

# **Annual Report 2016**

## **of the Certified Colorectal Cancer Centres (CrCCs)**

Audit year 2015 / Indicator year 2014

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**Status of the certification system for Colorectal Cancer Centres 2015**

	31.12.2015	31.12.2014	31.12.2013	31.12.2012	31.12.2011
Ongoing procedures	13	11	12	11	15
Certified centres	265	267	257	247	223
Certified clinical sites	274	276	266	257	233
CrCCs with 1 clinical site	259	261	251	240	216
2 clinical sites	4	4	4	5	5
3 clinical sites	1		1	1	1
4 clinical sites	1	1	1	1	1
Total primary cases*	25,809	25,418	22,281	21,391	20,198
Primary cases per centre (mean)*	97	95	87	87	91
Primary cases per centre (median)*	88	88	76	76	80

\* The figures refer to all certified centres.

General information

	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 Indicator 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.

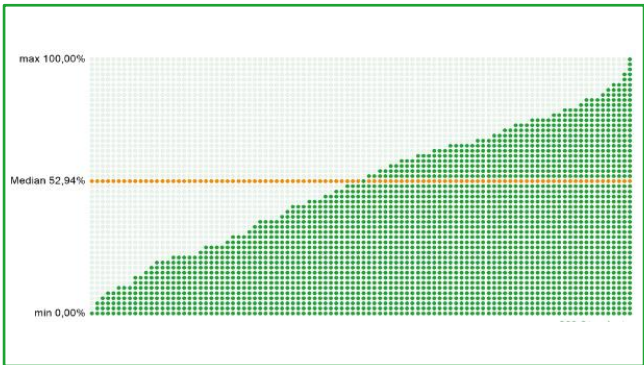


Chart:

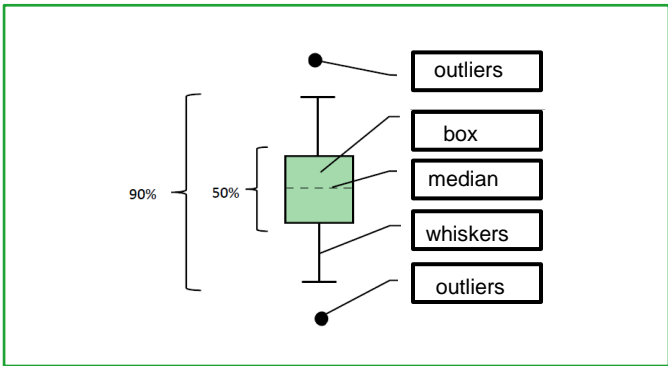
The x-axis indicates the number of centres, the y-axis gives the values in percent or number (e.g. primary cases). The target is depicted as a horizontal orange line. The median, a horizontal orange line, divides the entire group into two equal halves.

General information



Cohort development:

Cohort development in 2010, 2011, 2012, 2013 and 2014 is graphically represented with boxplots.



Boxplot:

A boxplot consists of a **box with median, whiskers** and **outliers**. 50% of the centres are inside 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.

**General information**

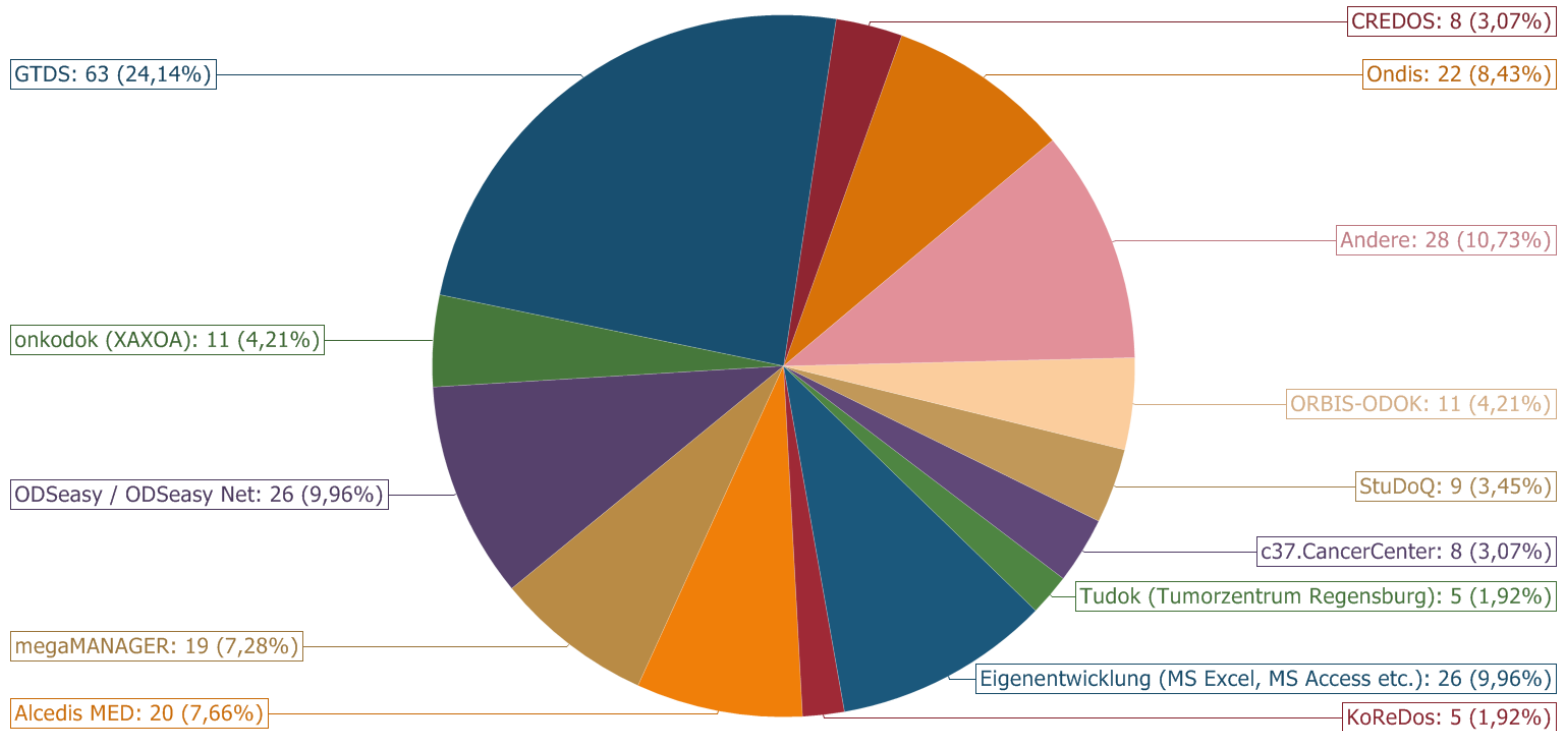
	31.12.2015	31.12.2014	31.12.2013	31.12.2012
Clinical sites included in the Annual Report	261	257	253	230
Percentage	95.3%	93.1%	95.1%	89.5%

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

The Annual Report covers 261 of the 274 clinical sites certified as per 31 December 2015. 13 clinical sites are not included: 10 clinical sites were certified for the first time in 2015 (data depiction of a full calendar year is not mandatory for initial certification), certification had been suspended at 2 clinical sites and for 1 clinical site verification of the data could not be completed in time.

The indicators published here refer to the indicator year 2014. They are the basis for the audits conducted in 2015.

Tumour documentation systems used in CrCCs



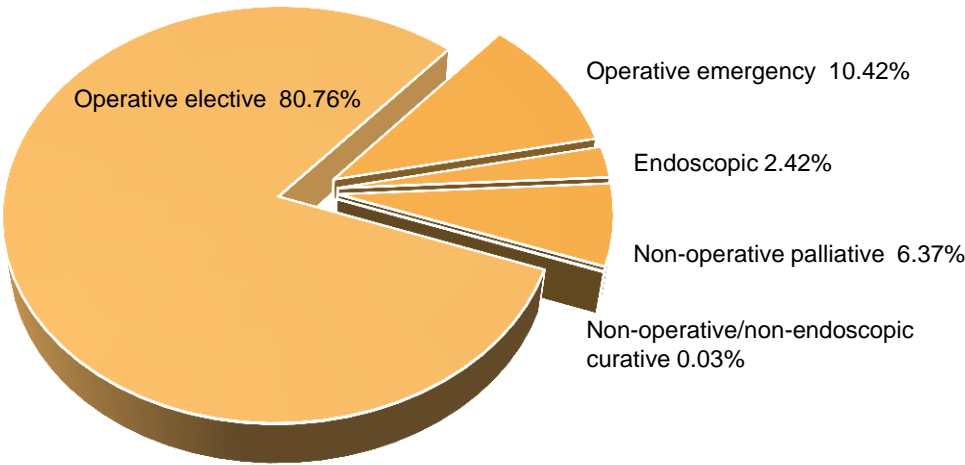
Legend:

Other	System used in less than 4 clinical sites
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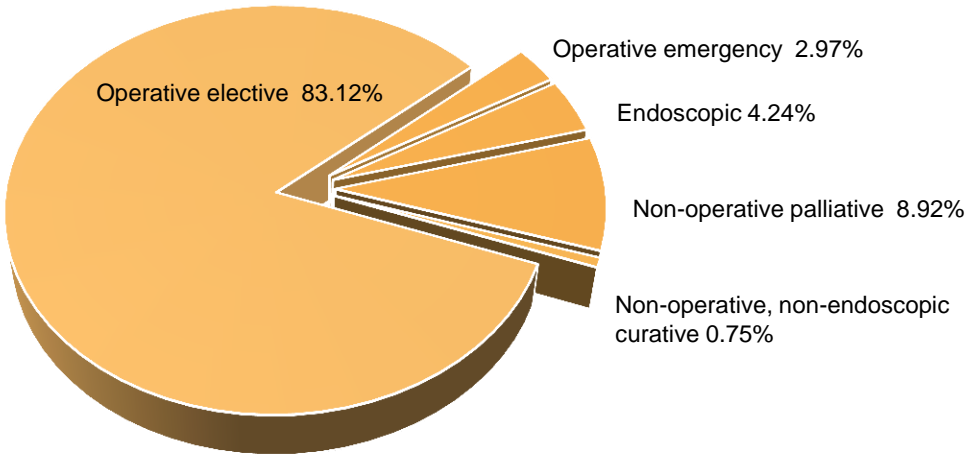
The information on the tumour documentation system was taken from the EXCEL annex to the Catalogue of Requirements (basic data worksheet). It is not possible to indicate more than one system. Support is often provided by the cancer registers or there may be a direct link to the cancer register via a specific tumour documentation system.

Basic data

Colon



Rectum



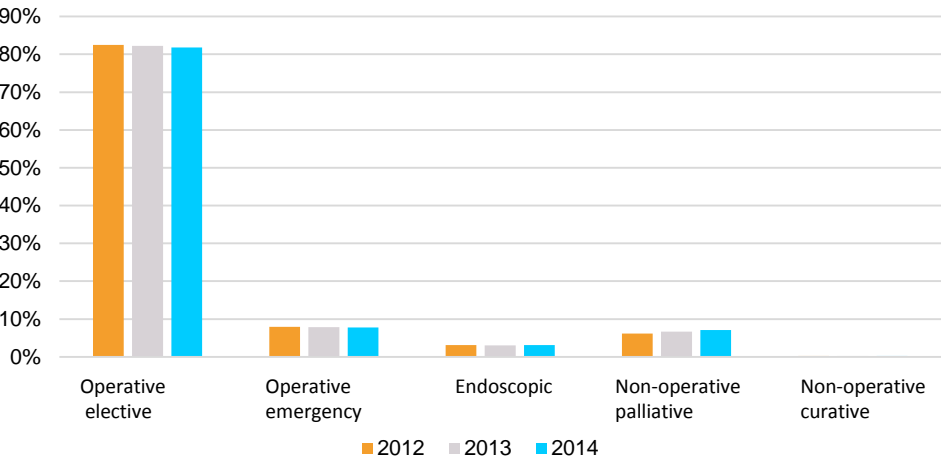
	Operative elective	Operative emergency	Endoscopic	Non-operative palliative *	Non-operative/non-endoscopic curative **	Total
Colon	12,457 (80.76%)	1,607 (10.42%)	374 (2.42%)	982 (6.37%)	5 (0.03%)	15,425
Rectum	7,358 (83.12%)	263 (2.97%)	375 (4.24%)	790 (8.92%)	66 (0.75%)	8,852
Total primary cases	19,815	1,870	749	1,772	71	24,277

\* Non-operative palliative: no tumour resection; palliative radiotherapy/chemotherapy or best supportive care  
\*\* Non-operative/non-endoscopic curative: complete tumour remission after planned neoadjuvant therapy and patient' foregoing of surgery

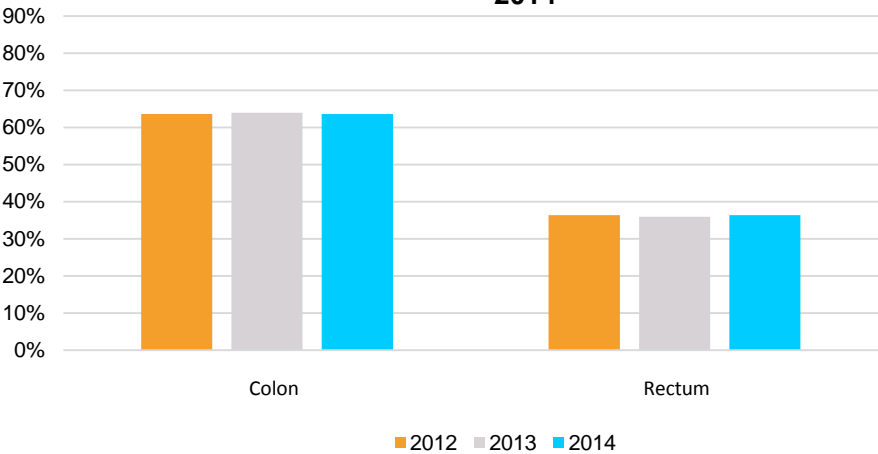


Basic data – Development 2012-2014

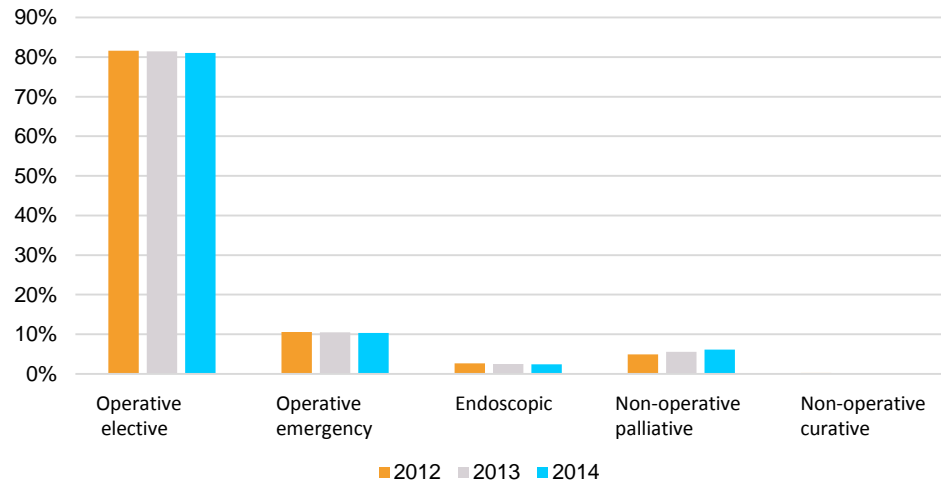
Distribution of primary cases by stage 2012-2014



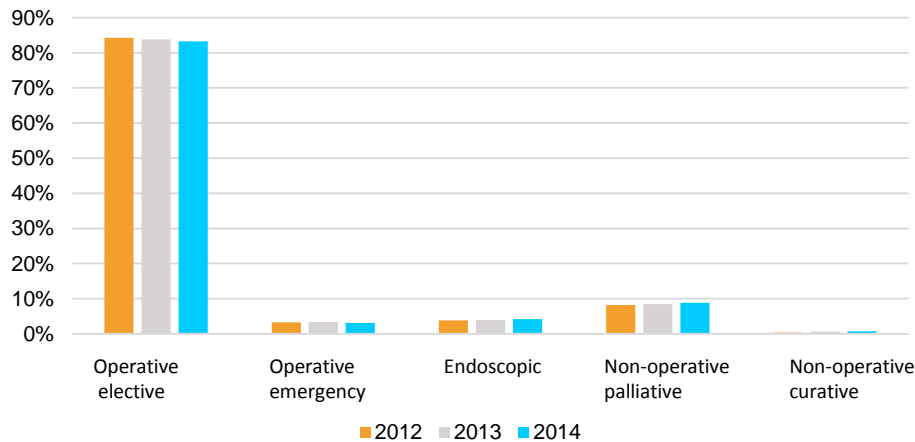
Distribution between primary cases colon and rectum 2012-2014



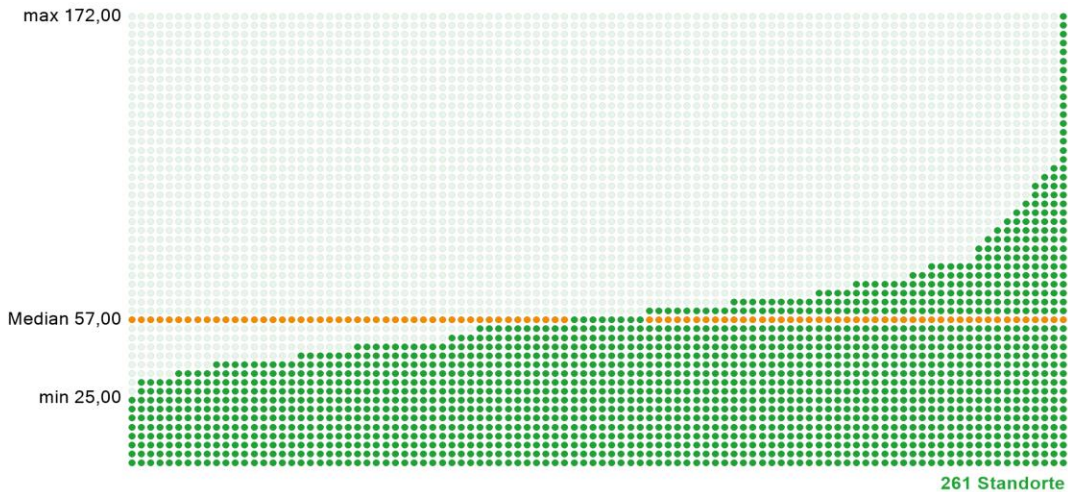
Distribution of primary cases colon by stage 2012-2014



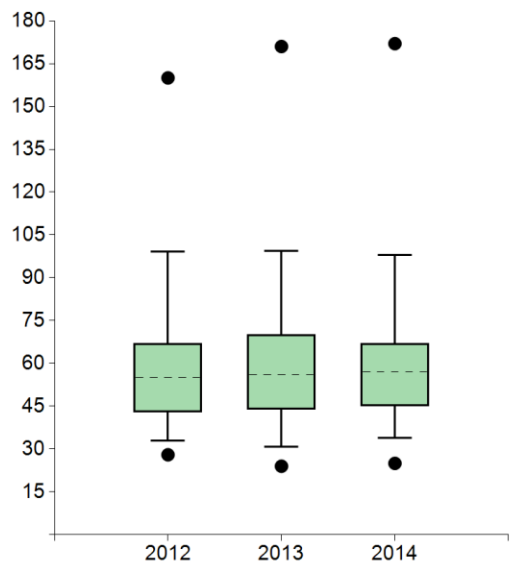
Distribution of primary cases rectum by stage 2012-2014



Total primary cases: colon



	Indicator definition	All clinical sites 2014	
		Median	Range
Number	Total primary cases: colon (Def. Chart 8)	57	25 - 172

