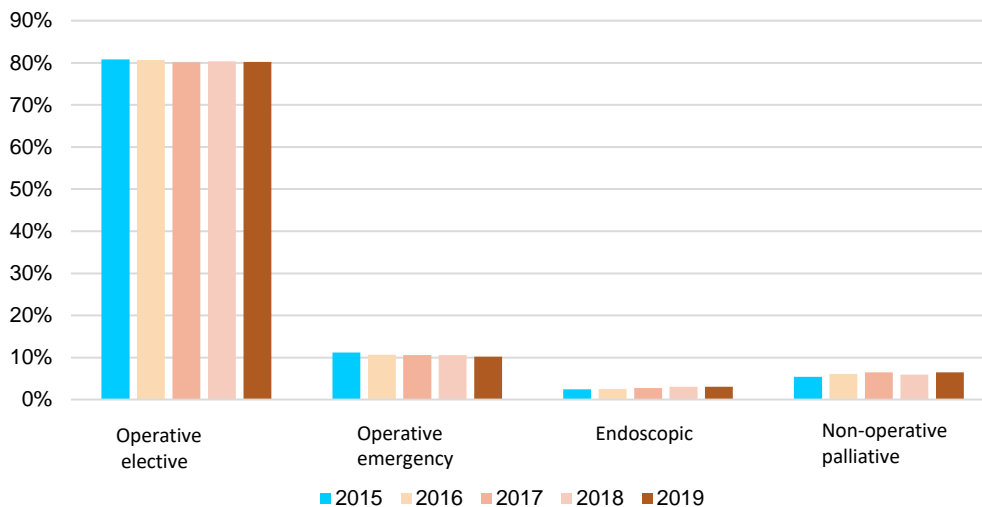
**Primary cases colon and rectum: Therapie 2015-2019**



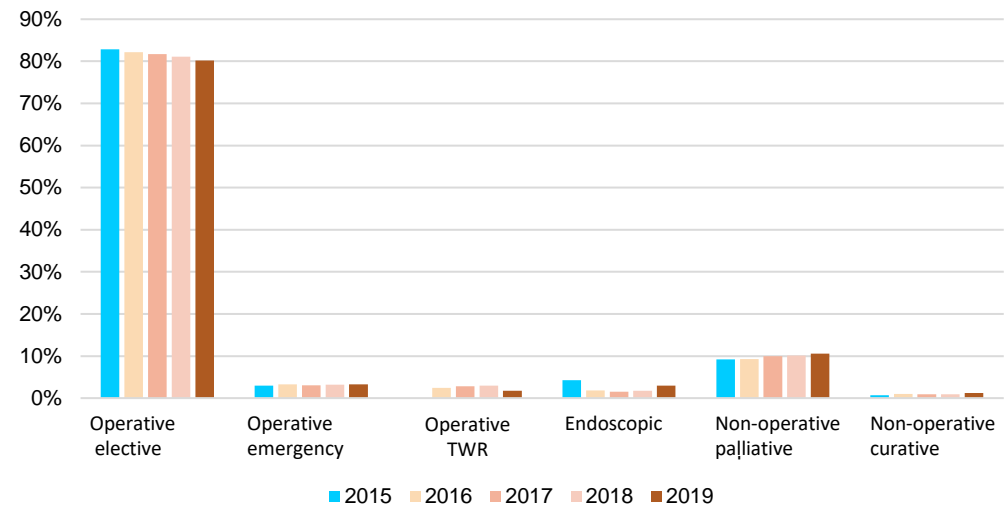
**Distribution between primary cases colon and rectum therapy: 2015-2019**



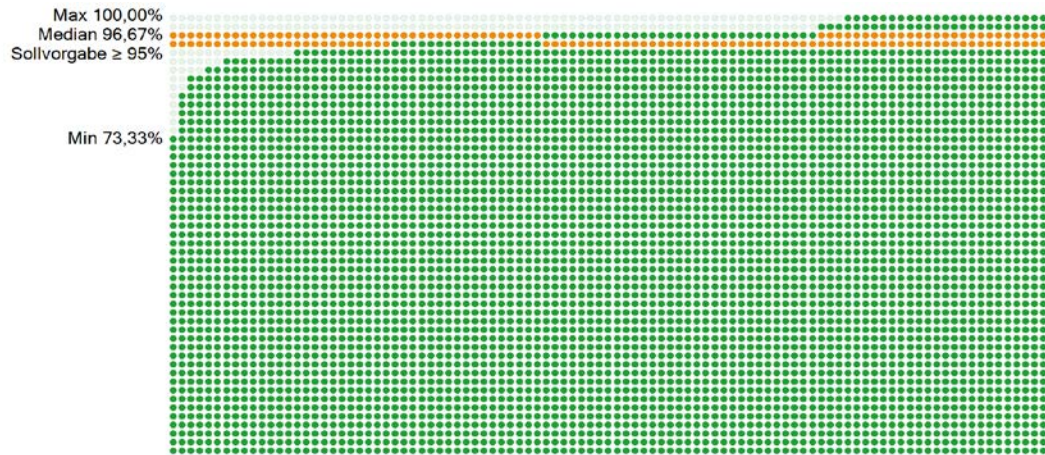
**Primary cases colon: therapy 2015-2019**



**Primary cases rectum: therapy 2015-2019**

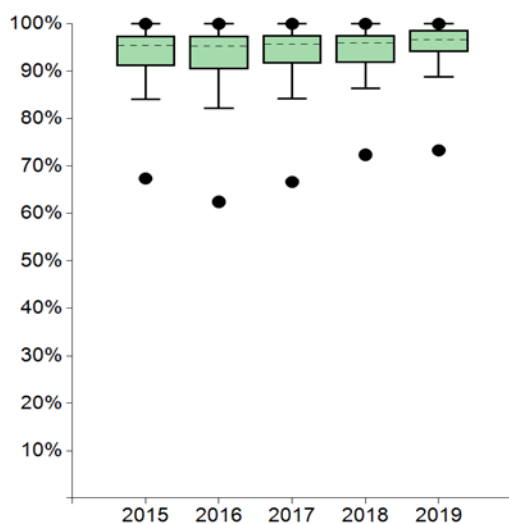


# 1. Pre-therapeutic case presentation (GL QI 7)



296 clinical sites

Sollvorgabe = target value



	2015	2016	2017	2018	2019
Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	100%	100%	100%	100%	100%
75 <sup>th</sup> percentile	97.44%	97.47%	97.50%	97.61%	98.58%
Median	95.45%	95.35%	95.70%	95.96%	96.67%
25 <sup>th</sup> percentile	91.11%	90.48%	91.67%	91.77%	94.09%
5 <sup>th</sup> percentile	84.05%	82.15%	84.17%	86.36%	88.89%
Minimum	67.39%	62.50%	66.67%	72.34%	73.33%

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients presented at an interdisciplinary tumour conference before therapy	36.5*	16 - 111	11,946
Denominator	All elective patients with RC and all patients with stage IV CC	37.5*	16 - 119	12,476
Rate	Target value ≥ 95%	96.67%	73.33% - 100%	95.75%**

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	203	68.58%

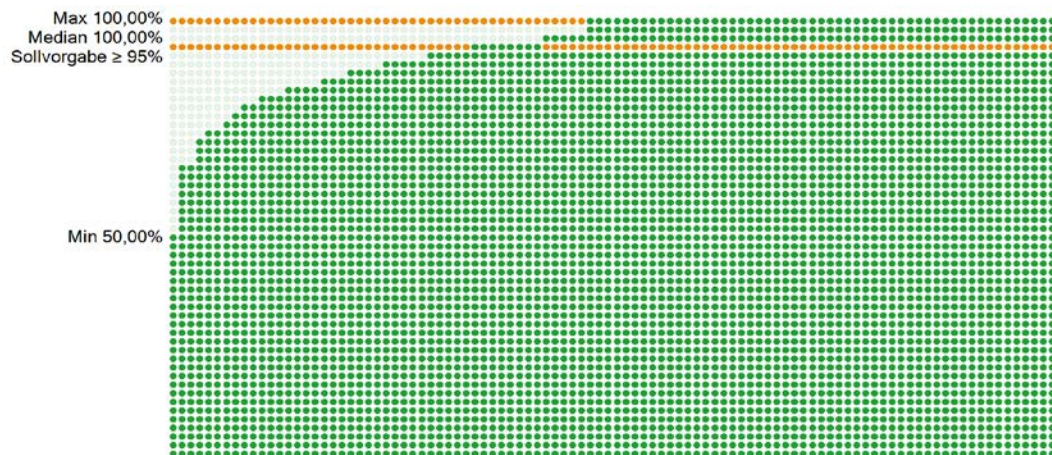
**Comments:**

The degree of fulfilment of the pre-therapeutic case presentation continues to rise, so that only 93 centres (previous year: 112) are generally just below the target. The most frequent reason for this were cases that were primarily diagnosed as M0, benign tumour, diverticulitis or other malignancy (e.g. gynaecological tumour) and only met the denominator definition (e.g. evidence of peritoneal carcinomatosis) intra- or postoperatively. In addition, emergency treatments, externally already pre-treated patients or patients primarily diagnosed as sigmoid carcinoma were reasons for undercutting. In some cases, the presentation was simply missed. Even if the majority of the explanations could be plausibly explained, measures such as training, quality circles and process adjustments (e.g. increased performance of rectoscopy) were carried out in isolated 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.

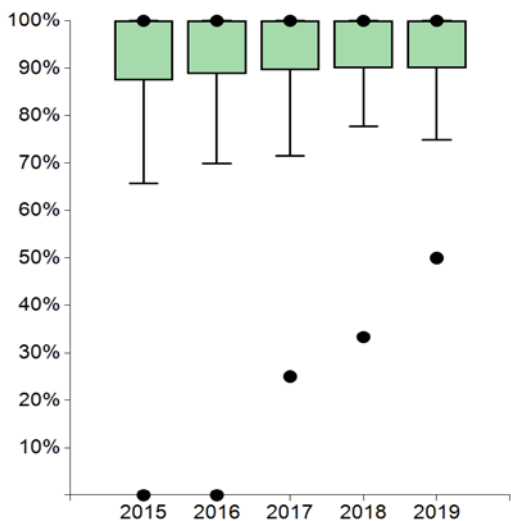
## 2. Pre-therapeutic case presentation: recurrences/meta-chronous metastases



Sollvorgabe = target value

292 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients with relapse or new metastases presented at the pre-therapeutic conference	12*	1 - 59	4,271
Denominator	Patients with relapse or new metastases	13*	1 - 62	4,563
Rate	Target value $\geq 95\%$	100%	50.00% - 100%	93.60%**



	2015	2016	2017	2018	2019
Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	100%	100%	100%	100%	100%
75 <sup>th</sup> percentile	100%	100%	100%	100%	100%
Median	100%	100%	100%	100%	100%
25 <sup>th</sup> percentile	87.50%	88.89%	89.66%	90.00%	90.00%
5 <sup>th</sup> percentile	65.65%	69.85%	71.43%	77.78%	75.00%
Minimum	0.00%	0.00%	25.00%	33.33%	50.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
292	98.65%	183	62.67%

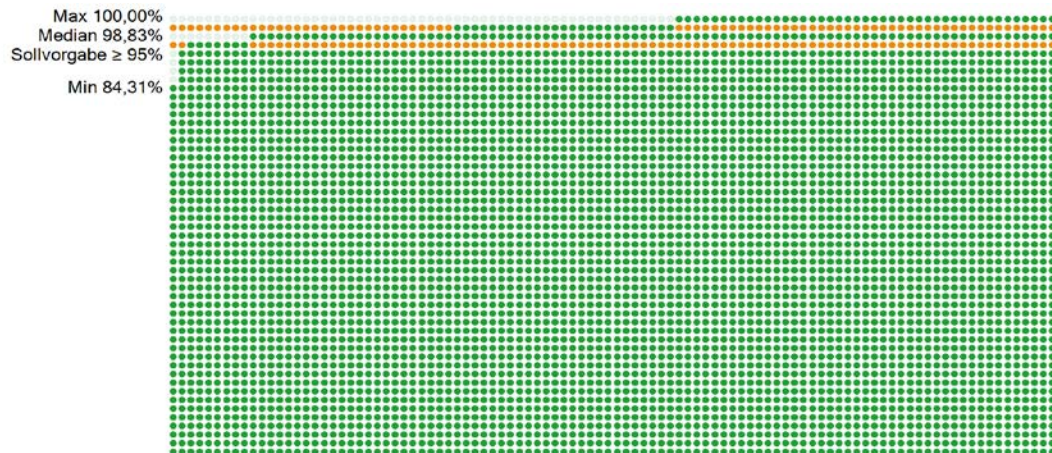
### Comments:

Analogous to indicator 1, there has also been a positive development over the years, although the compliance rate for this indicator is somewhat lower. Overall, 109 centres failed to meet the target, similar to the previous year. On the other hand, improvements can be seen in the lower percentage ranges. The most frequent reason for falling short of the target was that individual patients were not presented by mistake and/or in ignorance of the target. In addition to several plausible reasons (e.g. incidental findings or emergency interventions), the auditors pointed out that the pre-therapeutic discussion is also obligatory in the case of palliative patients, refusal of any therapy, progress with a change in chemotherapy or patients already presented externally.

\*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.

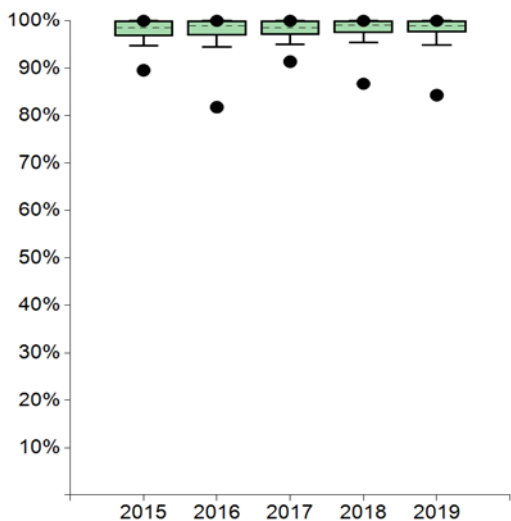
### 3. Post-operative presentation of all primary-case patients



Sollvorgabe = target value

296 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Operative and endoscopic primary cases presented at the post-operative conference	82*	37 - 228	25,691
Denominator	Operative and endoscopic primary cases	84*	37 - 230	26,092
Rate	Target value ≥ 95%	98.83%	84.31% - 100%	98.46%**



	2015	2016	2017	2018	2019
Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	100%	100%	100%	100%	100%
75 <sup>th</sup> percentile	100%	100%	100%	100%	100%
Median	98.51%	98.84%	98.45%	98.97%	98.83%
25 <sup>th</sup> percentile	96.73%	96.86%	97.01%	97.45%	97.59%
5 <sup>th</sup> percentile	94.81%	94.50%	95.01%	95.49%	94.93%
Minimum	89.58%	81.82%	91.36%	86.73%	84.31%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	280	94.59%

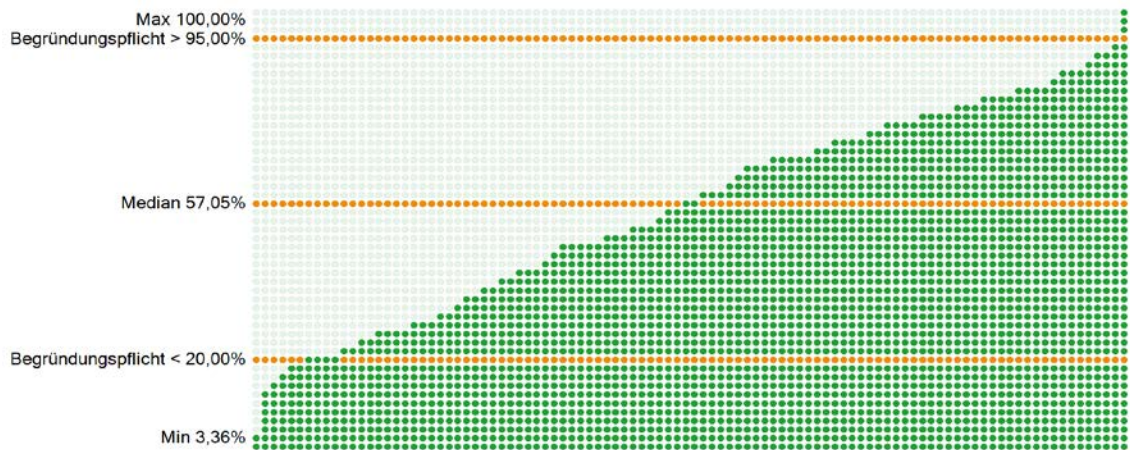
**Comments:**

Postoperative presentation of primary cases is very well implemented in the centres. 127 centres succeeded in a complete presentation. Only 16 centres did not present individual patients. The most frequent reason for this was that the patients had died immediately postoperatively (and were discussed in an M&M conference instead). In some cases, the centres announced that they would pay more attention to consistent postoperative presentation, for example if this had not been done in the case of direct transfer to the intensive care unit, omissions or the postoperative procedure already discussed preoperatively.

\*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.

