Belgian Cancer Registry

QUALITY INDICATORS

for the management of

DUCTAL CARCINOMA IN SITU and INVASIVE BREAST CANCER

(2014-2018)

Individual feedback report

Hospital 46

Table of Contents

1. Volume

In this section, volumes are presented by a bar plot at hospital and campus level. The 'total volume' of each bar corresponds to the total number of cases that were assigned to your hospital and campuses. These volumes are used for volume-outcome and volume-process analyses at national level (KCE-report 365, https://kce.fgov.be/sites/default/files/2023-03/KCE_365_Belgian_Hospitals_Breast_Cancer_Report.pdf). The dark part of the bar corresponds to the volume of the study population. Following inclusion and exclusion criteria for the 'total volume'[1] and the 'volume of the study population'[2] were applied:

Inclusion criteria:

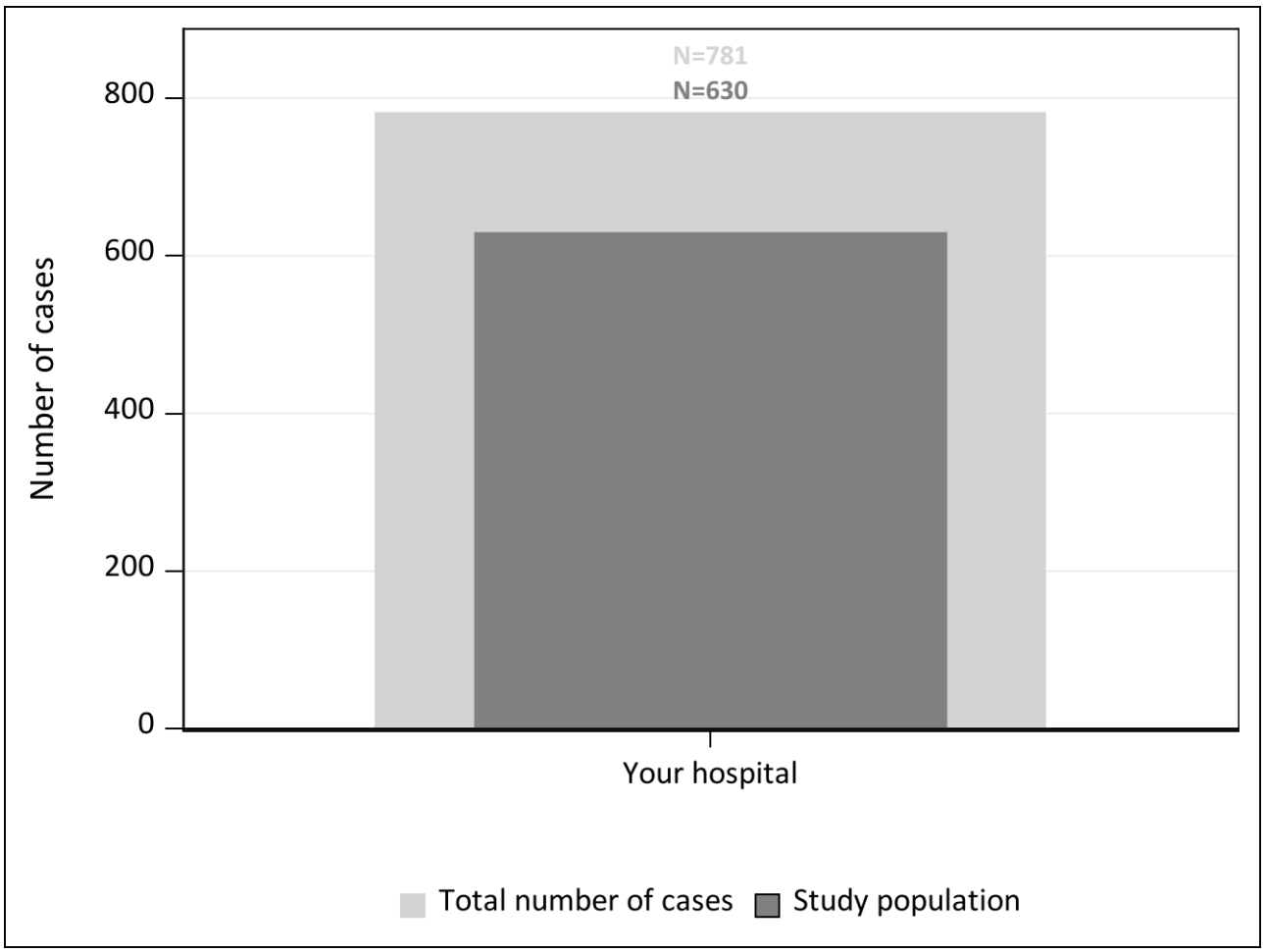
- [1 2]Incidence period 2014-2018
- [1 2]In situ breast tumours (ICD-10: D05) and invasive breast tumours (ICD-10: C50)
- [1 2]Belgian residence at the time of diagnosis

Exclusion criteria:

- [1 2]No data available from the Intermutuatlistic Agency (IMA-AIM)
- [1 2]Date of incidence is the same as date of death
- [1 2]Patients lost to follow-up since incidence
- [2]Patients with multiple invasive tumours (breast or non-breast) and/or with multiple breast tumours (invasive or in situ) registered in the BCR database with a diagnosis in 2004-2018
- [2]In situ tumours with an ICD-O-3 morphology other than ductal carcinoma in situ (DCIS) and invasive breast tumours that have an ICD-O-3 morphology corresponding with sarcoma or Paget's disease
- [2]Male patients

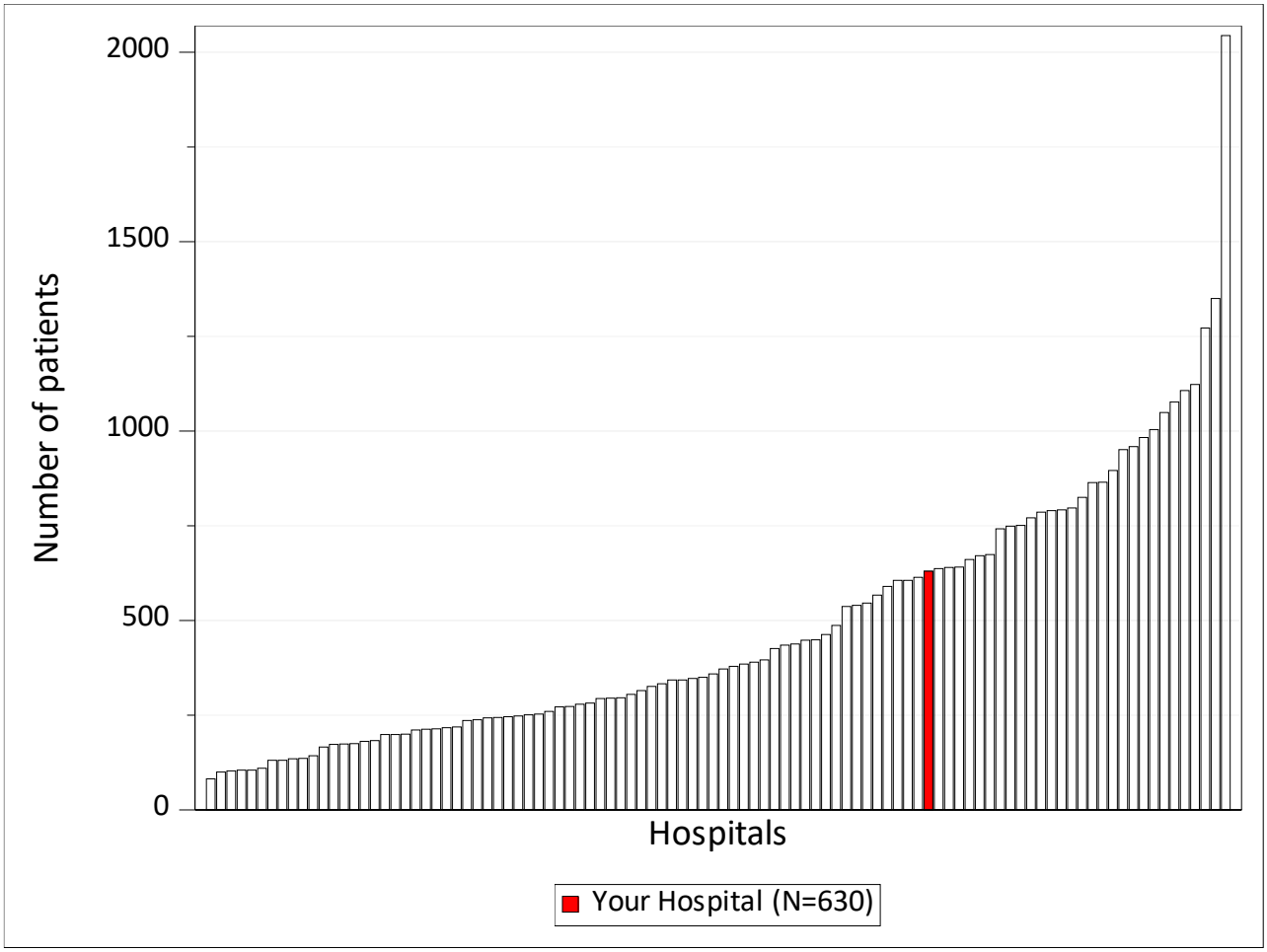
1.1. Volume by centre of diagnosis

Figure 1: Volume for your hospital, by centre of diagnosis



No analyses are performed at campus level by centre of diagnosis and therefore no campus volumes are shown.
For Belgium, the total number of cases is 59 918, of which 48 011 are included in the study population. In addition, the centre of diagnosis could not be identified for 2 525 and 1 997 cases respectively.

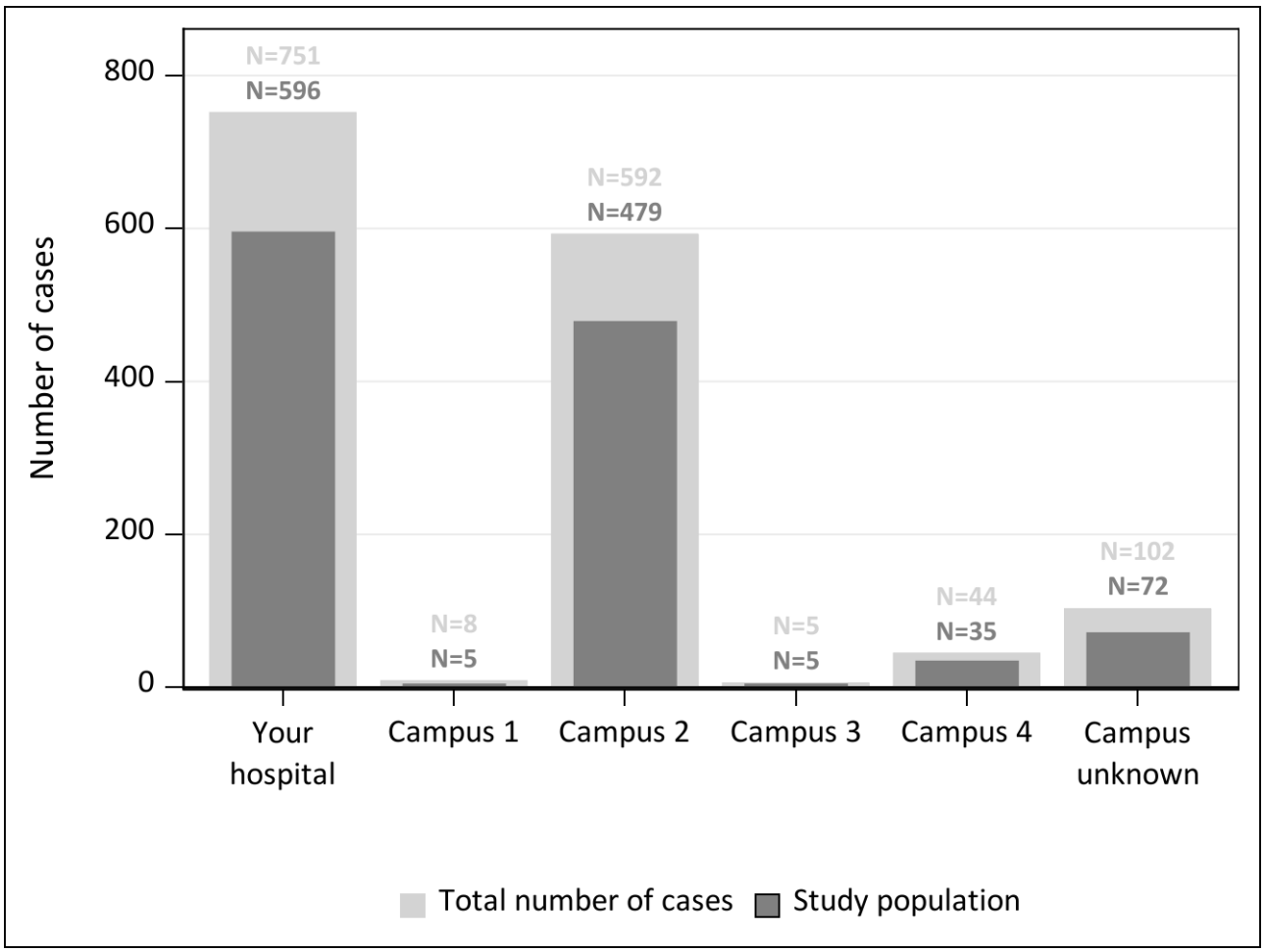
Figure 2: Volume of the study population for all Belgian hospitals, by centre of diagnosis



No analyses are performed at campus level by centre of diagnosis and therefore no campus volumes are shown.