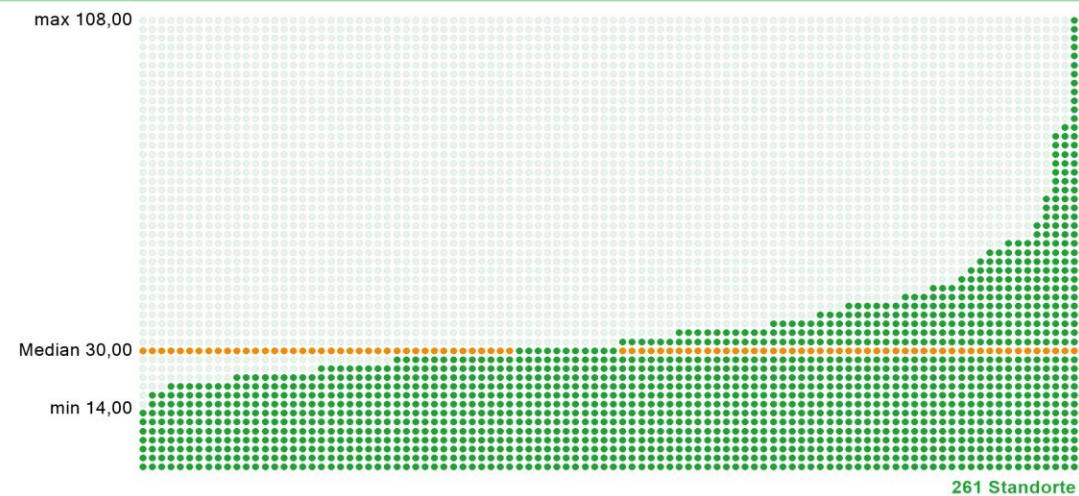


	2010	2011	2012	2013	2014
Maximum	----	----	160.00	171.00	172.00
95 <sup>th</sup> percentile	----	----	99.00	99.00	98.00
75 <sup>th</sup> percentile	----	----	67.00	70.00	67.00
Median	----	----	55.00	56.00	57.00
25 <sup>th</sup> percentile	----	----	43.00	44.00	45.00
5 <sup>th</sup> percentile	----	----	33.00	30.80	34.00
Minimum	----	----	28.00	24.00	25.00

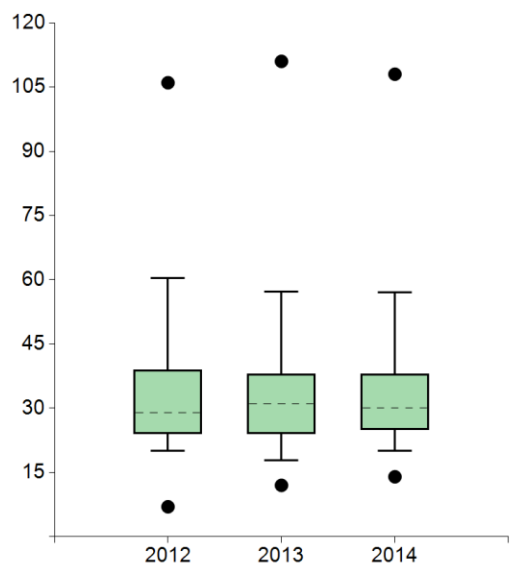
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	----	----

Comments:

Total primary cases: rectum



	Indicator definition	All clinical sites 2014	
		Median	Range
Number	Total primary cases: rectum (Def. Chart 8)	30	14 - 108

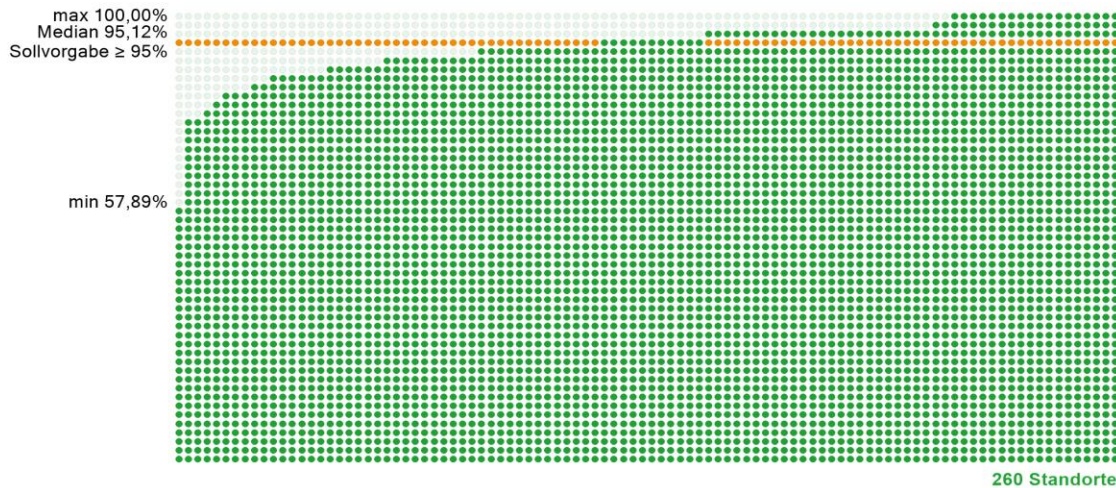


	2010	2011	2012	2013	2014
Maximum	----	----	106,00	111,00	108,00
95 <sup>th</sup> percentile	----	----	60,00	57,00	57,00
75 <sup>th</sup> percentile	----	----	39,00	38,00	38,00
Median	----	----	29,00	31,00	30,00
25 <sup>th</sup> percentile	----	----	24,00	24,00	25,00
5 <sup>th</sup> percentile	----	----	20,00	17,80	20,00
Minimum	----	----	7,00	12,00	14,00

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	----	----

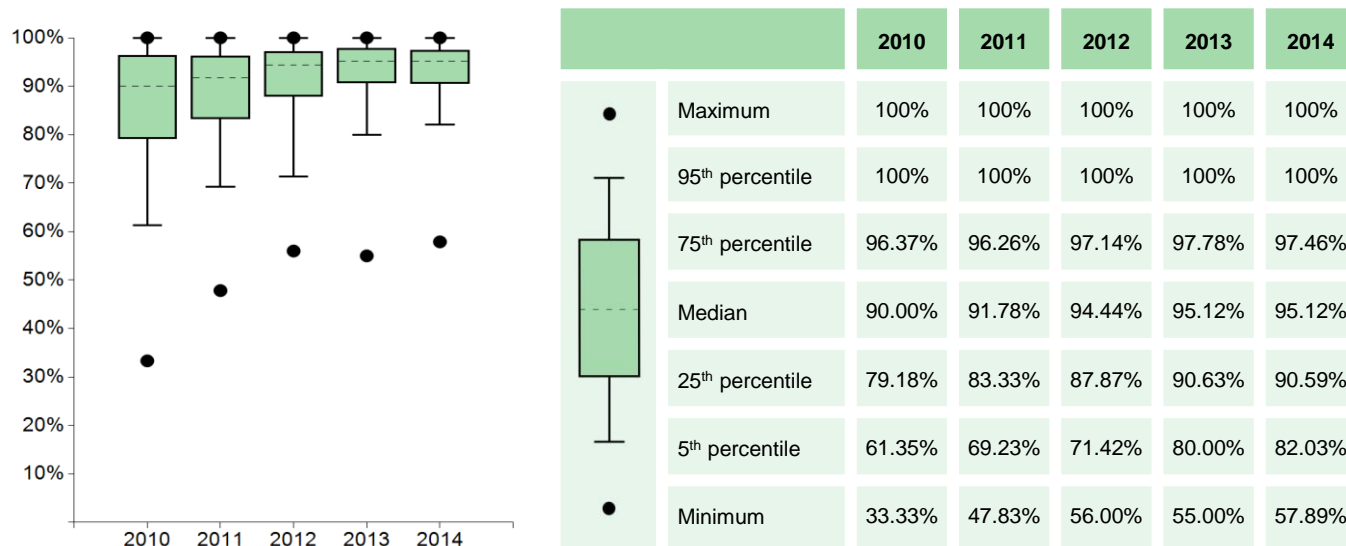
Comments:

# 1. Pre-therapeutic case presentation (QI 5 of the Guideline)



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Patient presented at an interdisciplinary tumour conference before therapy	34*	11 - 105
Population	Patients with RC and all patients with stage IV CC	36*	16 - 114
Rate	Target $\geq 95\%$	95.12%	57.89% - 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.



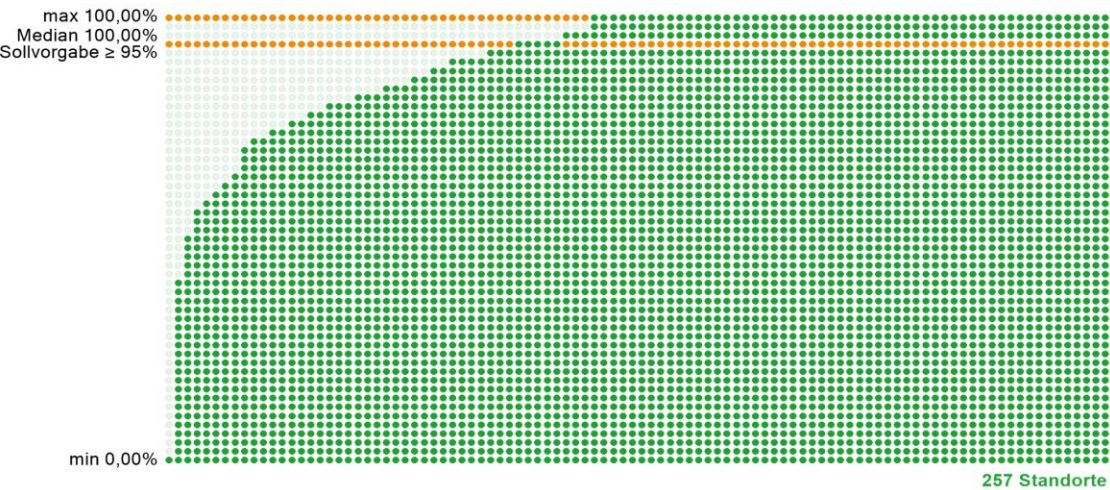
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
260	99.62%	134	51.54%

## Comments:

The implementation of the indicator shows a good development over the course of time but around 49% of the centres did not meet the target. Reasons for failure to meet the target: first intraoperative diagnosis confirmation (rectum carcinoma or metastatisation colon carcinoma), coordination difficulties with internal/external cooperation partners, urgent (not emergency) operations. Agreed measures: more rigid protoscopies pre-op, training of cooperation partners, staging of interdisciplinary indication conferences. The auditors formulated several deviations and remarks.

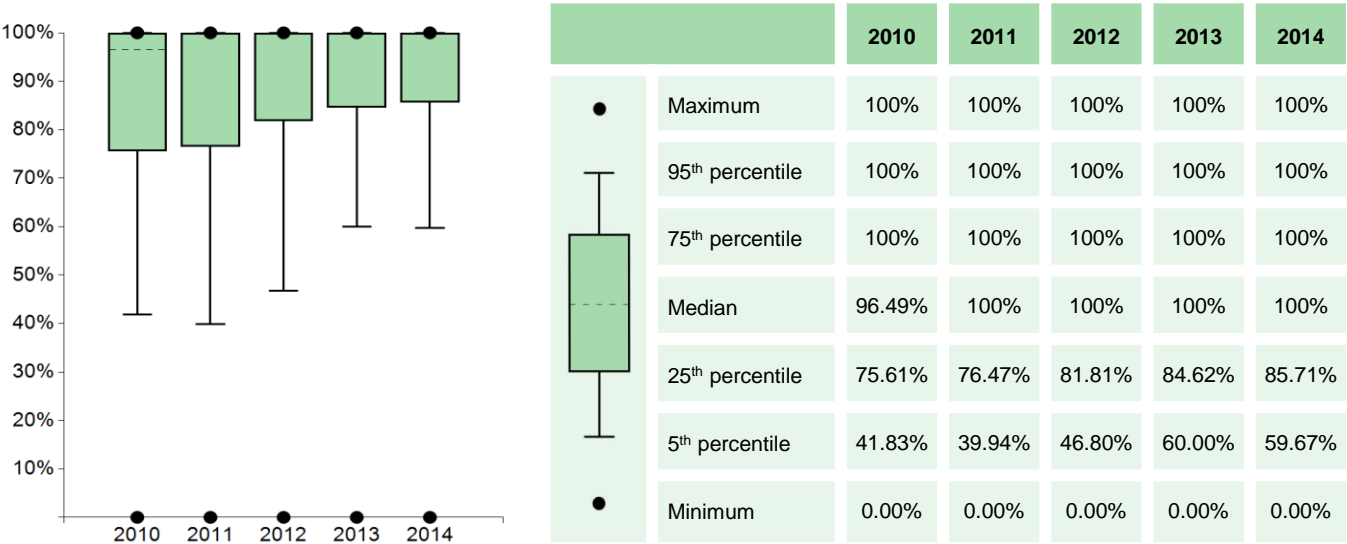


2. Pre-therapeutic case presentation: relapses/metachronous metastases



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Patients with relapse or new metastases presented at the pre-therapeutic conference	10*	0 - 87
Population	Patients with relapse or new metastases	11*	1 - 106
Rate	Target ≥ 95%	100%	0.00% - 100%

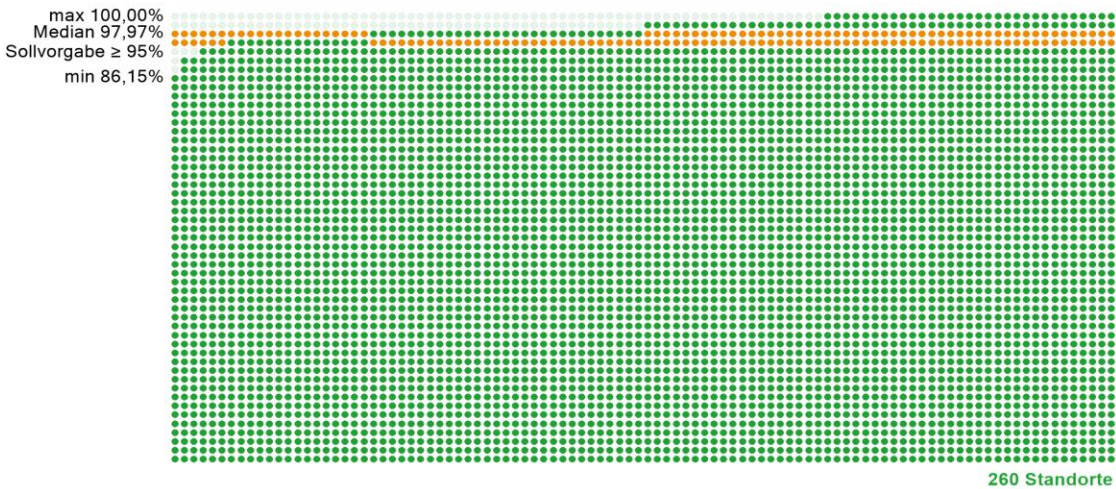
\*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
257	98.47%	157	61.09%

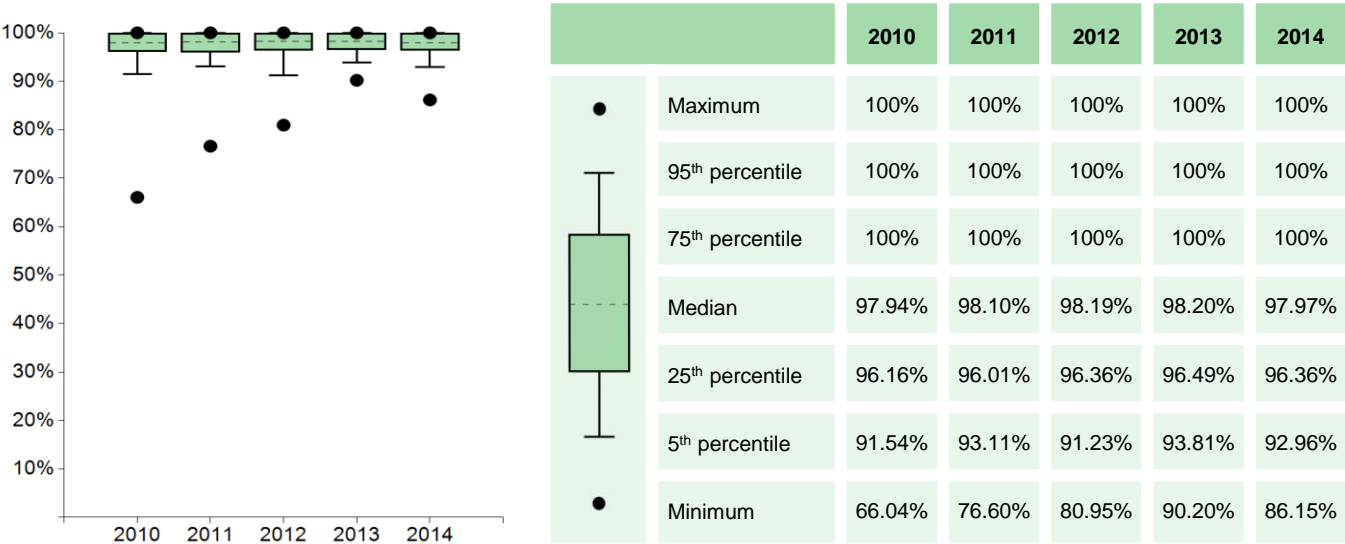
**Comments:**  
The centres with no presentation at the tumour conference have very small populations (1 or 3 patients). The centres gave the following reasons for non-presentation: patients were treated externally, the diagnosis of relapse/metastatisation was only made intra-operatively and there were coordination problems with the interdisciplinary partners who started treatment without any presentation at the tumour conference. Measures to improve presentation: training of cooperation partners.

3. Post-operative case presentation



	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%

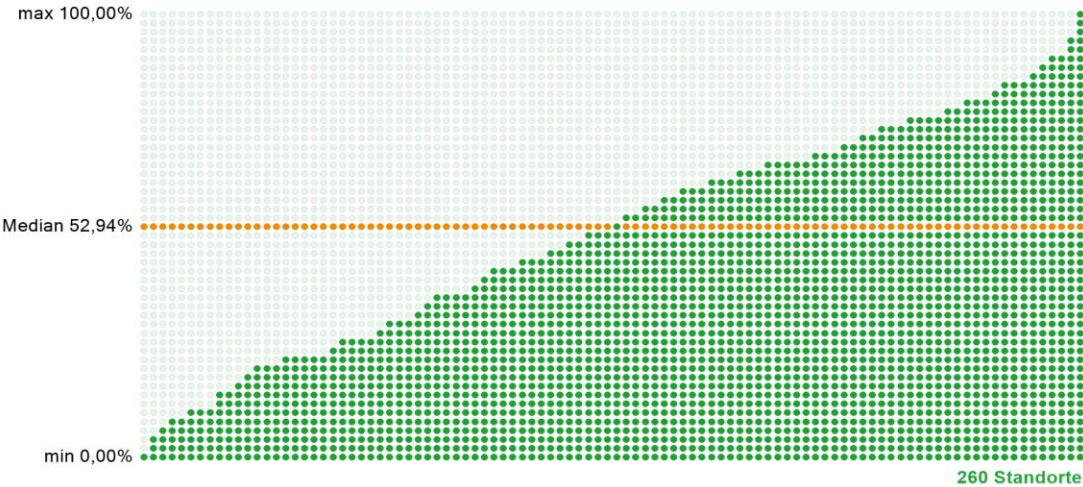
\*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
260	99.62%	232	89.23%

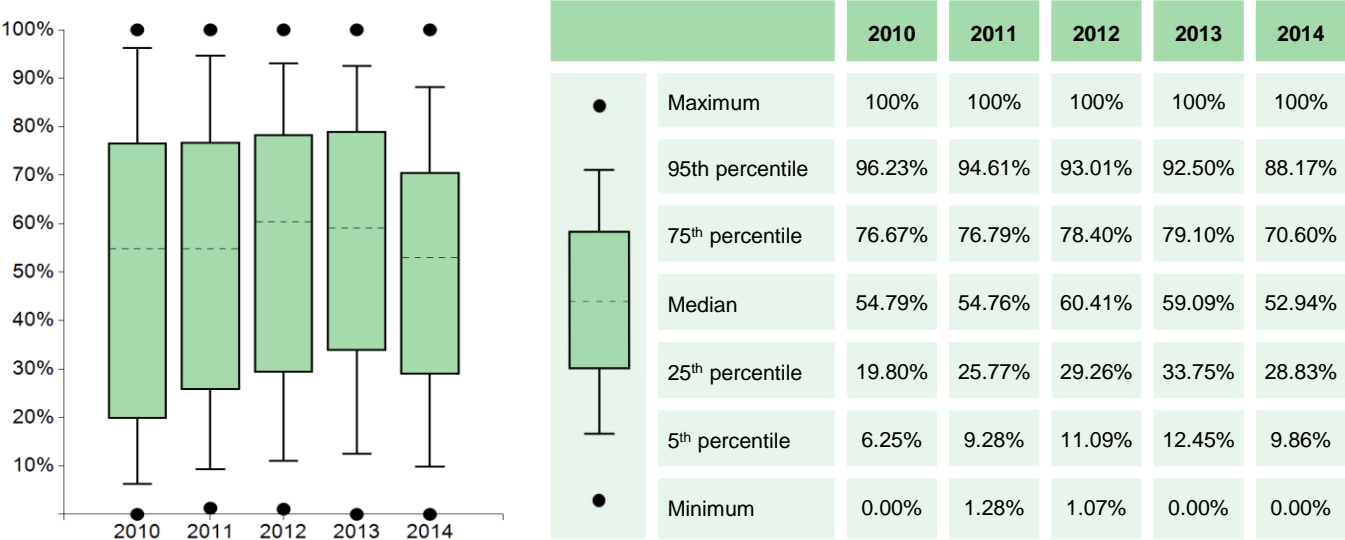
**Comments:**  
Reasons for non-presentation of patients at the tumour conference: post-operative death of patients, interdisciplinary consultations between the surgeon and the gastroenterologist on the ward, fixing of the procedure already at the pre-therapeutic tumour conference and coordination difficulties between the treatment partners.