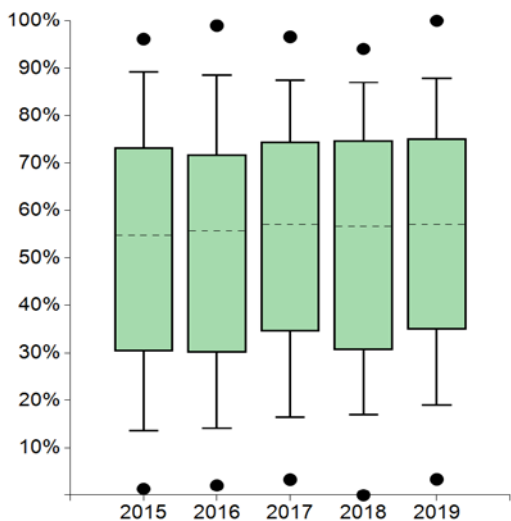
## 4. Psycho-oncological counselling



Begründungspflicht = mandatory statement of reasons

296 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients given inpatient or outpatient psycho-oncological counselling (length of session ≥ 25 min)	57*	3 - 165	17,540
Denominator	Total primary cases + patients with relapse/new metastases	104.5*	46 - 287	33,158
Rate	Explanation mandatory*** <20% and >95%	57.05%	3.36% - 100%	52.90%**



	2015	2016	2017	2018	2019
● Maximum	96.15%	98.94%	96.61%	94.05%	100%
● 95 <sup>th</sup> percentile	89.21%	88.58%	87.50%	86.96%	87.87%
● 75 <sup>th</sup> percentile	73.28%	71.73%	74.49%	74.75%	75.24%
● Median	54.88%	55.71%	57.11%	56.73%	57.05%
● 25 <sup>th</sup> percentile	30.41%	30.13%	34.58%	30.67%	34.92%
● 5 <sup>th</sup> percentile	13.57%	14.03%	16.51%	16.92%	19.01%
● Minimum	1.33%	2.06%	3.30%	0.00%	3.36%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	276	93.24%

### Comments:

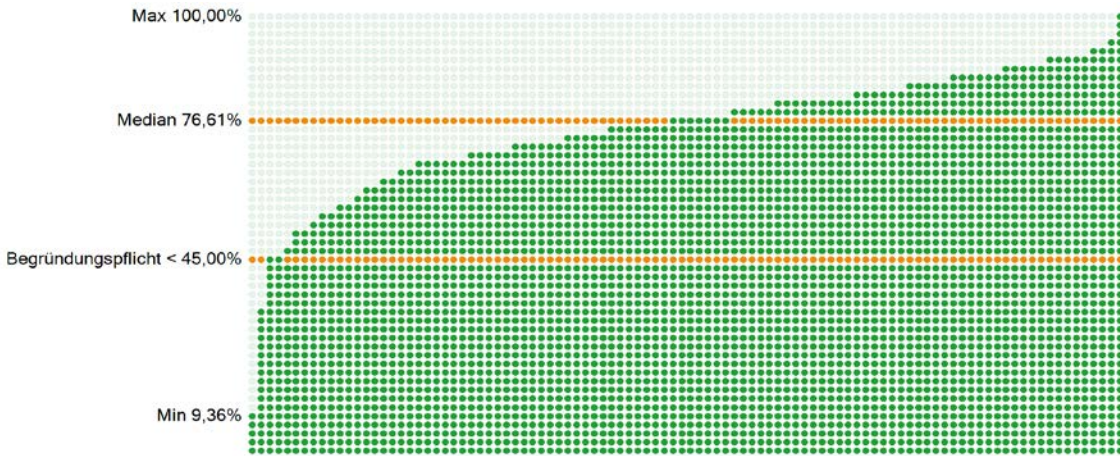
The psycho-oncological care rate remains at a high level and comprises more than half of the centre cases. Outside the plausibility corridor are 3 centres that provided more than 95% psycho-oncological care and 17 centres that fell below a quota of 20%. The most frequent reason given by the latter was that despite screening, the patient's need was low. Some centres then increased the presence of psychooncology on the ward, repeated the screening, hired additional staff and/or trained staff. In 2 cases, advice was given to intensify efforts to sustainably increase the counselling rate.

\*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.

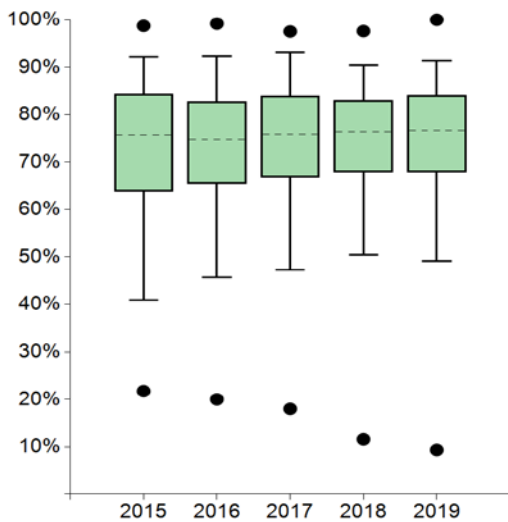
## 5. Social service counselling



Begründungspflicht = mandatory statement of reasons

296 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients of the denominator who have received inpatient or outpatient advice from the social services	77*	12 - 222	24,453
Denominator	Total primary cases + patients with relapse/new metastases	104,5*	46 - 287	33,158
Rate	Explanation mandatory*** <45%	76.61%	9.36% - 100%	73.75%**



	2015	2016	2017	2018	2019
Maximum	98.72%	99.18%	97.54%	97.62%	100%
95 <sup>th</sup> percentile	92.09%	92.25%	93.12%	90.37%	91.28%
75 <sup>th</sup> percentile	84.31%	82.76%	83.90%	83.04%	84.10%
Median	75.74%	74.77%	75.84%	76.45%	76.61%
25 <sup>th</sup> percentile	63.86%	65.46%	66.78%	67.95%	67.93%
5 <sup>th</sup> percentile	40.95%	45.67%	47.29%	50.43%	49.19%
Minimum	21.74%	20.00%	18.00%	11.57%	9.36%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	287	96.96%

### Comments:

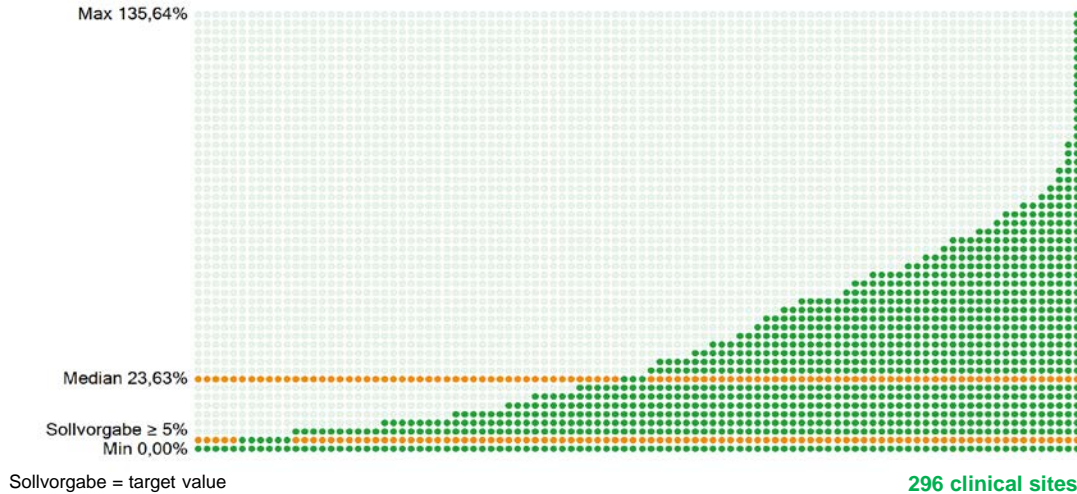
The social service counselling quota shows a high level for years and a very good integration into the structures of the colorectal cancer centres. 9 centres had to justify in the audits why they had fallen short of a quota of 45%. 5 of these centres were located in German-speaking countries, where other responsibilities or legal regulations apply. Nevertheless, these centres made efforts to increase the quota, for example by employing a patient manager. The other centres mainly referred to a low need for counselling on the part of the patients, partly also to the short length of stay with little opportunity for counselling. In this context, quality circles were organised and a checklist for early consultation was initiated. In 1 case, a note was issued.

\*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.

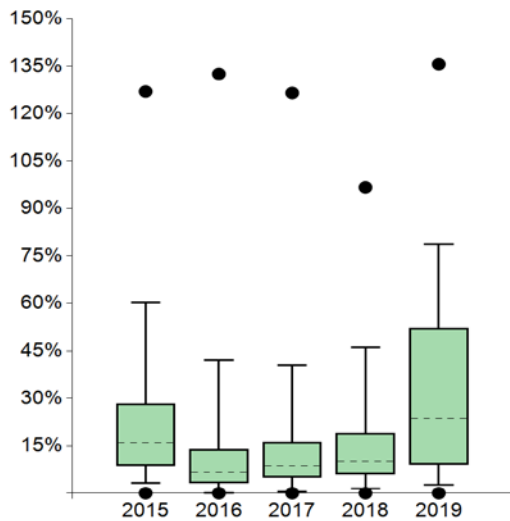
\*\* Percentage of centre patients who were treated according to the indicator.

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

## 6. Study participation



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients of the CrCC included in a study or colorectal prevention study	23*	0 - 154	9,379
Denominator	Total primary cases	91.5*	43 - 253	28,595
Rate	Target value ≥ 5%	23.63%	0.00% - 135.64%	32.80%**



	2015	2016	2017	2018	2019
● Maximum	126.98%	132.58%	126.53%	96.67%	135.64%
95 <sup>th</sup> percentile	60.18%	42.24%	40.33%	46.19%	78.65%
75 <sup>th</sup> percentile	28.21%	14.00%	16.18%	18.85%	52.28%
Median	16.00%	6.58%	8.53%	9.93%	23.63%
25 <sup>th</sup> percentile	8.70%	3.23%	5.10%	5.97%	9.02%
5 <sup>th</sup> percentile	3.18%	0.00%	0.48%	1.49%	2.61%
● Minimum	0.00%	0.00%	0.00%	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	269	90.88%

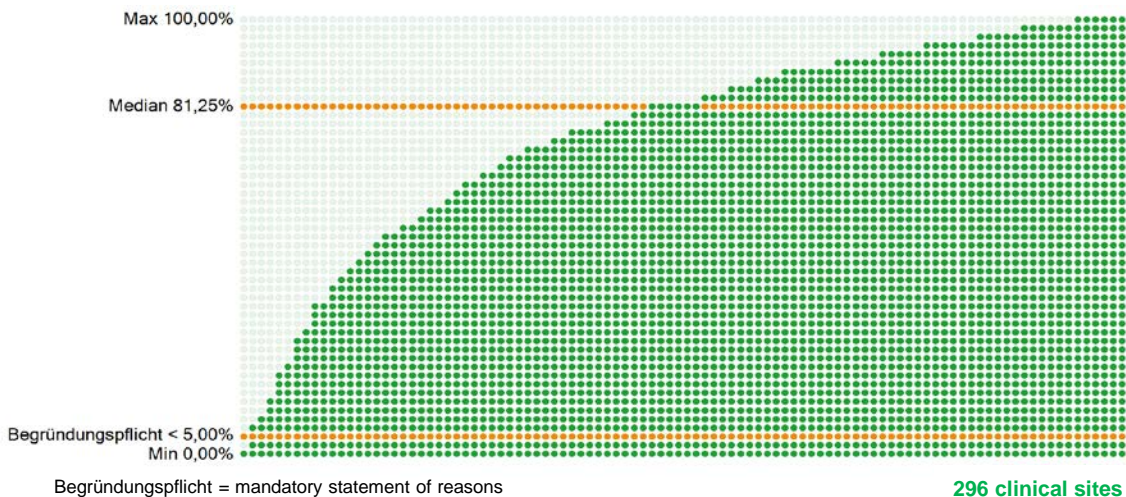
### Comments:

The study quota has risen sharply compared to previous years due to the committed participation of many colorectal cancer centres in the EDIUM study. Accordingly, the number of centres that were able to recruit fewer study patients than 5% of the primary case number halved from 54 to now 27. Centres below the target explained their quota mainly with problems in recruiting patients as well as with inclusion/exclusion criteria that would not have allowed patients to participate. In some cases, the centres participated in studies that were not listed in the StudyBox. The centres concerned intensified their efforts to increase the study quota (e.g. through increased research and training of investigators) and were often already able to show positive developments here at the audit date.

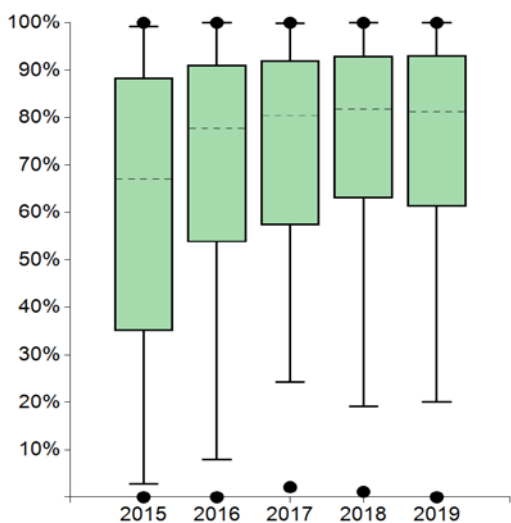
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

## 7. Colorectal carcinoma patients with a recorded family history



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Primary-case patients with a CRC and a completed patient questionnaire ( <a href="http://www.krebsgesellschaft.de/deutschkrebsgesellschaft/wtrl/deutschkrebsgesellschaft/zertifizierung/erhebungsboegen/organkrebszentren.html">http://www.krebsgesellschaft.de/deutschkrebsgesellschaft/wtrl/deutschkrebsgesellschaft/zertifizierung/erhebungsboegen/organkrebszentren.html</a> in the colorectal cancer section)	70.5*	0 - 216	21,093
Denominator	Total primary cases	91.5*	43 - 253	28,595
Rate	Explanation mandatory*** <math>< 5\%</math>	81.25%	0.00% - 100%	73.76%**



	2015	2016	2017	2018	2019
● Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	99.12%	100%	99.87%	100%	100%
75 <sup>th</sup> percentile	88.46%	91.07%	91.99%	92.99%	93.05%
Median	66.98%	77.78%	80.55%	81.82%	81.25%
25 <sup>th</sup> percentile	35.14%	53.82%	57.35%	62.97%	61.33%
5 <sup>th</sup> percentile	2.87%	7.96%	24.22%	19.10%	20.00%
● Minimum	0.00%	0.00%	2.13%	1.14%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	294	99.32%

### Comments:

This indicator shows very well how a quality indicator of the guideline is successively implemented in the centres by transferring it to the indicator sheet. In the indicator year 2019, only 2 centres fell below the quota of 5% of primary case patients with a recorded family history, which goes hand in hand with an obligation to provide justification. In one case, the family history was collected but not centrally documented, which was remedied with a systematic query as part of the registration for the tumour conference. In the other case, the previously unused questionnaire was introduced as mandatory.

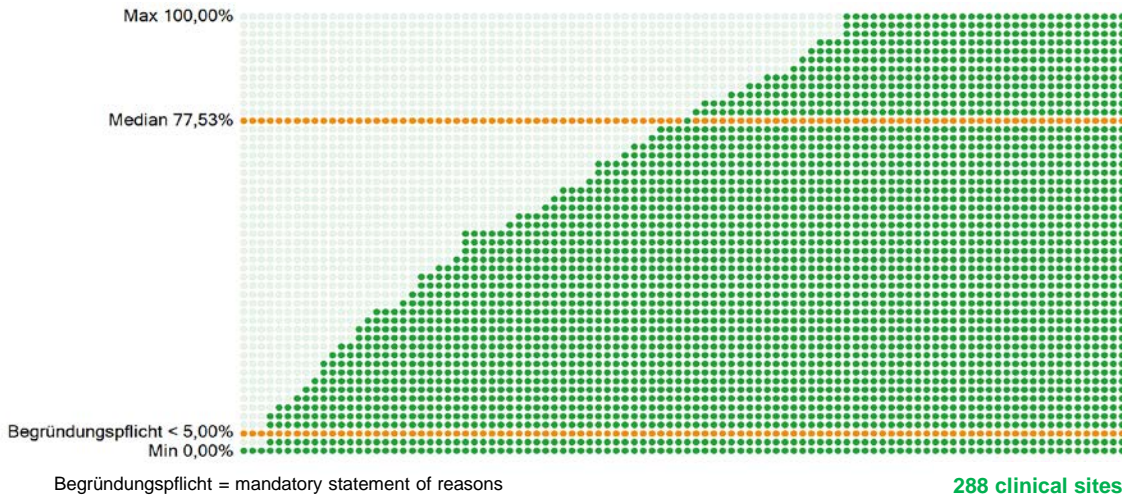
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

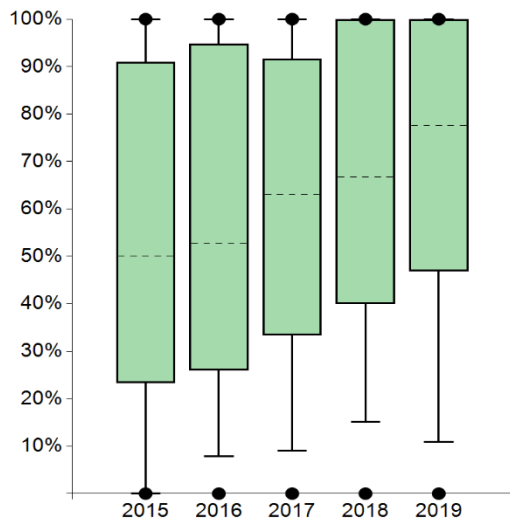
\*\*\* If value is outside the plausibility corridor, centres have to give an explanation.