1.2. Volume by centre of main treatment

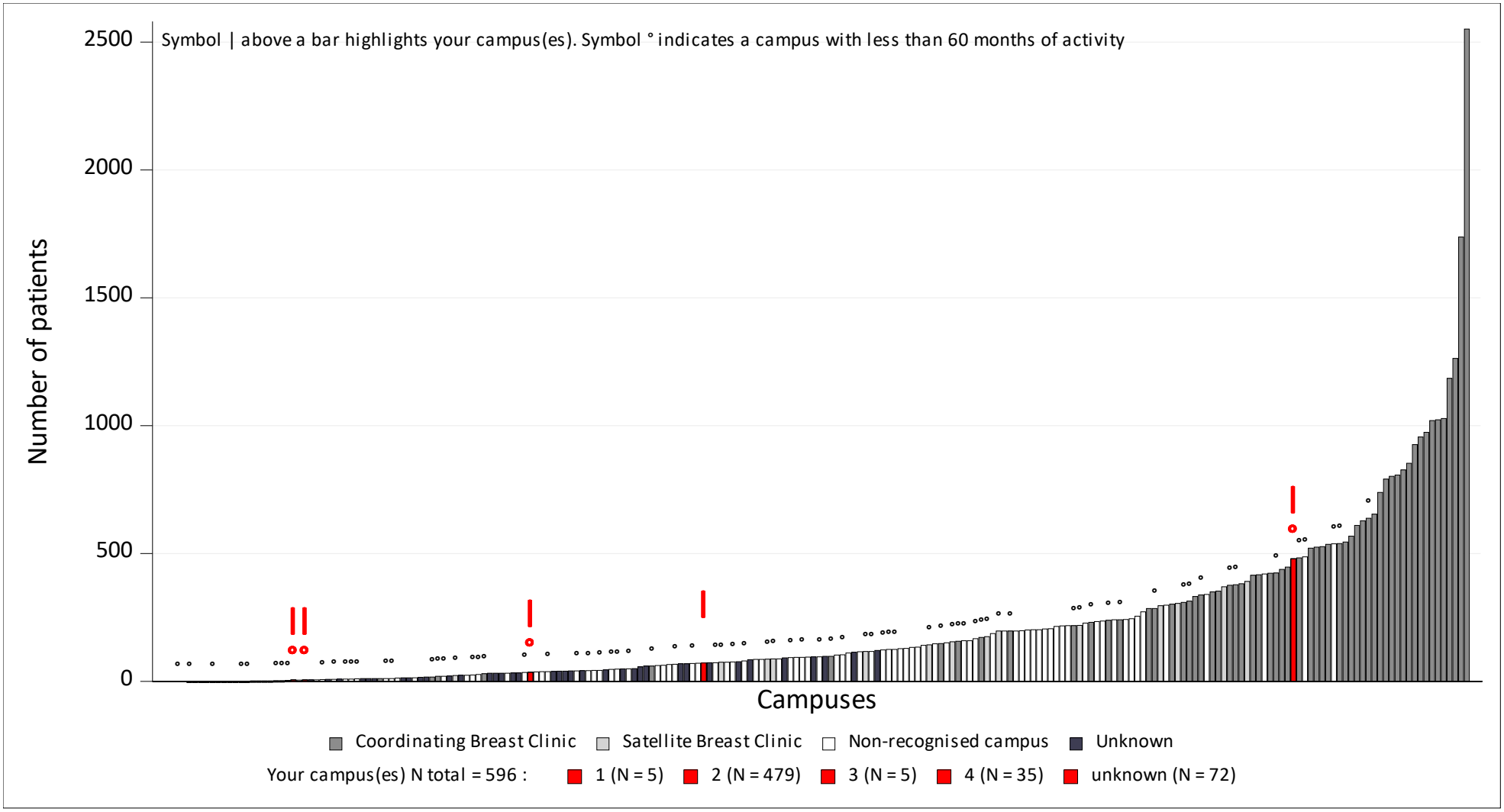
Figure 3: Volume for your hospital, by campus of main treatment



History of activity period :
Campus 1 active between January 2014 - September 2018
Campus 2 active between January 2014 - September 2018
Campus 3 active between January 2014 - September 2018
Campus 4 active between October 2018 - December 2018

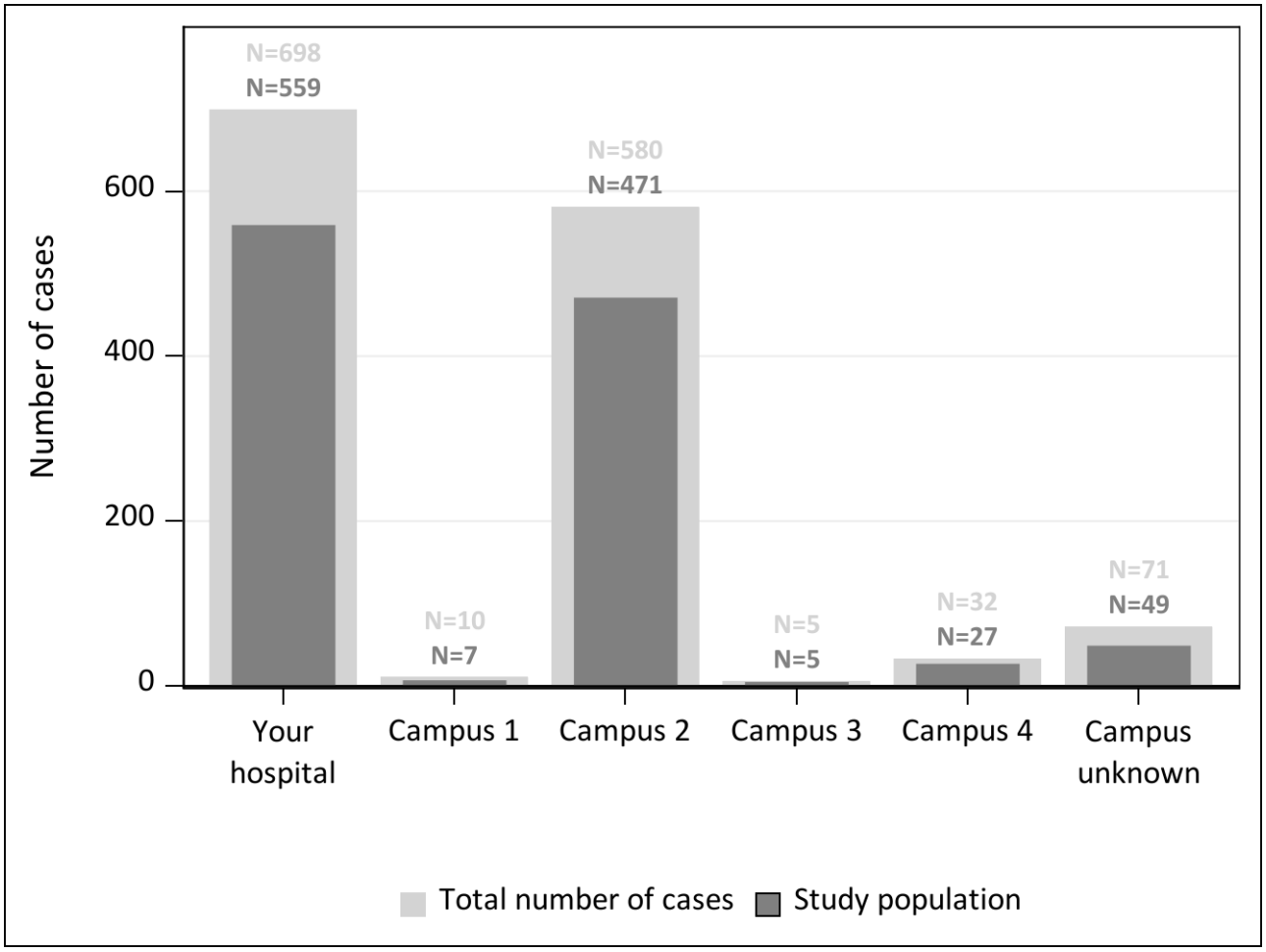
For Belgium, the total number of cases is 60 475 (41 396 in a coordinating breast clinic, 3 198 in a satellite breast clinic, 13 573 in a non-recognised campus and 2 308 who could not be allocated to a campus), of which 48 591 are included in the study population (33 182 in a coordinating breast clinic, 2 641 in a satellite breast clinic, 11 015 in a non-recognised campus and 1 753 who could not be allocated to a campus). In addition, the centre of main treatment on the hospital level could not be identified for 1 968 and 1 417 cases respectively.

Figure 4: Volume of the study population for all Belgian campuses, by campus of main treatment



1.3. Volume by centre of first treatment

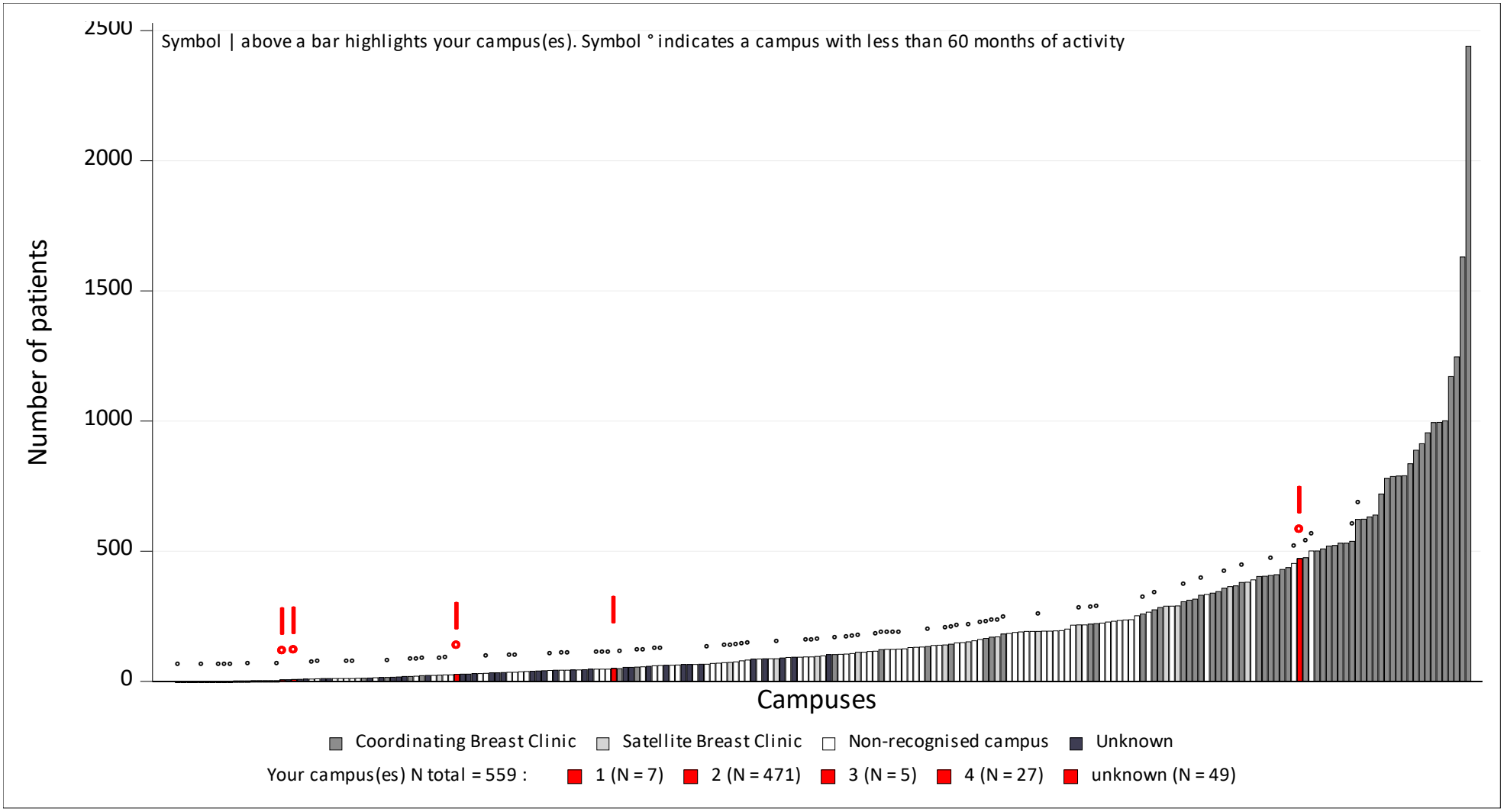
Figure 5: Volume for your hospital, by campus of first treatment



History of activity period :
Campus 1 active between January 2014 - September 2018
Campus 2 active between January 2014 - September 2018
Campus 3 active between January 2014 - September 2018
Campus 4 active between October 2018 - December 2018

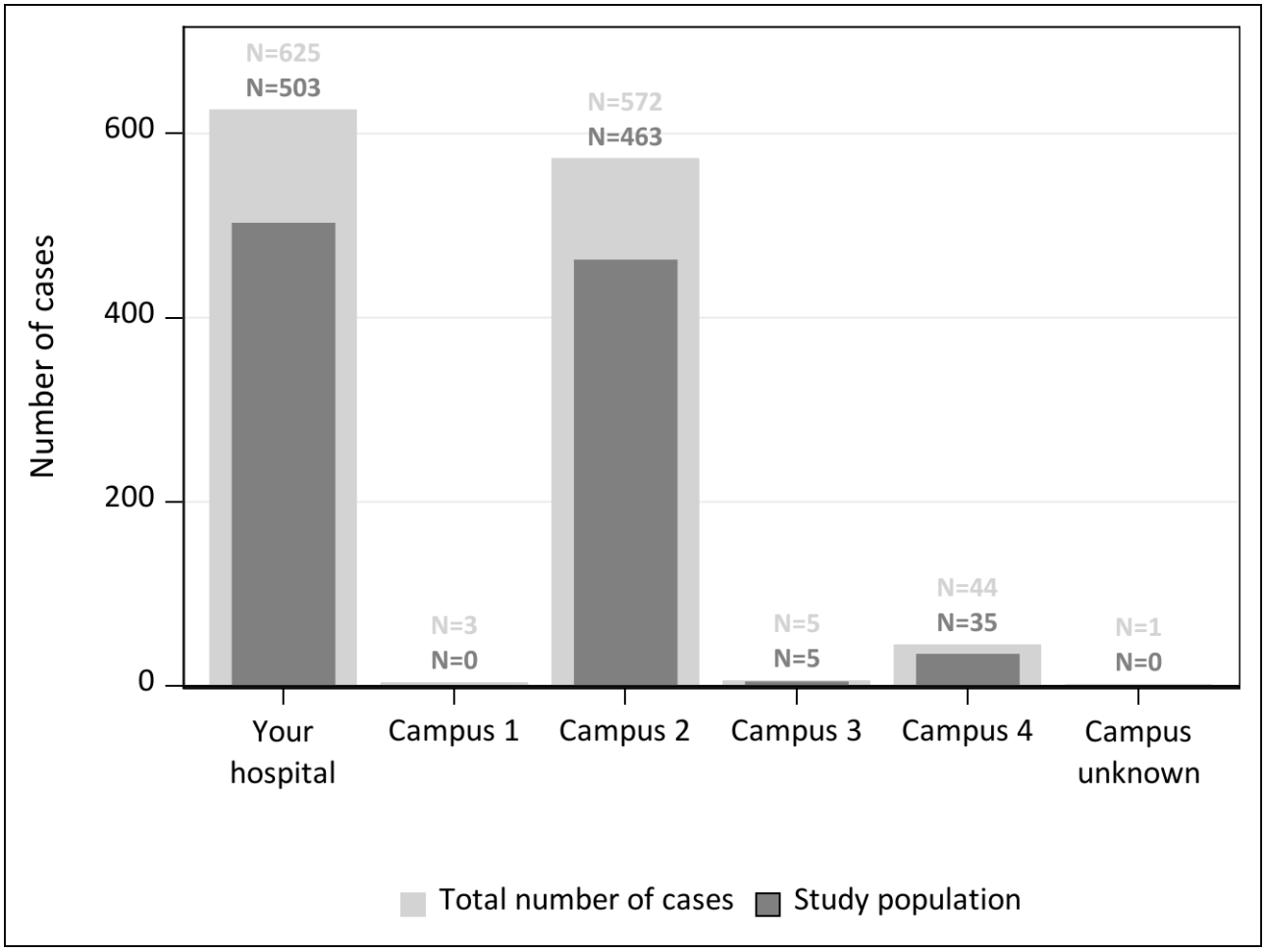
For Belgium, the total number of cases is 58 208 (39 708 in a coordinating breast clinic, 3 119 in a satellite breast clinic, 13 362 in a non-recognised campus and 2 019 who could not be allocated to a campus), of which 47 161 are included in the study population (32 072 in a coordinating breast clinic, 2 588 in a satellite breast clinic, 10 936 in a non-recognised campus and 1 565 who could not be allocated to a campus). In addition, the centre of first treatment on the hospital level could not be identified for 4 235 and 2 847 cases respectively.