4. Psycho-oncological counselling



	Indicator definition	All clinical 2014	
		Median	Range
Numerator	Patients given inpatient or outpatient psycho-oncological counselling (length of session ≥ 25 min)	49*	0 - 183
Population	Total primary cases + patients with relapse/new metastases	98.5*	49 - 345
Rate	No target	52.94%	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.

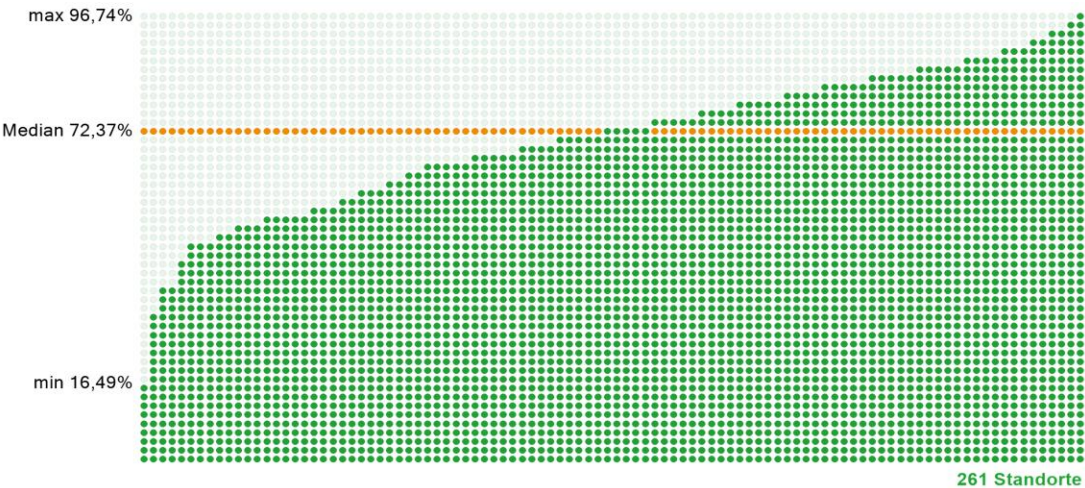


Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
260	99.62%	----	----

**Comments:**  
Compared to the previous year the counselling rates increased in more than half of the centres (134 vs. 88 centres with a higher counselling rate). The reason given by the centre with the lowest counselling rate was the screening instrument used (auditor formulated a remark). Other reasons: the offer was not taken up by the patients (auditor formulated a remark about low-threshold offer) and limited staff resources.

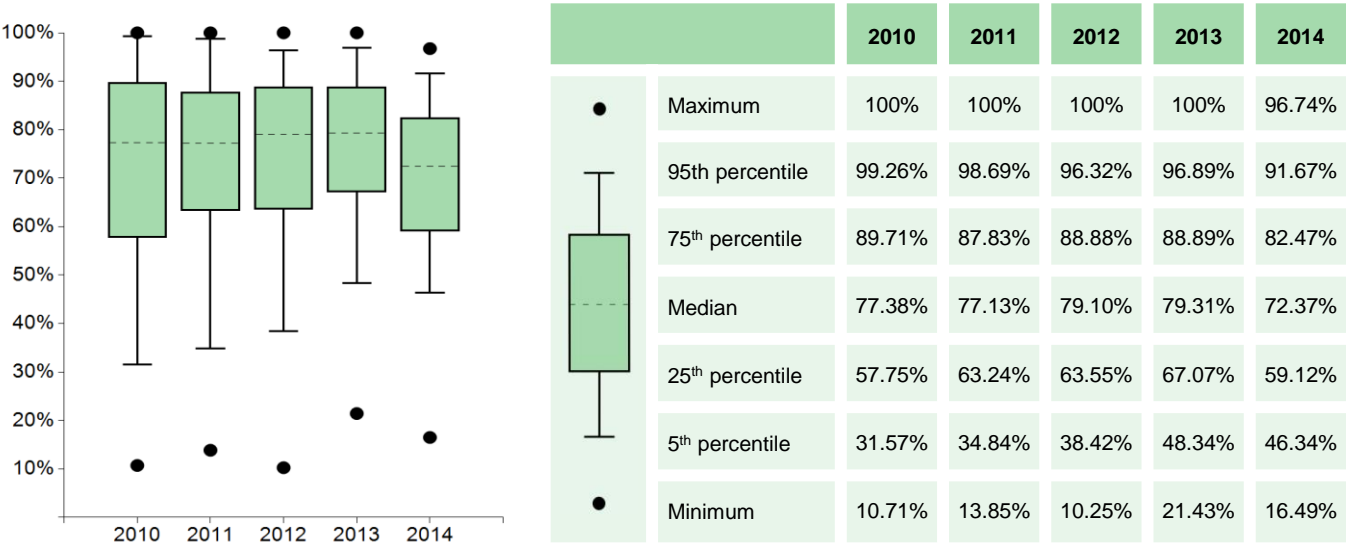


5. Social services counselling



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Inpatients or outpatients who received counselling from the social services	70*	16 - 273
Population	Total primary cases + patients with relapse/new metastases	99*	49 - 345
Rate	No target	72.37%	16.49% - 96.74%

\*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.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	----	----

**Comments:**  
Most of the centres in other German-speaking countries are in a different situation: social work is not organised by the hospitals but by outpatient counselling facilities.  
Compared with the previous year the counselling rate did, however, decrease in 2/3 of the centres.  
Reasons for low presentation rates: counselling provided in an outpatient facility, limited staff resources and patients not taking up the offer.

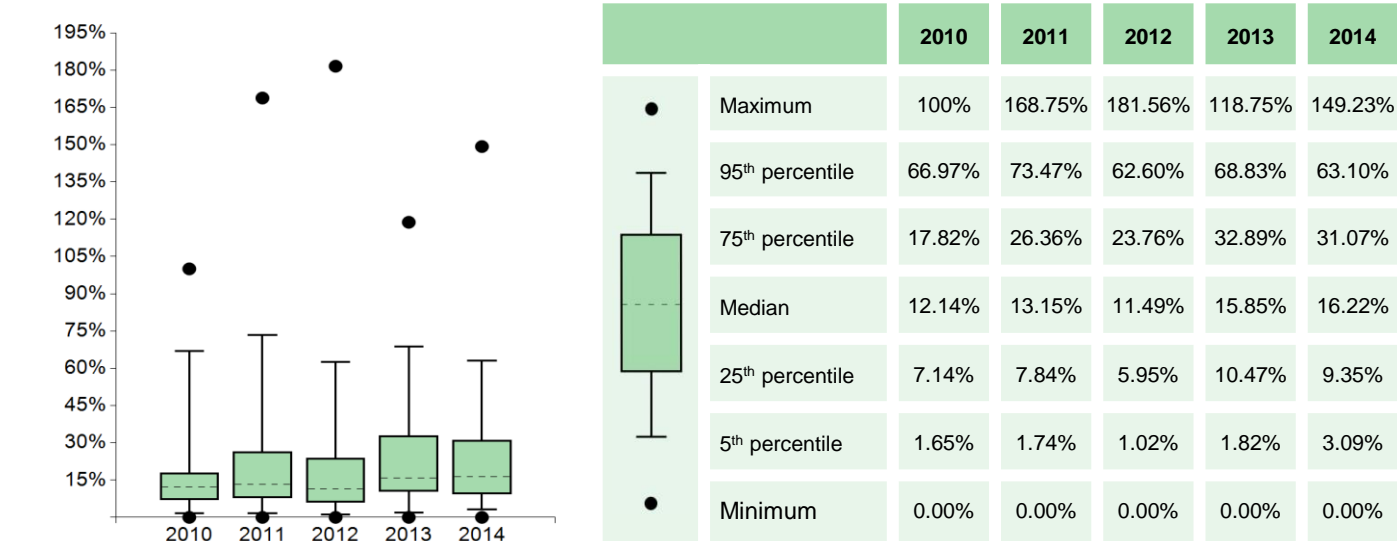


6. Study participation



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Patients of the CrCC included in a study or colorectal prevention study	14*	0 - 129
Population	Total primary cases	87*	47 - 272
Rate	Target $\geq 5\%$	16.22%	0.00% - 149.23%

\*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.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	239	91.57%

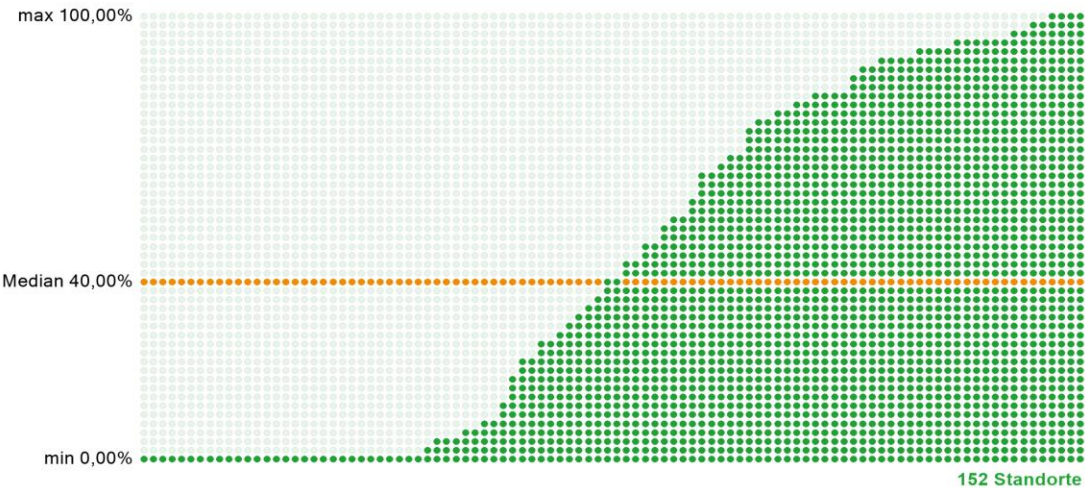
**Comments:**

The indicator for the study rate is the only indicator for which the numerator is not a subset of population. As the choice of study was not to be restricted solely to studies for patients with a first onset of the disease but there was, at the same time, a need for some indication of the size of the centre (primary case number), this deviation from the rule (numerator is subset of population) was tolerated.

5 of the 22 centres who did not meet the target, failed to meet the target in the previous year(s) too. Reasons: insufficient study offering, difficulties in study management. Centres with high study rates gave one reason, *inter alia*, as being the inclusion of patients in several studies at the same time.

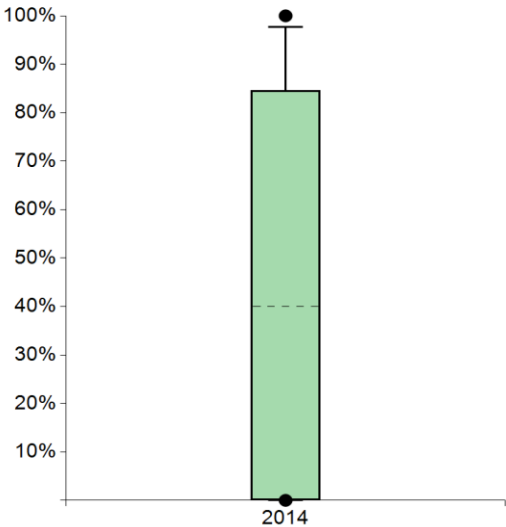
In future, attention is to be paid to the [www.StudyBox.de](http://www.StudyBox.de) in which the studies recognised in the certification system are listed (mandatory from 2017).

7b. CRC patients with a recorded family history



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Primary-case patients with a CRC and a completed patient questionnaire ( <a href="http://www.krebsgesellschaft.de/deutsche-krebsgesellschaft-wtrl/deutsche-krebsgesellschaft/zertifizierung/erhebungsboegen/organkrebszentren.html">http://www.krebsgesellschaft.de/deutsche-krebsgesellschaft-wtrl/deutsche-krebsgesellschaft/zertifizierung/erhebungsboegen/organkrebszentren.html</a> in the colorectal cancer section)	33.5*	0 - 161
Population	Total primary cases	87*	47 - 248
Rate	No target	40.0%	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.

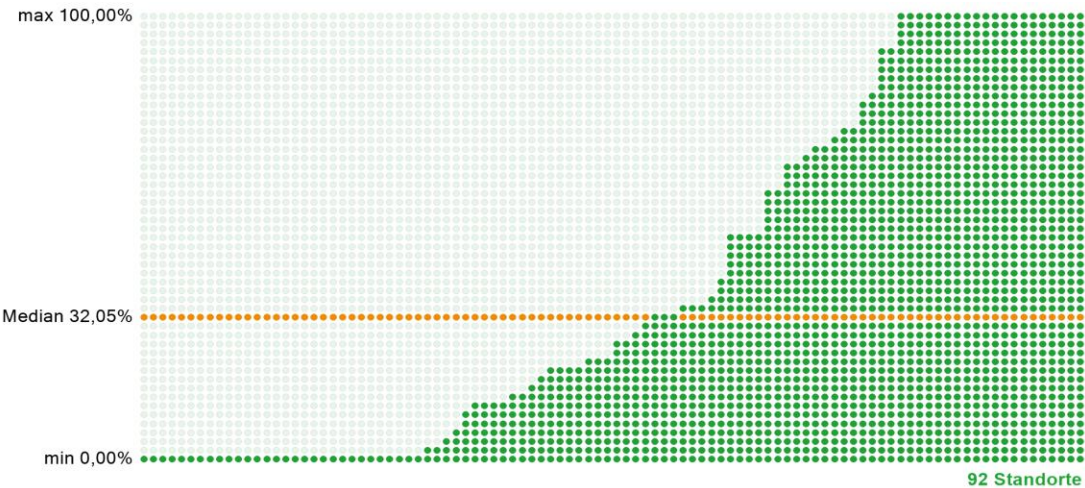


	2010	2011	2012	2013	2014
● Maximum	----	----	----	----	100%
95 <sup>th</sup>	----	----	----	----	97.63%
75 <sup>th</sup> percentile	----	----	----	----	84.57%
Median	----	----	----	----	40.00%
25 <sup>th</sup> percentile	----	----	----	----	0.00%
5 <sup>th</sup> percentile	----	----	----	----	0.00%
● Minimum	----	----	----	----	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
152	58.24%	----	----

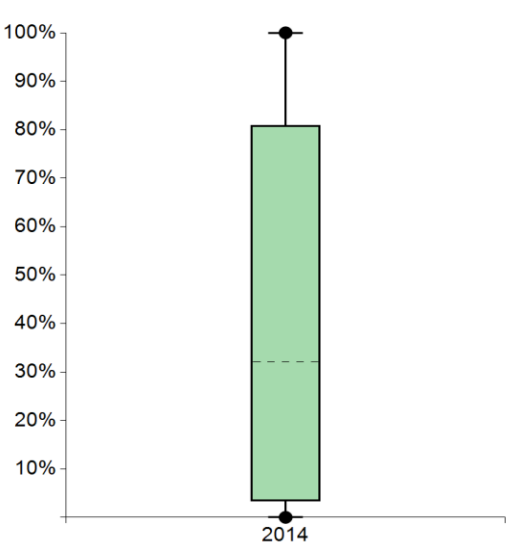
**Comments:**  
In 2015 completion of this indicator was still optional. From 2016 it replaced the indicator “CRC patients with a positive family history” as this indicator repeatedly led to misunderstandings. The procedure for the use of the patient questionnaire has only now becoming established in many centres. This explains the low number of evaluable clinical sites.

8b. Genetic counselling



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Primary-case patients with a positive patient questionnaire advised to visit a centre for familial colorectal cancer	2*	0 - 43
Population	Primary cases with a positive patient questionnaire	7.5*	1 - 68
Rate	No target	32.05%	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.



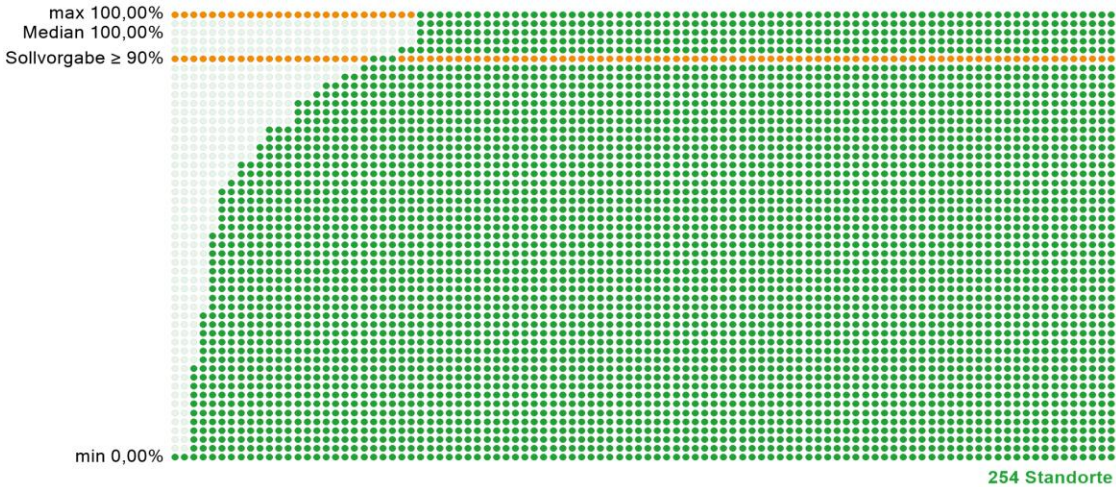
	2010	2011	2012	2013	2014
Maximum	----	----	----	----	100%
95 <sup>th</sup> percentile	----	----	----	----	100%
75 <sup>th</sup> percentile	----	----	----	----	80.83%
Median	----	----	----	----	32.05%
25 <sup>th</sup> percentile	----	----	----	----	3.41%
5 <sup>th</sup> percentile	----	----	----	----	0.00%
Minimum	----	----	----	----	0.00%

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
92	35.25%	----	----

**Comments:**  
The completion of this indicator was still optional in 2015. From audit year 2016 it replaced the indicator "Presentation of primary cases in the centre for familial colorectal cancer".  
As information was optional and a procedure had to be established, only a few clinical sites with evaluable data are included in the Annual report.