## 8. Genetic counselling



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Primary-case patients with a positive patient questionnaire advised to visit a centre for familial colorectal cancer	7*	0 - 56	2,469
Denominator	Primary cases with a positive patient questionnaire	11*	1 - 58	3,729
Rate	Explanation mandatory*** <5%	77.53%	0.00% - 100%	66.21%**



	2015	2016	2017	2018	2019
● Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	100%	100%	100%	100%	100%
75 <sup>th</sup> percentile	90.91%	94.78%	91.58%	100%	100%
Median	50.00%	52.66%	63.01%	66.67%	77.53%
25 <sup>th</sup> percentile	23.30%	25.95%	33.33%	40.00%	46.83%
5 <sup>th</sup> percentile	0.00%	7.85%	9.10%	15.11%	10.85%
● Minimum	0.00%	0.00%	0.00%	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
288	97.30%	278	96.53%

### Comments:

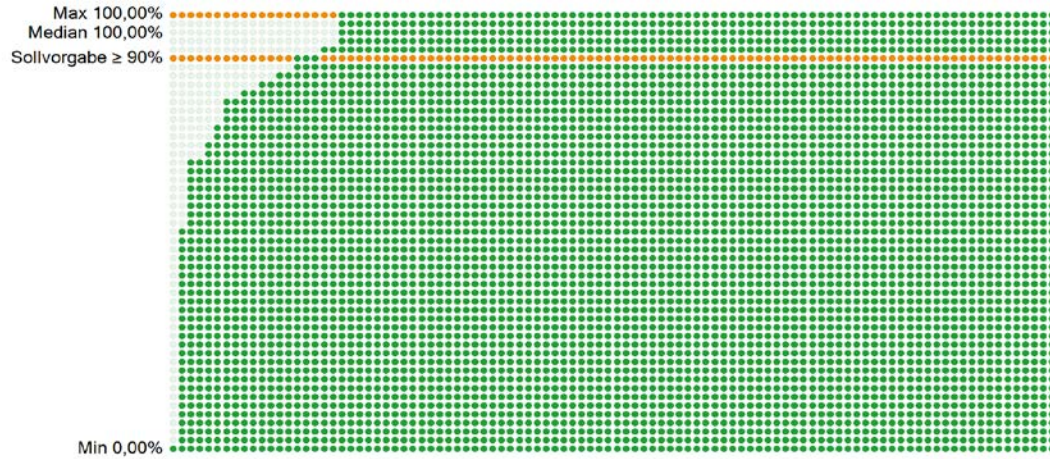
The median of this guideline indicator continues to rise, which is related to the increasingly established screening (cf. Indicator 7). However, with 10 centres, 9 more than in the previous year actually recommended genetic counselling in less than 5% of the cases with a positive result of the screening questionnaire. In some cases, no genetic counselling was recommended in the absence of evidence of microsatellite instability or HNPCC, and in others the offer of counselling was missed. In the latter case, the centres introduced genetic counselling as a mandatory field in the tumour documentation system/physician's letter or trained their staff. In a few cases, the patients had died prematurely, so that counselling was no longer recommended.

\*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.

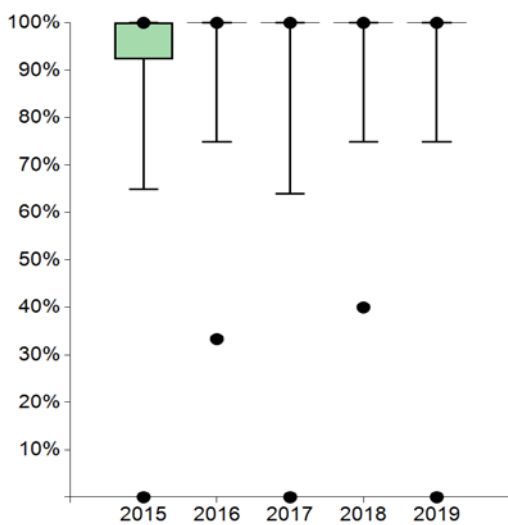
## 9. MMR assessment



Sollvorgabe = target value

288 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients with immunohistochemical assessment of mismatch repair (MMR) proteins	4*	0 - 29	1,460
Denominator	Patients with initial CRC diagnosis < 50 years old	4*	1 - 29	1,534
Rate	Target value $\geq 90\%$	100%	0.00% - 100%	95.18%**



	2015	2016	2017	2018	2019
Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	100%	100%	100%	100%	100%
75 <sup>th</sup> percentile	100%	100%	100%	100%	100%
Median	100%	100%	100%	100%	100%
25 <sup>th</sup> percentile	92.31%	100%	100%	100%	100%
5 <sup>th</sup> percentile	64.85%	75.00%	64.00%	75.00%	75.00%
Minimum	0.00%	33.33%	0.00%	40.00%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
288	97.30%	247	85.76%

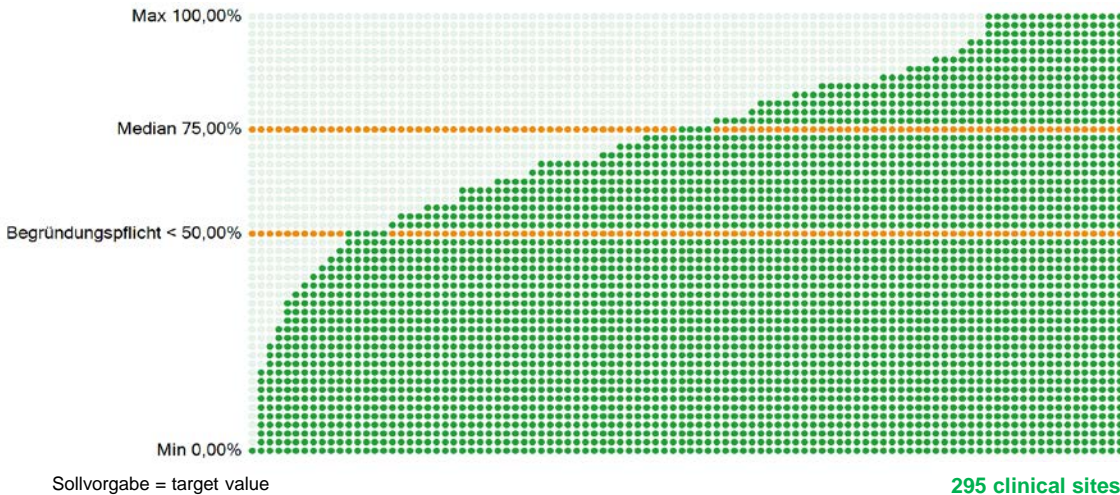
### Comments:

The indicator is now so well implemented that 232 centres achieved a ratio of 100%. 8 centres did not treat any patients <50 years. 41 centres failed to meet the target of determining the MMR proteins in at least 90% of these patients. The two centres with 0% each had only 1 patient in the denominator. Reasons for the lack of immunohistochemistry were mainly failures in individual patients, which the centres tried to eliminate for the future with training, quality circles and process adjustments (e.g. routine address in the tumour conference). In addition, shortfalls could also be plausibilised, e.g. in the case of complete tumour regression in the surgical preparation (ypT0), colitis-ulcerosa-associated carcinomas, still outstanding findings or in the case of patients who had refused the examination.

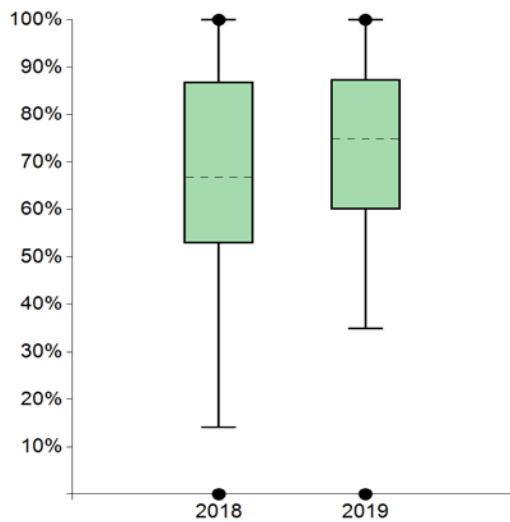
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

## 10. RAS- and BRAF-determination at the start of first-line treatment for metastasized CRC (GL QI 3)



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients of the denominator with RAS (= KRAS and NRAS mutations) and BRAF mutations at the start of first-line therapy	8*	0 - 102	3,243
Denominator	Patients with metastatic CRC and first-line therapy	13*	1 - 123	4,595
Rate	Target value <50%	75.00%	0.00% - 100%	70.58%**



	2015	2016	2017	2018	2019
Maximum	----	----	----	100%	100%
95 <sup>th</sup> percentile	----	----	----	100%	100%
75 <sup>th</sup> percentile	----	----	----	86.88%	87.50%
Median	----	----	----	66.67%	75.00%
25 <sup>th</sup> percentile	----	----	----	52.80%	60.00%
5 <sup>th</sup> percentile	----	----	----	14.08%	35.00%
Minimum	----	----	----	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
295	99.66%	264	89.49%

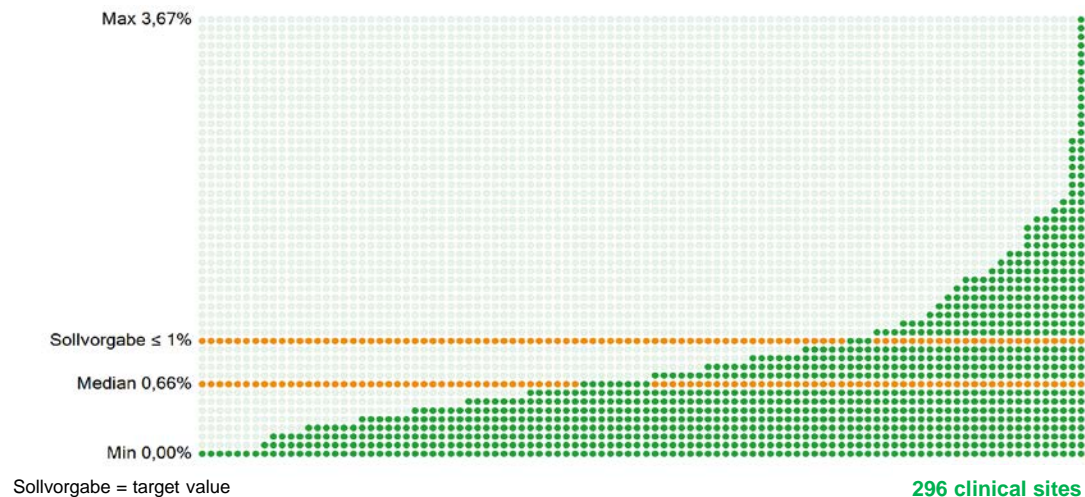
**Comments:**

This guideline QI was mandatory for all centres for the first time in the 2019 indicator year. In the audit, 31 centres had to justify why they had carried out an RAS or BRAF determination in less than 50% of patients with metastatic CRC and first-line therapy. It was found that the determination was often carried out after the start of chemotherapy, which had to be initiated urgently. In some cases, RAS/BRAF status was omitted, testing was done externally with unknown results, or there would have been no therapeutic consequence. In the audits, the measures derived focused primarily on improving the flow of information, for example by adapting SOPs, systematically addressing the issue in the tumour board or dealing with missed examinations in quality circles.

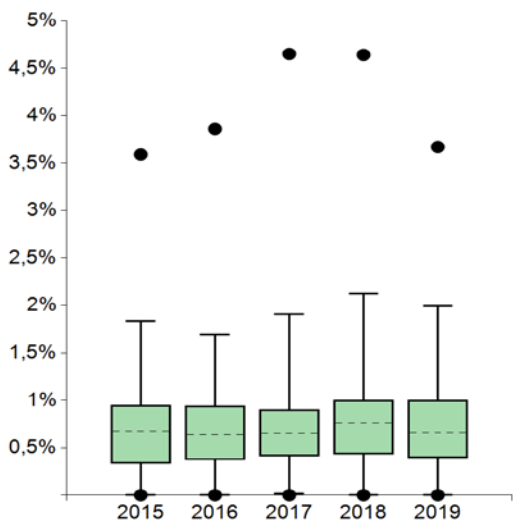
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

# 11. Complication rate therapeutic colonoscopies



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Therapeutic colonoscopies with complications (bleeding requiring re-intervention (recolonoscopy, operation) or a transfusion and/or perforation)	3*	0 - 16	1026
Denominator	Therapeutic colonoscopies with loop polypectomies per colonoscopic unit (not only patients CrCC)	397,5*	81 - 2604	141180
Rate	Target value ≤ 1%	0,66%	0,00% - 3,67%	0,73%**



	2015	2016	2017	2018	2019
Maximum	3.59%	3.86%	4.65%	4.64%	3.67%
95 <sup>th</sup> percentile	1.83%	1.69%	1.91%	2.12%	1.99%
75 <sup>th</sup> percentile	0.95%	0.95%	0.90%	1.00%	1.00%
Median	0.67%	0.64%	0.65%	0.76%	0.66%
25 <sup>th</sup> percentile	0.33%	0.38%	0.41%	0.43%	0.39%
5 <sup>th</sup> percentile	0.00%	0.00%	0.02%	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	%
296	100.00%	223	75.34%

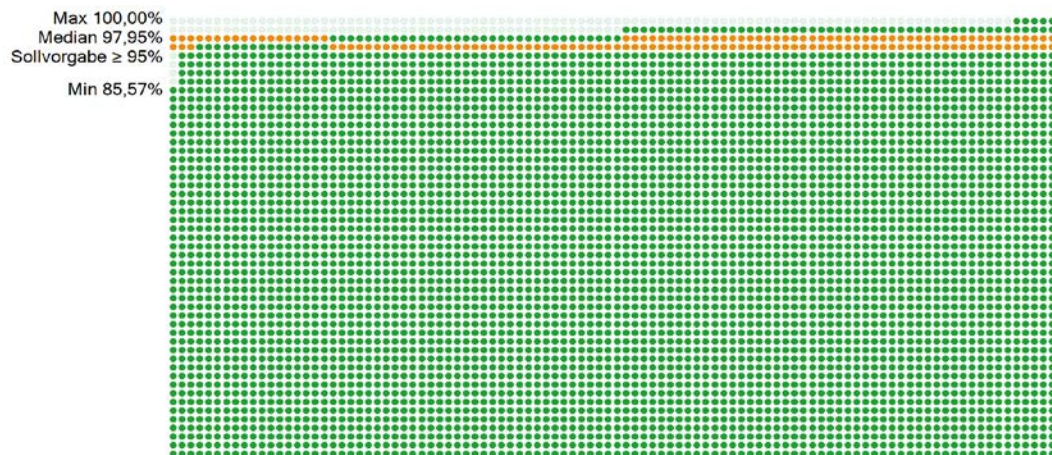
**Comments:**

The median complication rate decreases compared to the previous year. 22 centres had no complications requiring intervention or transfusion. However, with 74 centres, 4 more than in the previous year failed to meet the target of a maximum of 1%, with bleeding and perforation being the cause in almost all cases. Many centres pointed to a high proportion of patients with a higher risk per se (large, broad-based and/or numerous polyps, unfavourable location, anticoagulation). The centres reacted with individual case analyses, quality circles and process adjustments (e.g. SOP anticoagulation for endoscopy or SOP complication management). No systematic errors were found in the audits. Rather, the centres were encouraged in the self-derived improvement measures

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

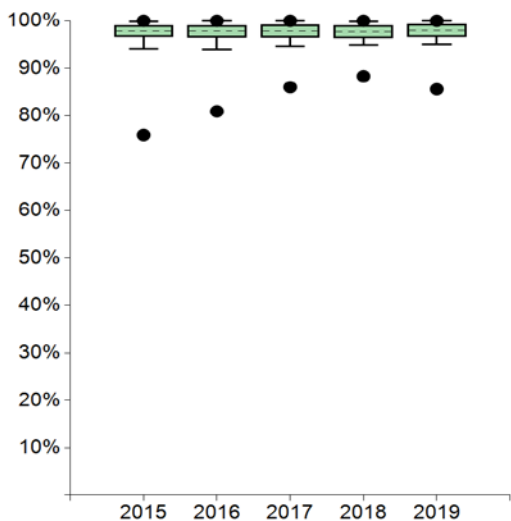
## 12. Complete elective colonoscopies



Sollvorgabe = target value

296 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Complete elective colonoscopies	1,443*	358 – 13,852	504,265
Denominator	Elective colonoscopies for each colonoscopy unit of the CrCC (not only CrCC patients) (Are counted: intention: complete colonoscopy)	1,466.5*	358 – 13,923	515,073
Rate	Target value ≥ 95%	97.95%	85.57% - 100%	97.90%**



	2015	2016	2017	2018	2019
Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	99.81%	99.89%	99.88%	99.86%	100%
75 <sup>th</sup> percentile	99.04%	99.07%	99.17%	99.04%	99.22%
Median	97.87%	97.86%	97.89%	97.68%	97.95%
25 <sup>th</sup> percentile	96.69%	96.53%	96.48%	96.35%	96.61%
5 <sup>th</sup> percentile	94.12%	94.02%	94.71%	94.91%	95.05%
Minimum	75.94%	80.91%	85.99%	88.32%	85.57%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	284	95.95%

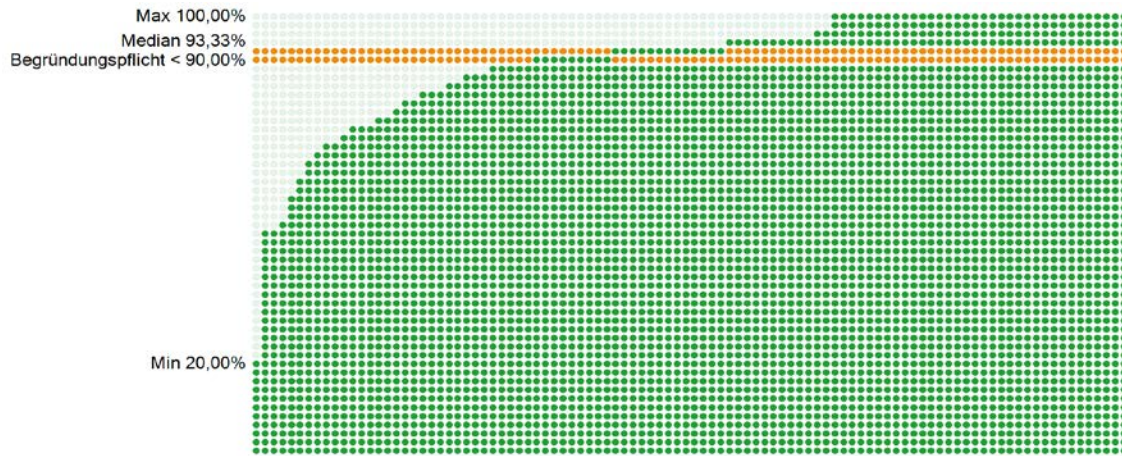
**Comments:**

Overall, almost 98% of the elective colonoscopies were completely performed by the centres. Only 12 centres (previous year: 15) did not succeed in this in individual cases. This was mainly due to technically complex colonoscopies (e.g. stenoses that could not be passed) and contamination due to inadequate colonoscopy preparation. The latter could be countered with training and SOP. Not all centres were aware that colonoscopies that were not completely intended in the first place (e.g. to verify a pre-described lesion or tumour marking as part of the preoperative preparation) are not to be counted in the denominator. This could be clarified in the audits. In some cases, the documentation software was expanded for this purpose to include the possibility of recording the intention of the examination.