Figure 6: Volume of the study population for all Belgian campuses, by campus of first treatment



1.4. Volume by centre of first surgery

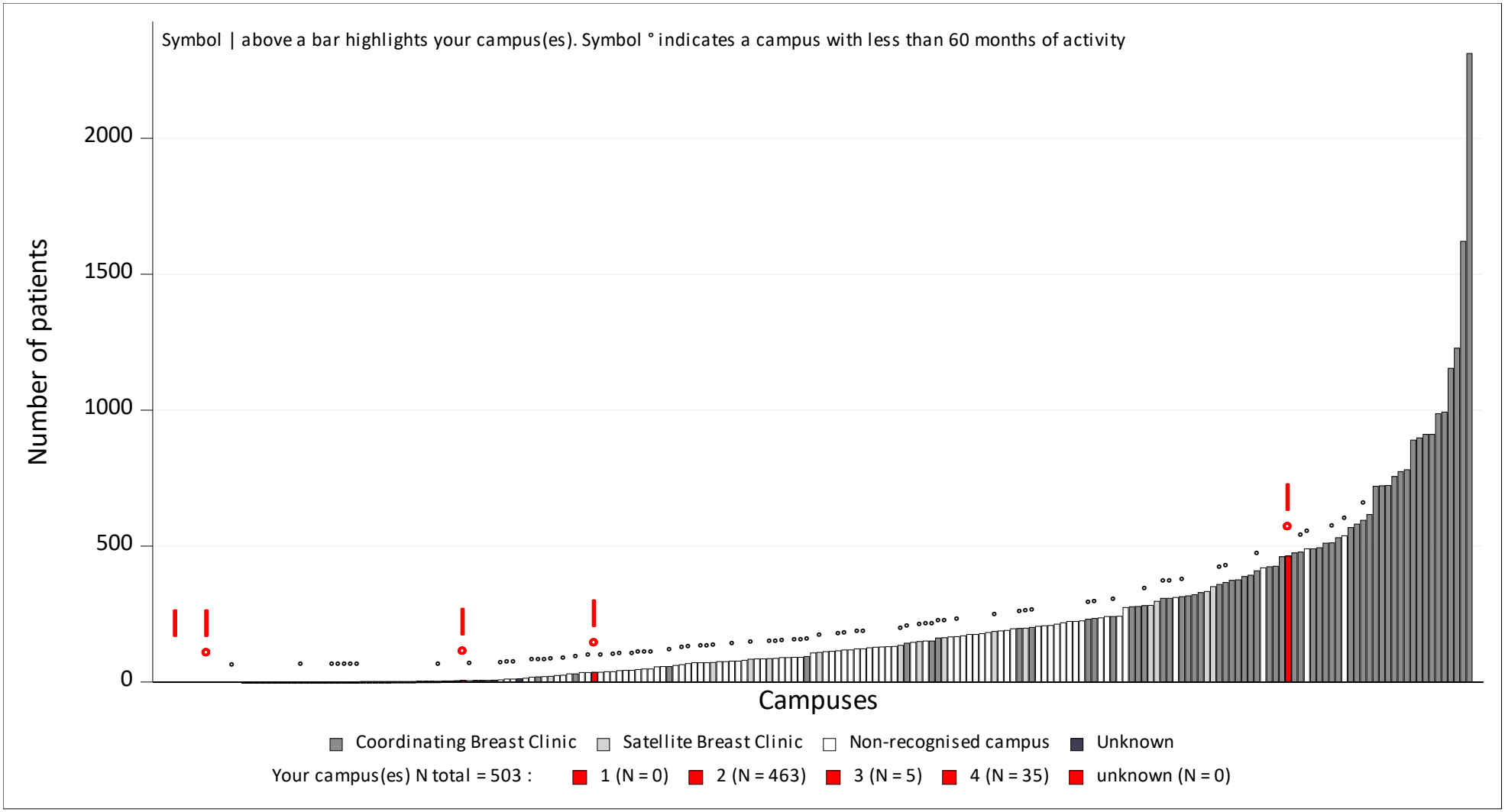
Figure 7: Volume for your hospital, by campus of first surgery



History of activity period :
Campus 1 active between January 2014 - September 2018
Campus 2 active between January 2014 - September 2018
Campus 3 active between January 2014 - September 2018
Campus 4 active between October 2018 - December 2018

For Belgium, the total number of cases is 54 294 (38 652 in a coordinating breast clinic, 2 971 in a satellite breast clinic, 12 589 in a non-recognised campus and 82 who could not be allocated to a campus), of which 44 038 are included in the study population (31 206 in a coordinating breast clinic, 2 466 in a satellite breast clinic, 10 300 in a non-recognised campus and 66 who could not be allocated to a campus). In addition, the centre of first surgery on the hospital level could not be identified for 6 and 4 cases respectively.

Figure 8: Volume of the study population for all Belgian campuses, by campus of first surgery



2. Descriptive tables

2.1. Patient characteristics

Table 1. Patient characteristics at time of diagnosis of patients with DCIS assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N=44		Campus 2 N=38		Campus 3 N=2		Campus 4 N=3		Campus Unknown N=1	
	N	%	N	%	N	%	N	%	N	%
Age at diagnosis (years)										
Mean (SD)	58	8.9	58	11.5	49	8.5	65	7.1	68	.
Median (IQR)	57	53-65	57	53-65	49	44-54	62	55-78	68	68-68
< 40 years	1	2.3	1	2.6	0	0.0	0	0.0	0	0.0
40-49 years	5	11.4	4	10.5	1	50.0	0	0.0	0	0.0
50-59 years	18	40.9	16	42.1	1	50.0	1	33.3	0	0.0
60-69 years	16	36.4	14	36.8	0	0.0	1	33.3	1	100.0
70-79 years	4	9.1	3	7.9	0	0.0	1	33.3	0	0.0
80+ years	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Laterality										
Left	19	43.2	17	44.7	0	0.0	2	66.7	0	0.0
Right	25	56.8	21	55.3	2	100.0	1	33.3	1	100.0
Unknown	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
WHO performance status										
0 – Asymptomatic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
1 – Symptomatic but completely ambulatory	44	100.0	38	100.0	2	100.0	3	100.0	1	100.0
2 – Symptomatic, <50% in bed during the day	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

	Your Hospital N=44		Campus 2 N=38		Campus 3 N=2		Campus 4 N=3		Campus Unknown N=1	
	N	%	N	%	N	%	N	%	N	%
3 – Symptomatic, >50% in bed, but not bedbound	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4 – Bedbound	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Missing	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Number of comorbidities										
0	28	63.6	25	65.8	2	100.0	1	33.3	0	0.0
1	15	34.1	12	31.6	0	0.0	2	66.7	1	100.0
2	1	2.3	1	2.6	0	0.0	0	0.0	0	0.0
3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type of comorbidities										
Cardiovascular diseases	14	31.8	11	28.9	0	0.0	2	66.7	1	100.0
Chronic pulmonary diseases	2	4.5	2	5.3	0	0.0	0	0.0	0	0.0
Diabetes	1	2.3	1	2.6	0	0.0	0	0.0	0	0.0
Number of inpatient bed days in year prior to incidence										
No	37	84.1	31	81.6	2	100.0	3	100.0	1	100.0
1-5 days	7	15.9	7	18.4	0	0.0	0	0.0	0	0.0
6-15 days	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
>15 days	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

DCIS: ductal carcinoma in situ; SD: standard deviation; IQR : InterQuartile Range; WHO: World Health Organization
Results related to the Belgian population can be found in KCE report 365: table 61, page 184.

Table 2. Patient characteristics at time of diagnosis of patients with invasive breast cancer assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N=552		Campus 1 N=5		Campus 2 N=441		Campus 3 N=3		Campus 4 N=32		Campus Unknown N=71	
	N	%	N	%	N	%	N	%	N	%	N	%
Age at diagnosis (years)												
Mean (SD)	62	14.5	61	14.3	61	19.2	59	13.8	56	9.1	74	12.6
Median (IQR)	62	51-75	59	50-75	61	51-72	61	50-68	56	45-67.5	77	66-84
< 40 years	30	5.4	1	20.0	22	5.0	0	0.0	6	18.8	1	1.4
40-49 years	78	14.1	0	0.0	71	16.1	0	0.0	5	15.6	2	2.8
50-59 years	129	23.4	2	40.0	115	26.1	1	33.3	6	18.8	5	7.0
60-69 years	131	23.7	0	0.0	106	24.0	2	66.7	8	25.0	15	21.1
70-79 years	100	18.1	1	20.0	77	17.5	0	0.0	4	12.5	18	25.4
80+ years	84	15.2	1	20.0	50	11.3	0	0.0	3	9.4	30	42.3
Laterality												
Left	312	56.5	4	80.0	249	56.5	2	66.7	19	59.4	38	53.5
Right	239	43.3	1	20.0	191	43.3	1	33.3	13	40.6	33	46.5
Unknown	1	0.2	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0
WHO performance status												
0 – Asymptomatic	8	1.4	1	20.0	3	0.7	0	0.0	1	3.1	3	4.2
1 – Symptomatic but completely ambulatory	534	96.7	4	80.0	437	99.1	3	100.0	31	96.9	59	83.1
2 – Symptomatic, <50% in bed during the day	4	0.7	0	0.0	0	0.0	0	0.0	0	0.0	4	5.6
3 – Symptomatic, >50% in bed, but not bedbound	4	0.7	0	0.0	0	0.0	0	0.0	0	0.0	4	5.6
4 – Bedbound	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Missing	2	0.4	0	0.0	1	0.2	0	0.0	0	0.0	1	1.4
Number of comorbidities												

	Your Hospital N=552		Campus 1 N=5		Campus 2 N=441		Campus 3 N=3		Campus 4 N=32		Campus Unknown N=71	
	N	%	N	%	N	%	N	%	N	%	N	%
0	281	50.9	2	40.0	239	54.2	1	33.3	20	62.5	19	26.8
1	204	37.0	2	40.0	158	35.8	2	66.7	9	28.1	33	46.5
2	64	11.6	1	20.0	42	9.5	0	0.0	2	6.3	19	26.8
3	3	0.5	0	0.0	2	0.5	0	0.0	1	3.1	0	0.0
Type of comorbidities												
Cardiovascular diseases	248	44.9	2	40.0	184	41.7	2	66.7	11	34.4	49	69.0
Chronic pulmonary diseases	49	8.9	1	20.0	37	8.4	0	0.0	2	6.3	9	12.7
Diabetes	44	8.0	1	20.0	27	6.1	0	0.0	3	9.4	13	18.3
Number of inpatient bed days in year prior to incidence												
No	406	73.6	3	60.0	329	74.6	2	66.7	29	90.6	43	60.6
1-5 days	98	17.8	2	40.0	83	18.8	1	33.3	1	3.1	11	15.5
6-15 days	27	4.9	0	0.0	19	4.3	0	0.0	2	6.3	6	8.5
>15 days	21	3.8	0	0.0	10	2.3	0	0.0	0	0.0	11	15.5

SD: standard deviation; IQR : InterQuartile Range; WHO: World Health Organization
Results related to the Belgian population can be found in KCE report 365: table 62, page 186.

Table 3. Patient characteristics at time of diagnosis of operated patients with invasive breast cancer assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N=460		Campus 2 N=425		Campus 3 N=3		Campus 4 N=32	
	N	%	N	%	N	%	N	%
Age at diagnosis (years)								
Mean (SD)	61	13.8	61	13.4	59	13.6	56	9.1
Median (IQR)	60	50-72	61	51-72	61	50-68	56	45-67.5
< 40 years	26	5.7	20	4.7	0	0.0	6	18.8
40-49 years	73	15.9	68	16.0	0	0.0	5	15.6
50-59 years	120	26.1	113	26.6	1	33.3	6	18.8
60-69 years	111	24.1	101	23.8	2	66.7	8	25.0
70-79 years	80	17.4	76	17.9	0	0.0	4	12.5
80+ years	50	10.9	47	11.1	0	0.0	3	9.4
Laterality								
Left	263	57.2	242	56.9	2	66.7	19	59.4
Right	197	42.8	183	43.1	1	33.3	13	40.6
Unknown	0	0.0	0	0.0	0	0.0	0	0.0
WHO performance status								
0 – Asymptomatic	4	0.9	3	0.7	0	0.0	1	3.1
1 – Symptomatic but completely ambulatory	455	98.9	421	99.1	3	100.0	31	96.9
2 – Symptomatic, <50% in bed during the day	0	0.0	0	0.0	0	0.0	0	0.0
3 – Symptomatic, >50% in bed, but not bedbound	0	0.0	0	0.0	0	0.0	0	0.0
4 – Bedbound	0	0.0	0	0.0	0	0.0	0	0.0
Missing	1	0.2	1	0.2	0	0.0	0	0.0
Number of comorbidities								

	Your Hospital N=460		Campus 2 N=425		Campus 3 N=3		Campus 4 N=32	
	N	%	N	%	N	%	N	%
0	252	54.8	231	54.4	1	33.3	20	62.5
1	162	35.2	151	35.5	2	66.7	9	28.1
2	43	9.3	41	9.6	0	0.0	2	6.3
3	3	0.7	2	0.5	0	0.0	1	3.1
Type of comorbidities								
Cardiovascular diseases	191	41.5	178	41.9	2	66.7	11	34.4
Chronic pulmonary diseases	37	8.0	35	8.2	0	0.0	2	6.3
Diabetes	29	6.3	26	6.1	0	0.0	3	9.4
Number of inpatient bed days in year prior to incidence								
No	349	75.9	318	74.8	2	66.7	29	90.6
1-5 days	82	17.8	80	18.8	1	33.3	1	3.1
6-15 days	19	4.1	17	4.0	0	0.0	2	6.3
>15 days	10	2.2	10	2.4	0	0.0	0	0.0

SD: standard deviation; IQR : InterQuartile Range; WHO: World Health Organization

2.2. Tumour characteristics

Table 4. Tumour characteristics of patients with DCIS assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N= 44		Campus 2 N=38		Campus 3 N=2		Campus 4 N=3		Campus Unknown N=1	
	N	%	N	%	N	%	N	%	N	%
Incidence years										
2014	13	29.5	13	34.2	0	0.0	0	0.0	0	0.0
2015	7	15.9	6	15.8	1	50.0	0	0.0	0	0.0
2016	6	13.6	6	15.8	0	0.0	0	0.0	0	0.0
2017	9	20.5	8	21.1	1	50.0	0	0.0	0	0.0
2018	9	20.5	5	13.2	0	0.0	3	100.0	1	100.0
Clinical stage*										
c0˜	37	100.0	35	100.0	2	100.0	0	0.0	0	0.0
Unknown	7	15.9	3	7.9	0	0.0	3	100.0	1	100.0
Pathological stage*ǥδ										
Patients who had surgery	43		38		2		3		0	
(y)p0	41	100.0	37	100.0	2	100.0	2	100.0	0	0
Unknown	2	4.7	1	2.6	0	0.0	1	33.3	0	0
Combined stage**δ										
(y)0˜	43	100.0	38	100.0	2	100.0	2	100.0	1	100.0
Unknown	1	2.3	0	0.0	0	0.0	1	33.3	0	0.0
Grade										
Well-differentiated	4	9.1	4	10.5	0	0.0	0	0.0	0	0.0
Moderately differentiated	14	31.8	13	34.2	1	50.0	0	0.0	0	0.0
Poorly differentiated	23	52.3	20	52.6	1	50.0	2	66.7	0	0.0
Unknown⌐	3	6.8	1	2.6	0	0.0	1	33.3	1	100.0

*DCIS: ductal carcinoma in situ. *: percentages for stages 0-IV were calculated excluding the unknown category. º: only includes patients who underwent surgery. ˜: in correspondence with TNM 7th & 8th edition, cTis cN0 cM0 tumours are categorized as cStage 0. δ: patients might have had neoadjuvant therapy (NAT), resulting in a ypStage in these cases. Note that a distinction was made between ypStage 0, i.e. complete pathological response after NAT (ypT0 ypN0,x ypM0,x) and ypStage is, i.e. in situ component remains after NAT (ypTis, ypN0,x ypM0,x). the combined stage is a summary of the information included in the clinical stage and the pathological stage and is defined as follows: a known pathological stage takes priority over a known clinical stage. ⌐: The high proportion of grade unknown is due to the incomplete information BCR received from the oncological care programs and/or laboratories for pathological anatomy.*
Results related to the Belgian population can be found in KCE report 365: table 64, page 190.