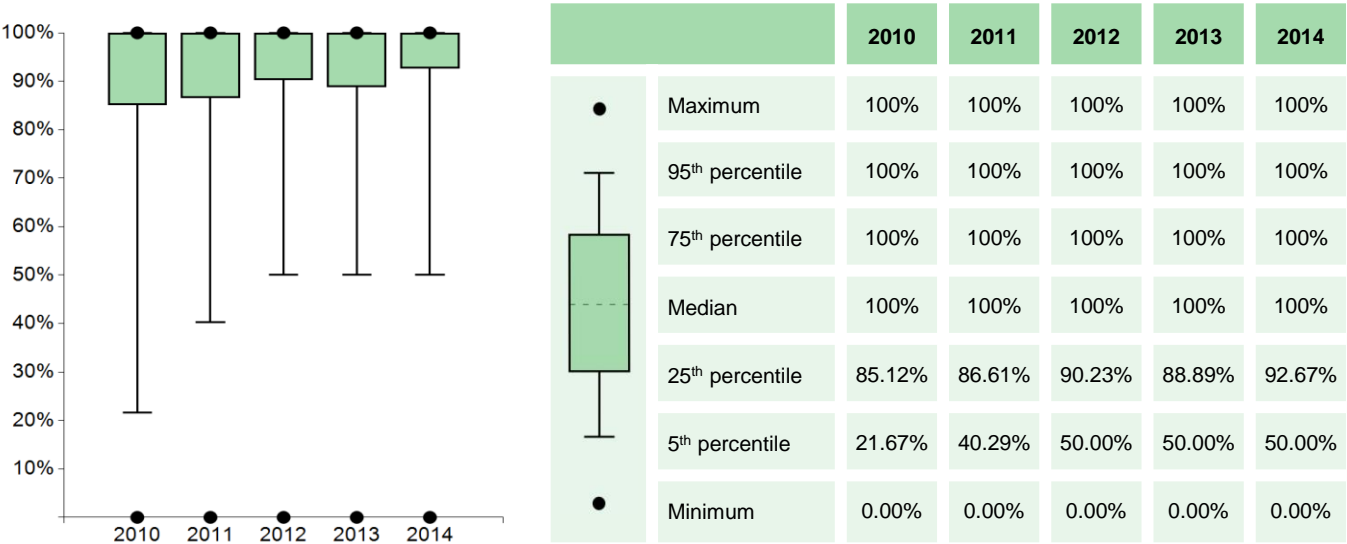


9. MSI examination



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Patients with MSI examination	4*	0 - 21
Population	Patients with initial CRC diagnosis < 50 years old	5*	1 - 24
Rate	Target ≥ 90%	100%	0.00% - 100%

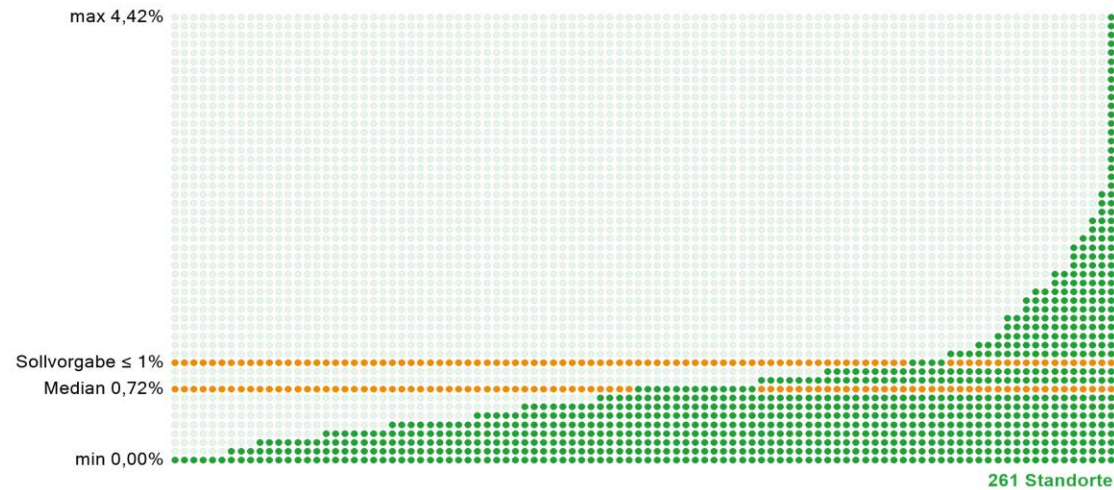
\*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
254	97.32%	201	79.13%

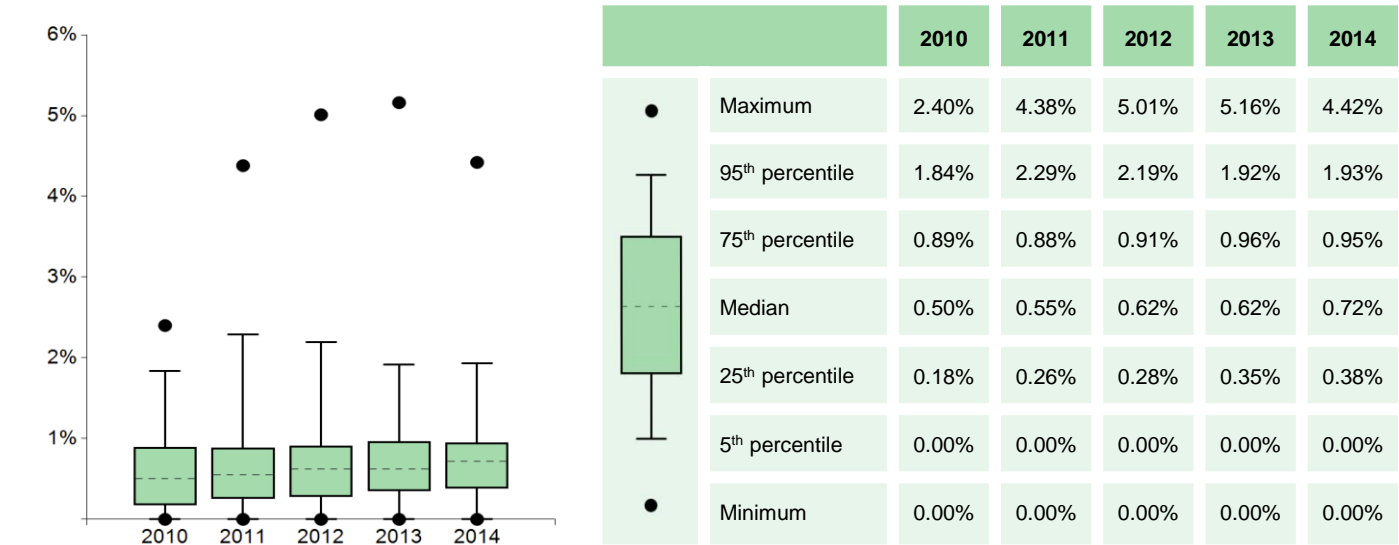
**Comments:**  
The populations taken into account for the indicator are very small (1-24). Each of the centres with a 0% rate had, for instance, 1 patient < 50 years of age in the population. The reasons they gave were non-examination as patient moved away or insufficient material for the examination. Other reasons for failing to meet the target: refusal by the patient and documentation difficulties.

10. Complication rate therapeutic colonoscopies



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Therapeutic colonoscopies with complications (bleeding requiring re-intervention (recolonoscopy, operation) or a transfusion and/or perforation)	3*	0 - 52
Population	Therapeutic colonoscopies per colonoscopy unit (not only CrCC patients)	438*	98 - 3328
Rate	Target ≤ 1%	0.72%	0.00% - 4.42%

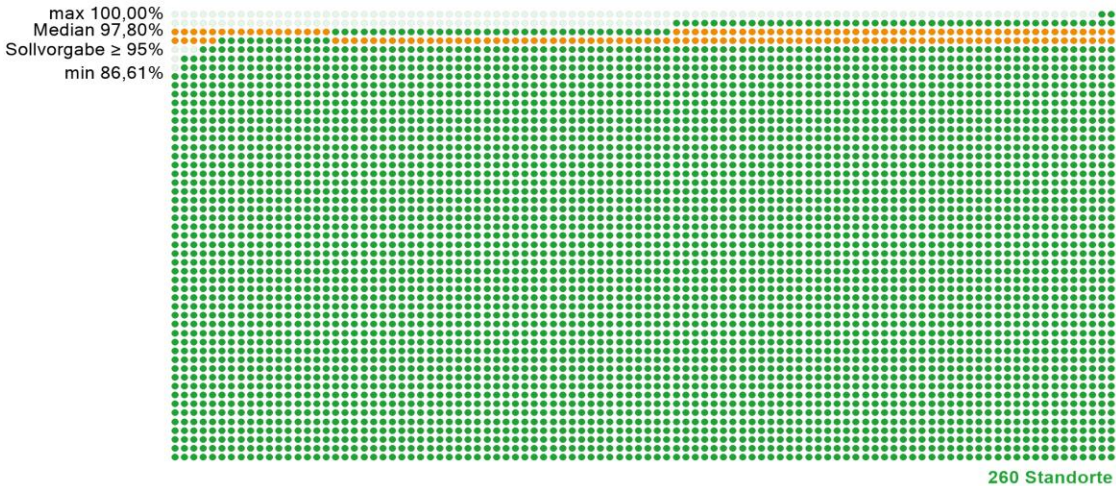
\*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	213	81.61%

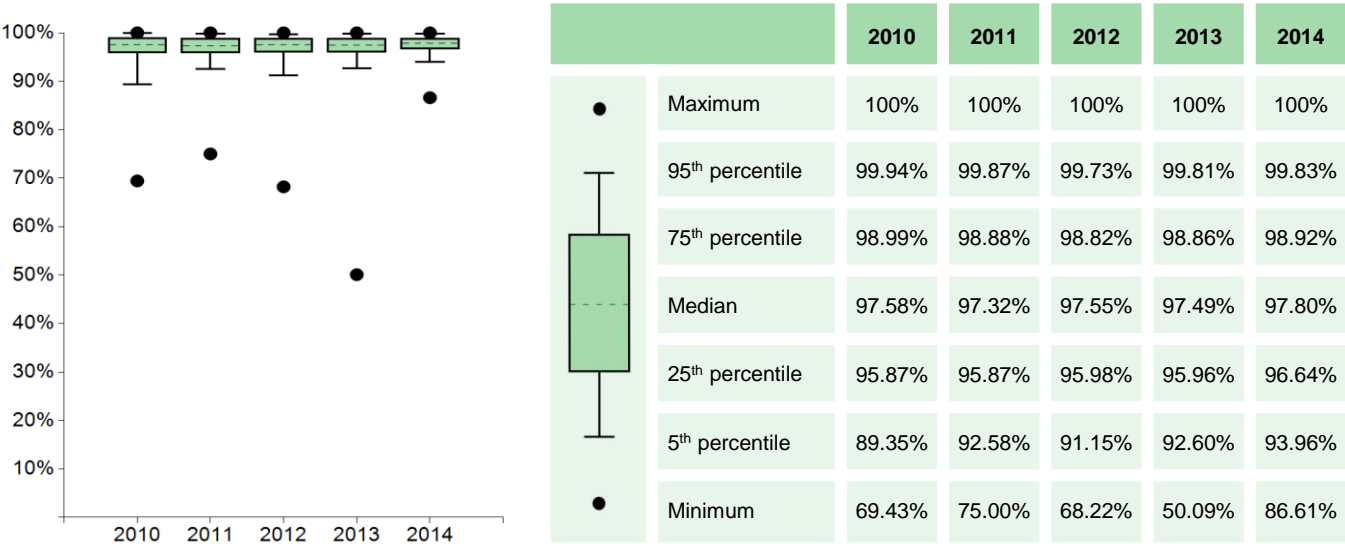
**Comments:**  
The main reason given for failure to meet the target is bleeding/perforation after endoscopic submucosal dissection. The auditors confirm above all the plausible processing of the cases. The centres that had the highest complication rates in previous years have improved their results.

11. Complete elective colonoscopies



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Complete elective colonoscopies	1406.5*	77 - 11378
Population	Elective colonoscopies for each colonoscopy unit of the CrCC (not only CrCC patients) (Are counted: intention: complete colonoscopy)	1456*	79 - 11426
Rate	Target ≥ 95%	97.80%	86.61% - 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.

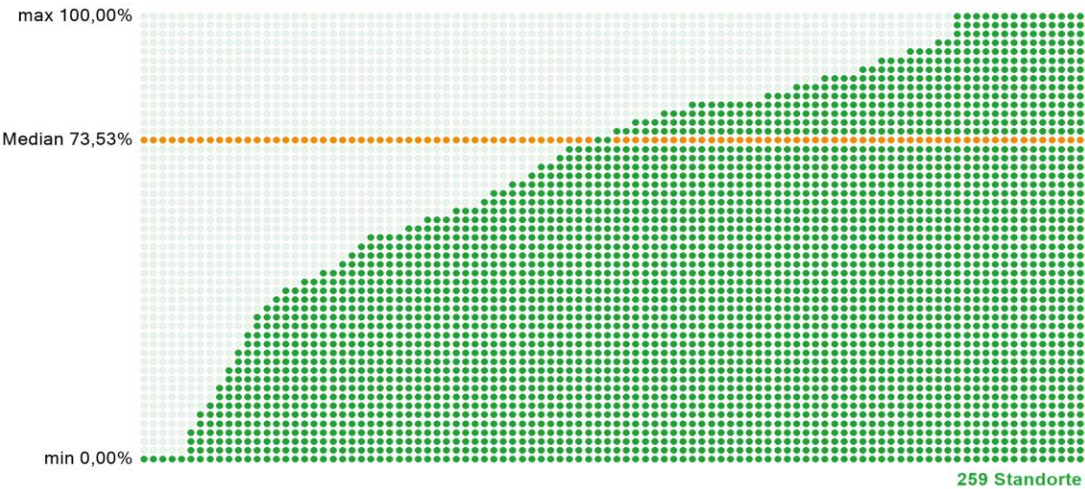


Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
260	99.62%	235	90.38%

**Comments:**  
The indicator continues to be implemented very well over the course of time: almost all planned colonoscopies are complete colonoscopies.

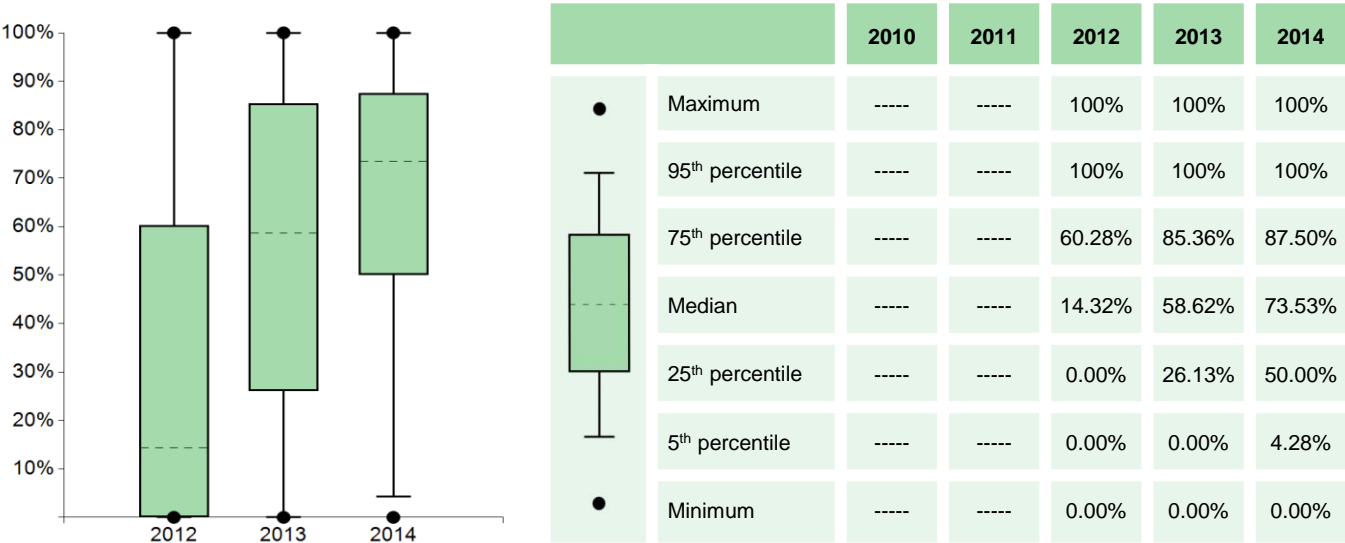


12. Information on distance to mesorectal fascia in the diagnostic report (RC of the lower and middle third)



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Patients with information on distance to mesorectal fascia in the diagnostic report	12*	0 - 56
Population	Patients with RC of the middle and lower third and MRI or thin-slice CT of the pelvis	17*	1 - 69
Rate	No target	73.53%	0.00% - 100%

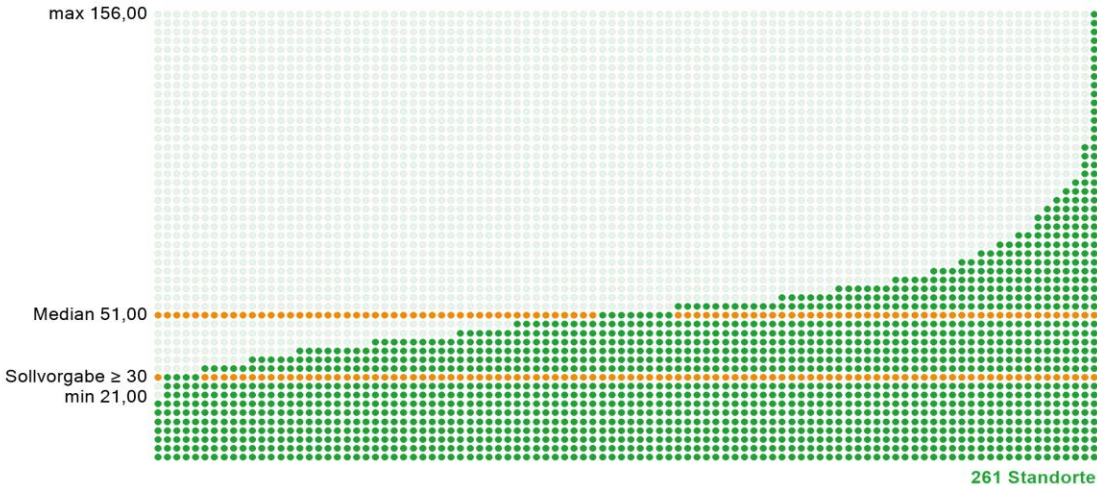
\*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.



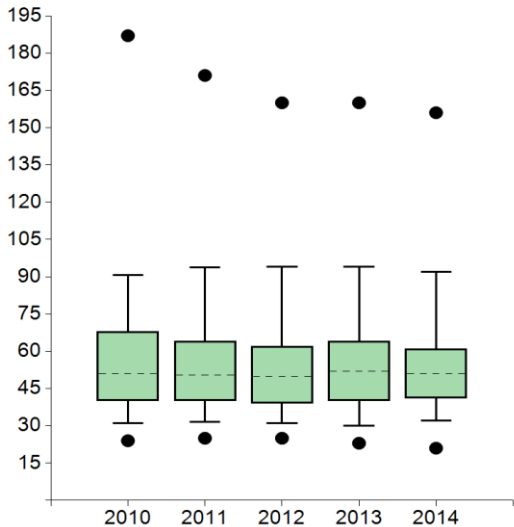
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
259	99.23%	----	----

**Comments:**  
The establishment of the procedure (= information on distance to mesorectal fascia in the diagnostic report) in the centres is very clearly visible over the course of time: for 151 clinical sites the rate of information compared to the previous year is higher or remained at 100%. Only 13 clinical sites still did not provide any information in the diagnostic report. This was discussed within the centre and agreement reached on providing this information in future.