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

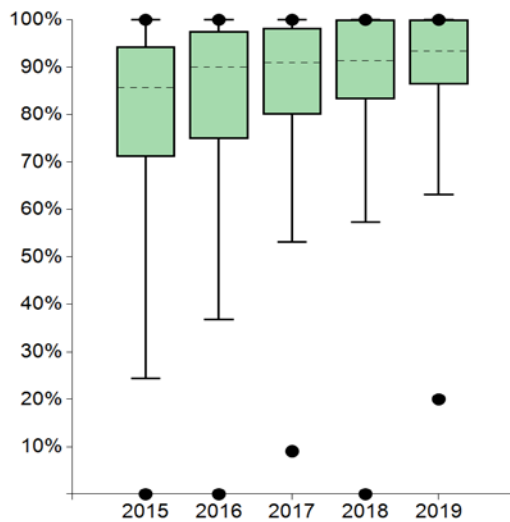
### 13. Information on distance to mesorectal fascia of the lower and middle third (GL QI 5)



Begründungspflicht = mandatory statement of reasons

296 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients with information on distance to mesorectal fascia in the diagnostic report	15*	1 - 66	5,059
Denominator	Patients with RC of the middle and lower third and MRI or thin-slice CT of the pelvis	17*	3 - 72	5,664
Rate	Explanation mandatory*** <90%	93.33%	20.00% - 100%	89.32%**



	2015	2016	2017	2018	2019
Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	100%	100%	100%	100%	100%
75 <sup>th</sup> percentile	94.33%	97.56%	98.25%	100%	100%
Median	85.71%	90.00%	90.91%	91.29%	93.33%
25 <sup>th</sup> percentile	71.07%	75.00%	80.00%	83.33%	86.36%
5 <sup>th</sup> percentile	24.34%	36.84%	53.08%	57.32%	63.12%
Minimum	0.00%	0.00%	9.09%	0.00%	20.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	202	68.24%

**Comments:**

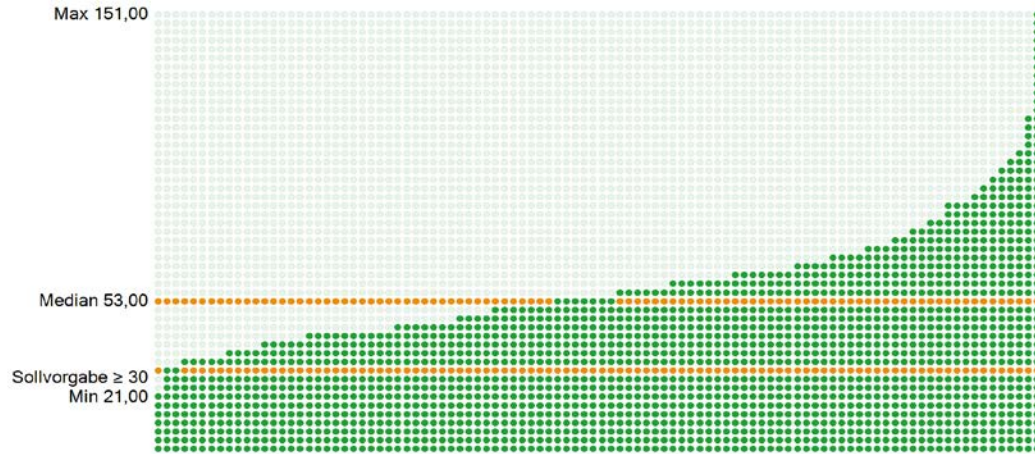
The increasing establishment of this guideline QI continues and shows a pleasing development. Nevertheless, with 94 centres requiring justification (previous year: 117), implementation is not yet complete. Overall, a statement of the distance to the mesorectal fascia is now included in almost 90% of the findings reports. Frequent reasons for lower values were above all external findings, tumours that could not be depicted or delineated, omissions, carcinomas that had already been removed or were in remission at the time of imaging, or far advanced stages for which the information would have had no therapeutic consequence. The centres attempted to further improve the rates with quality circles, training, process adjustments and, in specific cases, follow-up findings.

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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.

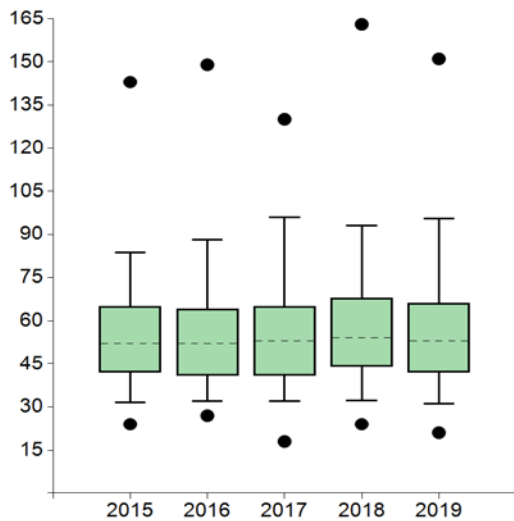
## 14. Operative primary cases: colon



Sollvorgabe = target value

296 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Number	Operative primary cases: colon	53	21 - 151	16,795
	Target value $\geq 30$			



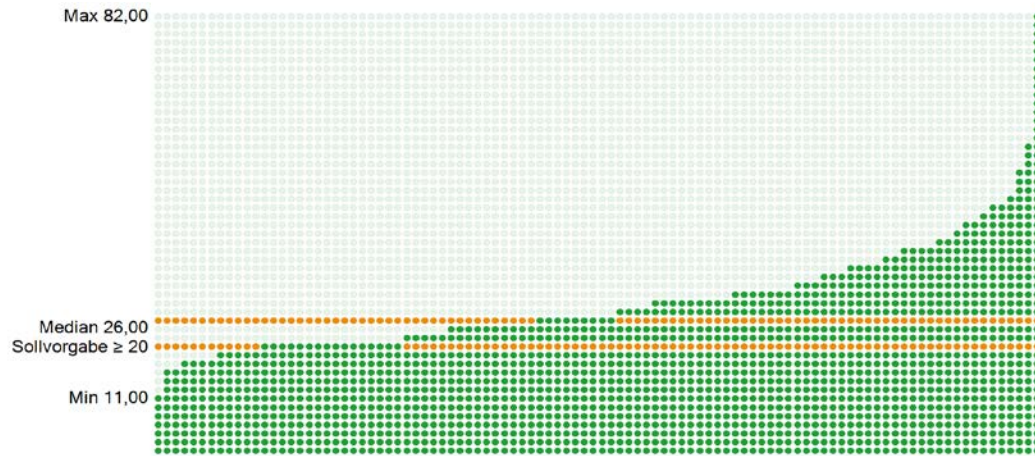
	2015	2016	2017	2018	2019
Maximum	143.00	149.00	130.00	163.00	151.00
95 <sup>th</sup> percentile	83.80	88.00	95.85	93.00	95.50
75 <sup>th</sup> percentile	65.00	64.00	65.00	68.00	66.00
Median	52.00	52.00	53.00	54.00	53.00
25 <sup>th</sup> percentile	42.00	41.00	41.00	44.00	42.00
5 <sup>th</sup> percentile	31.60	32.00	32.00	32.15	31.00
Minimum	24.00	27.00	18.00	24.00	21.00

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	291	98.31%

### Comments:

The operative primary case numbers for colon carcinoma are approximately at the previous year's level. Almost all centres met the target. The 5 centres below the target referred to strong competition with neighbouring hospitals, a falling incidence or random fluctuations. Since the 5 centres were in the surveillance audit, a shortfall was possible. The results must then be proven for the next repeat audit.

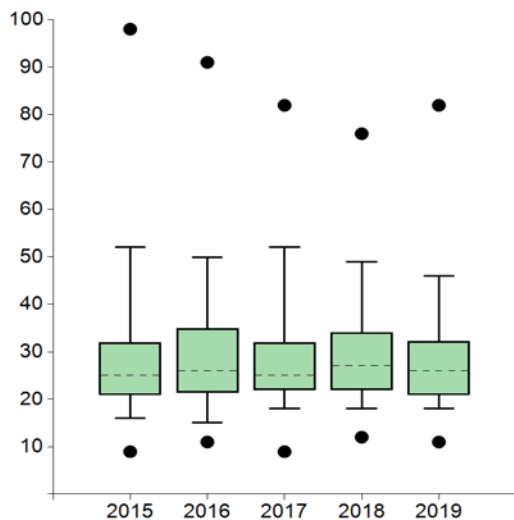
## 15. Operative primary cases: rectum



Sollvorgabe = target value

284 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Number	Operative primary cases: rectum (incl. trans anal wall resection)	26	11 - 82	8,391
	Target value ≥ 20			



	2015	2016	2017	2018	2019
Maximum	98.00	91.00	82.00	76.00	82.00
95 <sup>th</sup> percentile	52.00	49.90	52.00	49.00	46.00
75 <sup>th</sup> percentile	32.00	35.00	32.00	34.00	32.25
Median	25.00	26.00	25.00	27.00	26.00
25 <sup>th</sup> percentile	21.00	21.50	22.00	22.00	21.00
5 <sup>th</sup> percentile	16.00	15.10	18.00	18.00	18.00
Minimum	9.00	11.00	9.00	12.00	11.00

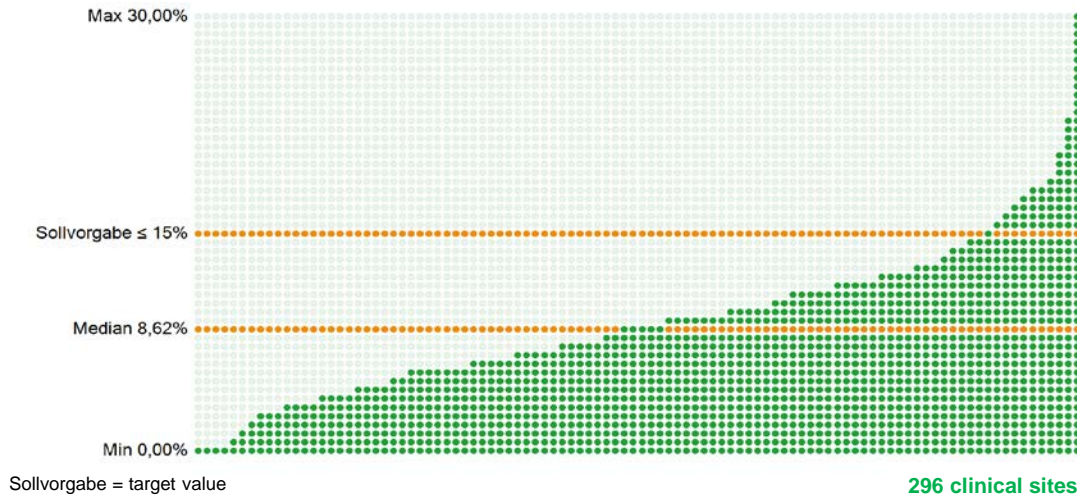
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	260	87.84%

### Comments:

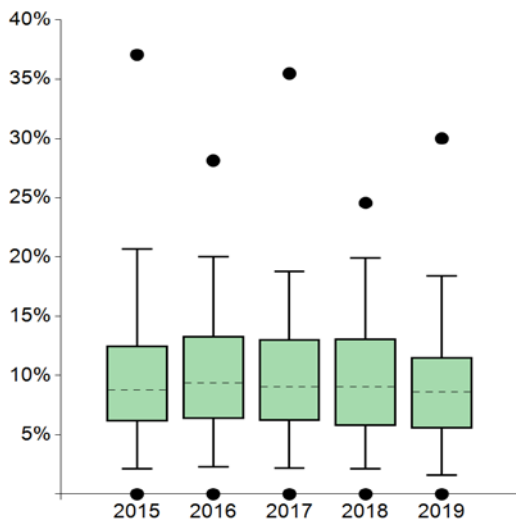
As in previous years, the minimum operative quantities for rectal cancer are achieved by fewer centres than for colon cancer (Indicator 14). In the indicator year 2019, 36 centres remained below 20 rectal operations for primary cases, which is 11 more than in the pre-indicator year. Some of these centres blamed the falling incidence as a result of screening. However, staff shortages, strong competition and an increasing proportion of "watch & wait" patients were also cited. Only one of the 36 centres was in the repeat audit, but was able to prove the case numbers on average over the last 3 years.



## 16. Revision surgery: colon



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Revision surgery due to perioperative complications within 30d of elective surgery	4*	0 - 20	1,308
Denominator	Elective colon surgery	48*	19 - 125	14,948
Rate	Target value $\leq 15\%$	8.62%	0.00% - 30.00%	8.75%**



	2015	2016	2017	2018	2019
Maximum	37.04%	28.13%	35.48%	24.56%	30.00%
95 <sup>th</sup> percentile	20.67%	20.00%	18.75%	19.92%	18.37%
75 <sup>th</sup> percentile	12.50%	13.29%	13.04%	13.07%	11.54%
Median	8.82%	9.38%	9.09%	9.09%	8.62%
25 <sup>th</sup> percentile	6.15%	6.40%	6.22%	5.79%	5.53%
5 <sup>th</sup> percentile	2.15%	2.29%	2.18%	2.14%	1.59%
Minimum	0.00%	0.00%	0.00%	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	263	88.85%

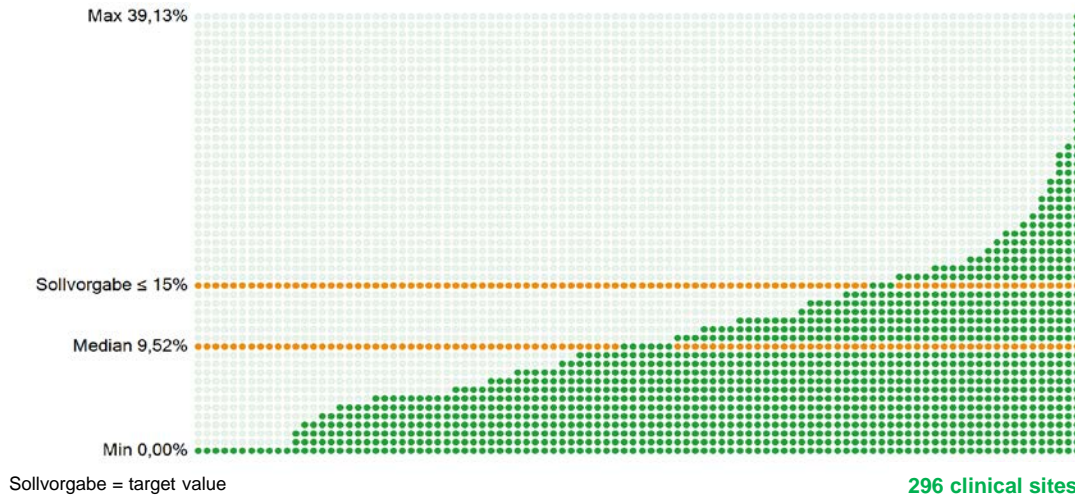
### Comments:

Median and overall revision rate for elective colon interventions decrease compared to the pre indicator year. 12 of the 33 centres also exceeded the target of 15% in the previous year. The centres primarily identified anastomosis insufficiencies, abdominal bursting, perforations (and associated peritonitis or abscesses), wound infections, postoperative bleeding, postoperative hernias, ileus and ischaemia as causes. These complications were often plausible; sometimes the centres also adapted their surgical technique (e.g. end-side anastomoses) or the preoperative preparation (e.g. antibiotic prophylaxis) of the patients. Some centres referred to a relevant share of diagnostic laparoscopies in terms of prevention of serious complications.