Table 5. Tumour characteristics of patients with invasive breast cancer assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N= 552		Campus 1 N=5		Campus 2 N=441		Campus 3 N=3		Campus 4 N=32		Campus Unknown N=71	
	N	%	N	%	N	%	N	%	N	%	N	%
Incidence years												
2014	107	19.4	1	20.0	88	20.0	2	66.7	0	0.0	16	22.5
2015	95	17.2	0	0.0	85	19.3	0	0.0	0	0.0	10	14.1
2016	112	20.3	2	40.0	93	21.1	1	33.3	0	0.0	16	22.5
2017	117	21.2	1	20.0	105	23.8	0	0.0	0	0.0	11	15.5
2018	121	21.9	1	20.0	70	15.9	0	0.0	32	100.0	18	25.4
Clinical stage*												
c0˜	4	0.8	0	0.0	4	1.0	0	0.0	0	0.0	0	0.0
cIA	225	42.5	0	0.0	215	51.1	0	0.0	9	30.0	1	1.4
cIIA	138	26.1	0	0.0	118	28.0	0	0.0	11	36.7	9	12.9
cIIB	52	9.8	0	0.0	45	10.7	2	66.7	4	13.3	1	1.4
cIIIA	15	2.8	0	0.0	12	2.9	0	0.0	2	6.7	1	1.4
cIIIB	32	6.0	1	20.0	12	2.9	1	33.3	4	13.3	14	20.0
cIIIC	3	0.6	0	0.0	3	0.7	0	0.0	0	0.0	0	0.0
cIV	60	11.3	4	80.0	12	2.9	0	0.0	0	0.0	44	62.9
Unknown	23	4.2	0	0.0	20	4.5	0	0.0	2	6.3	1	1.4
Pathological stage*ᵍᵟ												
Patients who had surgery	460		0		425		3		32		0	
(y)p0	11	2.5	0	0	8	1.9	0	0.0	3	10.7	0	0
(y)pIA	201	45.3	0	0	194	47.0	0	0.0	7	25.0	0	0
(y)pIB	13	2.9	0	0	13	3.1	0	0.0	0	0.0	0	0
(y)pIIA	111	25.0	0	0	99	24.0	0	0.0	12	42.9	0	0
(y)pIIB	48	10.8	0	0	44	10.7	1	33.3	3	10.7	0	0

	Your Hospital N= 552		Campus 1 N=5		Campus 2 N=441		Campus 3 N=3		Campus 4 N=32		Campus Unknown N=71	
	N	%	N	%	N	%	N	%	N	%	N	%
(y)pIIIA	40	9.0	0	0	38	9.2	1	33.3	1	3.6	0	0
(y)IIIB	5	1.1	0	0	4	1.0	1	33.3	0	0.0	0	0
(y)pIIIC	12	2.7	0	0	11	2.7	0	0.0	1	3.6	0	0
(y)pIV	0	0.0	0	0	0	0.0	0	0.0	0	0.0	0	0
ypis	3	0.7	0	0	2	0.5	0	0.0	1	3.6	0	0
Unknown	16	3.5	0	0	12	2.8	0	0.0	4	12.5	0	0
Combined stage*δ												
(y)0˜	11	2.0	0	0.0	8	1.8	0	0.0	3	9.7	0	0.0
(y)IA	205	37.2	0	0.0	196	44.4	0	0.0	7	22.6	2	2.8
(y)IB	13	2.4	0	0.0	13	2.9	0	0.0	0	0.0	0	0.0
(y)IIA	127	23.0	0	0.0	104	23.6	0	0.0	13	41.9	10	14.1
(y)IIB	51	9.3	0	0.0	46	10.4	1	33.3	3	9.7	1	1.4
(y)IIIA	44	8.0	0	0.0	41	9.3	1	33.3	1	3.2	1	1.4
(y)IIIB	22	4.0	1	20.0	6	1.4	1	33.3	2	6.5	12	16.9
(y)IIIC	14	2.5	0	0.0	13	2.9	0	0.0	1	3.2	0	0.0
(y)IV	61	11.1	4	80.0	12	2.7	0	0.0	0	0.0	45	63.4
yis	3	0.5	0	0.0	2	0.5	0	0.0	1	3.2	0	0.0
Unknown	1	0.2	0	0.0	0	0.0	0	0.0	1	3.1	0	0.0
Grade												
Well-differentiated	25	4.5	0	0.0	22	5.0	0	0.0	2	6.3	1	1.4
Moderately differentiated	247	44.7	1	20.0	199	45.1	1	33.3	14	43.8	32	45.1
Poorly differentiated	264	47.8	4	80.0	215	48.8	2	66.7	15	46.9	28	39.4
Unknown⌐	16	2.9	0	0.0	5	1.1	0	0.0	1	3.1	10	14.1
Histological subtype*												
Invasive ductal carcinoma (IDC)	461	83.5	5	100.0	372	84.4	2	66.7	28	87.5	54	76.1
Invasive lobular carcinoma (ILC)	63	11.4	0	0.0	49	11.1	0	0.0	3	9.4	11	15.5
Mixed ductal & lobular	14	2.5	0	0.0	11	2.5	1	33.3	0	0.0	2	2.8

	Your Hospital N= 552		Campus 1 N=5		Campus 2 N=441		Campus 3 N=3		Campus 4 N=32		Campus Unknown N=71	
	N	%	N	%	N	%	N	%	N	%	N	%
Papillary & micropapillary	6	1.1	0	0.0	5	1.1	0	0.0	0	0.0	1	1.4
Mucinous	4	0.7	0	0.0	2	0.5	0	0.0	1	3.1	1	1.4
Metaplastic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Medullary	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cribriform & tubular	1	0.2	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0
Inflammatory***	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Neuroendocrine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salivary gland type	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Apocrine****	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other carcinoma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Carcinoma, NOS	3	0.5	0	0.0	1	0.2	0	0.0	0	0.0	2	2.8
Sub-localisation												
C50.0: Nipple	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
C50.1: Central portion of breast	26	4.7	0	0.0	19	4.3	0	0.0	2	6.3	5	7.0
C50.2: Upper-inner quadrant of breast	68	12.3	0	0.0	56	12.7	0	0.0	6	18.8	6	8.5
C50.3: Lower-inner quadrant of breast	26	4.7	0	0.0	21	4.8	0	0.0	1	3.1	4	5.6
C50.4: Upper-outer quadrant of breast	216	39.1	1	20.0	183	41.5	1	33.3	13	40.6	18	25.4
C50.5: Lower-outer quadrant of breast	49	8.9	1	20.0	40	9.1	1	33.3	3	9.4	4	5.6
C50.6: Axillary tail of breast	6	1.1	0	0.0	5	1.1	0	0.0	0	0.0	1	1.4
C50.8: Overlapping lesion of breast	8	1.4	0	0.0	7	1.6	0	0.0	1	3.1	0	0.0
C50.9: Breast, NOS	153	27.7	3	60.0	110	24.9	1	33.3	6	18.8	33	46.5

: percentages for stages 0-IV were calculated excluding the unknown category. º: only includes patients who underwent surgery. ˜: in correspondence with TNM 7th & 8th edition, cTis cN0 cM0 tumours are categorized as cStage 0. For IBC, these tumours were clinically assessed as in situ but appeared to be invasive after resection. $^{\delta}$: patients might have had neoadjuvant therapy (NAT), resulting in a ypStage in these cases. Note that a distinction was made between ypStage 0, i.e. complete pathological response after NAT (ypT0 ypN0,x ypM0,x) and ypStage is, i.e. in situ component remains after NAT (ypTis, ypN0,x ypM0,x); the combined stage is a summary of the information included in the clinical stage and the pathological stage and is defined as follows: a known pathological stage takes priority over a known clinical stage, except when the presence of metastasis is specified in the clinical stage. ⌐: The high proportion of grade unknown is due to the incomplete information BCR received from the oncological care programs and/or laboratories for pathological anatomy. NOS: not otherwise specified. **: Various sources were used to classify the morphology codes: RARECAREnet Information Network on Rare Cancers, List of Rare Cancers (October 2015, retrieved from http://rarecarenet.istitutotumori.mi.it/rarecarenet/index.php/cancerlist), The Surveillance, Epidemiology, and End Results (SEER) Program - Breast Solid Tumor Rules (2018, update July 2019, retrieved from https://seer.cancer.gov/tools/solidtumor/Breast_STM.pdf), the World Health Organization Classification of Tumours Editorial Board & International Agency for Research on Cancer (2012) and personal communication with clinical experts. *: Inflammatory breast cancer is registered in the BCR database with ICD-O-3 morphology code 8530/3. However, inflammatory breast cancer can also be identified based on TNM, i.e. cT4d cases. ****: Apocrine breast cancer is registered in the BCR database with ICD-O-3 morphology code 8401/3.*
Results related to the Belgian population can be found in KCE report 365: tables 63-65, page 188-191.

Table 6. Tumour characteristics of operated patients with invasive breast cancer assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N= 460		Campus 2 N=425		Campus 3 N=3		Campus 4 N=32	
	N	%	N	%	N	%	N	%
Incidence years								
2014	89	19.3	87	20.5	2	66.7	0	0.0
2015	79	17.2	79	18.6	0	0.0	0	0.0
2016	90	19.6	89	20.9	1	33.3	0	0.0
2017	103	22.4	103	24.2	0	0.0	0	0.0
2018	99	21.5	67	15.8	0	0.0	32	100.0
Clinical stage*								
c0˜	4	0.9	4	1.0	0	0.0	0	0.0
cIA	224	51.1	215	53.1	0	0.0	9	30.0
cIIA	129	29.5	118	29.1	0	0.0	11	36.7
cIIB	49	11.2	43	10.6	2	66.7	4	13.3
cIIIA	14	3.2	12	3.0	0	0.0	2	6.7
cIIIB	16	3.7	11	2.7	1	33.3	4	13.3
cIIIC	2	0.5	2	0.5	0	0.0	0	0.0
cIV	0	0.0	0	0.0	0	0.0	0	0.0
Unknown	22	4.8	20	4.7	0	0.0	2	6.3
Pathological stage*ǫδ								
Patients who had surgery	460		425		3		32	
(y)p0	11	2.5	8	1.9	0	0.0	3	10.7
(y)pIA	201	45.3	194	47.0	0	0.0	7	25.0
(y)pIB	13	2.9	13	3.1	0	0.0	0	0.0
(y)pIIA	111	25.0	99	24.0	0	0.0	12	42.9
(y)pIIB	48	10.8	44	10.7	1	33.3	3	10.7

	Your Hospital N= 460		Campus 2 N=425		Campus 3 N=3		Campus 4 N=32	
	N	%	N	%	N	%	N	%
(y)pIIIA	40	9.0	38	9.2	1	33.3	1	3.6
(y)IIIB	5	1.1	4	1.0	1	33.3	0	0.0
(y)pIIIC	12	2.7	11	2.7	0	0.0	1	3.6
(y)pIV	0	0.0	0	0.0	0	0.0	0	0.0
ypis	3	0.7	2	0.5	0	0.0	1	3.6
Unknown	16	3.5	12	2.8	0	0.0	4	12.5
Combined stage*δ								
(y)0˜	11	2.4	8	1.9	0	0.0	3	9.7
(y)IA	203	44.2	196	46.1	0	0.0	7	22.6
(y)IB	13	2.8	13	3.1	0	0.0	0	0.0
(y)IIA	117	25.5	104	24.5	0	0.0	13	41.9
(y)IIB	48	10.5	44	10.4	1	33.3	3	9.7
(y)IIIA	43	9.4	41	9.6	1	33.3	1	3.2
(y)IIIB	8	1.7	5	1.2	1	33.3	2	6.5
(y)IIIC	13	2.8	12	2.8	0	0.0	1	3.2
(y)IV	0	0.0	0	0.0	0	0.0	0	0.0
yis	3	0.7	2	0.5	0	0.0	1	3.2
Unknown	1	0.2	0	0.0	0	0.0	1	3.1
Grade								
Well-differentiated	24	5.2	22	5.2	0	0.0	2	6.3
Moderately differentiated	210	45.7	195	45.9	1	33.3	14	43.8
Poorly differentiated	220	47.8	203	47.8	2	66.7	15	46.9
Unknown⌐	6	1.3	5	1.2	0	0.0	1	3.1

**: percentages for stages 0-IV were calculated excluding the unknown category. º: only includes patients who underwent surgery. ˜: in correspondence with TNM 7th & 8th edition, cTis cN0 cM0 tumours are categorized as cStage 0. For IBC, these tumours were clinically assessed as in situ but appeared to be invasive after resection. $^{\delta}$: patients might have had neoadjuvant therapy (NAT), resulting in a ypStage in these cases. Note that a distinction was made between ypStage 0, i.e. complete pathological response after NAT (ypT0 ypN0,x ypM0,x) and ypStage is, i.e. in situ component remains after NAT (ypTis, ypN0,x ypM0,x). The combined stage is a summary of the information included in the clinical stage and the pathological stage and is defined as follows: a known pathological stage takes priority over a known clinical stage, except when the presence of metastasis is specified in the clinical stage. ⌐: The high proportion of grade unknown is due to the incomplete information BCR received from the oncological care programs and/or laboratories for pathological anatomy.*

2.3. Main diagnostic and staging procedures

Table 7. Diagnostic and staging procedures for patients with DCIS or invasive breast cancer assigned to your hospital on the basis of diagnosis, at hospital level

	DCIS N=60		Invasive BC N=570	
	N	%	N	%
Puncture and/or biopsy				
Overall*	59	98.3	565	99.1
Breast biopsy[¬]	59	98.3	562	98.6
Incision biopsy	0	0.0	3	0.5
Core biopsy	20	33.3	551	96.7
Vacuum assisted biopsy	44	73.3	19	3.3
Breast puncture[¬]	3	5.0	30	5.3
Lymph node puncture[¬]	0	0.0	5	0.9
Cytohisto-pathological examination				
Overall*	60	100.0	569	99.8
Cytological examination	10	16.7	239	41.9
Immunohistochemical examination (general)[º]	59	98.3	568	99.6
Anatomo-pathological examinations	60	100.0	569	99.8
Biopsy specimens	59	98.3	564	98.9
Resection specimens	56	93.3	440	77.2
Frozen section	14	23.3	338	59.3
HER2 in situ hybridization**	1	1.7	515	90.4
Genetic testing				
BRCA (within -3 to +3 months of incidence)	1	1.7	40	7.0
BRCA (within -1 to +1 years of incidence)	3	5.0	69	12.1
BRCA (within -1 to +5 years of incidence)	4	6.7	81	14.2

*DCIS: ductal carcinoma in situ. BC: breast cancer. HER2: Human epidermal growth factor receptor 2. BRCA: breast cancer gene. For nomenclature codes based on which diagnostic procedures were defined. Please see Appendix 8.1.3. *: for several diagnostic procedures the numbers of the subcategories do not add up as for some patients more than one type of staging/diagnostic procedure was billed. ⌐: the interpretation of these results should be performed with caution since the pre-validation study indicated that codes for breast biopsy. breast puncture and lymph node puncture are used interchangeably in some Belgian hospitals (e.g. a FNAC of the axillary glands being coded as 'breast puncture' instead of 'lymph node puncture'). º: no specific code exists for immunohistochemical testing of HER2. An IHC HER2 testing could only be billed as part of the general immunohistochemical examination. Note that separate nomenclature codes do exist for testing the oestrogen and progesterone receptors (see Appendix 8.1.3), but since these codes didn't occur in the health insurance data of our study population, they could not be reported separately. **according to the protocols prevailing in 2014-2018. An ISH test was only to be performed when the HER2 IHC test result was equivocal (score 2+) or 3+.*
Results related to the Belgian population can be found in KCE report 365: table 71, page 200.