13. Operative primary cases: colon



	Indicator definition	All clinical sites 2014	
		Median	Range
Number	Operative primary cases: colon	51	21 - 156
	Target $\geq 30$		



	2010	2011	2012	2013	2014
Maximum	187.00	171.00	160.00	160.00	156.00
95 <sup>th</sup> percentile	90.70	93.85	94.00	94.00	92.00
75 <sup>th</sup> percentile	68.00	64.00	62.00	64.00	61.00
Median	51.00	50.50	50.00	52.00	51.00
25 <sup>th</sup> percentile	40.00	40.00	39.00	40.00	41.00
5 <sup>th</sup> percentile	31.00	31.45	31.00	30.00	32.00
Minimum	24.00	25.00	25.00	23.00	21.00

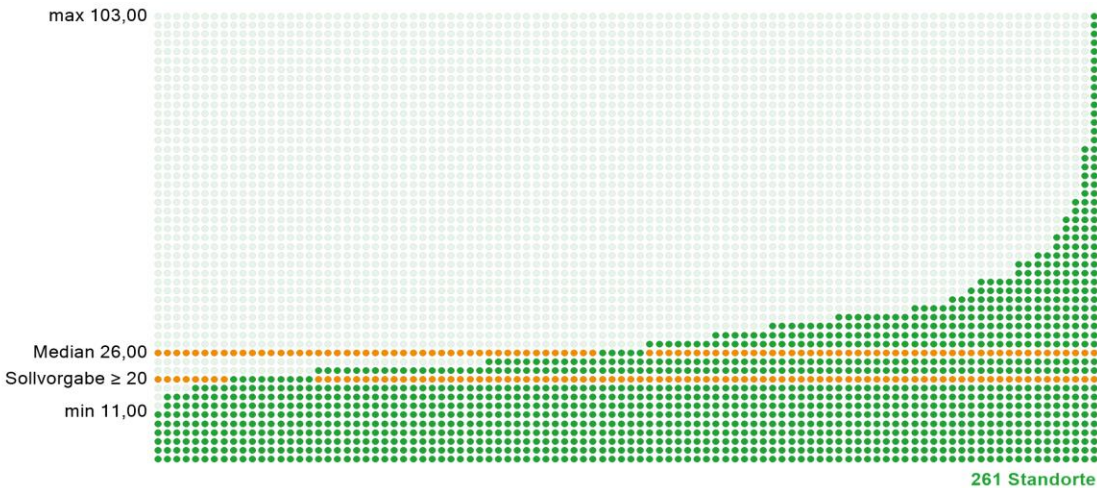
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	256	98.08%

Comments:

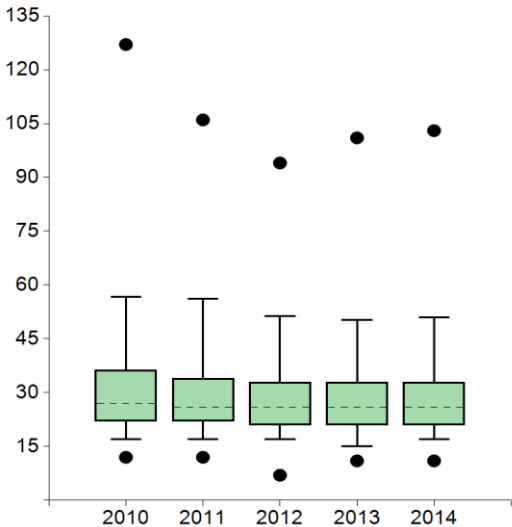
5 centres did not meet the target. In 2015 these centres underwent a follow-up audit (the target must be met for initial certification and recertification). Compared with the previous year it was shown that in the 238 clinical sites certified in 2014 and 2015 the total number of operated primary cases – colon – fell from 13,302 to 12,838. The drop in the total case numbers is compatible with the fall in incidence (C20) according to the RKI data from 41,006 (2010) to 39,500 (2012).



14. Operative primary cases: rectum



	Indicator definition	All clinical sites 2014	
		Median	Range
Number	Operative primary cases: rectum	26	11 - 103
	Target ≥ 20		

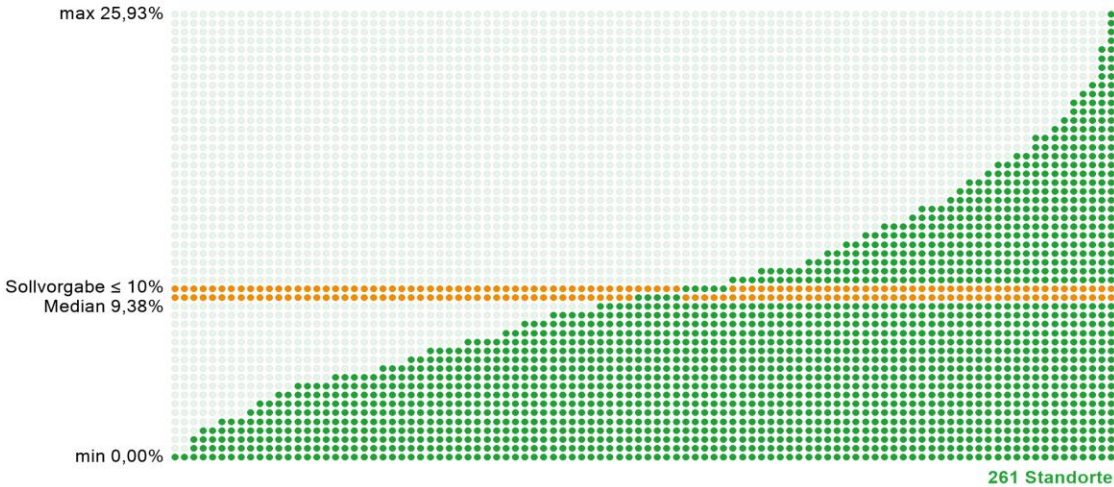


	2010	2011	2012	2013	2014
Maximum	127,00	106,00	94,00	101,00	103,00
95 <sup>th</sup> percentile	56,70	56,10	51,40	50,20	51,00
75. percentile	36,25	34,00	33,00	33,00	33,00
Median	27,00	26,00	26,00	26,00	26,00
25. percentile	22,00	22,00	21,00	21,00	21,00
5. percentile	17,00	17,00	17,00	15,00	17,00
Minimum	12,00	12,00	7,00	11,00	11,00

Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	230	88.12%

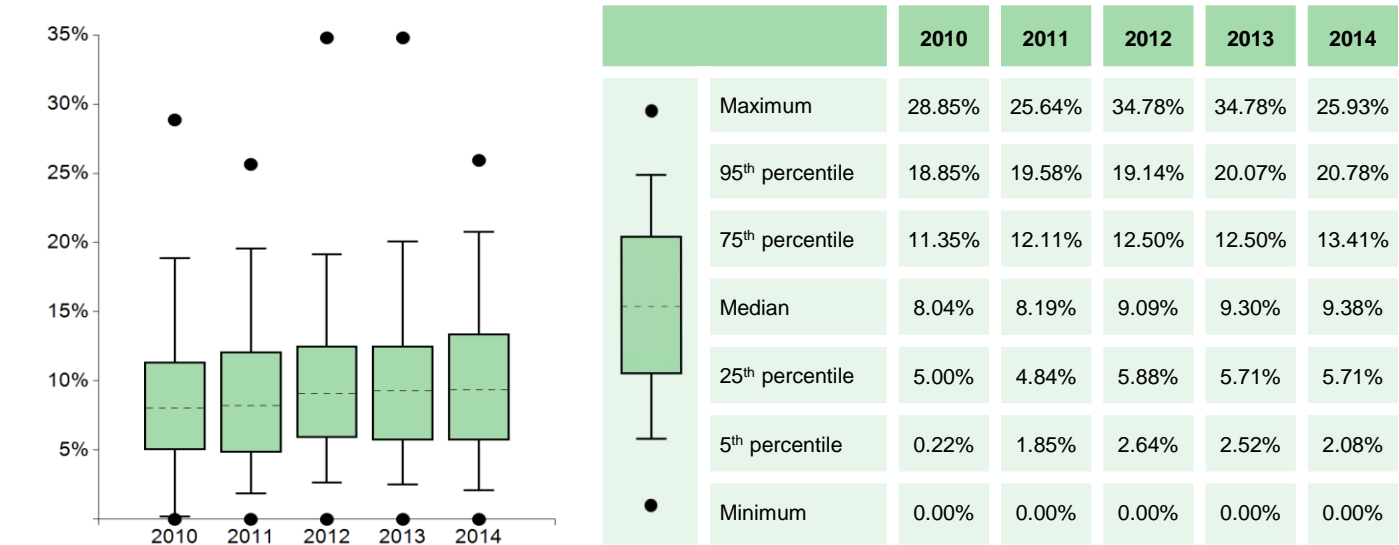
**Comments:**  
In the indicator year 2014 7,621 primary cases of rectum carcinoma were operated on at 261 clinical sites. Compared with the previous year the number of operative primary cases rectum has fallen: from 7,063 (2013) to 6,994 (2014) in 238 clinical sites. Here, too, the falling number of primary cases mirrors the development in the RKI data: 21,817 (2010) to 20,912 (2012).

15. Revision surgery: colon



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Revision surgery due to perioperative complications within 30d of elective surgery	4*	0 - 16
Population	Elective colon surgery	44*	18 - 136
Rate	Target ≤ 10%	9.38%	0.00% - 25.93%

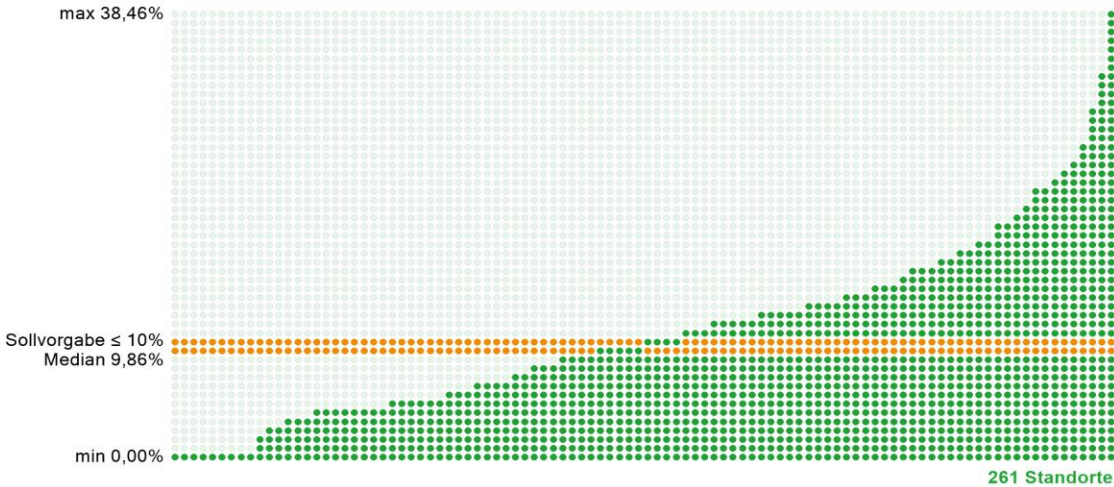
\*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.



Clinical sites with evaluable data		Clinical sites meeting the target	
Anzahl	%	Anzahl	%
261	100.00%	149	57.09%

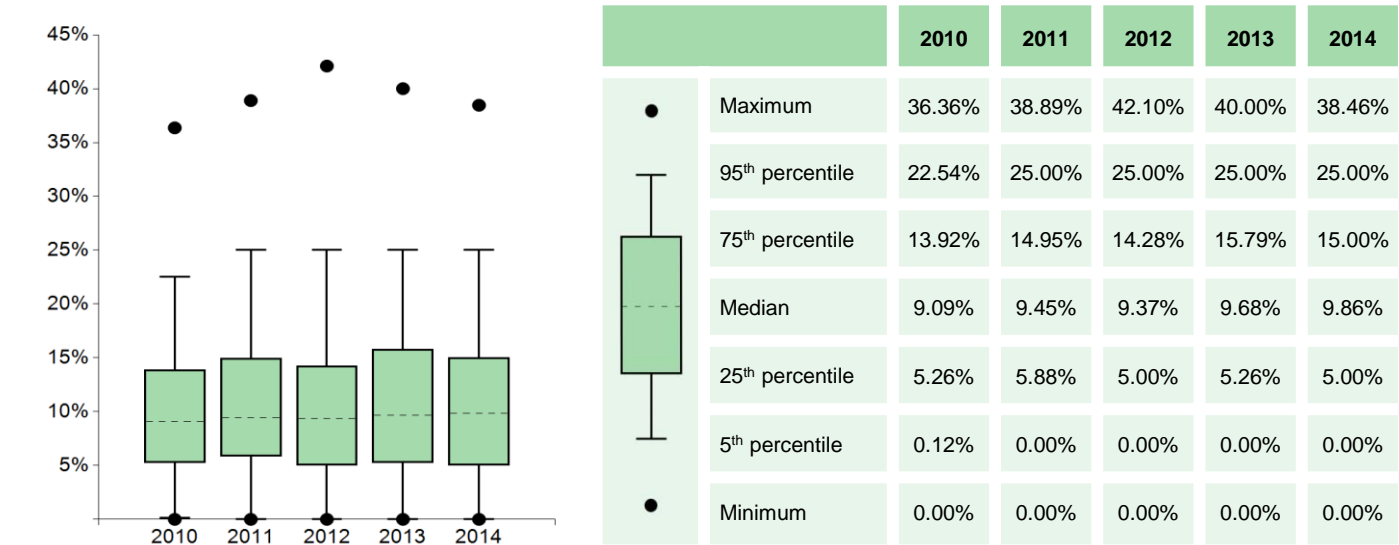
**Comments:**  
57% of the clinical sites met the target. A comparison with the previous year shows that 2/3 of the clinical sites that exceeded the target in audit year 2014 (= 107) were able to improve their results in the current audit year (74 clinical sites with an improvement).  
The reasons given for the revision surgery are: anastomotic insufficiencies, post-operative thread dehiscence, existing comorbidities, change in surgeon. Measures for improvement: change in anastomosis method, change in thread material. The auditors commented that the cases were processed in the M&M conferences.

16. Revision surgery: rectum



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Revision surgery after perioperative complications within 30 d of elective surgery	3*	0 - 15
Population	Elective rectum surgery	25*	11 - 100
Rate	Target ≤ 10%	9.86%	0.00% - 38.46%

\*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.

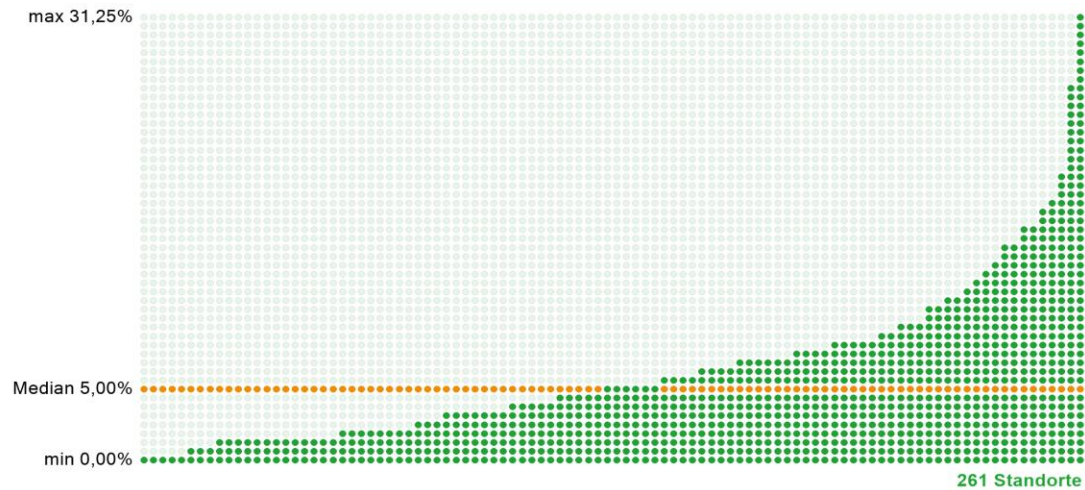


Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	134	51.34%

**Comments:**  
127 clinical sites did not meet the target. However, most of the clinical sites, that exceeded the target the previous year, have improved their results (83 out of 126 clinical sites).  
Some reasons for revision surgery: use of new surgical methods, existing comorbidities and condition after neoadjuvant therapy. The implemented measures mentioned are: discussion in the M&M conferences, the fitting of a protective stoma and the staging of continuing education courses.

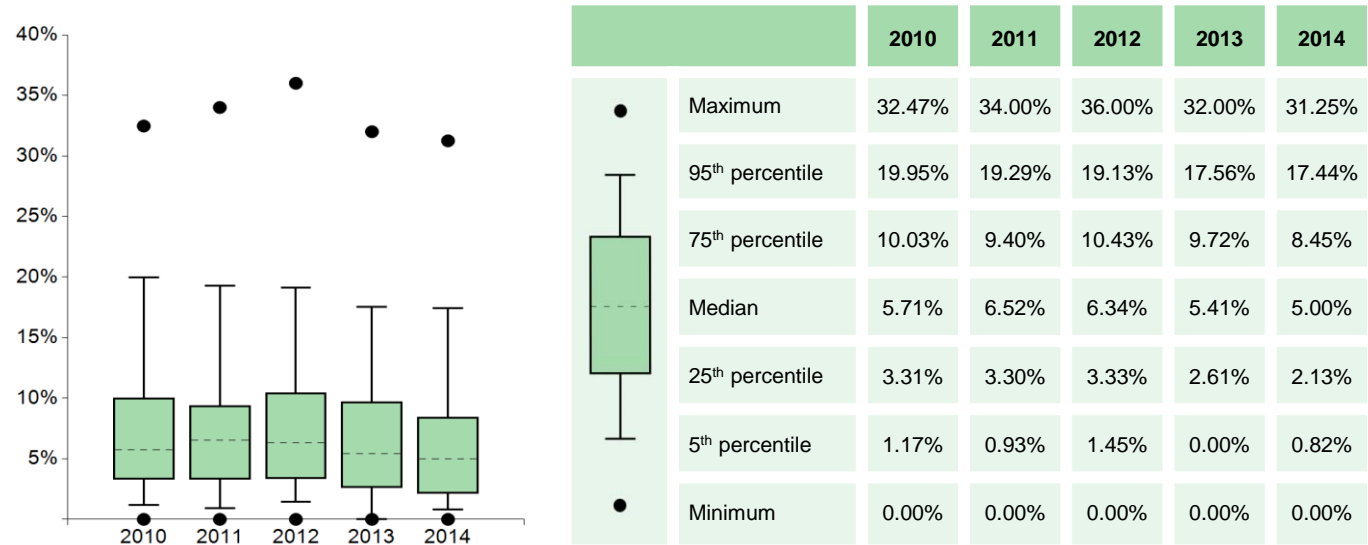


17. Post-operative wound infection



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Post-operative wound infection within 30 d of elective surgery requiring surgical wound revision (rinsing, spreading, VAC bandage)	4*	0 - 37
Population	Operations of the CrCC	68*	39 - 223
Rate	No target	5.00%	0.00% - 31.25%