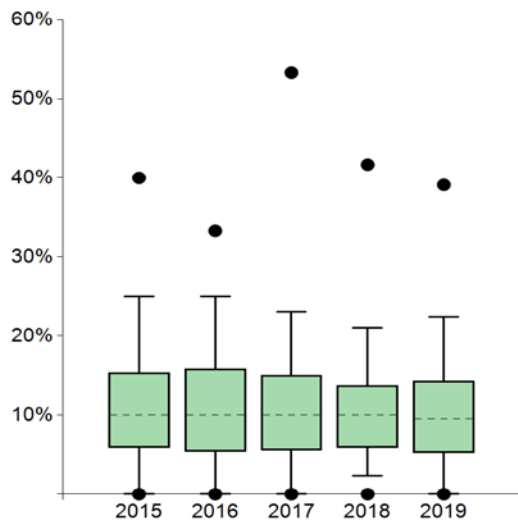
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

## 17. Revision surgery: rectum



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Revision surgery after perioperative complications within 30d of elective surgery	2.5*	0 - 12	796
Denominator	Elective rectum surgery (without transanal wall resection)	25*	11 - 81	7,926
Rate	Target value ≤ 15%	9.52%	0.00% - 39.13%	10.04%**



	2015	2016	2017	2018	2019
● Maximum	40.00%	33.33%	53.33%	41.67%	39.13%
95 <sup>th</sup> percentile	25.00%	25.00%	23.03%	21.05%	22.44%
75 <sup>th</sup> percentile	15.38%	15.79%	15.00%	13.79%	14.29%
Median	10.00%	10.00%	10.00%	10.00%	9.52%
25 <sup>th</sup> percentile	5.88%	5.43%	5.56%	5.88%	5.26%
5 <sup>th</sup> percentile	0.00%	0.00%	0.00%	2.31%	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	%
296	100.00%	227	76.69%

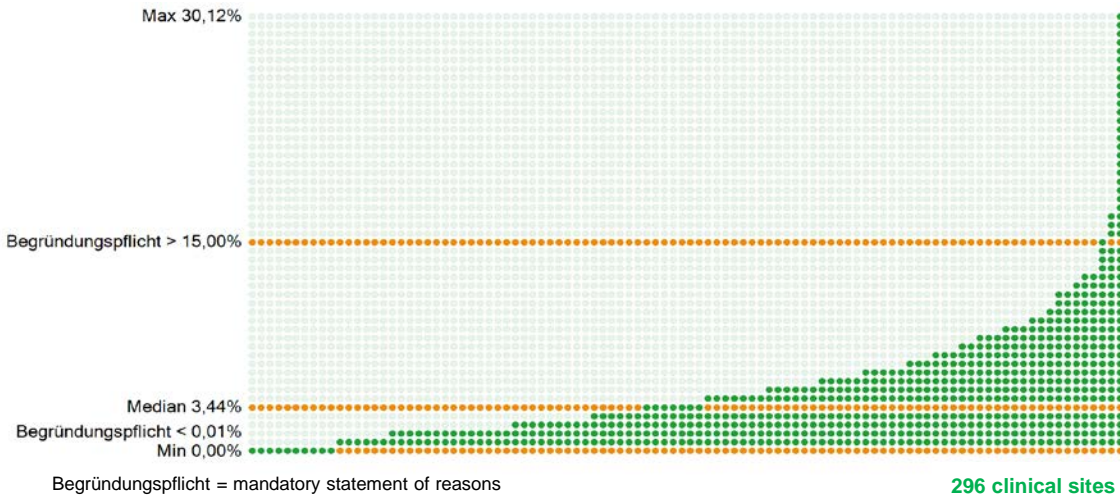
### Comments:

The revision rate for elective rectal surgery is slightly higher than for colon surgery (Indicator 16). With a slightly decreasing median and overall rate, 69 centres (previous year: 48) had revision rates above 15%. The reasons are similar to those given for the revision of colon operations (mainly anastomosis insufficiencies, wound infections, burst belly), with stoma revisions and ileus-related revisions playing a greater role. Many centres critically questioned their own surgical techniques and perioperative management. Even though most of the cases could be plausibilised, the auditors made some recommendations. This also applies to the centre with a rate of almost 40%, which had a high proportion of multimorbid patients and showed an open and constructive approach to problems.

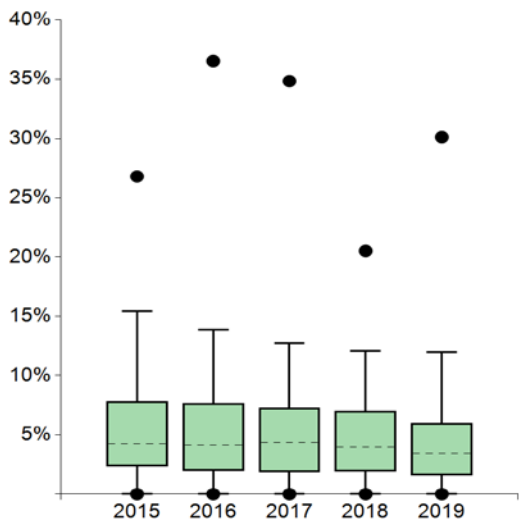
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

## 18. Post-operative wound infection



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Post-operative wound infection within 30 d of elective surgery requiring surgical wound revision (rinsing, spreading, VAC bandage)	2*	0 - 44	1,030
Denominator	Operations of the CrCC (without transanal wall resection)	72.5*	32 - 196	22,874
Rate	Explanation mandatory*** <0.01% and >15%	3.44%	0.00% - 30.12%	4.50%**



	2015	2016	2017	2018	2019
Maximum	26.79%	36.51%	34.83%	20.51%	30.12%
95 <sup>th</sup> percentile	15.41%	13.89%	12.75%	12.06%	12.00%
75 <sup>th</sup> percentile	7.81%	7.64%	7.27%	7.00%	6.02%
Median	4.26%	4.17%	4.35%	4.00%	3.44%
25 <sup>th</sup> percentile	2.33%	1.97%	1.88%	1.95%	1.59%
5 <sup>th</sup> 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	%
296	100.00%	259	87.50%

### Comments:

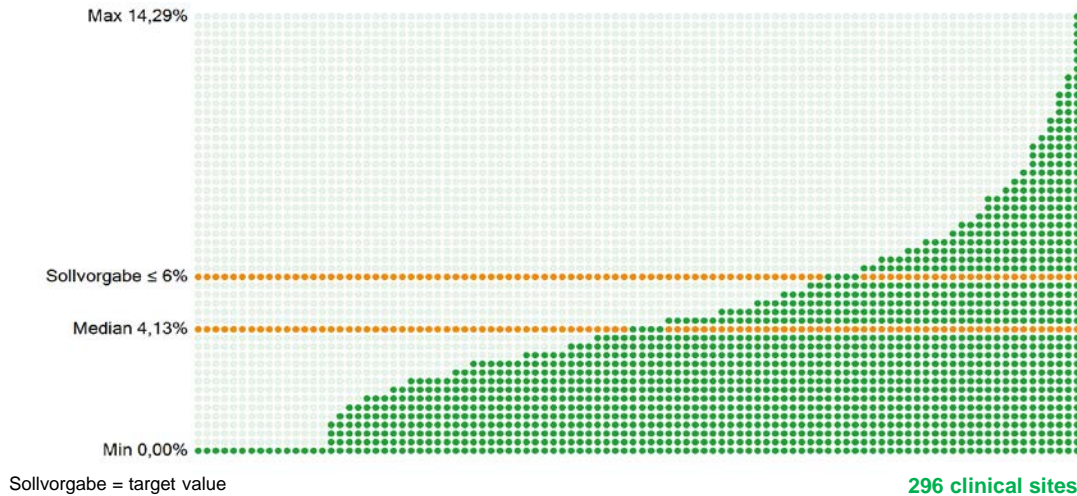
This indicator also shows a positive development over the years. Of the 37 centres requiring justification, only 7 had a rate of 15% of postoperative wound infections requiring intervention in elective operations. This is 3 more than in the previous year. Reasons for comparatively high values were anastomosis insufficiencies, concomitant diseases (obesity per magna, diabetes mellitus, nicotine abuse), and neoadjuvant pretreated patients. No systematic causes were identified in the audits. Some centres worked on the cases and made efforts to improve hygiene measures (e.g. regular dressing visits).

\*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.

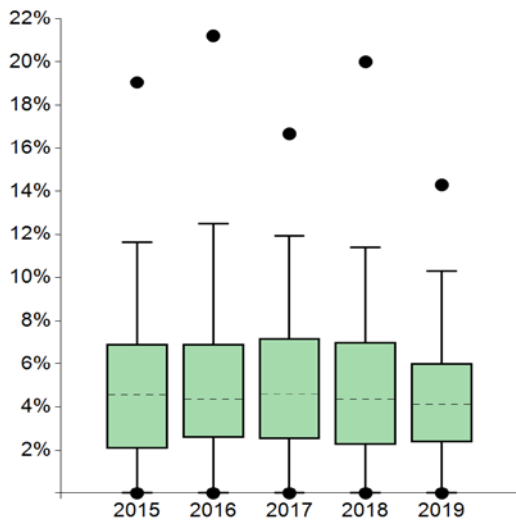
\*\* Percentage of centre patients who were treated according to the indicator.

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

## 19. Anastomotic insufficiencies: colon (GL QI 10)



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Colon anastomotic insufficiencies requiring re-intervention after elective surgery	2*	0 - 12	615
Denominator	Patients with CC in whom anastomosis was performed in an elective tumour resection	46*	19 - 119	14383
Rate	Target value ≤ 6%	4,13%	0,00% - 14,29%	4,28%**



	2015	2016	2017	2018	2019
Maximum	19.05%	21.21%	16.67%	20.00%	14.29%
95 <sup>th</sup> percentile	11.63%	12.50%	11.94%	11.38%	10.28%
75 <sup>th</sup> percentile	6.90%	6.90%	7.19%	7.00%	6.00%
Median	4.55%	4.35%	4.59%	4.35%	4.13%
25 <sup>th</sup> percentile	2.08%	2.56%	2.50%	2.24%	2.38%
5 <sup>th</sup> 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	%
296	100.00%	223	75.34%

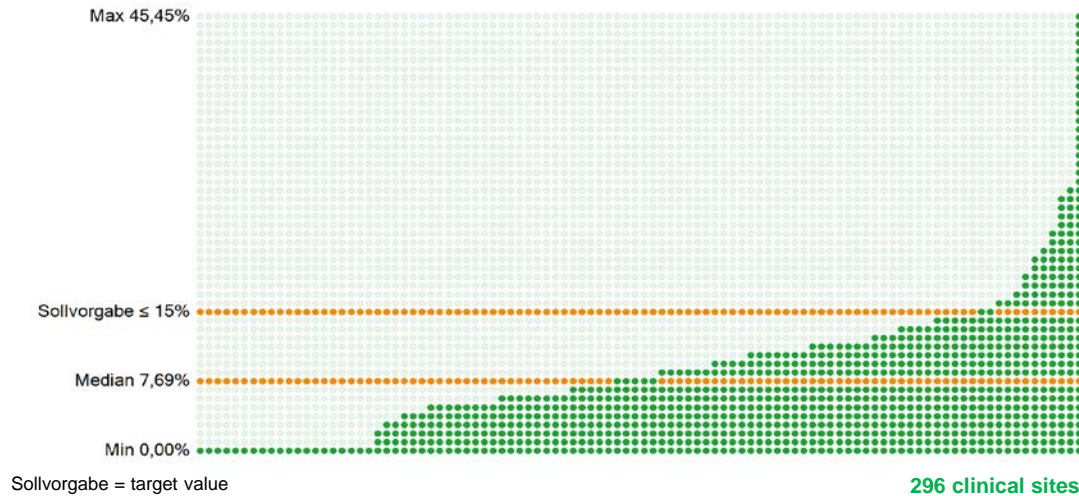
### Comments:

In the indicator year 2019, 73 centres failed to meet the target of a maximum of 6%, compared to 90 centres in the previous year. Most of these were patients with advanced age and/or multimorbidity (e.g. diabetes, Crohn's disease, CHD). Specific causes were often reduced perfusion, ileus or complex interventions (e.g. in advanced tumour stages). The centres tried to work out the causes in individual case reviews and quality circles. Some of them adapted the surgical techniques, e.g. by changing the anastomosis technique, blood flow control with ICG fluorescence angiography or systematic bowel decontamination. As a rule, no systematic errors were found.

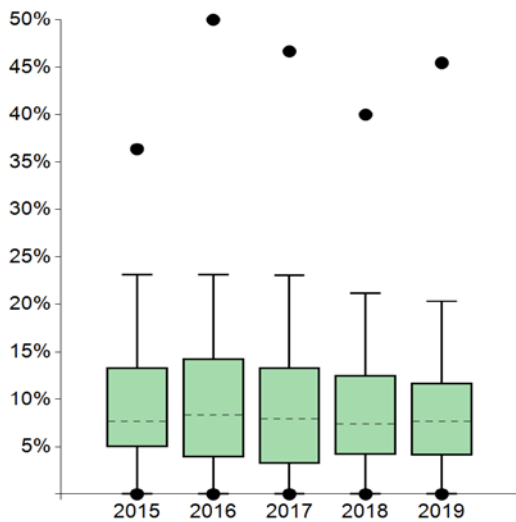
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

## 20. Anastomotic insufficiencies: rectum (GL QI 9)



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients with grade B (requiring antibiotic administration or interventional drainage or transanal lavage/drainage) or grade C ((re-)laparotomy) anastomotic insufficiency	1*	0 - 14	477
Denominator	Patients with RC in whom anastomosis was performed in an elective tumour resection (without transanal wall resection)	18*	5 - 71	5,870
Rate	Target value ≤ 15%	7.69%	0.00% - 45.45%	8.13%**



	2015	2016	2017	2018	2019
● Maximum	36.36%	50.00%	46.67%	40.00%	45.45%
95 <sup>th</sup> percentile	23.08%	23.08%	23.03%	21.22%	20.36%
75 <sup>th</sup> percentile	13.33%	14.29%	13.33%	12.50%	11.76%
Median	7.69%	8.33%	7.95%	7.42%	7.69%
25 <sup>th</sup> percentile	5.00%	3.94%	3.21%	4.17%	4.13%
5 <sup>th</sup> 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	%
296	100.00%	264	89.19%

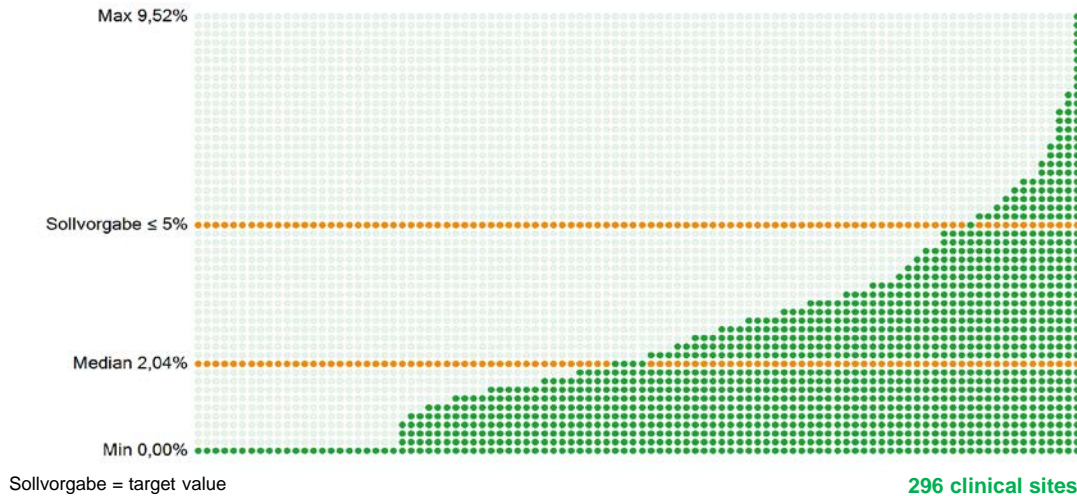
### Comments:

The results of this indicator are at the previous year's level. The target of a maximum of 15% anastomosis insufficiencies grade B or C in elective resection of rectal cancer is missed by 32 centres (previous year: 42). Multimorbidity and complex interventions (especially in the case of deep-seated tumours, neoadjuvantly pre-treated patients, advanced tumour stages and/or inferior perfusion) were the most frequent causes of increased rates. Accordingly, individual case analyses, adapted anastomosis techniques and ICG angiographies were countermeasures announced in the audits. The centre with a rate of 45.45% had 11 patients in the denominator. The figures requested for 2020 already showed a significant improvement in the rate.

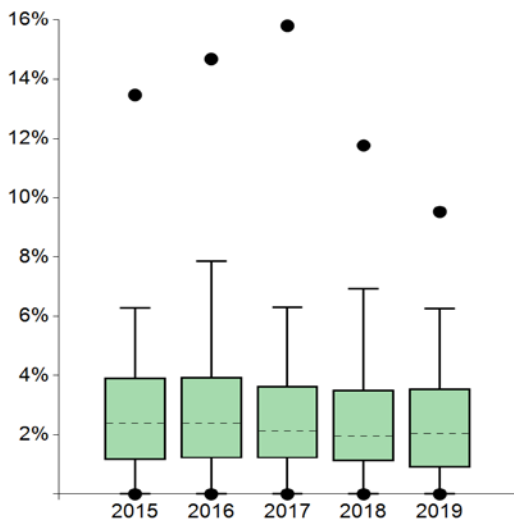
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

## 21. Post-operative mortality



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Post-operative patient deaths within 30d of elective surgery	2*	0 - 8	524
Denominator	Electively operated patients (without transanal wall resection)	72.5*	32 - 196	22,874
Rate	Target value ≤ 5%	2.04%	0.00% - 9.52%	2.29%**



	2015	2016	2017	2018	2019
Maximum	13.46%	14.67%	15.79%	11.76%	9.52%
95 <sup>th</sup> percentile	6.27%	7.87%	6.30%	6.93%	6.25%
75 <sup>th</sup> percentile	3.92%	3.94%	3.64%	3.53%	3.57%
Median	2.41%	2.41%	2.13%	1.96%	2.04%
25 <sup>th</sup> percentile	1.15%	1.21%	1.22%	1.11%	0.89%
5 <sup>th</sup> 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	%
296	100.00%	259	87.50%

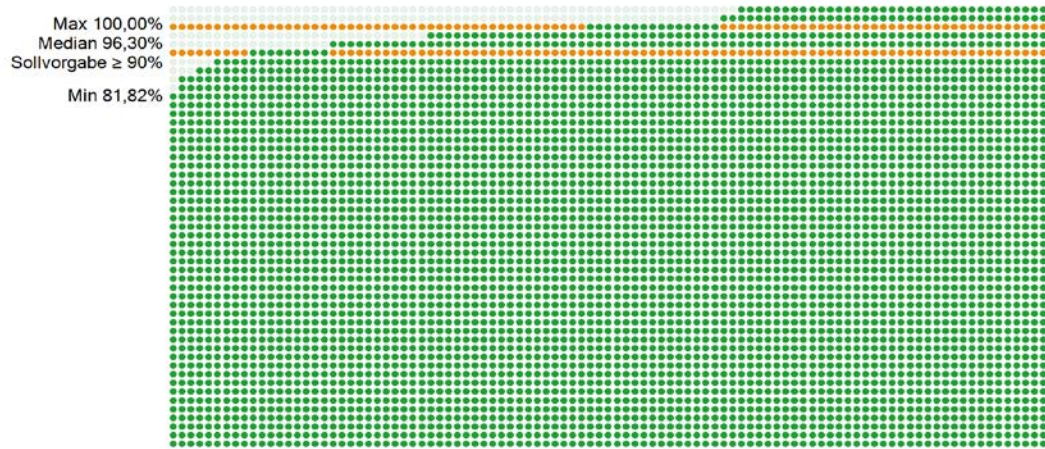
### Comments:

For the first time, no centre has a postoperative mortality rate above 10%. 37 centres, 9 more than in the previous year, have a postoperative mortality rate of over 5%. This should be seen against the background of an overall lower rate and decreasing dispersion of the values. Frequent causes of death were (aspiration) pneumonia, cardiovascular failure (cardiogenic shock, heart failure, myocardial infarction), sepsis with multi-organ failure, pulmonary embolism and liver failure, which were usually dealt with in m&m conferences. Sporadically, the technical experts gave advice. No systematic error was found at any of the centres. One centre announced that it would increasingly consider sole ileostomy placement as an alternative to palliative tumour resection.