Table 8. Imaging procedures performed within 3 months around incidence date, for patients with DCIS or invasive breast cancer assigned to your hospital on the basis of diagnosis, at hospital level

	DCIS N=60		Invasive BC N=570	
	N	%	N	%
Imaging exclusively for breast				
Overall*	59	98.3	566	99.3
Mammography and/or breast ultrasound	59	98.3	564	98.9
Mammography	54	90.0	525	92.1
Diagnostic mammography only	31	51.7	411	72.1
Screening mammography only	6	10.0	58	10.2
Diagnostic AND screening mammography	18	30.0	58	10.2
Breast ultrasound	55	91.7	562	98.6
MRI breast	22	36.7	237	41.6
Mammo and/or breast ultrasound combined with MRI breast	22	36.7	235	41.2
Imaging - other				
Overall*	23	38.3	547	96.0
X-ray thorax	14	23.3	154	27.0
Abdominal ultrasound	9	15.0	140	24.6
X-ray thorax and abdominal ultrasound	8	13.3	116	20.4
SPECT and/or SPECT-CT and/or scintigraphy	16	26.7	523	91.8
SPECT	12	20.0	521	91.4
SPECT-CT	4	6.7	19	3.3
Scintigraphy	9	15.0	21	3.7
CT body[r]	6	10.0	421	73.9
PET-CT	0	0.0	50	8.8
CT and/or MRI brain	3	5.0	14	2.5

	DCIS N=60		Invasive BC N=570	
	N	%	N	%
MRI body	1	1.7	24	4.2

*DCIS: ductal carcinoma in situ. BC: breast cancer. *: for several diagnostic procedures the numbers of the subcategories do not add up as for some patients more than one type of staging/diagnostic procedure was billed. All imaging as from start of treatment are excluded from this table. ⌐: CT body performed within 14 days before the start of a radiotherapy series was excluded.*
Results related to the Belgian population can be found in KCE report 365: table 72, page 201.

2.4. Main therapeutic procedures

Table 9. Main treatment scheme for patients with DCIS assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N= 44		Campus 2 N=38		Campus 3 N=2		Campus 4 N=3		Campus Unknown N=1	
	N	%	N	%	N	%	N	%	N	%
Surgery < adjuvant RT	7	15.9	5	13.2	1	50.0	1	33.3	0	0.0
Surgery < adjuvant systemic Tx	6	13.6	6	15.8	0	0.0	0	0.0	0	0.0
Surgery < TT a/o ET	6	13.6	6	15.8	0	0.0	0	0.0	0	0.0
Surgery < chemo (+ TT a/o ET)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Surgery < adjuvant RT + systemic Tx	26	59.1	23	60.5	1	50.0	2	66.7	0	0.0
Surgery < RT + TT a/o ET	26	59.1	23	60.5	1	50.0	2	66.7	0	0.0
Surgery < chemo/RT + TT a/o ET	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Surgery < chemo/RT	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Neo-adjuvant Tx < Surgery (< adjuvant Tx)	1	2.3	1	2.6	0	0.0	0	0.0	0	0.0
Chemo a/o RT + TT a/o ET < Surgery < RT or chemo/RT (+ TT a/o ET)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chemo a/o RT < Surgery < RT or chemo/RT + TT a/o ET	1	2.3	1	2.6	0	0.0	0	0.0	0	0.0
Chemo a/o RT < Surgery < RT or chemo/RT	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TT a/o ET < Surgery < chemo a/o RT (+ TT a/o ET)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chemo a/o RT (+ TT a/o ET) < Surgery (< TT a/o ET)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

	Your Hospital N= 44		Campus 2 N=38		Campus 3 N=2		Campus 4 N=3		Campus Unknown N=1	
	N	%	N	%	N	%	N	%	N	%
TT a/o ET < Surgery (< TT a/o ET)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chemo a/o RT (+ TT a/o ET) < Surgery < chemo (+ TT a/o ET)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Surgery only	3	6.8	3	7.9	0	0.0	0	0.0	0	0.0
Primary systemic and/or radiotherapy (no surgery)	1	2.3	0	0.0	0	0.0	0	0.0	1	100.0
ET a/o TT	1	2.3	0	0.0	0	0.0	0	0.0	1	100.0
Chemo (+ TT a/o ET)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
RT (+ TT a/o ET)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chemo/RT (+ TT a/o ET)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
No oncological treatment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

RT: radiotherapy; TT: targeted therapy; ET: endocrine therapy; Tx: treatment; a/o: and/or; <: followed by
Results related to the Belgian population can be found in KCE report 365: table 75, page 206.

Table 10. Main treatment scheme for patients with invasive breast cancer assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N= 552		Campus 1 N=5		Campus 2 N=441		Campus 3 N=3		Campus 4 N=32		Campus Unknown N=71	
	N	%	N	%	N	%	N	%	N	%	N	%
Surgery < adjuvant RT	4	0.7	0	0.0	4	0.9	0	0.0	0	0.0	0	0.0
Surgery < adjuvant systemic Tx	47	8.5	0	0.0	45	10.2	0	0.0	2	6.3	0	0.0
Surgery < TT a/o ET	28	5.1	0	0.0	26	5.9	0	0.0	2	6.3	0	0.0
Surgery < chemo (+ TT a/o ET)	19	3.4	0	0.0	19	4.3	0	0.0	0	0.0	0	0.0
Surgery < adjuvant RT + systemic Tx	344	62.3	0	0.0	325	73.7	3	100.0	16	50.0	0	0.0
Surgery < RT + TT a/o ET	225	40.8	0	0.0	212	48.1	0	0.0	13	40.6	0	0.0
Surgery < chemo/RT + TT a/o ET	106	19.2	0	0.0	101	22.9	2	66.7	3	9.4	0	0.0
Surgery < chemo/RT	13	2.4	0	0.0	12	2.7	1	33.3	0	0.0	0	0.0
Neo-adjuvant Tx < Surgery (< adjuvant Tx)	63	11.4	0	0.0	49	11.1	0	0.0	14	43.8	0	0.0
Chemo a/o RT + TT a/o ET < Surgery < RT or chemo/RT (+ TT a/o ET)	20	3.6	0	0.0	16	3.6	0	0.0	4	12.5	0	0.0
Chemo a/o RT < Surgery < RT or chemo/RT + TT a/o ET	14	2.5	0	0.0	9	2.0	0	0.0	5	15.6	0	0.0
Chemo a/o RT < Surgery < RT or chemo/RT	19	3.4	0	0.0	17	3.9	0	0.0	2	6.3	0	0.0
TT a/o ET < Surgery < chemo a/o RT (+ TT a/o ET)	5	0.9	0	0.0	4	0.9	0	0.0	1	3.1	0	0.0
Chemo a/o RT (+ TT a/o ET) < Surgery (< TT a/o ET)	5	0.9	0	0.0	3	0.7	0	0.0	2	6.3	0	0.0
TT a/o ET < Surgery (< TT a/o ET)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chemo a/o RT (+ TT a/o ET) < Surgery < chemo (+ TT a/o ET)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

	Your Hospital N= 552		Campus 1 N=5		Campus 2 N=441		Campus 3 N=3		Campus 4 N=32		Campus Unknown N=71	
	N	%	N	%	N	%	N	%	N	%	N	%
Surgery only	2	0.4	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0
Primary systemic and/or radiotherapy (no surgery)	92	16.7	5	100.0	16	3.6	0	0.0	0	0.0	71	100.0
ET a/o TT	41	7.4	0	0.0	0	0.0	0	0.0	0	0.0	41	57.7
Chemo (+ TT a/o ET)	18	3.3	5	100.0	13	2.9	0	0.0	0	0.0	0	0.0
RT (+ TT a/o ET)	30	5.4	0	0.0	0	0.0	0	0.0	0	0.0	30	42.3
Chemo/RT (+ TT a/o ET)	3	0.5	0	0.0	3	0.7	0	0.0	0	0.0	0	0.0
No oncological treatment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

RT: radiotherapy; TT: targeted therapy; ET: endocrine therapy; Tx: treatment; a/o: and/or; <: followed by
Results related to the Belgian population can be found in KCE report 365: table 76, page 208.

Table 11. Surgical procedures for patients with DCIS assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N=44		Campus 2 N=38		Campus 3 N=2		Campus 4 N=3		Campus Unknown N=1	
	N	%	N	%	N	%	N	%	N	%
Breast surgery										
Overall	43	97.7	38	100.0	2	100.0	3	100.0	0	0.0
Breast conserving surgery (BCS)*										
Overall	39	88.6	34	89.5	2	100.0	3	100.0	0	0.0
BCS for benign breast lesion	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BCS without SLNB or ALND	25	56.8	22	57.9	2	100.0	1	33.3	0	0.0
BCS with SLNB without ALND	16	36.4	14	36.8	0	0.0	2	66.7	0	0.0
BCS with SLNB and possibly ALND	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mastectomy*										
Overall	7	15.9	7	18.4	0	0.0	0	0.0	0	0.0
Mastectomy without SLNB or ALND	3	6.8	3	7.9	0	0.0	0	0.0	0	0.0
Mastectomy with SLNB without ALND	3	6.8	3	7.9	0	0.0	0	0.0	0	0.0
Mastectomy with SLNB and possibly ALND	1	2.3	1	2.6	0	0.0	0	0.0	0	0.0
First surgery										
BCS	39	88.6	34	89.5	2	100.0	3	100.0	0	0.0
BCS (stricto sensu)	39	88.6	34	89.5	2	100.0	3	100.0	0	0.0
Surgery for benign breast lesions	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Excision biopsy	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Surgery leading to accidental findings	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

	Your Hospital N=44		Campus 2 N=38		Campus 3 N=2		Campus 4 N=3		Campus Unknown N=1	
	N	%	N	%	N	%	N	%	N	%
Mastectomy	4	9.1	4	10.5	0	0.0	0	0.0	0	0.0
Lymph node surgery (separate nomenclature codes)										
SLNB	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ALND	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

*DCIS: ductal carcinoma in situ. BCS: breast conserving surgery. SLNB: sentinel lymph node biopsy. ALND: axillary lymph node dissection. *: note that the subchapter 'Overall' in the chapters 'BCS' and 'Mastectomy' are not the sum of the other subchapters as for some patients more than one type of breast conserving surgery or mastectomy was billed. The subchapter 'Overall' will thus contain as many or less patients than the sum of the other subchapters.*
Results related to the Belgian population can be found in KCE report 365: table 77, page 210.

Table 12. Surgical procedures for patients with invasive breast cancer assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N=552		Campus 1 N=5		Campus 2 N=441		Campus 3 N=3		Campus 4 N=32		Campus Unknown N=71	
	N	%	N	%	N	%	N	%	N	%	N	%
Breast surgery												
Overall	460	83.3	0	0.0	425	96.4	3	100.0	32	100.0	0	0.0
Breast conserving surgery (BCS)*												
Overall	365	66.1	0	0.0	342	77.6	1	33.3	22	68.8	0	0.0
BCS for benign breast lesion	2	0.4	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0
BCS without SLNB or ALND	31	5.6	0	0.0	28	6.3	0	0.0	3	9.4	0	0.0
BCS with SLNB without ALND	295	53.4	0	0.0	278	63.0	0	0.0	17	53.1	0	0.0
BCS with SLNB and possibly ALND	57	10.3	0	0.0	53	12.0	1	33.3	3	9.4	0	0.0
Mastectomy*												
Overall	105	19.0	0	0.0	92	20.9	2	66.7	11	34.4	0	0.0
Mastectomy without SLNB or ALND	12	2.2	0	0.0	10	2.3	0	0.0	2	6.3	0	0.0
Mastectomy with SLNB without ALND	44	8.0	0	0.0	40	9.1	0	0.0	4	12.5	0	0.0
Mastectomy with SLNB and possibly ALND	51	9.2	0	0.0	44	10.0	2	66.7	5	15.6	0	0.0
First surgery												
BCS	365	66.1	0	0.0	342	77.6	1	33.3	22	68.8	0	0.0
BCS (stricto sensu)	363	65.8	0	0.0	340	77.1	1	33.3	22	68.8	0	0.0
Surgery for benign breast lesions	2	0.4	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0
Excision biopsy	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Surgery leading to accidental findings	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

	Your Hospital N=552		Campus 1 N=5		Campus 2 N=441		Campus 3 N=3		Campus 4 N=32		Campus Unknown N=71	
	N	%	N	%	N	%	N	%	N	%	N	%
Mastectomy	95	17.2	0	0.0	83	18.8	2	66.7	10	31.3	0	0.0
Lymph node surgery (separate nomenclature codes)												
SLNB	19	3.4	0	0.0	15	3.4	0	0.0	4	12.5	0	0.0
ALND	11	2.0	0	0.0	10	2.3	0	0.0	0	0.0	1	1.4

*BCS: breast conserving surgery. SLNB: sentinel lymph node biopsy. ALND: axillary lymph node dissection. *: note that the subchapter 'Overall' in the chapters 'BCS' and 'Mastectomy' are not the sum of the other subchapters as for some patients more than one type of breast conserving surgery or mastectomy was billed. The subchapter 'Overall' will thus contain as many or less patients than the sum of the other subchapters.*
Results related to the Belgian population can be found in KCE report 365: table 78, page 212.