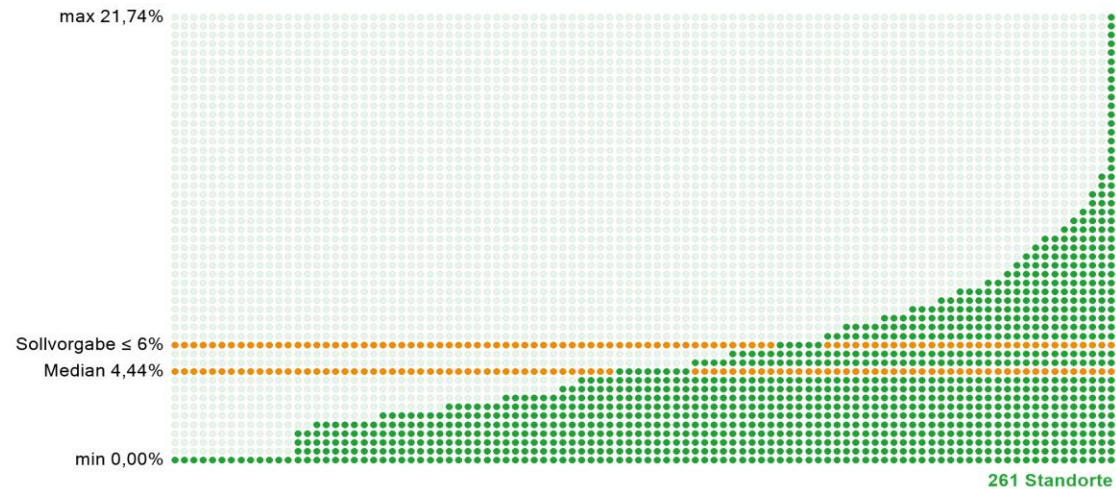
\*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100,00%	----	----

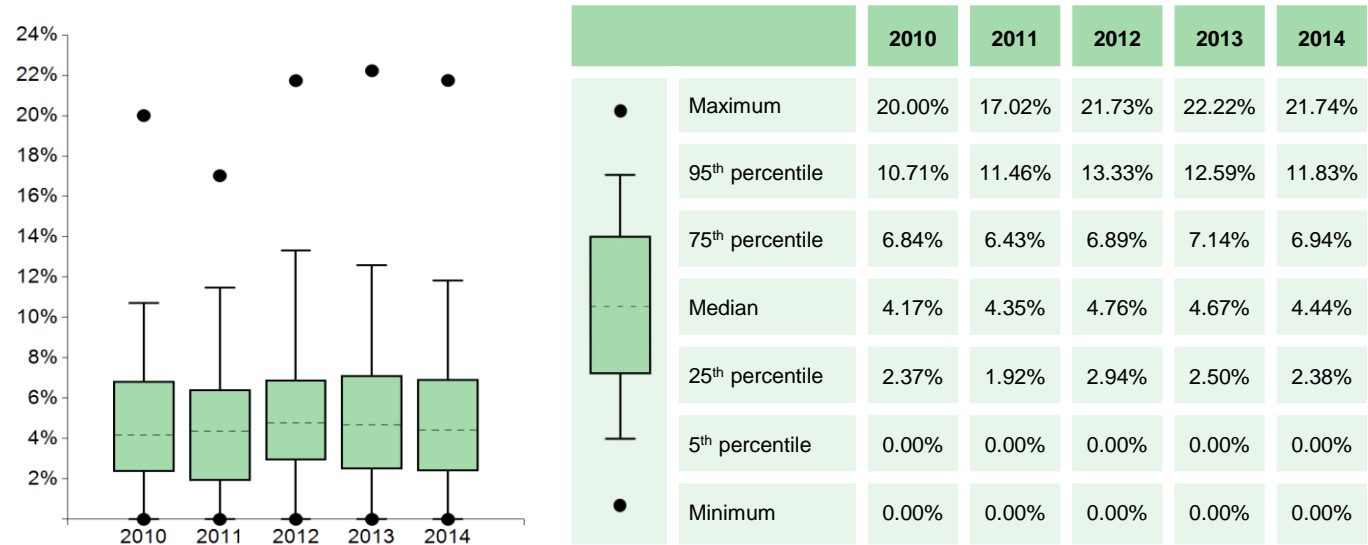
**Comments:**  
Since audit year 2016 this indicator has plausibility limits which means that more information is obtained about the cause of wound infections. The centres with the highest wound infection rates the previous year have all improved.  
Indicated improvement measures: preoperative risk evaluation, malnutrition management, perioperative antibiotic prophylaxis, analysis operator/infection rate and surgical team/infection rate.

18. Anastomotic insufficiencies: colon (QI 9 of the Guidelines)



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Colon anastomotic insufficiencies requiring re-intervention after elective surgery	2*	0 - 12
Population	Patients with CC in whom anastomosis was performed in an elective tumour resection	43*	16 - 128
Rate	Target ≤ 6%	4.44%	0.00% - 21.74%

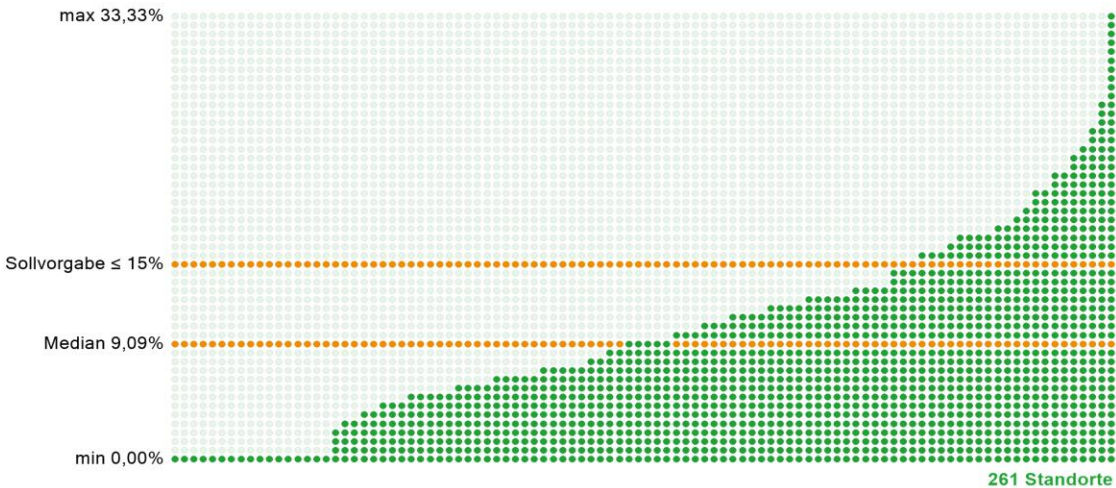
\*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	175	67.05%

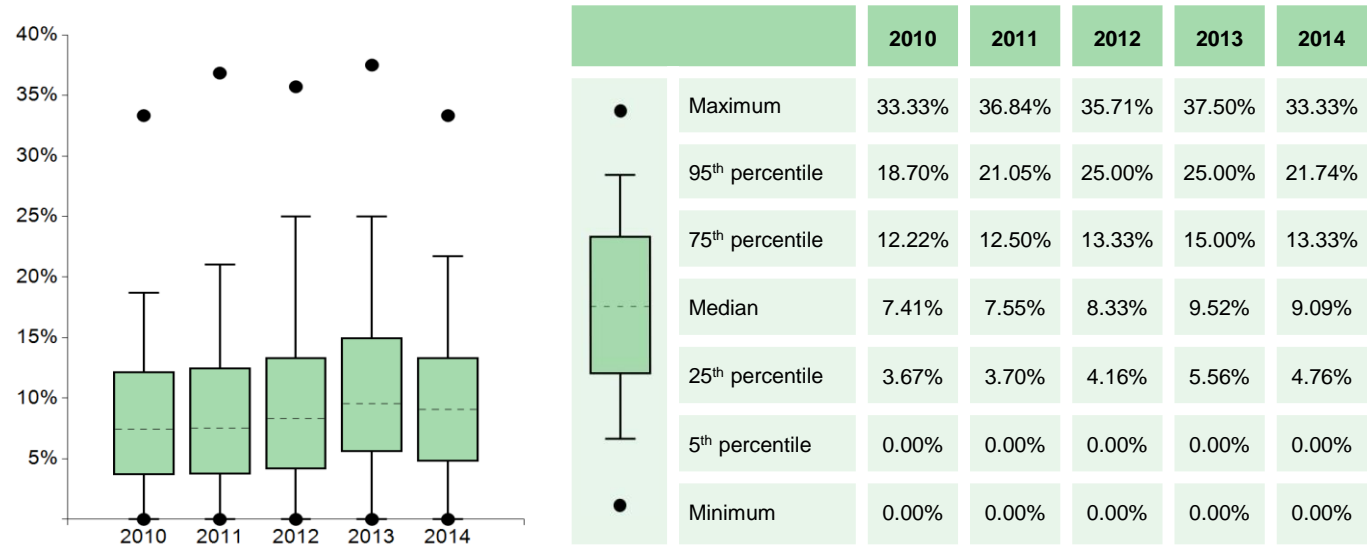
**Comments:**  
The implementation of the indicator remains almost steady over the course of time. A comparison with the previous year reveals that the rate of anastomotic insufficiencies has fallen for all the clinical sites (129 clinical sites with an improved anastomotic insufficiency rate).

19. Anastomotic insufficiencies: rectum (QI 8 of the Guideline)



	Indicator definition	All clinical sites 2014	
		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 - 9
Population	Patients with RC in whom anastomosis was performed in an elective tumour resection	18*	6 - 94
Rate	Target ≤ 15%	9.09%	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.

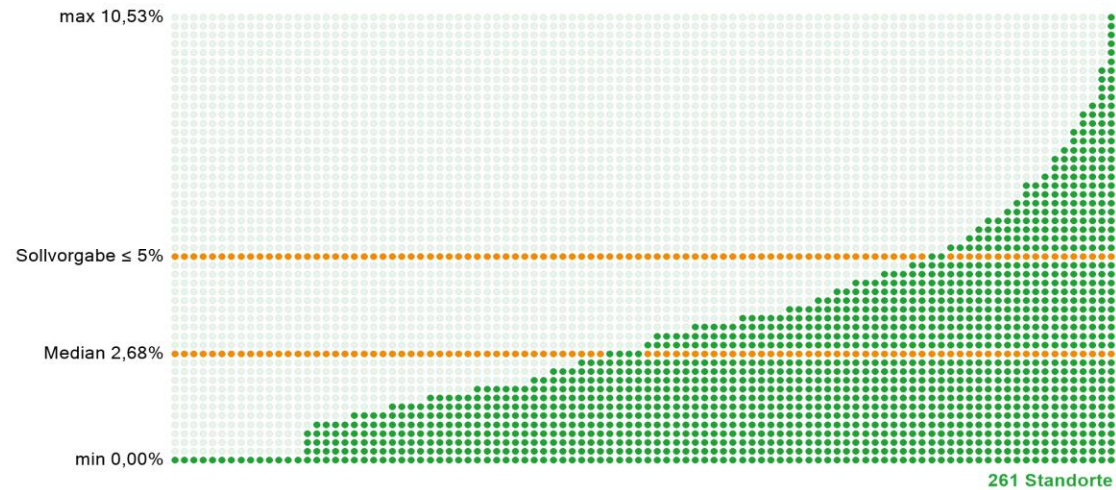


Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	206	78.93%

**Comments:**  
The indicator median has fallen but more centres met the target of ≤ 15% than in the previous year (79% vs. 75%).

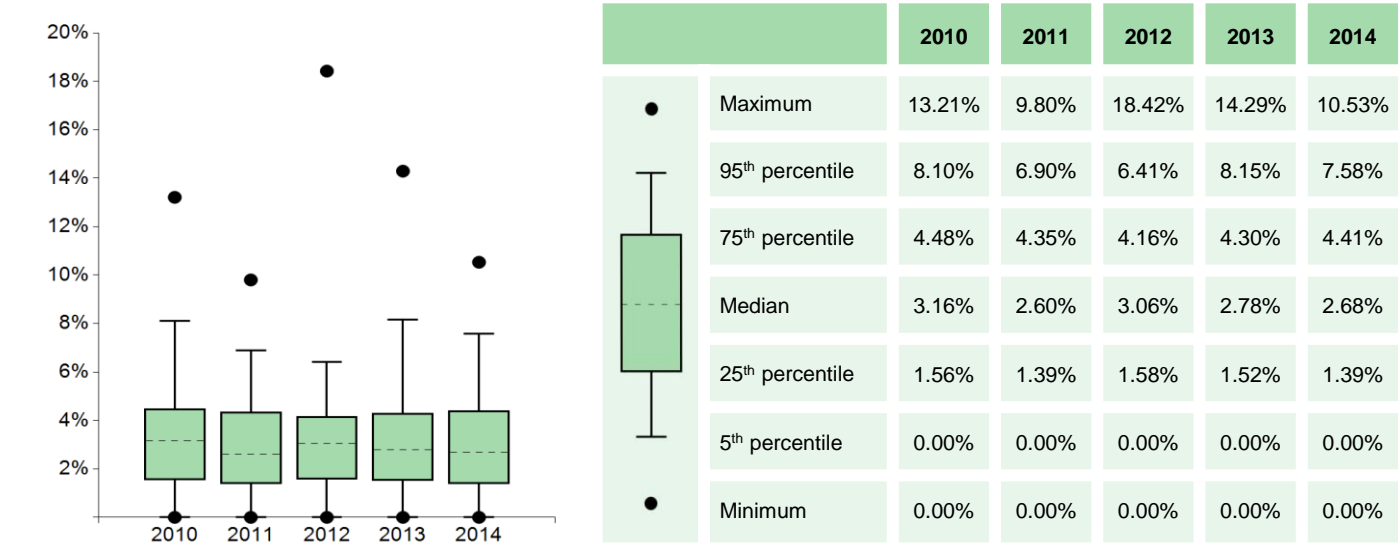


20. Post-operative mortality



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Post-operative patient deaths with 30 d of elective surgery	2*	0 - 10
Population	Electively operated patients	68*	39 - 223
Rate	Target ≤ 5%	2.68%	0.00% - 10.53%

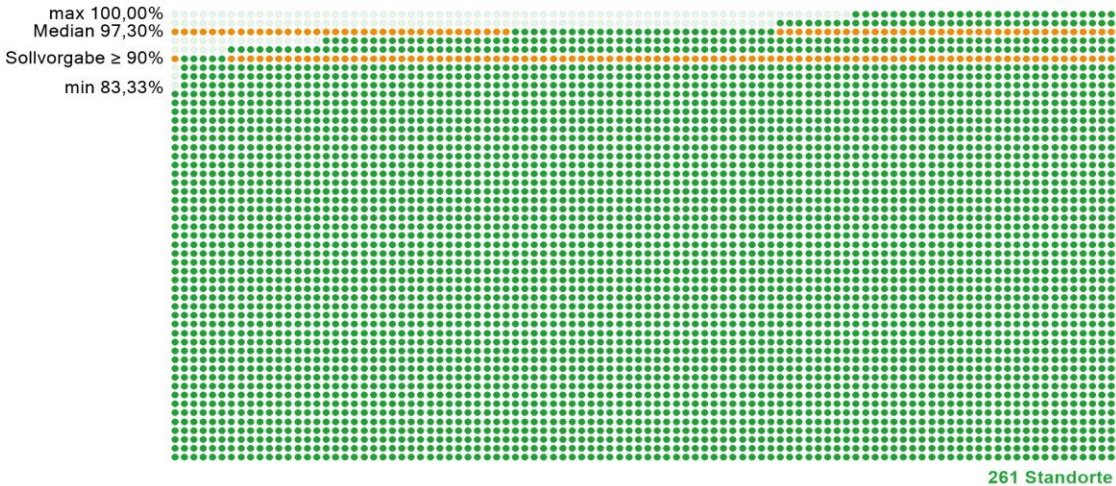
\*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	214	81.99%

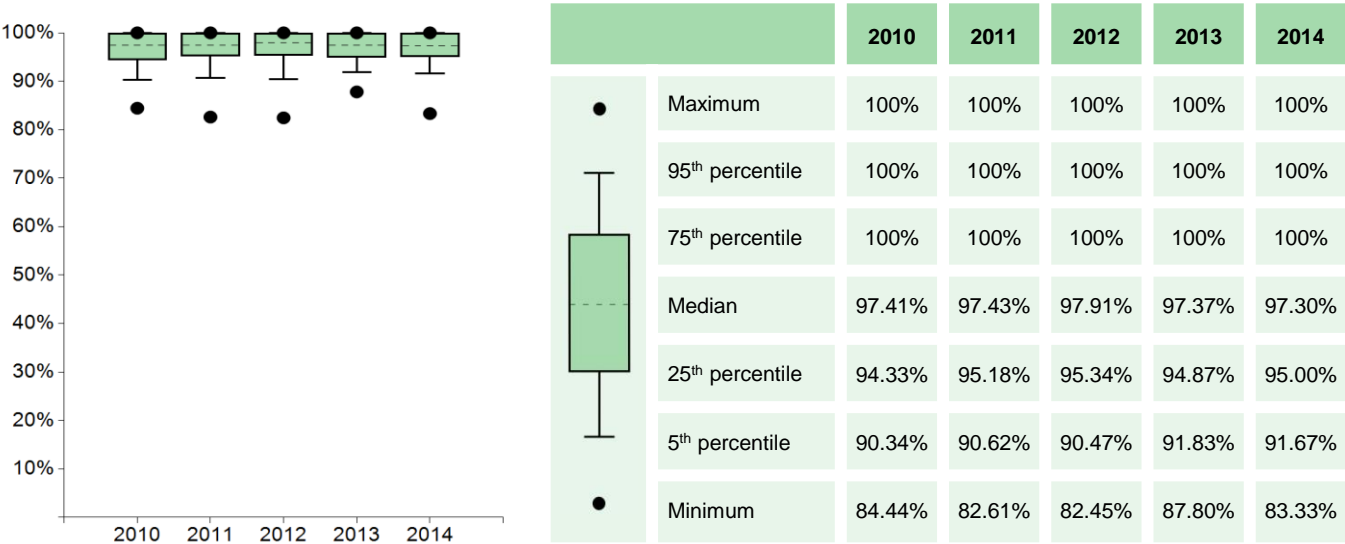
**Comments:**  
Good development of the indicator but more centres did not meet the target (47 vs. 37 the previous year). The centre with the highest value has, however, improved compared with the previous year. The most frequent reasons given are: post-operative organ failure, septic/cardiogenic shock, pulmonary embolism. Measures taken by the centres: stricter preoperative risk analysis, processing of cases at the M&M conferences. The auditors looked at the individual cases and ruled out systematic errors.

21. Local R0 resections: colon



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Local R0 resections - colon - after completion of surgical treatment	43*	15 - 130
Population	Colon operations according to primary case definition (operative)	44*	18 - 136
Rate	Target ≥ 90%	97.30%	83.33% - 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.

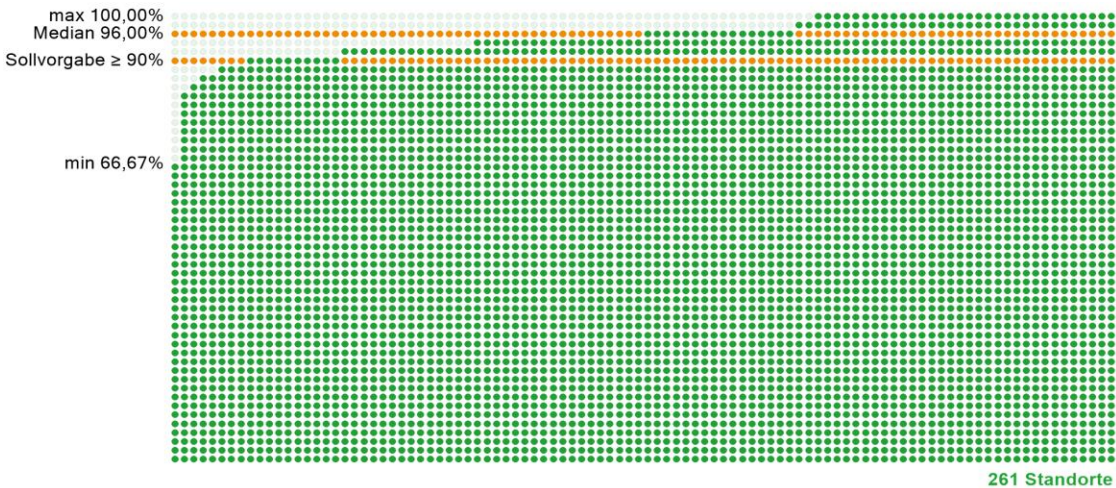


Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	258	98.85%

**Comments:**  
3 centres did not meet the target. These centres had normal values the previous year. The reason given is: no R-classification in the case of serosa perforation.