\*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.

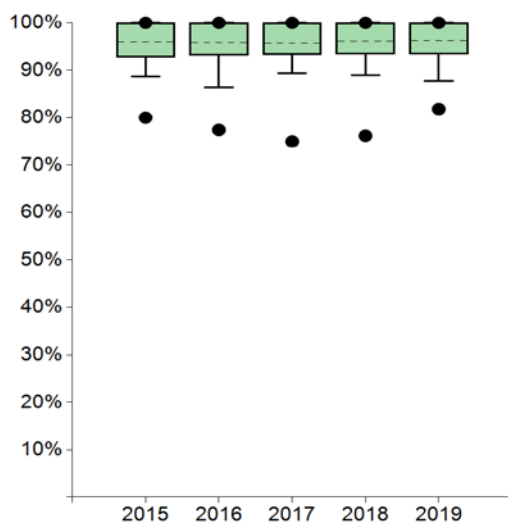
## 22. Local R0 resections: rectum



Sollvorgabe = target value

296 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Local R0 resections - colon -after completion of surgical treatment	24*	9 - 78	7,598
Denominator	Colon operations according to primary case definition (operative)	25*	11 - 81	7,926
Rate	Target value $\geq 90\%$	96.30%	81.82% - 100%	95.86%**



	2015	2016	2017	2018	2019
Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	100%	100%	100%	100%	100%
75 <sup>th</sup> percentile	100%	100%	100%	100%	100%
Median	96.00%	95.83%	95.65%	96.08%	96.30%
25 <sup>th</sup> percentile	92.68%	93.02%	93.16%	93.29%	93.27%
5 <sup>th</sup> percentile	88.72%	86.26%	89.32%	88.95%	87.79%
Minimum	80.00%	77.42%	75.00%	76.19%	81.82%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	269	90.88%

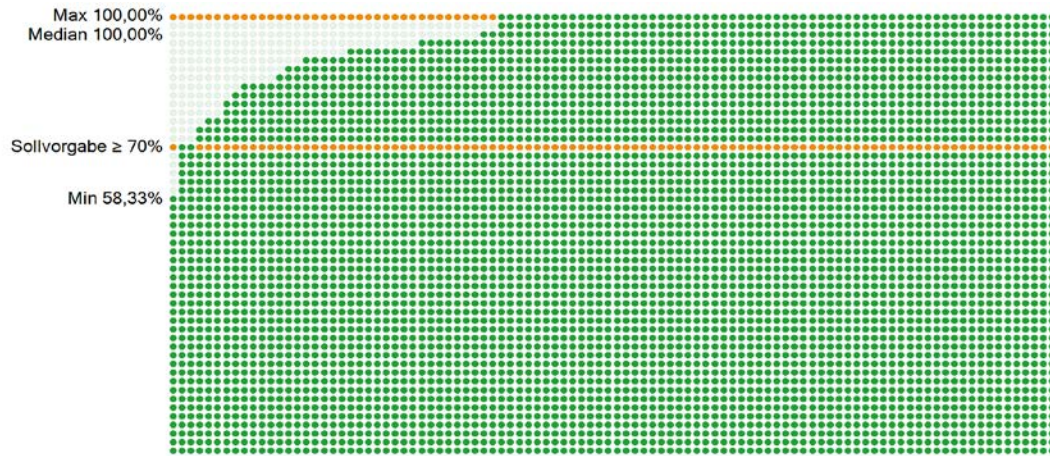
### Comments:

An improvement in the R0 rates for rectal cancer is particularly evident in the lower percentage ranges. 27 centres nevertheless failed to meet the target, albeit comparatively narrowly. In most cases, these were locally advanced tumours or palliative operations for which no R0 resection was aimed for from the outset. In addition, perforating rectal carcinomas, an R status that could not be assessed (e.g. due to concomitant ulcerative colitis) or macroscopic/quick section R0 findings that turned out to be R1 postoperatively were also responsible for a shortfall. Many centres dedicated themselves to the affected patients in individual case analyses. Systematic problems could not be identified.

\*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.

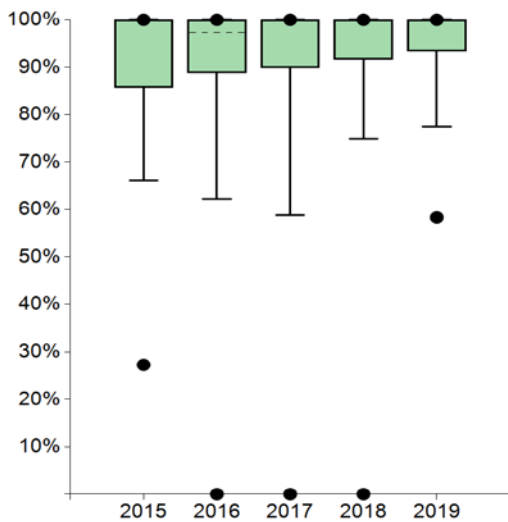
## 23. Marking of stoma position (GL QI 11)



Sollvorgabe = target value

296 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients of the denominator with preoperative marking of the stoma position	17*	4 - 81	5,684
Denominator	Patients with RC who have undergone elective surgery with stoma system (without TWR)	19*	5 - 81	5,958
Rate	Target value ≥ 70%	100%	58.33% - 100%	95.40%**



	2015	2016	2017	2018	2019
Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	100%	100%	100%	100%	100%
75 <sup>th</sup> percentile	100%	100%	100%	100%	100%
Median	100%	97.30%	100%	100%	100%
25 <sup>th</sup> percentile	85.71%	88.89%	89.87%	91.67%	93.33%
5 <sup>th</sup> percentile	66.02%	62.23%	58.81%	75.00%	77.51%
Minimum	27.27%	0.00%	0.00%	0.00%	58.33%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	292	98.65%

### Comments:

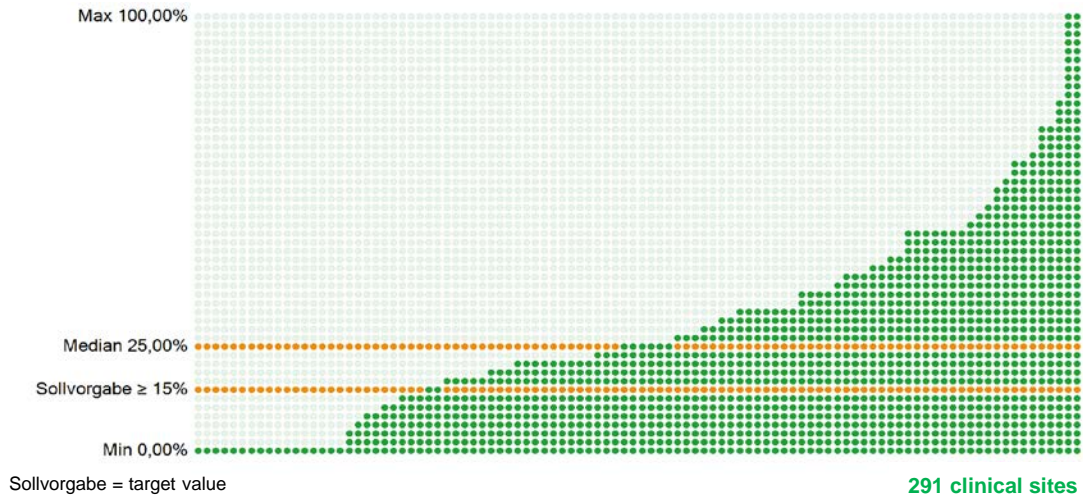
The recommendation behind this QI of the guideline has become established over the years and is now very well fulfilled by the centres. Only 4 centres marked the stoma position preoperatively in less than 70% of elective rectal surgeries with stoma placement. The reasons for this were very different and ranged from documentation errors to omissions to only intraoperative decisions for stoma placement. One centre adapted its surgical checklist and dealt with the topic in a quality circle.

\*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.

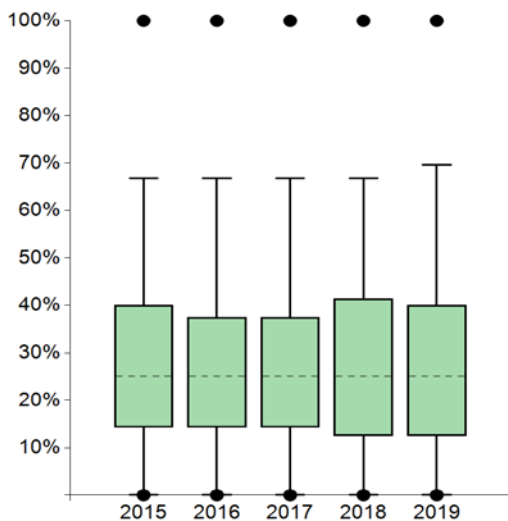
\*\* Percentage of centre patients who were treated according to the indicator.



## 24a. Primary resection of liver metastases (UICC stage IV CRC)



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Primary-case patients with UICC stage IV CRC who underwent resection of liver metastases	2*	0 - 9	672
Denominator	Primary-case patients with UICC stage IV CRC who only have liver metastases (without TWR)	8*	1 - 29	2,500
Rate	Target value ≥ 15%	25.00%	0.00% - 100%	26.88%**



	2015	2016	2017	2018	2019
● Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	66.67%	66.67%	66.67%	66.67%	69.62%
75 <sup>th</sup> percentile	40.00%	37.50%	37.50%	41.43%	40.00%
Median	25.00%	25.00%	25.00%	25.00%	25.00%
25 <sup>th</sup> percentile	14.29%	14.29%	14.29%	12.50%	12.50%
5 <sup>th</sup> 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	%
291	98.31%	211	72.51%

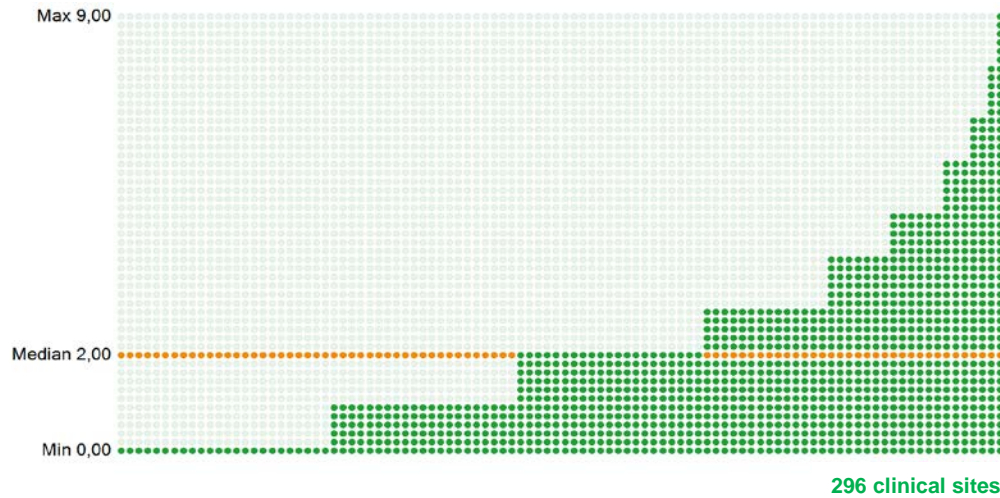
### Comments:

The proportion of patients with primary resection of an exclusive liver metastasis remains constant at one quarter. This also applies to the number of centres below the target of 15% (2019: 90; 2018: 88). Note the sometimes small denominators that increase the weight of individual cases. Reasons for a low rate were mainly non-resectable liver metastases (multiple/diffuse occurrence, unfavourable location, infiltrating growth) and (often at the request of the patients and due to age/comorbidity) palliative therapy approaches. Some centres criticised that the OncoBox only counts primary cases in the denominator, although many primary liver metastases resections were performed for secondary metastasis (i.e. non-primary cases). The indicator for liver metastasis resection were fundamentally adjusted from this audit year onwards.

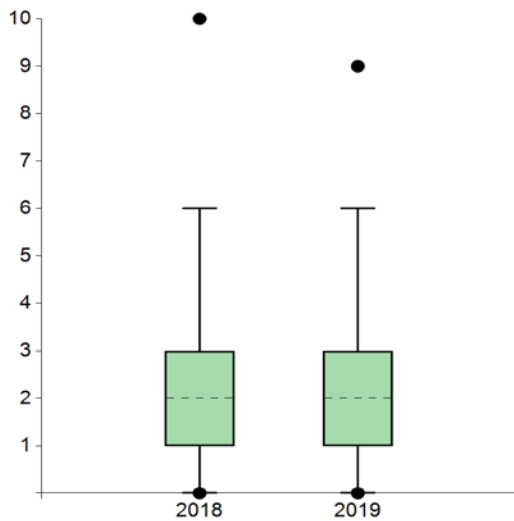
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

## 24b. Primary liver metastasis resection (UICC stage IV CRC) at the surgical site of the CRCC



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Primary cases of denominator 24a, which receive a primary liver metastasis resection internally (= at the surgical site of the colorectal cancer center) (= subset of numerator 24a)	2	0 - 9	630
	No target value			



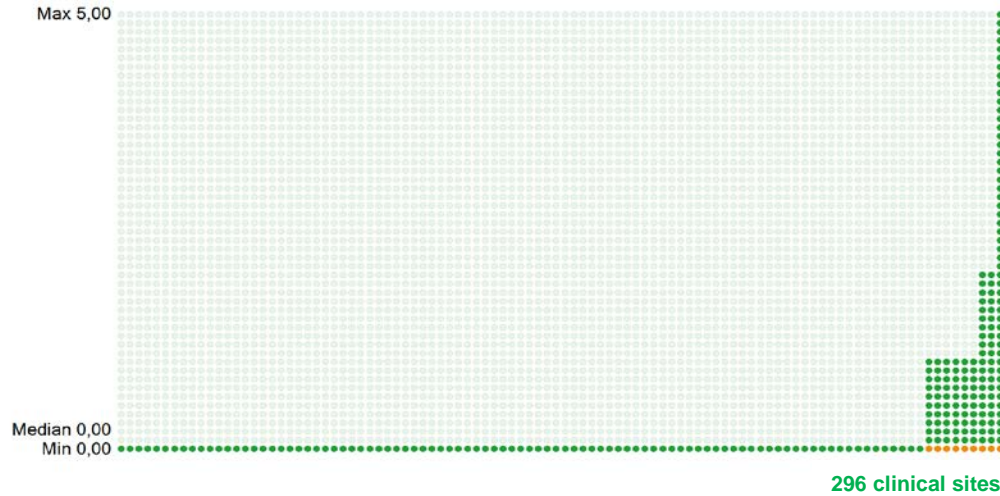
	2015	2016	2017	2018	2019
● Maximum	----	----	----	10.00	9.00
95 <sup>th</sup> percentile	----	----	----	6.00	6.00
75 <sup>th</sup> percentile	----	----	----	3.00	3.00
Median	----	----	----	2.00	2.00
25 <sup>th</sup> percentile	----	----	----	1.00	1.00
5 <sup>th</sup> percentile	----	----	----	0.00	0.00
● Minimum	----	----	----	0.00	0.00

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	----	----

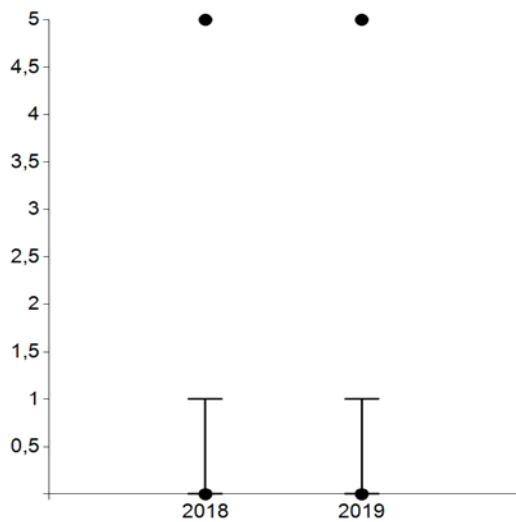
**Comments:**

This indicator is a subset of the numerator of indicator 24a, which indicates the proportion of primary liver metastasis resections performed at the centre itself. It was compulsorily collected for the first time in the indicator year 2019. In total, 630 of the 672 resections were performed internally, which corresponds to just under 94%. Nevertheless, there were only 2 resections per centre on average, which is due to the small basic population. The indicators for liver metastasis resection were fundamentally adjusted as of this audit year..