Table 13. Radiotherapy for patients with DCIS assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N=44		Campus 2 N=38		Campus 3 N=2		Campus 4 N=3		Campus Unknown N=1	
	N	%	N	%	N	%	N	%	N	%
Radiotherapy										
Overall	34	77.3	29	76.3	2	100.0	3	100.0	0	0.0
Operated patients	43		38		2		3		0	
Before surgery	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Adjuvant	34	79.1	29	76.3	2	100.0	3	100.0	0	0.0
Non-operated patients	1		0		0		0		1	
In non-operated patients	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

DCIS: ductal carcinoma in situ. Percentages of adjuvant radiotherapy and radiotherapy given before surgery are calculated on the total number of operated patients. Percentages 'In non-operated patients' are calculated on the total number of non-operated patients.
Results related to the Belgian population can be found in KCE report 365: table 79, page 214.

Table 14. Radiotherapy for patients with invasive breast cancer assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N=552		Campus 1 N=5		Campus 2 N=441		Campus 3 N=3		Campus 4 N=32		Campus Unknown N=71	
	N	%	N	%	N	%	N	%	N	%	N	%
Radiotherapy												
Overall	438	79.3	0	0.0	377	85.5	3	100.0	28	87.5	30	42.3
Operated patients	460		0		425		3		32		0	
Before surgery	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Adjuvant	405	88.0	0	0.0	374	88.0	3	100.0	28	87.5	0	0.0
Non-operated patients	92		5		16		0		0		71	
In non-operated patients	33	35.9	0	0.0	3	18.8	0	0.0	0	0.0	30	42.3

Percentages of adjuvant radiotherapy and radiotherapy given before surgery are calculated on the total number of operated patients. Percentages 'In non-operated patients' are calculated on the total number of non-operated patients.
Results related to the Belgian population can be found in KCE report 365: table 80, page 214.

Table 15. Systemic treatment for patients with DCIS assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N=44		Campus 2 N=38		Campus 3 N=2		Campus 4 N=3		Campus Unknown N=1	
	N	%	N	%	N	%	N	%	N	%
Targeted therapy										
Overall (anti-HER2 and other)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Operated patients	43		38		2		3		0	
Neo-adjuvant only	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Adjuvant only	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Both neo-adjuvant and adjuvant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Non-operated patients	1		0		0		0		1	
In non-operated patients	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Anti-HER2 only	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Operated patients	43		38		2		3		0	
Neo-adjuvant only	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Adjuvant only	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Both neo-adjuvant and adjuvant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Non-operated patients	1		0		0		0		1	
In non-operated patients	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chemotherapy										
Overall	1	2.3	1	2.6	0	0.0	0	0.0	0	0.0
Operated patients	43		38		2		3		0	
Neo-adjuvant only	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Adjuvant only	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Both neo-adjuvant and adjuvant	1	2.3	1	2.6	0	0.0	0	0.0	0	0.0

	Your Hospital N=44		Campus 2 N=38		Campus 3 N=2		Campus 4 N=3		Campus Unknown N=1	
	N	%	N	%	N	%	N	%	N	%
Non-operated patients	1		0		0		0		1	
In non-operated patients	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Endocrine therapy										
Overall	34	77.3	30	78.9	1	50.0	2	66.7	1	100.0
Operated patients	43		38		2		3		0	
Neo-adjuvant only	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Adjuvant only	33	76.7	30	78.9	1	50.0	2	66.7	0	0.0
Both neo-adjuvant and adjuvant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Non-operated patients	1		0		0		0		1	
In non-operated patients	1	100.0	0	0.0	0	0.0	0	0.0	1	100.0

DCIS: ductal carcinoma in situ. HER2: Human epidermal growth factor receptor 2. Percentages of (neo-)adjuvant treatment are calculated on the total number of operated patients. Percentages 'In non-operated patients' are calculated on the total number of non-operated patients.
Results related to the Belgian population can be found in KCE report 365: table 81, page 215.

Table 16. Systemic treatment for patients with invasive breast cancer assigned to your hospital on the basis of main treatment, at campus level

	Your Hospital N=552		Campus 1 N=5		Campus 2 N=441		Campus 3 N=3		Campus 4 N=32		Campus Unknown N=71	
	N	%	N	%	N	%	N	%	N	%	N	%
Targeted therapy												
Overall (anti-HER2 and other)	95	17.2	3	60.0	77	17.5	1	33.3	5	15.6	9	12.7
Operated patients	460		0		425		3		32		0	
Neo-adjuvant only	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Adjuvant only	50	10.9	0	0.0	49	11.5	1	33.3	0	0.0	0	0.0
Both neo-adjuvant and adjuvant	21	4.6	0	0.0	16	3.8	0	0.0	5	15.6	0	0.0
Non-operated patients	92		5		16		0		0		71	
In non-operated patients	24	26.1	3	60.0	12	75.0	0	0.0	0	0.0	9	12.7
Anti-HER2 only	82	14.9	2	40.0	74	16.8	1	33.3	5	15.6	0	0.0
Operated patients	460		0		425		3		32		0	
Neo-adjuvant only	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Adjuvant only	49	10.7	0	0.0	48	11.3	1	33.3	0	0.0	0	0.0
Both neo-adjuvant and adjuvant	21	4.6	0	0.0	16	3.8	0	0.0	5	15.6	0	0.0
Non-operated patients	92		5		16		0		0		71	
In non-operated patients	12	13.0	2	40.0	10	62.5	0	0.0	0	0.0	0	0.0
Chemotherapy												
Overall	218	39.5	5	100.0	194	44.0	3	100.0	16	50.0	0	0.0
Operated patients	460		0		425		3		32		0	
Neo-adjuvant only	56	12.2	0	0.0	43	10.1	0	0.0	13	40.6	0	0.0
Adjuvant only	139	30.2	0	0.0	133	31.3	3	100.0	3	9.4	0	0.0
Both neo-adjuvant and adjuvant	2	0.4	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0

	Your Hospital N=552		Campus 1 N=5		Campus 2 N=441		Campus 3 N=3		Campus 4 N=32		Campus Unknown N=71	
	N	%	N	%	N	%	N	%	N	%	N	%
Non-operated patients	92		5		16		0		0		71	
In non-operated patients	21	22.8	5	100.0	16	100.0	0	0.0	0	0.0	0	0.0
Endocrine therapy												
Overall	473	85.7	2	40.0	374	84.8	2	66.7	27	84.4	68	95.8
Operated patients	460		0		425		3		32		0	
Neo-adjuvant only	2	0.4	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0
Adjuvant only	390	84.8	0	0.0	363	85.4	2	66.7	25	78.1	0	0.0
Both neo-adjuvant and adjuvant	6	1.3	0	0.0	4	0.9	0	0.0	2	6.3	0	0.0
Non-operated patients	92		5		16		0		0		71	
In non-operated patients	75	81.5	2	40.0	5	31.3	0	0.0	0	0.0	68	95.8

HER2: Human epidermal growth factor receptor 2. Percentages of (neo-)adjuvant treatment are calculated on the total number of operated patients. Percentages 'In non-operated patients' are calculated on the total number of non-operated patients.
Results related to the Belgian population can be found in KCE report 365: table 82, page 217.

3. Process indicator results

3.1. Quality of diagnosis and staging

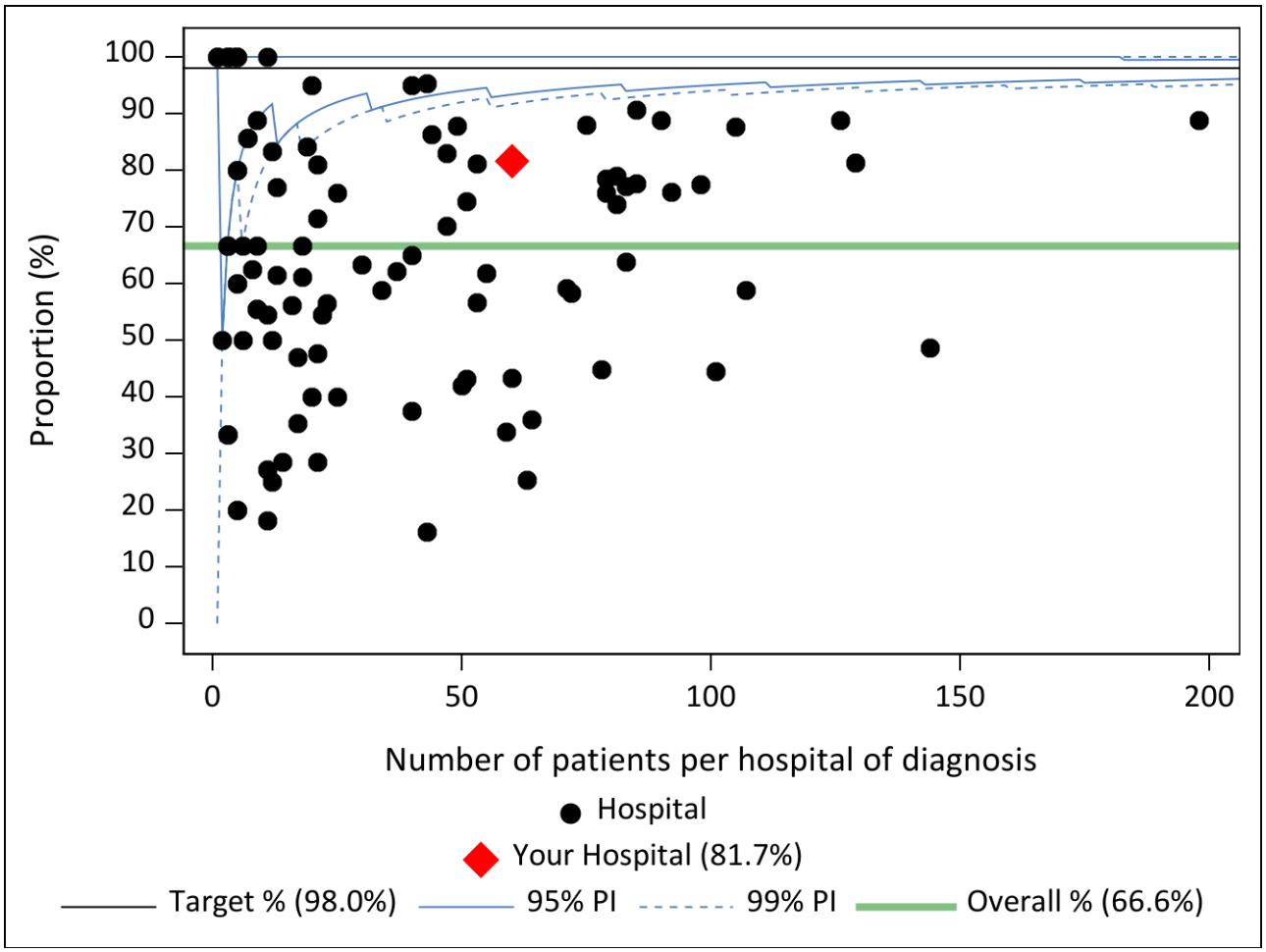
Table 17a. Breast cancer (2014-2018) - Proportion of women with breast cancer for whom a valid cTNM stage is reported to the Belgian Cancer Registry (BCR) in Belgium and your hospital, by hospital of diagnosis.

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 17), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

	DCIS			Invasive BC		
	Denominator (N)	Numerator (n)	QI-result n/N (%)	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium						
Overall	3 973	2 646	66.6	46 035	40 868	88.8
Your hospital						
Overall	60	49	81.7	570	544	95.4

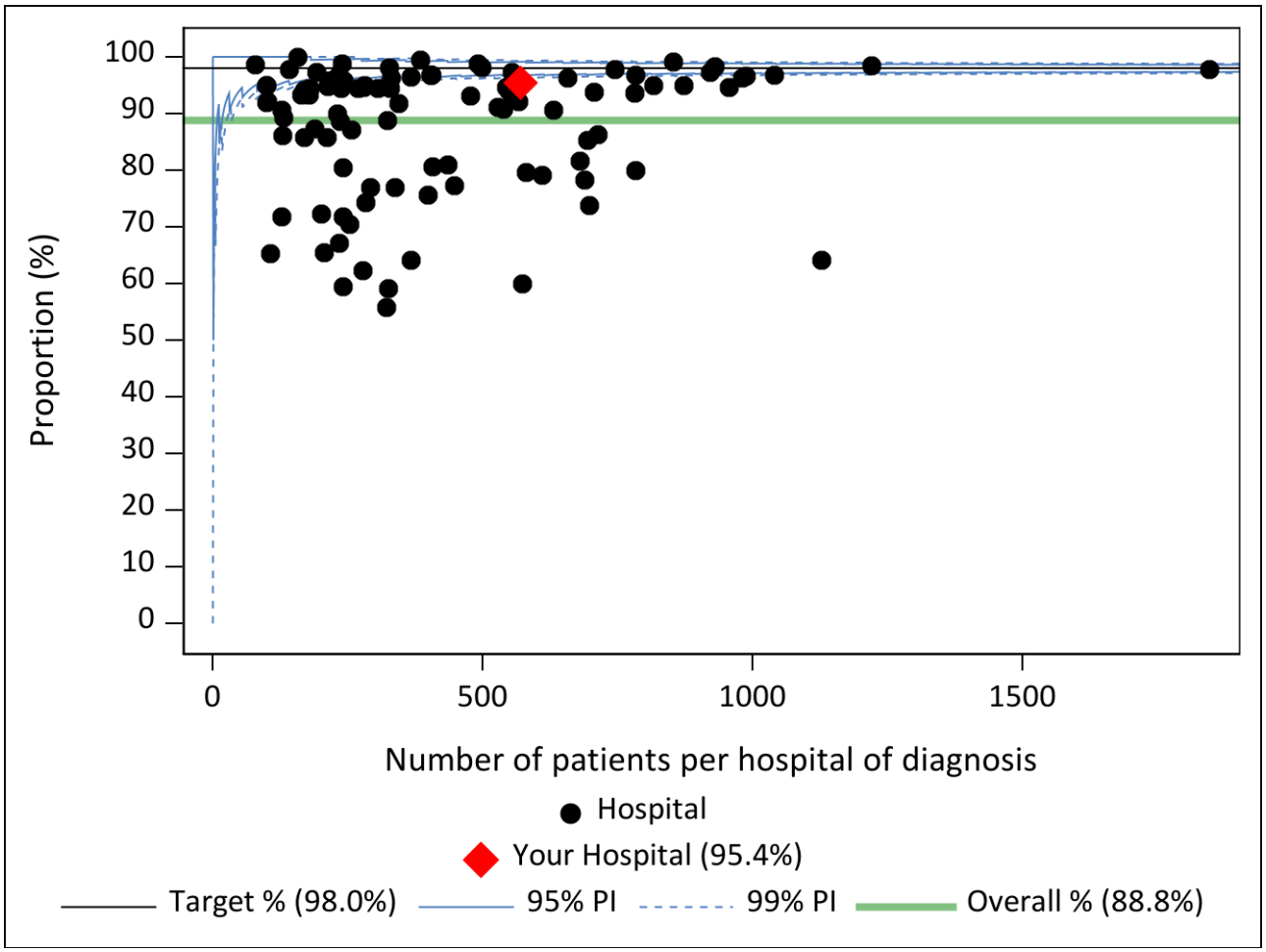
DCIS: ductal carcinoma in situ; BC : breast cancer.