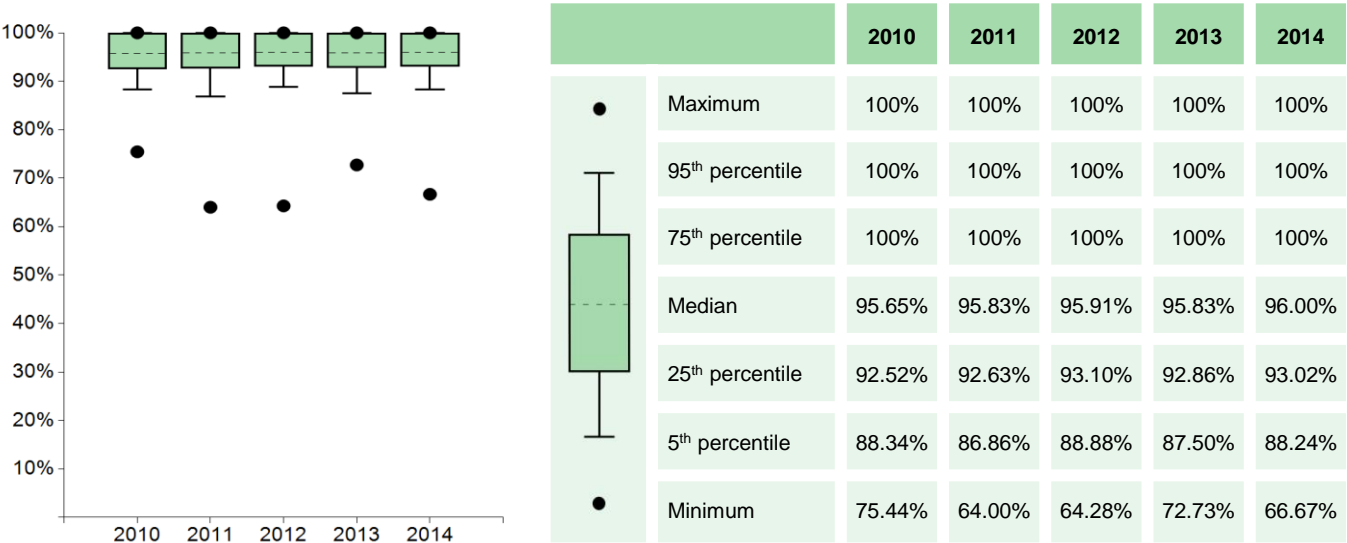


22. Local R0 resections: rectum



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Local R0 resections – rectum - after completion of surgical treatment	24*	10 - 98
Population	Rectum operations according to primary case definition (operative)	25*	11 - 100
Rate	Target ≥ 90%	96.00%	66.67% - 100%

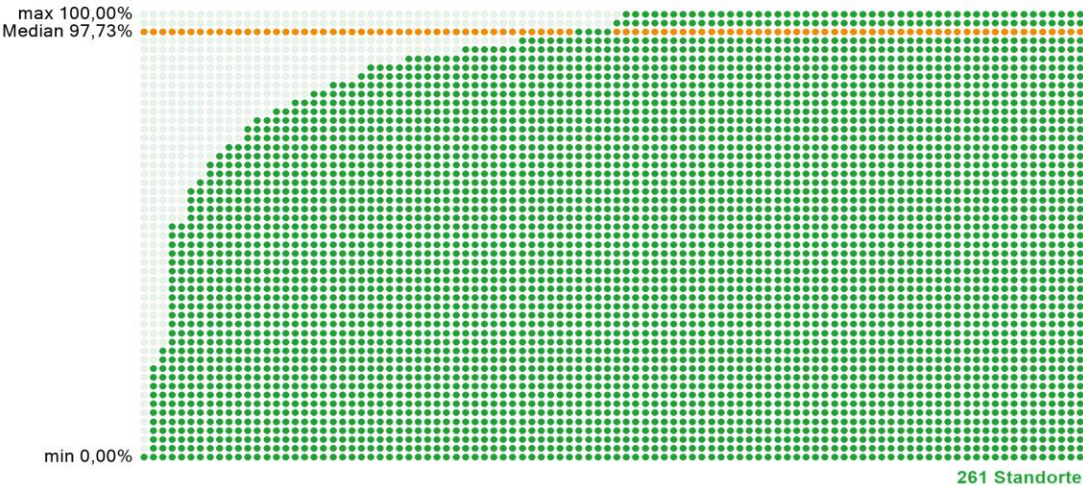
\*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	241	92.34%

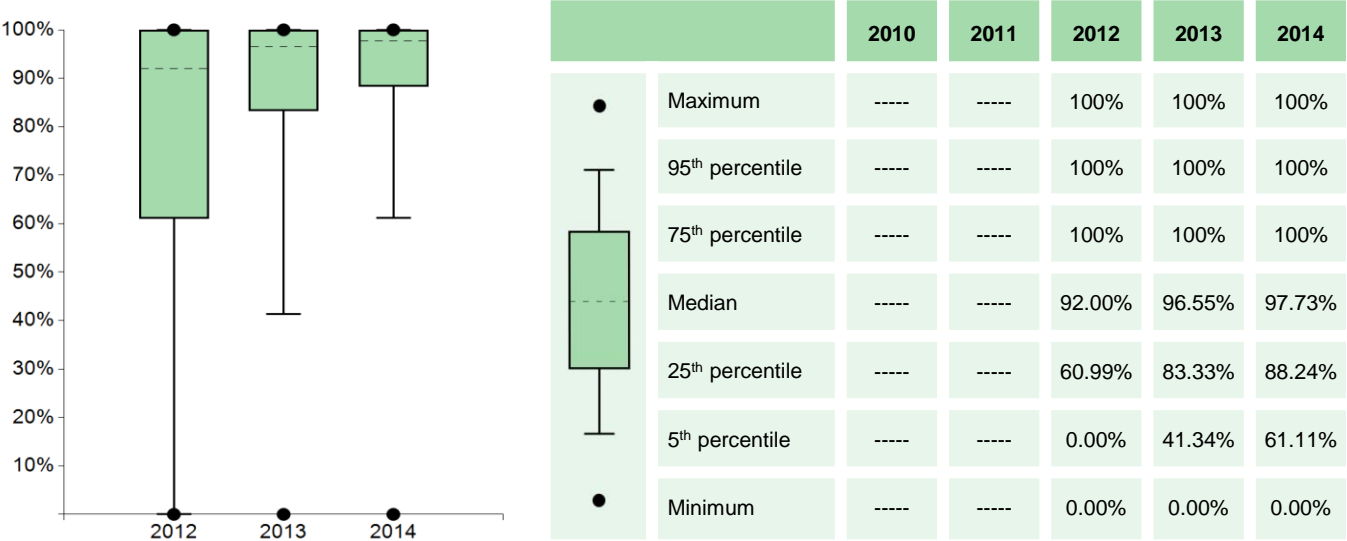
**Comments:**  
More than 92% of the centres met the target. The main reasons given for not meeting the target are: infiltration of the neighbouring organs, condition after pre-operations and abscess formation. The auditors looked at the cases and mainly deemed the reasons to be sound.

23. Marking of stoma position (QI 10 of the Guidelines)



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Patients with preoperative marking of stoma position	16*	0 - 98
Population	Patients with RC who had surgery to install a stoma	18*	3 - 99
Rate	No target	97.73%	0.00% - 100%

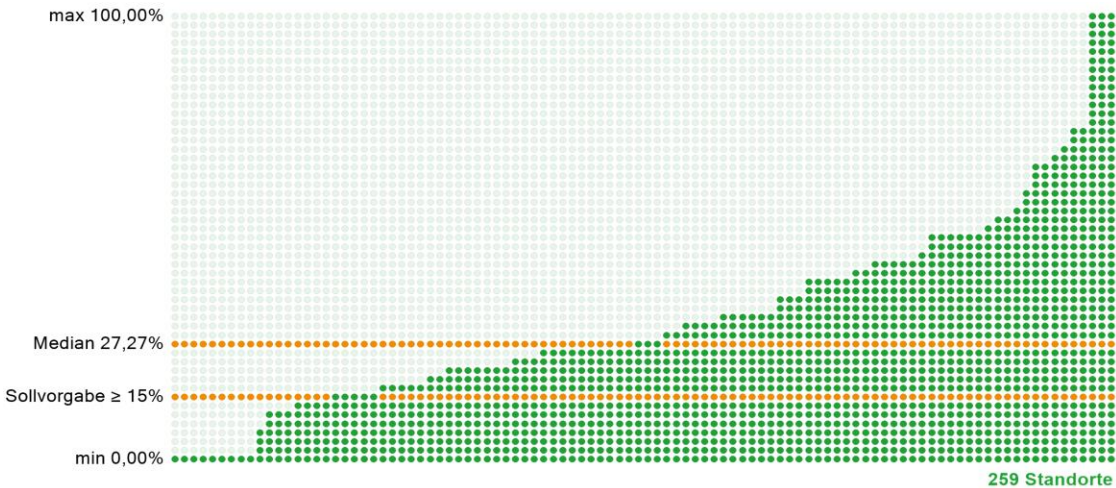
\*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	----	----

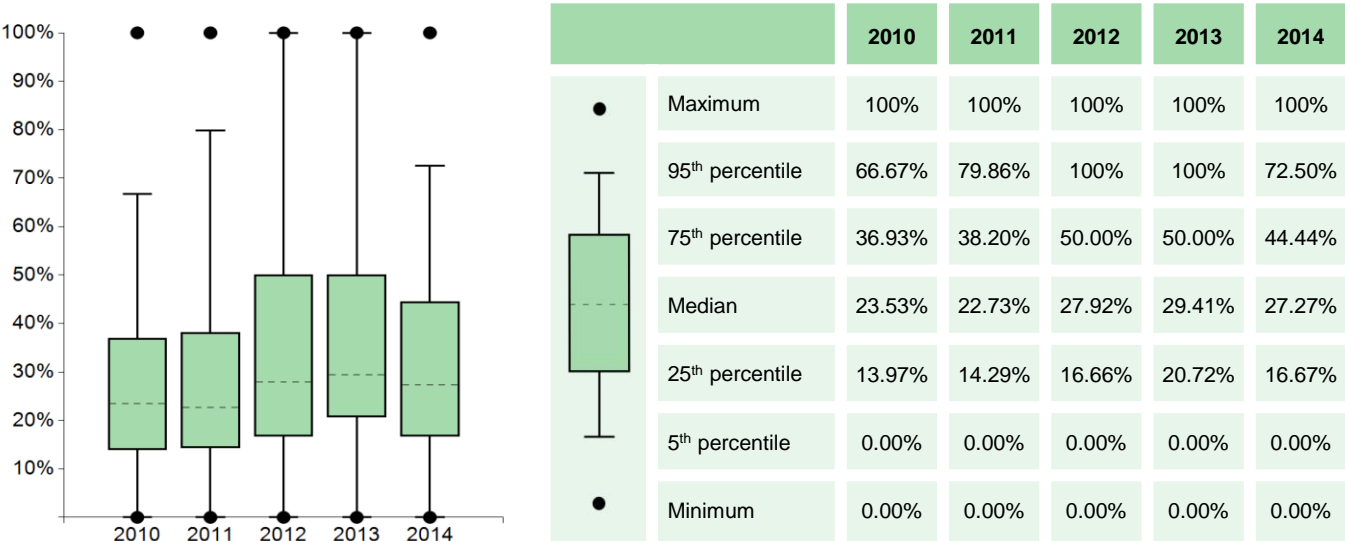
**Comments:**  
Very good development of the indicator over the course of time. The procedure is increasingly becoming established in the centres.

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



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Primary-case patients with UICC stage IV CRC who underwent resection of liver metastases	2*	0 - 13
Population	Primary-case patients with UICC stage IV CRC who only have metastases	8*	1 - 62
Rate	Target ≥ 15%	27.27%	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.

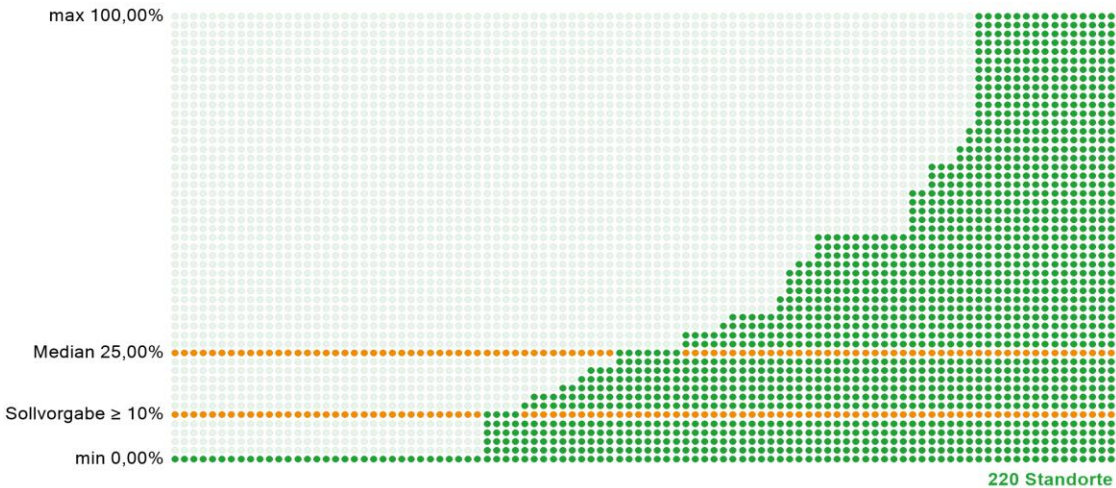


Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
259	99.23%	205	79.15%

**Comments:**  
In total 712 patients who only have liver metastases underwent primary resection. The reasons given for not achieving the indicator are: diffuse liver metastatisation, refusal by patients, secondary resection after chemotherapy and presentation in large centres for resection. The cases were processed and substantiated very comprehensively by the centres. The auditors deemed the reasons to be plausible. The small indicator population should be borne in mind.

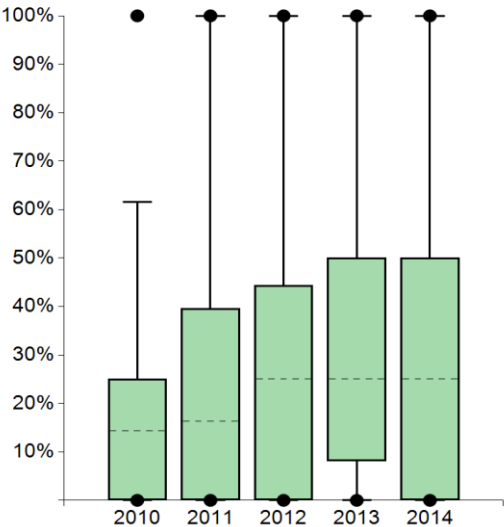


25. Secondary resection of liver metastases (UICC stage IV CRC)



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Primary-case patients with UICC stage IV CRC who underwent secondary resection of liver metastases after chemotherapy	1*	0 - 11
Population	Primary-case patients with UICC stage IV CRC with primarily non-resectable only liver metastases who received chemotherapy	4*	1 - 62
Rate	Target ≥ 10%	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.

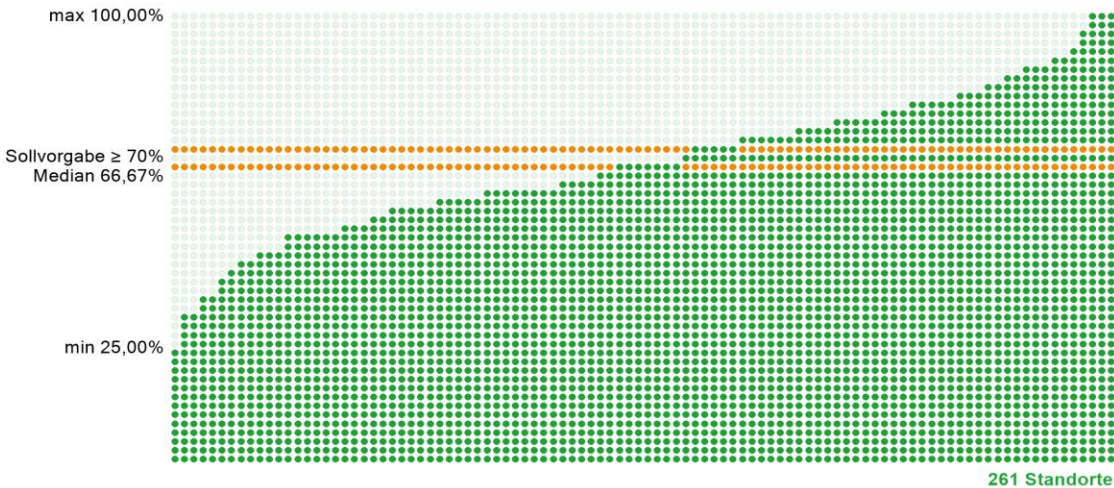


	2010	2011	2012	2013	2014
Maximum	100%	100%	100%	100%	100%
95 <sup>th</sup> percentile	61.63%	100%	100%	100%	100%
75 <sup>th</sup> percentile	25.00%	39.62%	44.36%	50.00%	50.00%
Median	14.29%	16.34%	25.00%	25.00%	25.00%
25 <sup>th</sup> percentile	0.00%	0.00%	0.00%	8.11%	0.00%
5 <sup>th</sup> percentile	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	%
220	84.29%	146	66.36%

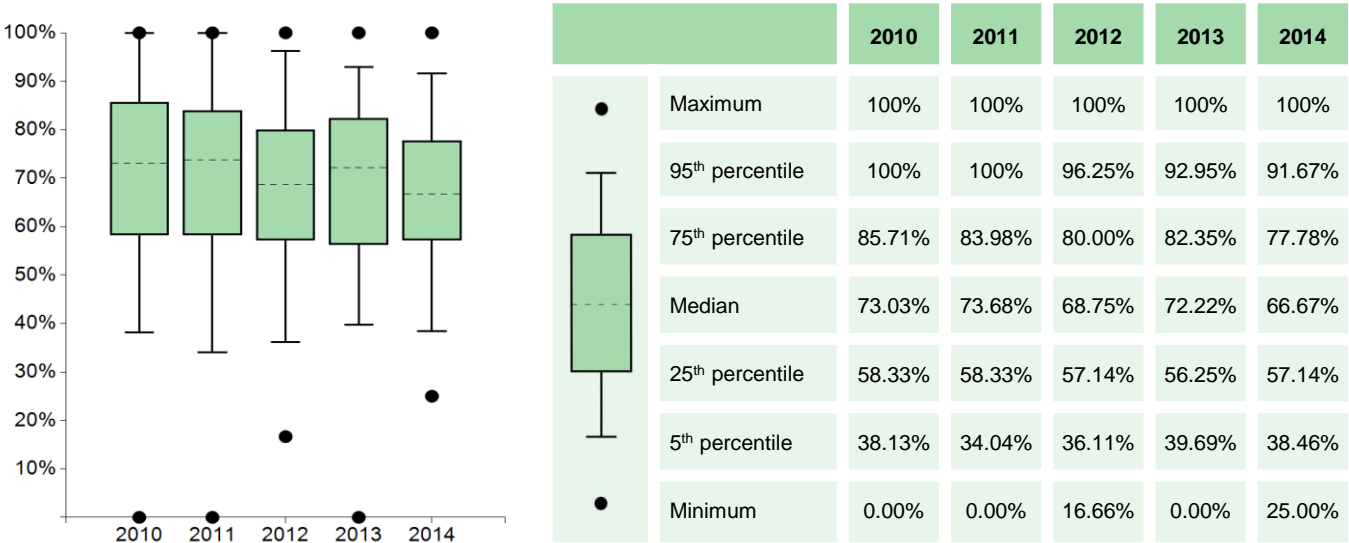
**Comments:**  
293 resections were undertaken in indicator year 2014. The reasons given for not meeting the target were: progredient metastatisation under chemotherapy and diffuse metastatisation.