## 24c. Primary liver metastasis resection (UICC stage IV CRC) outside the surgical site the CRCC



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Primary cases of denominator 24a that receive a primary liver metastasis resection externally (= outside the surgical site of the colorectal cancer center) (= subset of numerator 24a)	0	0 - 5	42
	No target value			



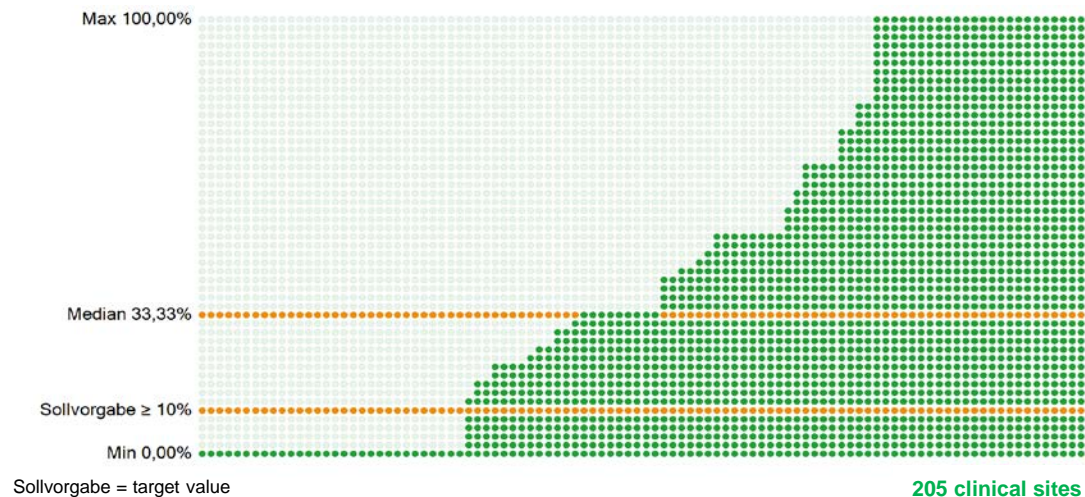
	2015	2016	2017	2018	2019
Maximum	----	----	----	5.00	5.00
95 <sup>th</sup> percentile	----	----	----	1.00	1.00
75 <sup>th</sup> percentile	----	----	----	0.00	0.00
Median	----	----	----	0.00	0.00
25 <sup>th</sup> percentile	----	----	----	0.00	0.00
5 <sup>th</sup> percentile	----	----	----	0.00	0.00
Minimum	----	----	----	0.00	0.00

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	----	----

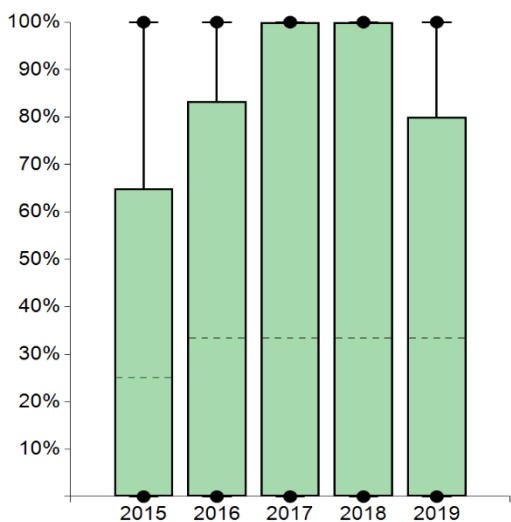
**Comments:**

This indicator is also a subset of the numerator of Indicator 24a. It shows the minority (42 of 672) of primary liver metastases resected externally. This indicator was also mandatory for the first time to be reported by the centres. It shows that only 27 centres sent patients to another hospital for primary liver metastasis resection. The indicators for liver metastasis resection were fundamentally adjusted from this audit year onwards.

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



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Primary cases of the denominator in which a secondary liver metastasis resection was performed after chemotherapy	1*	0 - 9	319
Denominator	Primary cases with KRK UICC Stad. IV with primarily non-resectable, exclusive liver metastases that have received chemotherapy	3*	1 - 20	829
Rate	Target value ≥ 10%	33.33%	0.00% - 100%	38.48%**



	2015	2016	2017	2018	2019
● Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	100%	100%	100%	100%	100%
75 <sup>th</sup> percentile	64.92%	83.33%	100%	100%	80.00%
Median	25.00%	33.33%	33.33%	33.33%	33.33%
25 <sup>th</sup> percentile	0.00%	0.00%	0.00%	0.00%	0.00%
5 <sup>th</sup> 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	%
205	69.26%	143	69.76%

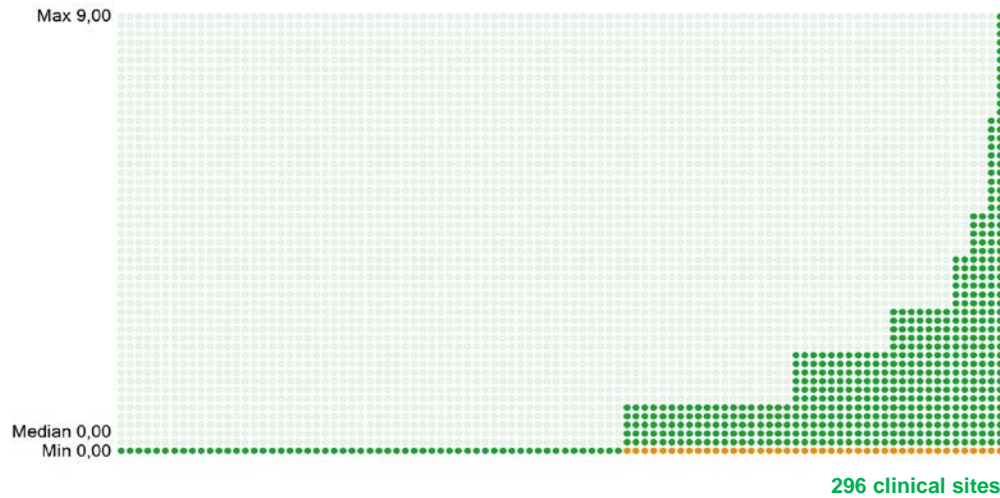
### Comments:

Of the patients with liver metastasis only, 829 (33.16%) were not primarily resectable and received chemotherapy. They were thus included in the denominator of the ratio. 62 of the 205 centres that treated such patients performed secondary liver metastases resection in less than 10% of cases. This corresponds to the level of previous years. The most frequent reason for omitted resection was inadequate downsizing or progression under chemotherapy. Some patients had died in the meantime or refused the procedure. In addition, patients receiving palliative chemotherapy without planned secondary resection (e.g. for diffuse liver metastasis) also fall under the denominator criteria. The cases were analysed in the audits, and no systematic quality deficit was found.

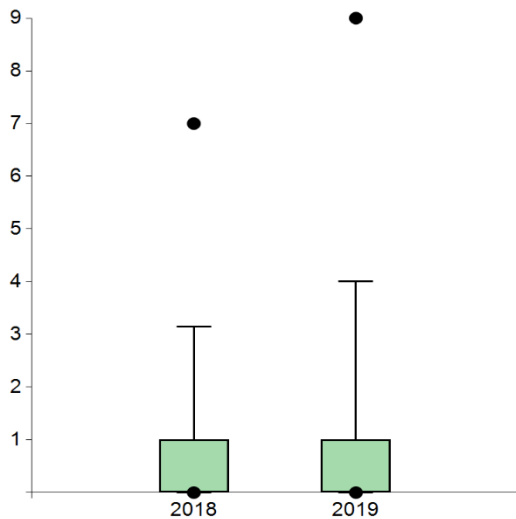
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

## 25b. Secondary resection of liver metastases (UICC stage IV CRC) at the surgical site of the CRCC Certification



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Primary cases of denominator 25a, which receive a secondary liver metastasis resection internally (= at the surgical site of the colorectal cancer center) (= subset of numerator 25a)	0	0 - 9	282
	No target value			



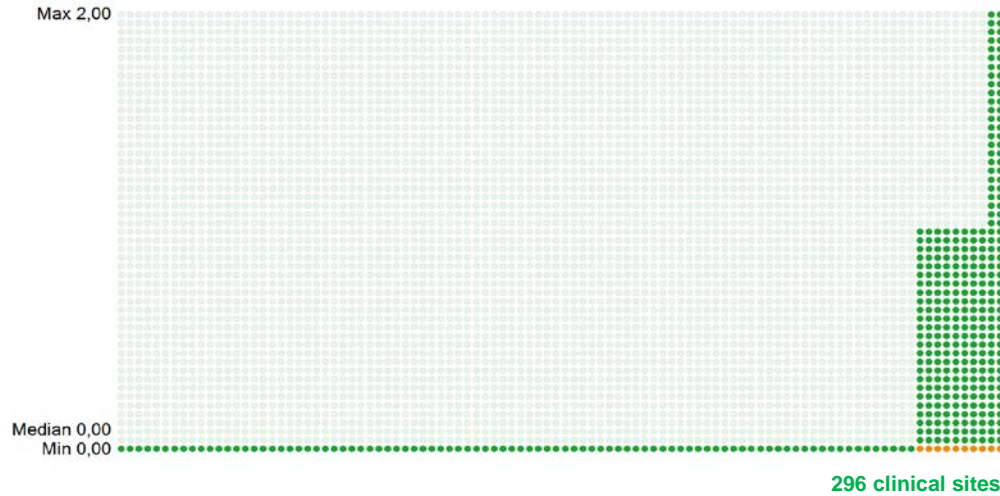
	2015	2016	2017	2018	2019
Maximum	----	----	----	7.00	9.00
95 <sup>th</sup> percentile	----	----	----	3.15	4.00
75 <sup>th</sup> percentile	----	----	----	1.00	1.00
Median	----	----	----	1.00	0.00
25 <sup>th</sup> percentile	----	----	----	0.00	0.00
5 <sup>th</sup> percentile	----	----	----	0.00	0.00
Minimum	----	----	----	0.00	0.00

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	----	----

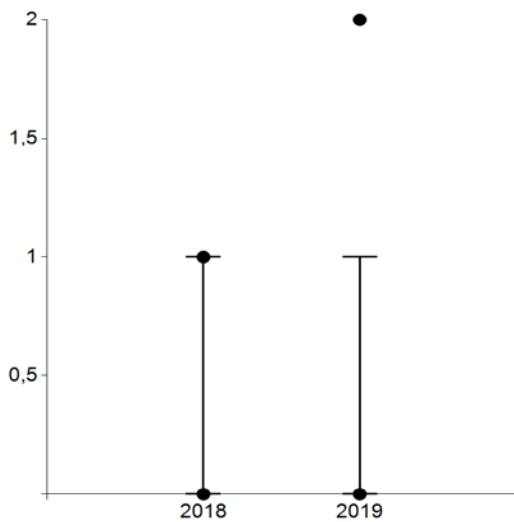
**Comments:**

Analogous to the indicators 24a-24c, a breakdown into internally and externally operated cases is also made for secondary liver metastasis resection. At 88.4%, a somewhat smaller proportion is performed at the same centre than for primary resection, but still the vast majority. The problem of small numbers is even more evident here than in the primary resections: 257 of the 296 centres performed 0, 1 or 2 resections, which increases the influence of individual cases enormously.

## 25c. Secondary resection of liver metastases (UICC stage IV CRC) outside the surg. site of CRCC



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Primary cases of denominator 25a that receive a secondary liver metastasis resection externally (= outside the surgical site of the colorectal cancer center) (= subset counter 25a)	0	0 - 2	37
	No target value			



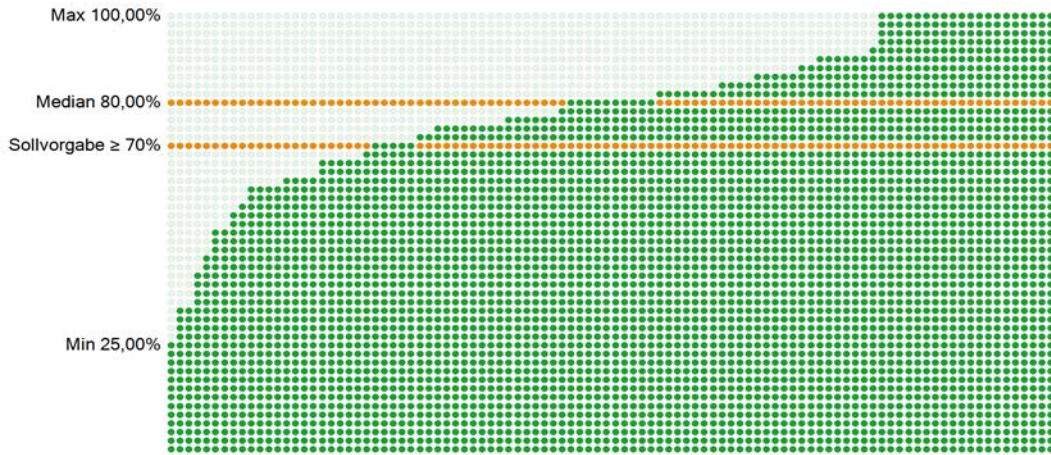
	2015	2016	2017	2018	2019
● Maximum	----	----	----	1.00	2.00
95 <sup>th</sup> percentile	----	----	----	1.00	1.00
75 <sup>th</sup> percentile	----	----	----	0.00	0.00
Median	----	----	----	0.00	0.00
25 <sup>th</sup> percentile	----	----	----	0.00	0.00
5 <sup>th</sup> percentile	----	----	----	0.00	0.00
● Minimum	----	----	----	0.00	0.00

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	----	----

**Comments:**

As with primary liver metastasis resections (cf. Indicator 24c), only a minority of secondary liver metastasis resections are performed externally: 31 centres had a total of 37 secondary liver metastasis resections performed by another centre.

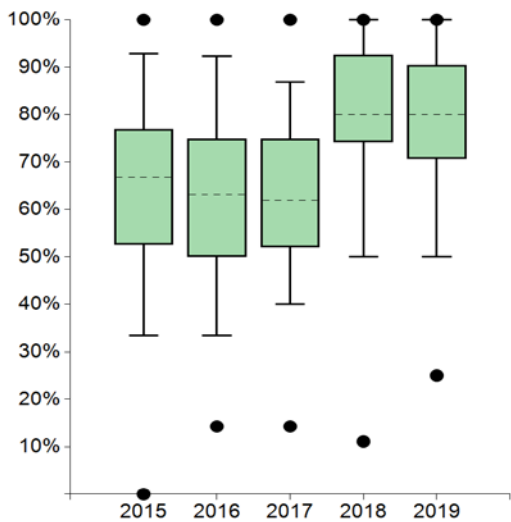
## 26. Adjuvant chemotherapies: colon (UICC stage III) (GL QI 8)



Sollvorgabe = target value

295 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients of the denominator who have received adjuvant chemotherapy	6*	1 - 23	1,944
Denominator	Patients ≤ 75 years with a colon carcinoma UICC Stad. III, in whom an R0 resection of the primary tumour was performed	8*	1 - 26	2,469
Rate	Target value ≥ 70%	80.00%	25.00% - 100%	78.74%**



	2015	2016	2017	2018	2019
Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	92.86%	92.25%	86.87%	100%	100%
75 <sup>th</sup> percentile	76.92%	75.00%	75.00%	92.59%	90.46%
Median	66.67%	63.16%	62.02%	80.00%	80.00%
25 <sup>th</sup> percentile	52.63%	50.00%	52.03%	74.34%	70.72%
5 <sup>th</sup> percentile	33.33%	33.33%	40.00%	50.00%	50.00%
Minimum	0.00%	14.29%	14.29%	11.11%	25.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
295	99.66%	226	76.61%

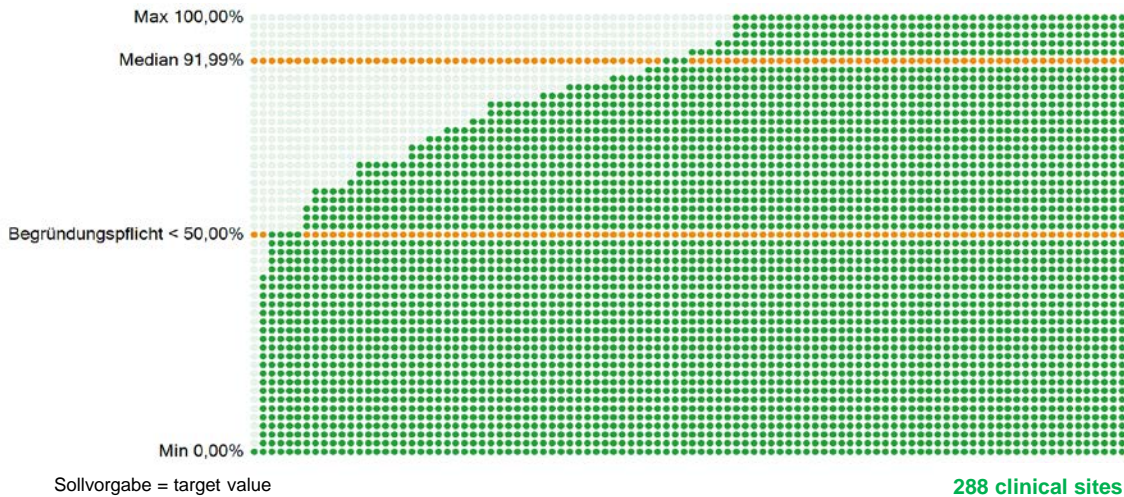
### Comments:

After the denominator was restricted to patients up to max. 75 years of age for the indicator year 2018, the ratio improved by leaps and bounds. It remained at this level in the indicator year 2019. 69 centres administered adjuvant chemotherapy in less than 70% after R0 resection of a stage III tumour. In most cases, patients had refused chemotherapy. Sometimes it was not recommended in cases of co/multimorbidity, reduced general condition or a second malignancy leading to therapy. Sometimes the interval for initiating chemotherapy was missed (e.g. due to delayed convalescence). Some centres had no information on the postoperative course, e.g. because patients no longer appeared. The cases were considered in individual case analyses and declared plausible in the audits.