Figure 9: Proportion of women with DCIS for whom a valid cTNM stage is reported to the Belgian Cancer Registry (BCR), by hospital of diagnosis



Note: there were 98 hospitals reported in the funnel plot, with 76/98 below the 99% PI. 27 hospitals had less than ten patients in the denominator. N=138 patients could not be allocated to a hospital and are thus not represented in the funnel plot.

Figure 10: Proportion of women with invasive breast cancer for whom a valid cTNM stage is reported to the Belgian Cancer Registry (BCR), by hospital of diagnosis



Note: there were 100 hospitals reported in the funnel plot, with 72/100 below 99 % PI. There were no hospitals with less than ten patients in the denominator. N=1 859 patients could not be allocated to a hospital and are thus not represented in the funnel plot.

Table 17b. DCIS (2014-2018) - Proportion of women with DCIS who had surgery for whom the (y)pTNM stage is reported to the Belgian Cancer Registry (BCR) in Belgium and your hospital, by campus of main treatment.

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 17), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

Campus characteristics			DCIS		
	Recognition status	Activity period	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium					
Overall			3 809	3 556	93.4
Coordinating breast clinics			2 832	2 663	94.0
Satellite breast clinics			188	174	92.6
Campus not recognised for breast cancer			782	712	91.0
Campus unknown			7	7	100.0
Your hospital					
Overall	-	-	43	41	95.3
Your campus 1	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	0	-	-
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	38	37	97.4
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	2	2	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	3	2	66.7
Campus unknown	-	-	0	-	-

DCIS: ductal carcinoma in situ.

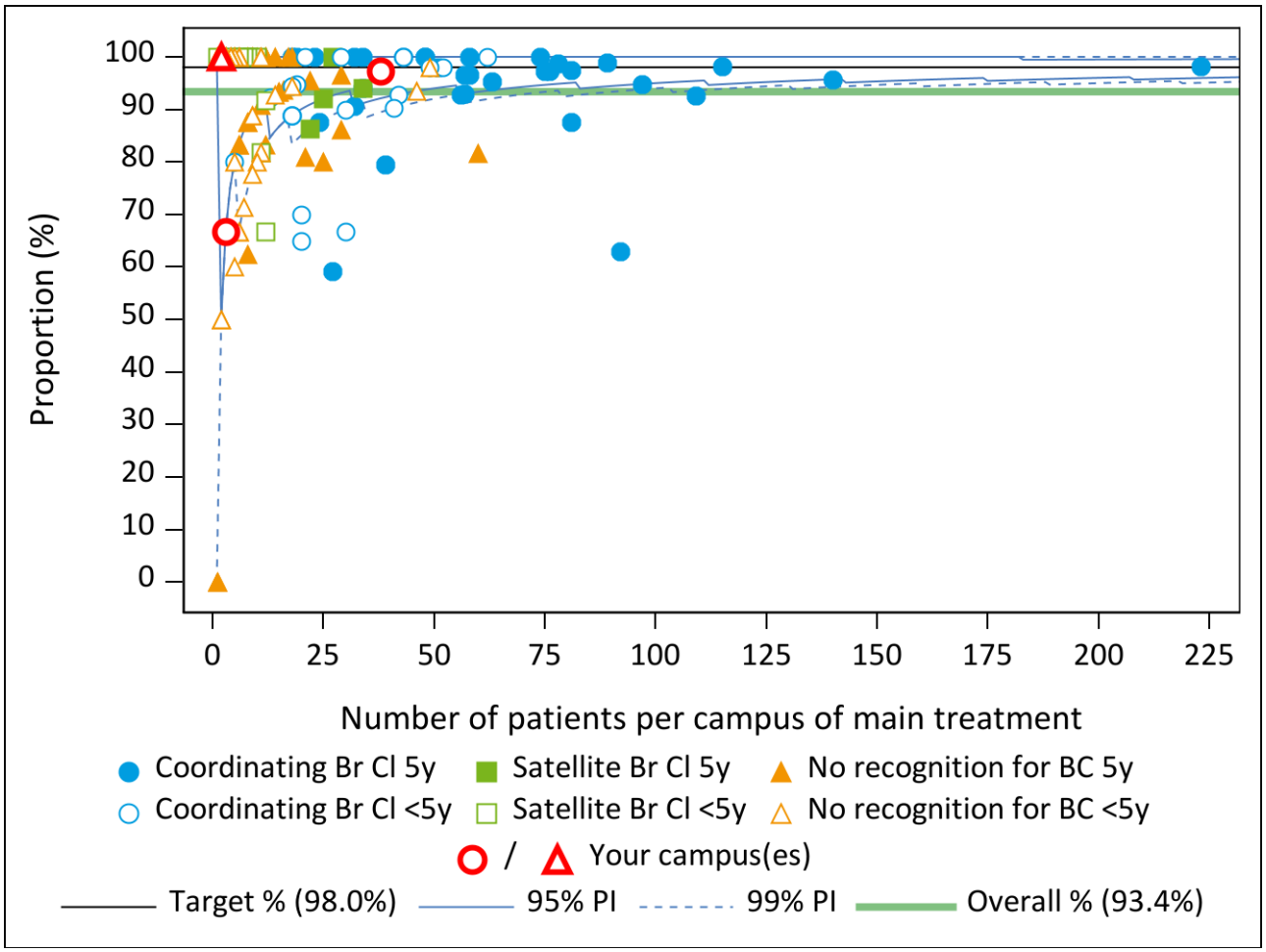
Table 17c. Invasive Breast cancer (2014-2018) - Proportion of women with invasive breast cancer who had surgery for whom the (y)pTNM stage is reported to the Belgian Cancer Registry (BCR) in Belgium and your hospital, by campus of main treatment.

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 17), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

	Campus characteristics		Invasive BC		
	Recognition status	Activity period	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium					
Overall			40 233	38 725	96.3
Coordinating breast clinics			28 383	27 297	96.2
Satellite breast clinics			2 279	2 193	96.2
Campus not recognised for breast cancer			9 511	9 180	96.5
Campus unknown			60	55	91.7
Your hospital					
Overall	-	-	460	444	96.5
Your campus 1	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	0	-	-
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	425	413	97.2
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	3	3	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	32	28	87.5
Campus unknown	-	-	0	-	-

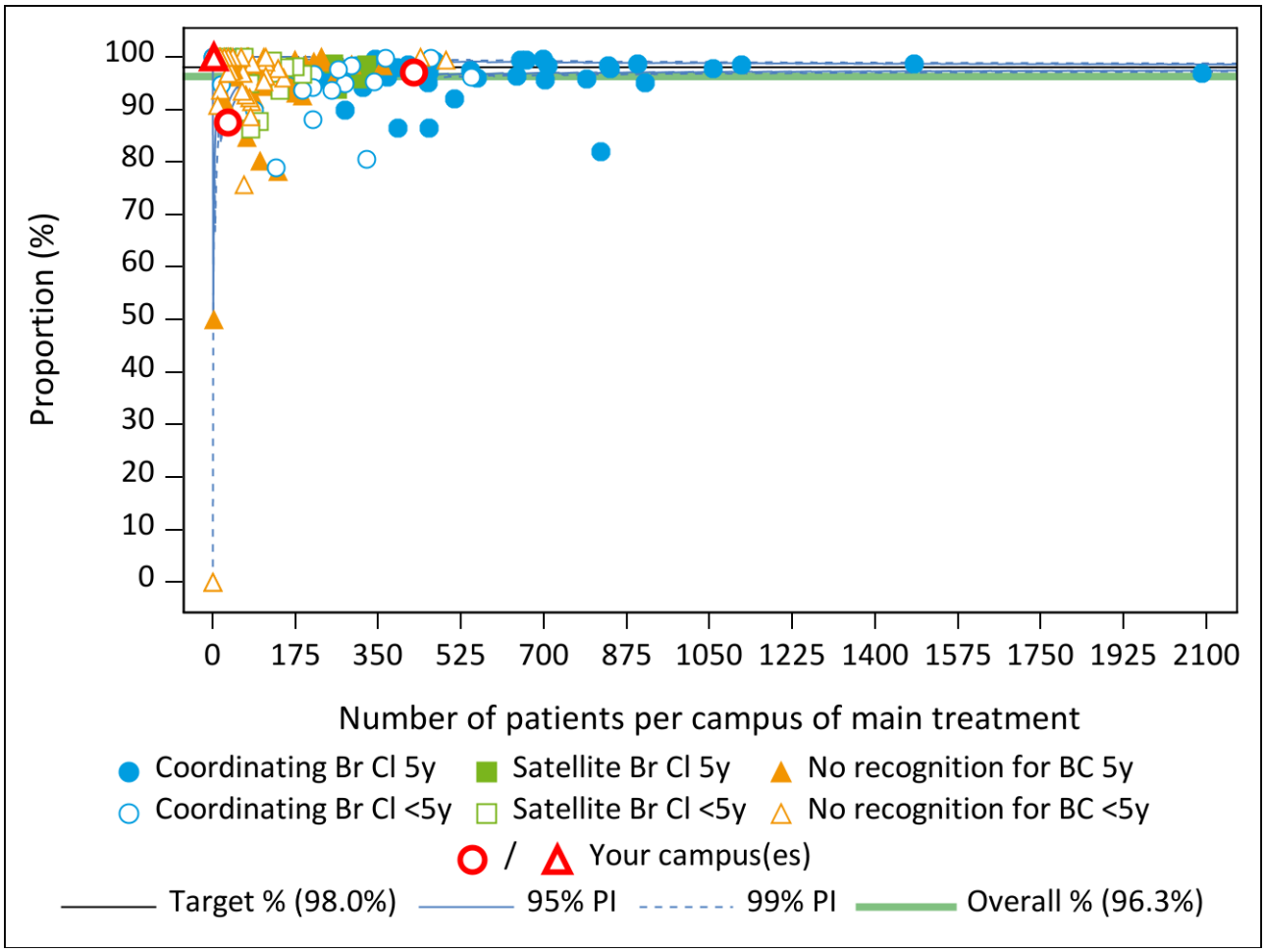
BC : breast cancer.

Figure 11: Proportion of women with DCIS who had surgery, for whom the (y)pTNM stage is reported to the BCR, by campus of main treatment



Note: there were 155 units of analysis reported in the funnel plot, including 65 having less than ten patients in the denominator. 15 out of 155 units were situated below the 99% prediction interval. 7 patients, who could not be assigned to a campus of main treatment, are not represented in the funnel plot.

Figure 12: Proportion of women with <u>invasive breast cancer</u> who had surgery, for whom the (y)pTNM stage is reported to the BCR, by campus of main treatment



Note: there were 175 units of analysis reported in the funnel plot, including 21 units with less than ten patients in denominator. 38 out of 175 units were situated below the 99% prediction interval. 60 patients, who could not be assigned to a campus of main treatment, are not represented in the funnel plot.

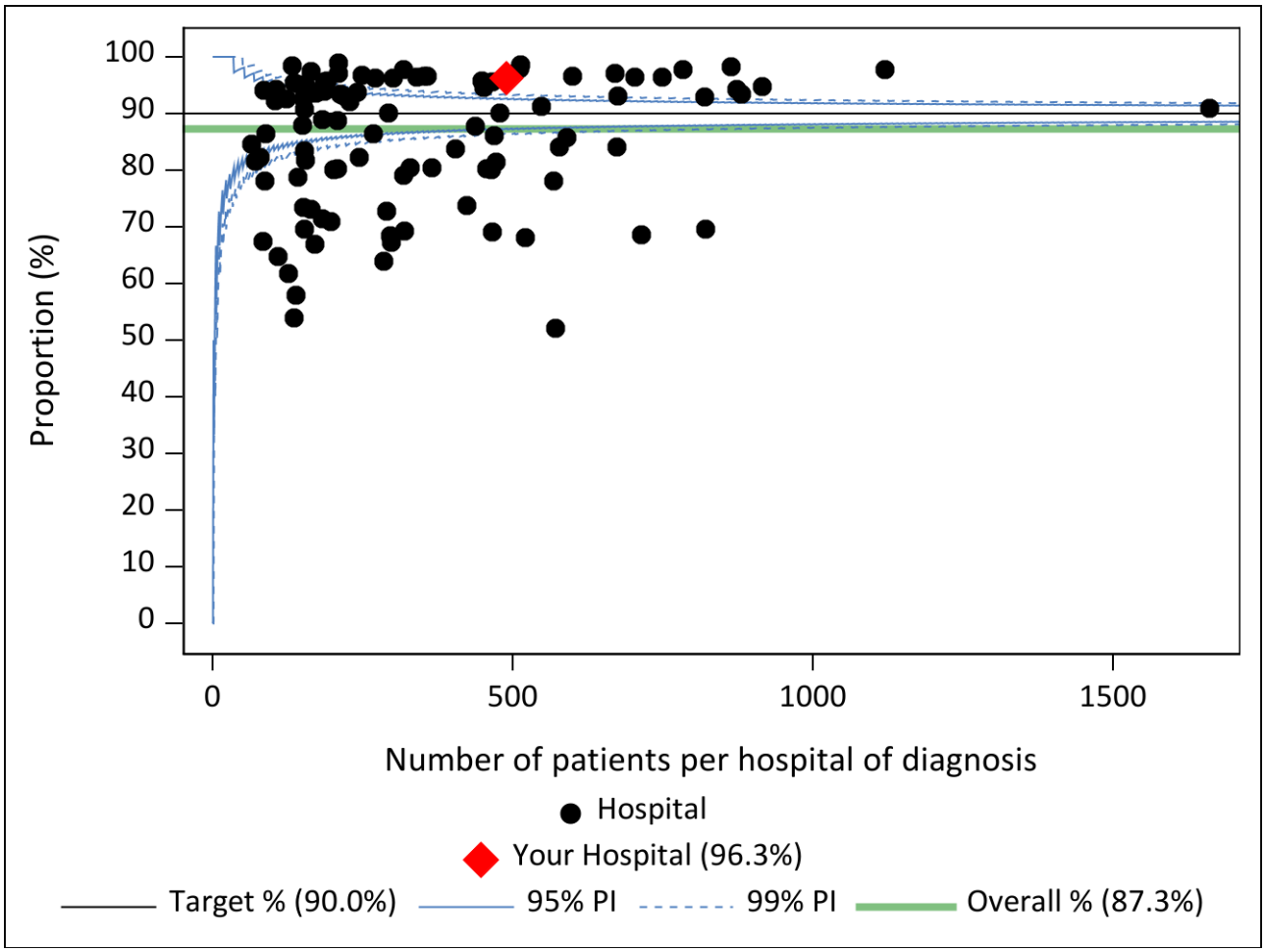
Table 18. Invasive breast cancer (2014-2018) - Proportion of women with invasive breast cancer for whom the time interval between the incidence date and the date of first treatment <= 6 weeks for Belgium and your hospital, by hospital of diagnosis

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 18), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

	Invasive BC		
	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium			
Overall, by hospital of diagnosis	37 574	32 791	87.3
Your hospital			
Overall, by hospital of diagnosis	489	471	96.3

BC : breast cancer.