26. Adjuvant chemotherapies: colon (UICC stage III) (QI 6 of the Guidelines)



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Patients with a UICC stage III colon carcinoma who received adjuvant chemotherapy	9*	2 - 25
Population	Patients with a UICC stage III colon carcinoma who had a R0 resection of the primary tumour	13*	5 - 35
Rate	Target ≥ 70%	66.67%	25.00% - 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.

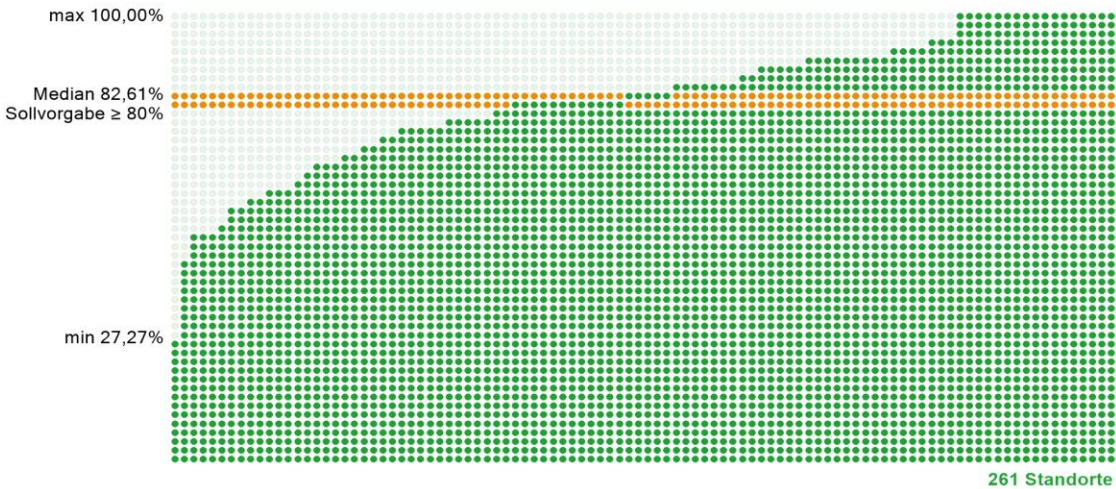


Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	117	44.83%

Comments:

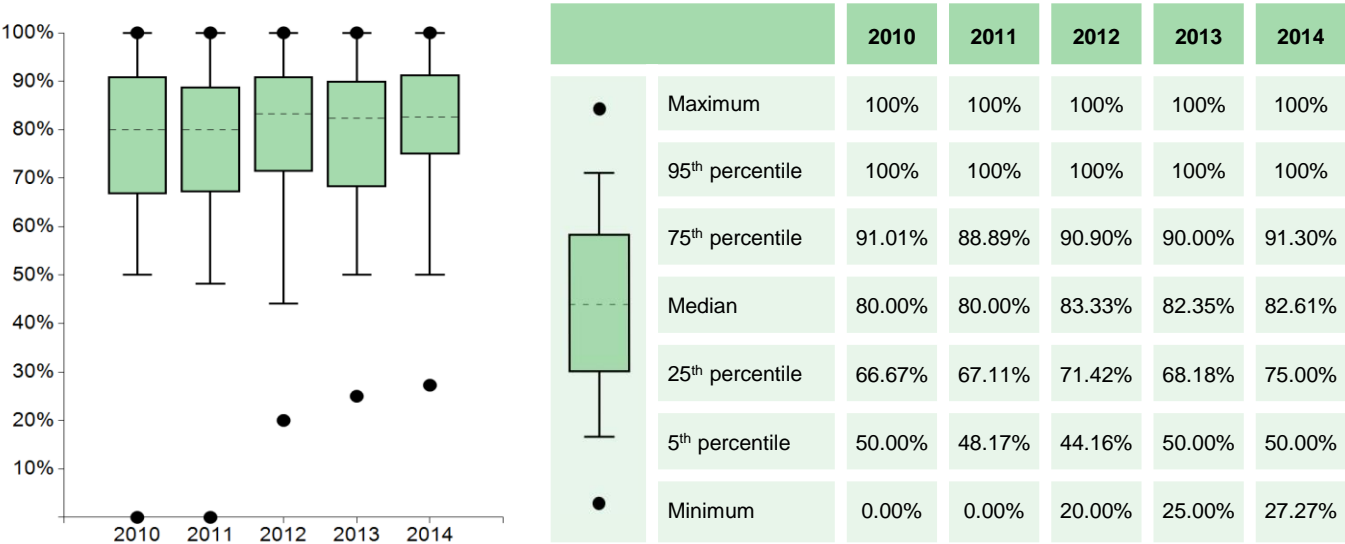
The indicator median fell over the course of time. Furthermore, compared with the previous year the rate of conducted adjuvant chemotherapies has fallen and not risen in more centres (131 centres vs. 108 centres with a drop). The reasons given are: death of the patients, refusal by patients, existing comorbidities, secondary cancers. The centres presented the cases to the auditors in a comprehensive and plausible manner. For this indicator, too, the small population is to be borne in mind.

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



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Patients who received neoadjuvant radiotherapy or radiochemotherapy.	10*	2 - 36
Population	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)	12*	2 - 53
Rate	Target ≥ 80%	82.61%	27.27% - 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.



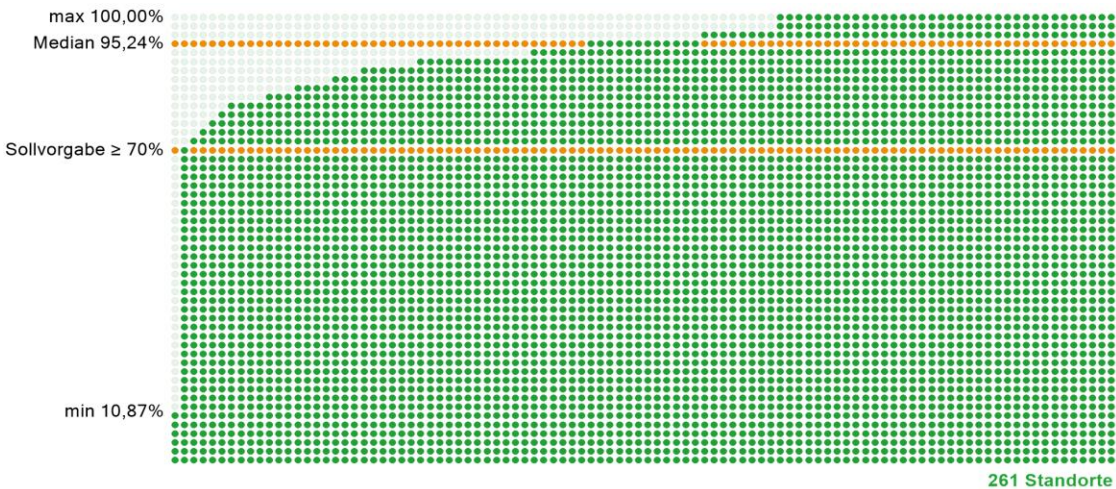
Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	166	63.60%

Comments:

The implementation of the indicator is almost unchanged over the course of time. However, compliance is better than for indicator 26 (adjuvant chemotherapies colon carcinoma). The reasons given by the centres for low rates are: stenosing tumour and therefore need for surgery, refusal by patients, multimorbidity, secondary cancer, participation in OCUM study and coordination difficulties with cooperation partners. Measures: *inter alia* joint clarification discussions with radio-oncology and gastroenterology.

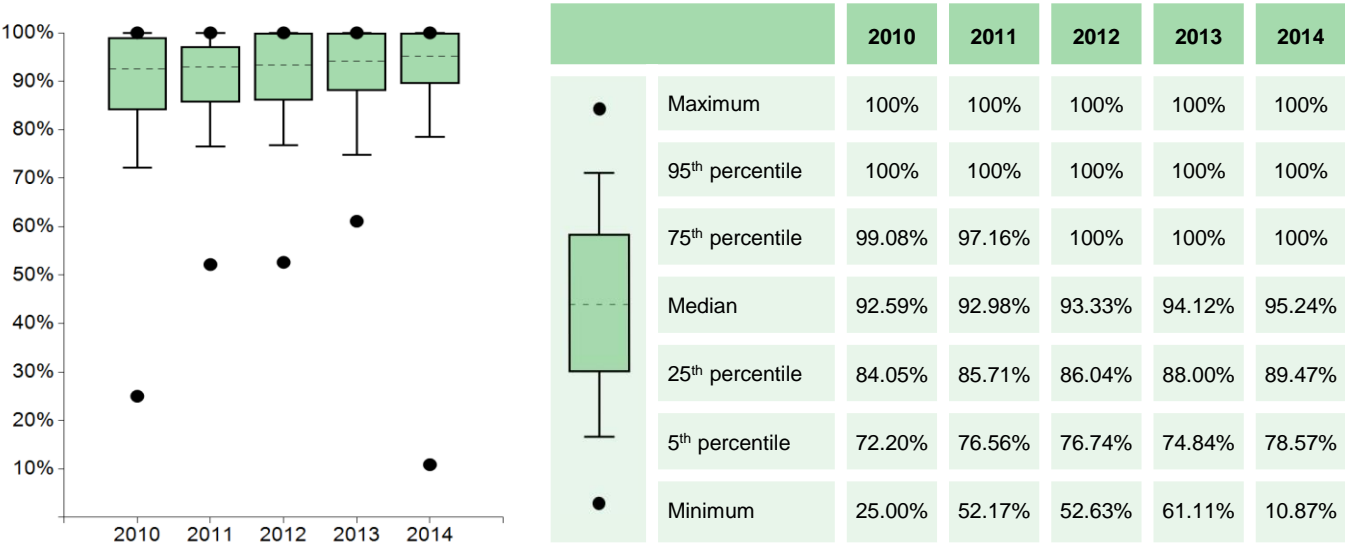


28. Quality of the TME rectum specimen (information from pathology) (QI 3 of the Guidelines)



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Patients with good-to-moderate quality (grade 1: mesorectal fascia or grade 2: intramesorectal excisions) TME	18*	5 - 71
Population	Patients with radically operated RC	19*	6 - 78
Rate	Target ≥ 70%	95.24%	10.87% - 100%

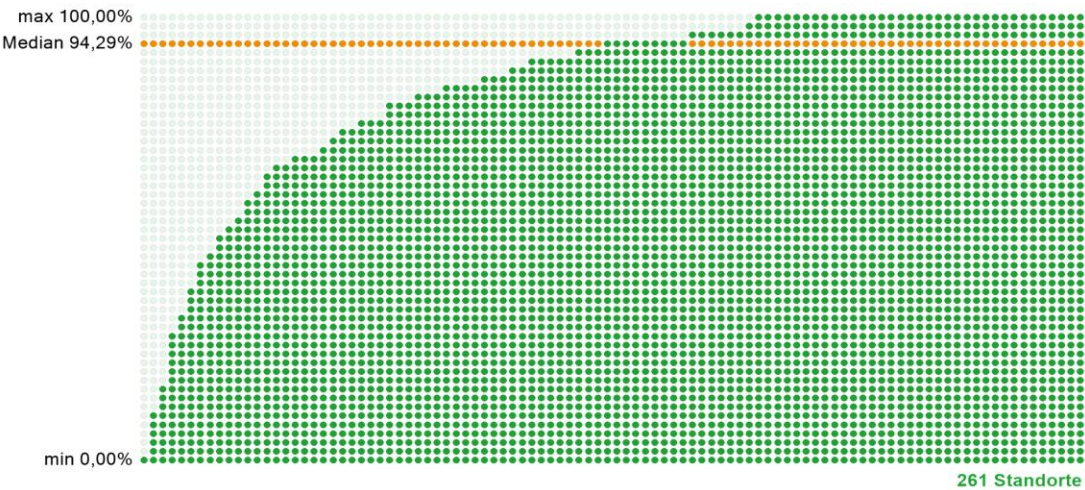
\*The medians for numerator and population do not refer to an existing centre but indicate the median for all numerators of the cohort and the median of all populations of the cohort.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	257	98.47%

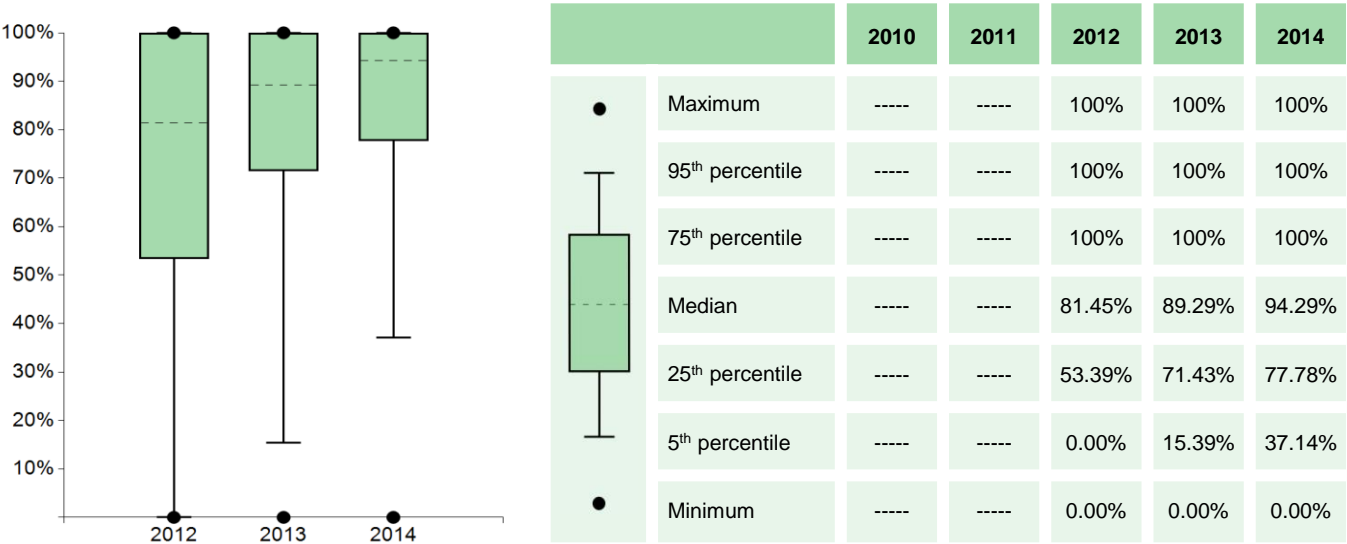
**Comments:**  
The quality of the TME samples is very good. 4 centres did not meet the target. In two of these centres the pathologist had not received any documentation training. The auditor formulated a deviation. All centres with abnormal values the previous year met the target in audit year 2015.

29. Information on resection edge (QI 4 of the Guidelines)



	Indicator definition	All clinical sites 2014	
		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*	0 - 81
Population	Patients with RC in whom the primary tumor was resected in the form of a TME or PME.	23*	8 - 100
Rate	No target	94.29%	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.

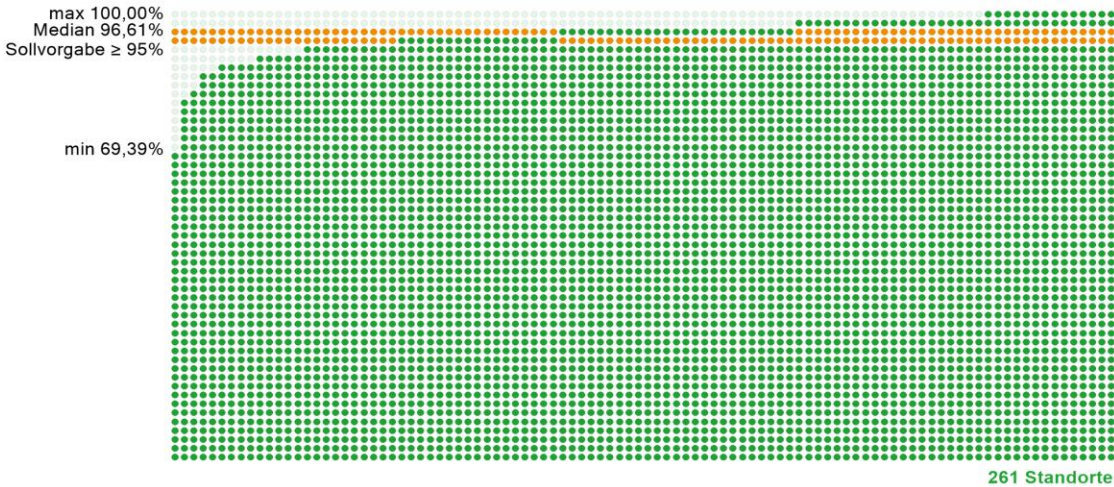


Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	----	----

**Comments:**  
The provision of information on the aboral resection edge and the distance to the circumferential mesorectal resection level is becoming increasingly established in the centres. The auditors consistently formulated observations/remarks and deviations when this information was not provided. The centres with the lowest values all had higher rates the previous year. Implemented measures: quality circles within the centre to specify the contents of the pathology reports.

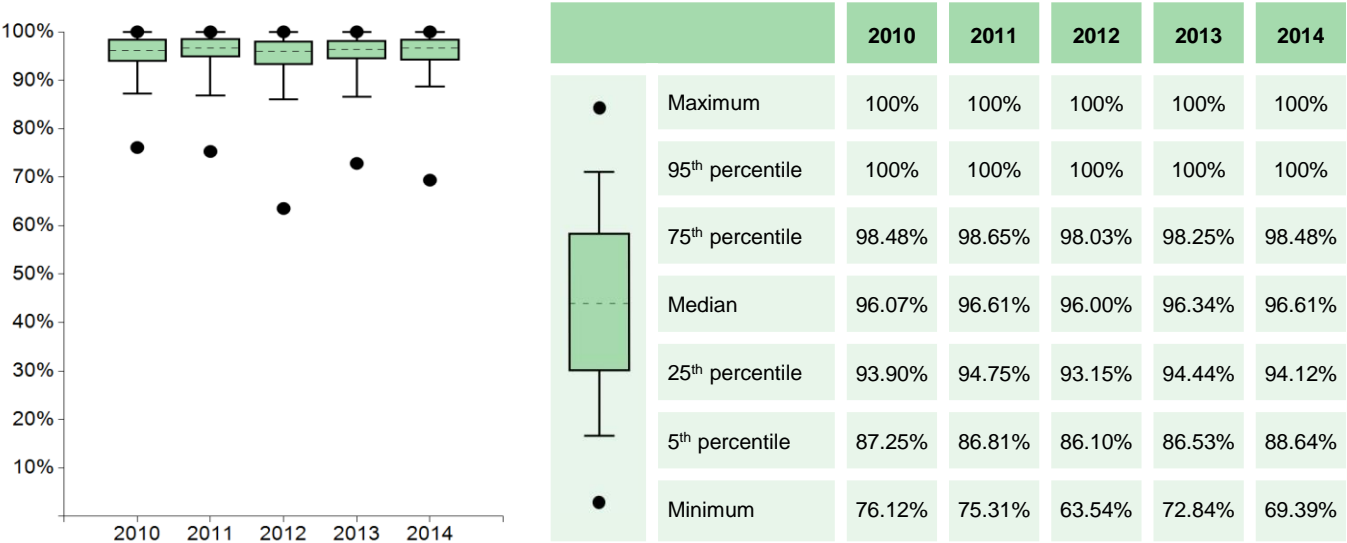


30. Lymph node examination (QI 2 of the Guidelines)



	Indicator definition	All clinical sites 2014	
		Median	Range
Numerator	Patients with pathological examination of lymph nodes ≥ 12	66*	35 - 213
Population	Patients with CRC who underwent a lymphadenectomy	68*	39 - 223
Rate	Target ≥ 95%	96.61%	69.39% - 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.



Clinical sites with evaluable data		Clinical sites meeting the target	
Number	%	Number	%
261	100.00%	185	70.88%

**Comments:**  
Overall very good implementation of the quality indicator. The main reason for not meeting the target was neoadjuvant pre-treatment of patients. The centre with the lowest rate has had the minimum value since 2011. The centre staged internal quality circles and the auditor confirmed successful efforts in audit year 2015.

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