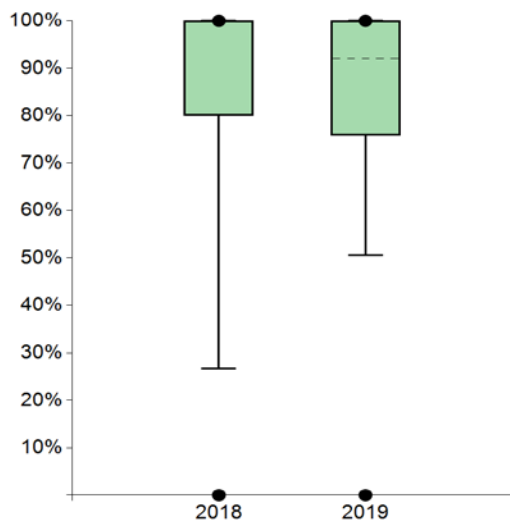
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

## 27. Combination chemotherapy for metastasised CRC with systemic first-line treatment (GL QI 4)



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients of the denominator with combination chemotherapy	7*	0 - 98	2,490
Denominator	Patients with metastatic CRC, ECOG 0-1 and systemic first-line therapy	7*	1 - 106	2,918
Rate	Explanation mandatory*** <50%	91.99%	0.00% - 100%	85.33%**



	2015	2016	2017	2018	2019
Maximum	----	----	----	100%	100%
95 <sup>th</sup> percentile	----	----	----	100%	100%
75 <sup>th</sup> percentile	----	----	----	100%	100%
Median	----	----	----	100%	91.99%
25 <sup>th</sup> percentile	----	----	----	80.00%	75.89%
5 <sup>th</sup> percentile	----	----	----	26.66%	50.60%
Minimum	----	----	----	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
288	97.30%	282	97.92%

**Comments:**

This QI of the guideline was compulsorily surveyed in all centres for the first time in the indicator year 2019. The good results of the previous year can thus be confirmed. Only 6 centres fell under the obligation to justify because they offered combination chemotherapy to less than 50% of their M1 patients with ECOG 0-1 and systemic first-line therapy. They explained this with the patient's wish, comorbidities as well as monotherapies recommended in the specific individual case. The centre with a rate of 0% had only 1 patient in the denominator. The procedure of the centres was not objected to in the audits.

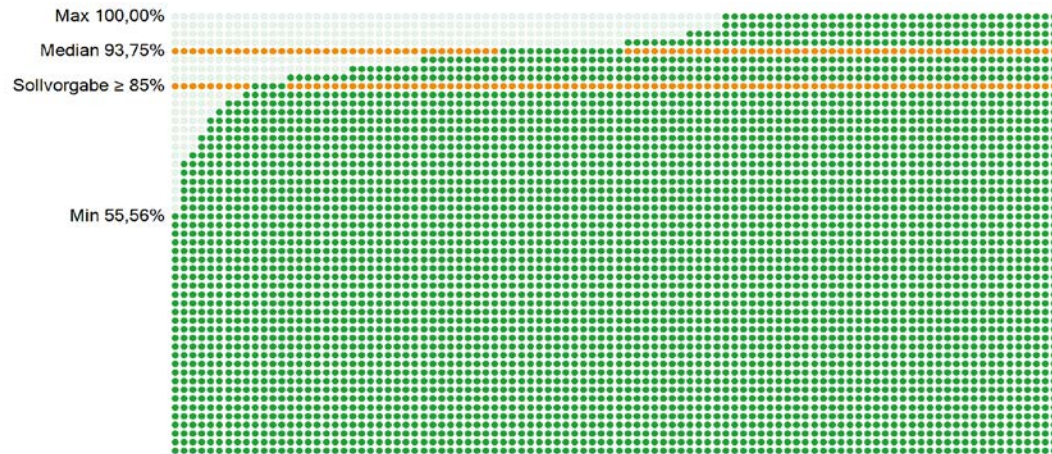
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

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



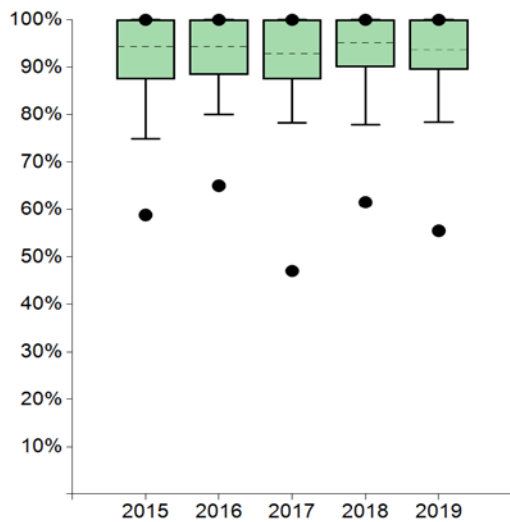
## 28. Quality of the TME rectum specimen (information from pathology) (GL QI 6)



Sollvorgabe = target value

296 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients with good-to-moderate quality (grade 1: mesorectal fascia or grade 2: intramesorectal excisions) TME	14*	5 - 65	4,904
Denominator	Patients with elective radically operated RC (without TWR)	16*	5 - 67	5,276
Rate	Target value ≥ 85%	93.75%	55.56% - 100%	92.95%**



	2015	2016	2017	2018	2019
Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	100%	100%	100%	100%	100%
75 <sup>th</sup> percentile	100%	100%	100%	100%	100%
Median	94.44%	94.44%	92.86%	95.24%	93.75%
25 <sup>th</sup> percentile	87.50%	88.46%	87.50%	90.00%	89.47%
5 <sup>th</sup> percentile	75.00%	80.00%	78.31%	77.90%	78.37%
Minimum	58.82%	65.00%	47.06%	61.54%	55.56%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	266	89.86%

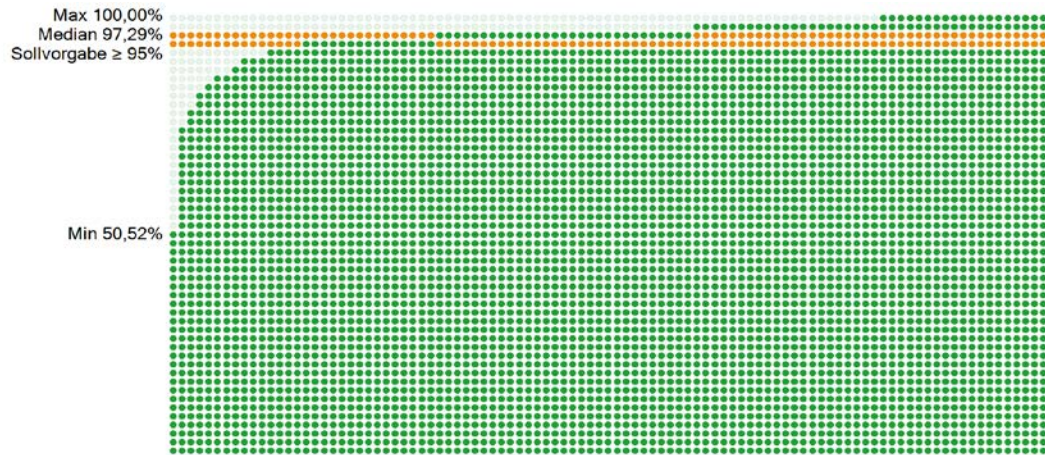
### Comments:

The implementation of this guideline indicator remains at a consistently good level. About 90% of the centres meet the target, according to which at least 85% of electively operated rectal resections should be of good or moderate quality. The 30 centres below the target mainly referred to difficult surgical conditions (e.g. scarring, abscesses, deep tumours, infiltrative growth, neoadjuvant radiation with fibrosis). In some cases, the Mercury grade was not indicated in the report or the specimen was torn during salvage. Some centres then held discussions with the pathology department and adapted the surgical techniques (e.g. establishment of robotic interventions, larger salvage incision). In one case, a note was issued by the auditor.

\*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.

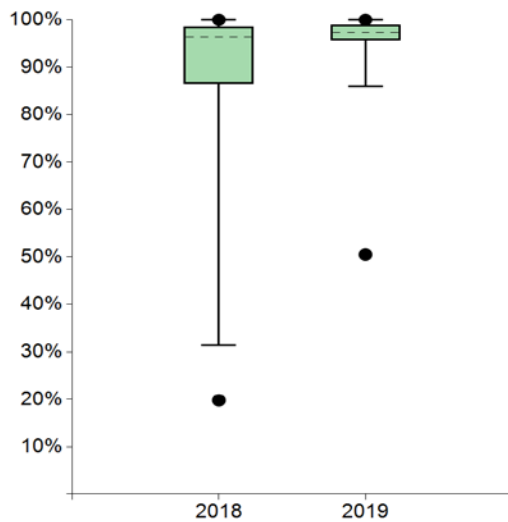
## 29. Diagnostic report after surgical resection of colorectal carcinoma (GL QI 2)



Sollvorgabe = target value

296 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients of the denominator with complete reports	78*	35 - 217	23,999
Denominator	Patients with CRC and surgical resection	80.5*	36 - 223	24,995
Rate	Target value ≥ 95%	97.29%	50.52% - 100%	96.02%**



	2015	2016	2017	2018	2019
Maximum	----	----	----	100%	100%
95 <sup>th</sup> percentile	----	----	----	100%	100%
75 <sup>th</sup> percentile	----	----	----	98.53%	98.83%
Median	----	----	----	96.35%	97.29%
25 <sup>th</sup> percentile	----	----	----	86.45%	95.71%
5 <sup>th</sup> percentile	----	----	----	31.35%	85.96%
Minimum	----	----	----	19.78%	50.52%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	243	82.09%

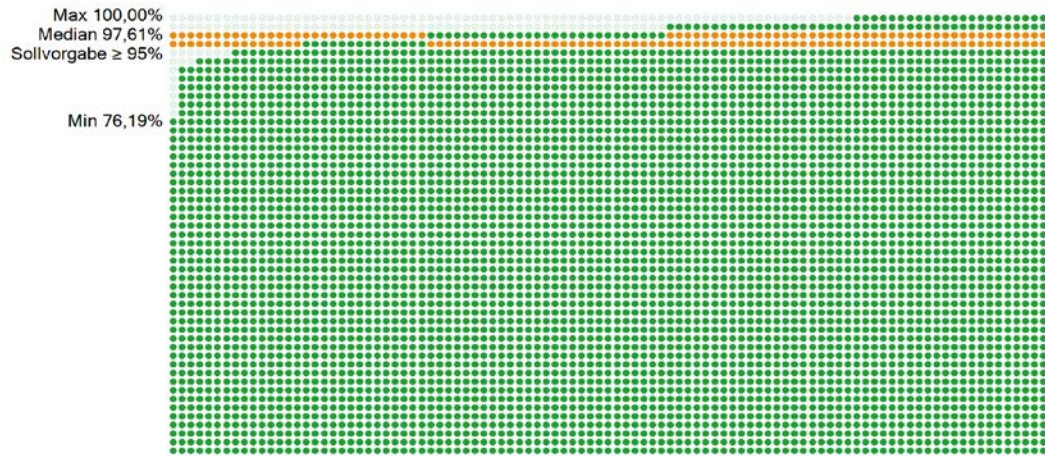
**Comments:**

In the first year of mandatory data collection, there was a clear improvement in the results. 53 centres failed to meet the target of at least 95%. In many cases, information on the aboral and/or circumferential resection margin was missing. Information was requested, a standard for marking the margins by the surgeons was introduced and quality circles were organised. In particular, the grading was missing for neoadjuvant pre-treatment, as the Gx to be indicated here was not accepted by the OncoBox. In the meantime, OnkoZert corrected the specification so that this would no longer lead to a failure to meet the target in the future. The centre with a value of 50.52% sought an exchange with the pathology department and was able to rectify the problem for the following year.

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

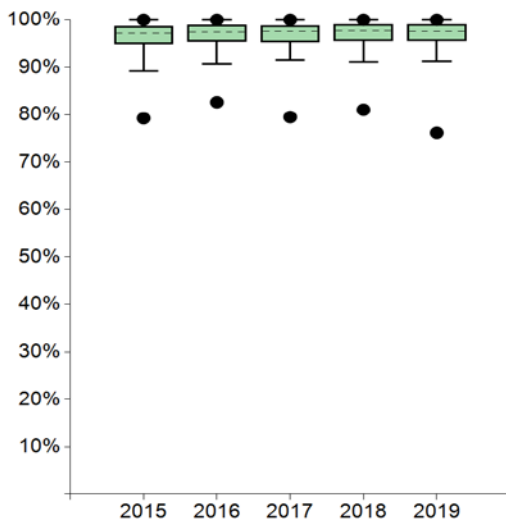
### 30. Lymph node examination (GL QI 2)



Sollvorgabe = target value

296 clinical sites

	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients with pathological examination of lymph nodes ≥ 12	70*	30 - 188	22,074
Denominator	Patients with CRC who underwent an lymphadenectomy (without TWR)	72*	32 - 195	22,777
Rate	Target value ≥ 95%	97.61%	76.19% - 100%	96.91%**



	2015	2016	2017	2018	2019
Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	100%	100%	100%	100%	100%
75 <sup>th</sup> percentile	98.61%	98.91%	98.78%	99.00%	98.98%
Median	97.18%	97.47%	97.58%	97.66%	97.61%
25 <sup>th</sup> percentile	94.92%	95.45%	95.34%	95.56%	95.58%
5 <sup>th</sup> percentile	89.18%	90.66%	91.44%	91.13%	91.15%
Minimum	79.25%	82.61%	79.49%	81.03%	76.19%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
296	100.00%	242	81.76%

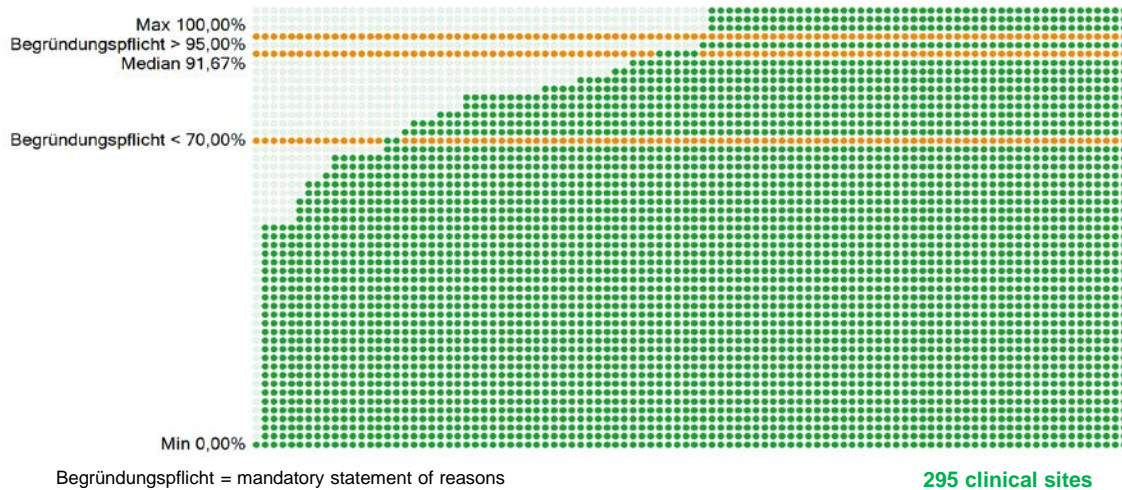
**Comments:**

The quality indicator of the guideline on lymph node examination is well established overall, although a relevant number of centres still do not meet the target. Of these 54 centres, 21 had already failed to meet the target in the previous year. The dominant reasons for this were neoadjuvant pre-treated patients and palliative limited resections from the outset. In many cases, the 12 lymph nodes required in the numerator could not be found despite meticulous processing of the specimen by the pathology department. The justifications were checked for plausibility in the audits. Measures included, among others, quality circles with the pathology department, automatic follow-up reporting if less than 12 lymph nodes were found, and internal training.

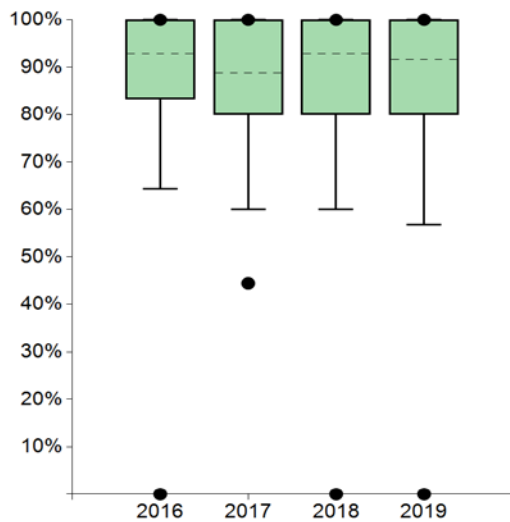
\*The medians for numerator and population do not refer to an existing Centre but indicate the median of all cohort numerators and the median of all cohort denominators.

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

### 31. Start of adjuvant chemotherapy



	Indicator definition	All clinical sites 2019		
		Median	Range	Patients Total
Numerator	Patients with beginning of chemotherapy within 8 weeks after surgery	5*	0 - 19	1,693
Denominator	Patients with UICC stage III colon carcinoma who had received adjuvant chemotherapy	6*	1 - 23	1,944
Rate	Explanation mandatory*** <70% and >95%	91.67%	0.00% - 100%	87.09%**



	2015	2016	2017	2018	2019
Maximum	----	100%	100%	100%	100%
95 <sup>th</sup> percentile	----	100%	100%	100%	100%
75 <sup>th</sup> percentile	----	100%	100%	100%	100%
Median	----	92.86%	88.89%	92.86%	91.67%
25 <sup>th</sup> percentile	----	83.33%	80.00%	80.00%	80.00%
5 <sup>th</sup> percentile	----	64.38%	60.00%	60.00%	56.87%
Minimum	----	0.00%	44.44%	0.00%	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
295	99.66%	107	36.27%

**Comments:**

This indicator is an extension of Indicator 26, which checks whether adjuvant chemotherapy for stage III colon cancer was started quickly. 188 centres were outside the plausibility corridor, with 143 achieving a rate of 100%. 45 centres had to justify a rate of less than 70%. This was mostly due to the first necessary exclusion of metastases or other malignancies, postoperative complications, delayed convalescence or the patient's wish (reflection period, second opinion). In some cases, however, no justification was available, especially when the 8-week limit was narrowly exceeded. No systematic errors were identified in the audits. Individual centres announced quality circles or wanted to improve interdisciplinary communication.

\*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.

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