Figure 13: Proportion of women with invasive breast cancer for whom first treatment was initiated within 6 weeks (42 days) of incidence, by hospital of diagnosis



Note: there were 100 hospitals reported in the funnel plot, none of them having less than ten patients in the denominator. Forty out of hundred hospitals were situated below the 99% prediction interval. 1 354 patients, who could not be assigned to a centre of diagnosis, were not represented in the funnel plot.

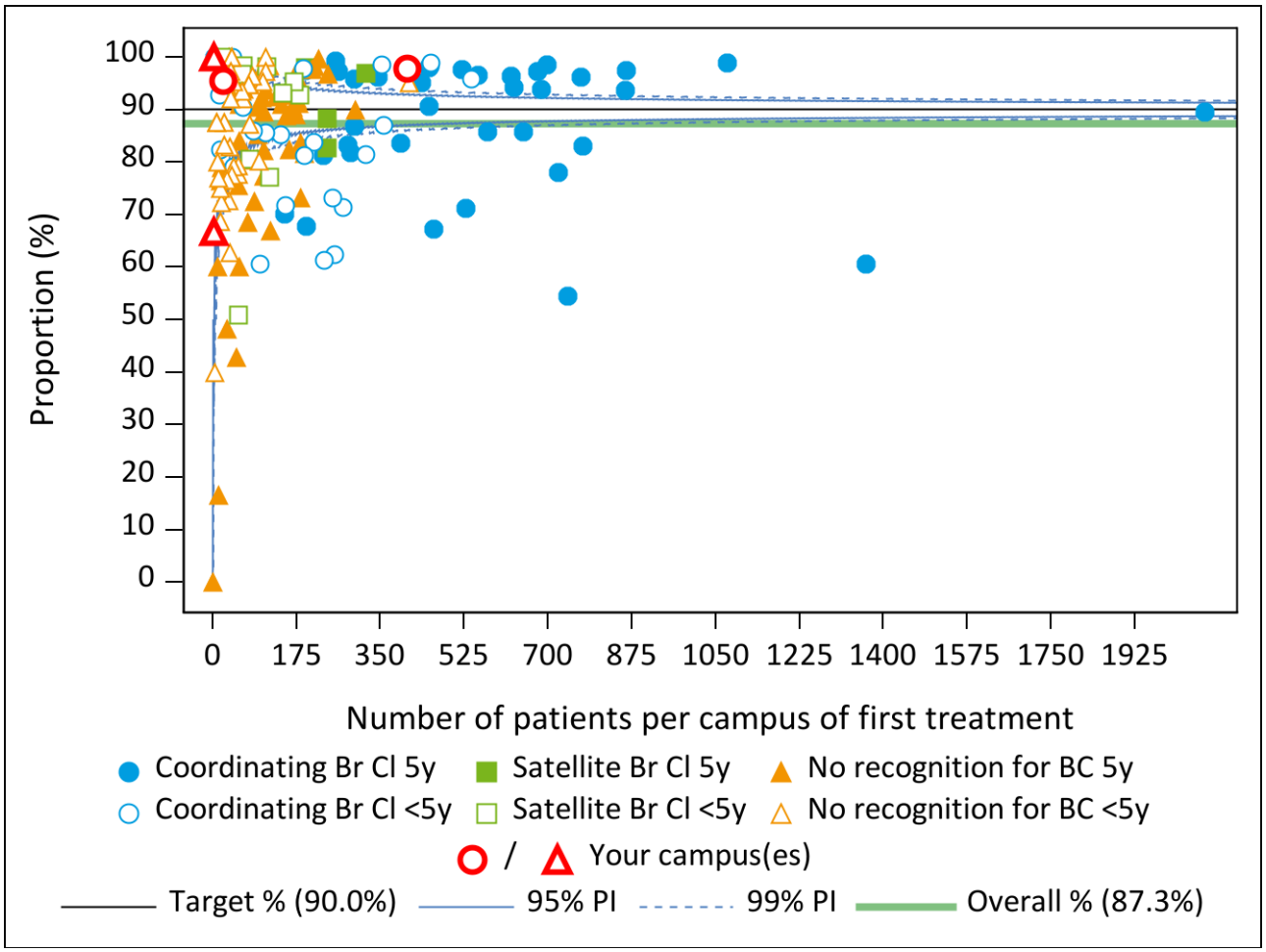
Table 19. Invasive breast cancer (2014-2018) - Proportion of women with invasive breast cancer for whom the time interval between the incidence date and the date of first treatment <= 6 weeks for Belgium and your hospital, by campus of first treatment.

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 18), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

	Campus characteristics		Invasive BC		
	Recognition status	Activity period	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium					
Overall			37 574	32 791	87.3
Coordinating breast clinics			25 692	22 386	87.1
Satellite breast clinics			1 994	1 807	90.6
Campus not recognised for breast cancer			8 171	7 295	89.3
Campus unknown			1 717	1 303	75.9
Your hospital					
Overall	-	-	457	441	96.5
Your campus 1	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	3	2	66.7
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	407	398	97.8
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	3	3	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	22	21	95.5
Campus unknown	-	-	22	17	77.3

BC : breast cancer.

Figure 14: Proportion of women with invasive breast cancer for whom first treatment was initiated within 6 weeks (42 days) of incidence, by campus of first treatment



Note: there were 178 units of analysis reported in the funnel plot, 19 of them having less than ten patients in the denominator. 43 out of 178 units were situated below the 99% prediction interval. 1 717 patients, who could not be assigned to a campus of first treatment, were not represented in the funnel plot.

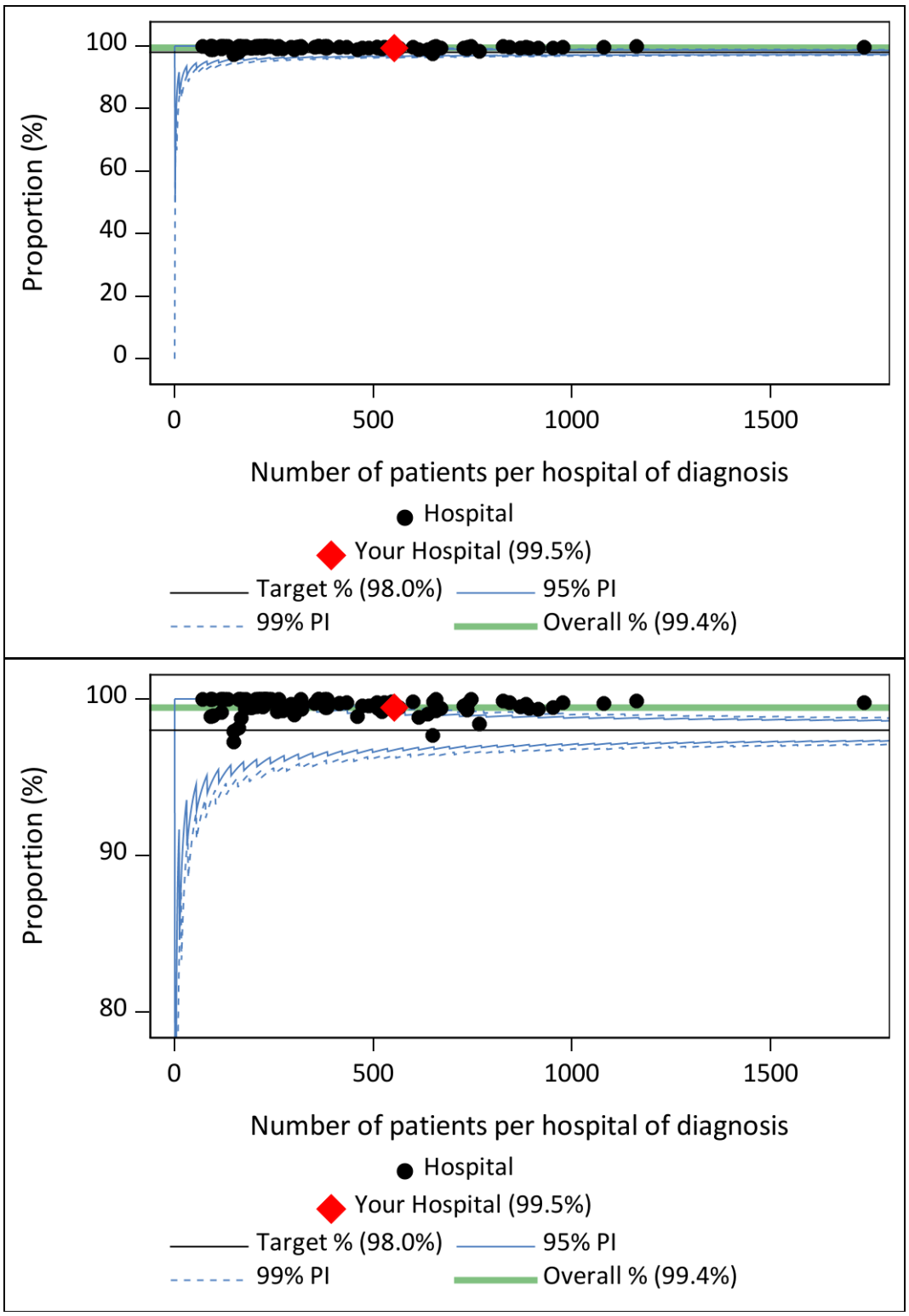
Table 20. Invasive breast cancer (2014-2018) - Proportion of women with invasive breast cancer in whom HER2 status and/or oestrogen receptor (ER) and/or progesterone receptor (PR) status were assessed before any systemic treatment for Belgium and your hospital, by hospital of diagnosis

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 15), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

	Invasive BC		
	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium			
Overall, by hospital of diagnosis	43 252	43 012	99.4
Your hospital			
Overall, by hospital of diagnosis	553	550	99.5

BC : breast cancer.

Figure 15: Proportion of women with <u>invasive breast cancer</u> treated with systemic therapy in whom HER2 status and/or ER and/or PR status was assessed before any systemic treatment (top) and zoom on the highest proportions (bottom), by hospital of diagnosis



Note: there were 100 hospitals reported in the funnel plot, none of them having less than ten patients in denominator. No hospital was situated below the 99% prediction interval, while 38 were situated above the 99% prediction interval. 1 599 patients, who could not be assigned to a centre of diagnosis, were not represented in the funnel plot.

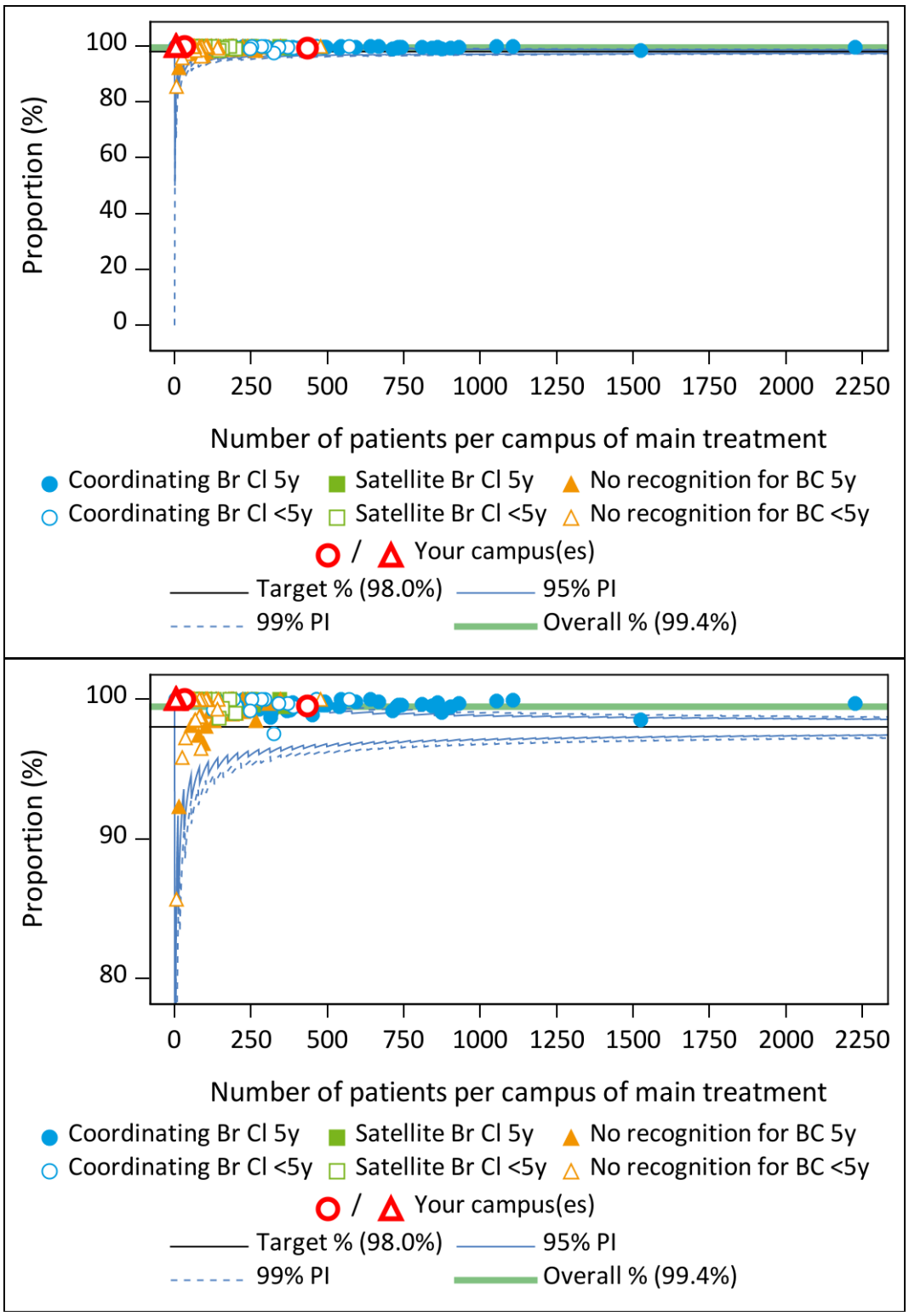
Table 21. Invasive breast cancer (2014-2018) - Proportion of women with invasive breast cancer in whom HER2 status and/or oestrogen receptor (ER) and/or progesterone receptor (PR) status were assessed before any systemic treatment for Belgium and your hospital, by campus of main treatment

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 15), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

	Campus characteristics		Invasive BC		
	Recognition status	Activity period	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium					
Overall			43 252	43 012	99.4
Coordinating breast clinics			29 106	28 974	99.5
Satellite breast clinics			2 371	2 363	99.7
Campus not recognised for breast cancer			9 761	9 719	99.6
Campus unknown			2 014	1 956	97.1
Your hospital					
Overall	-	-	543	540	99.4
Your campus 1	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	5	5	100.0
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	435	433	99.5
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	3	3	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	32	32	100.0
Campus unknown	-	-	68	67	98.5

BC : breast cancer.

Figure 16: Proportion of women with <u>invasive breast cancer</u> treated with systemic therapy in whom HER2 status and/or ER and/or PR status was assessed before any systemic treatment (top) and zoom on the highest proportions (bottom), by campus of main treatment



Note: there were 180 units of analysis reported in the funnel plot, 24 of them having less than ten patients in denominator. No unit was situated below the 99% prediction interval, while 30 were situated above the 99% prediction interval. 2 014 patients, who could not be assigned to a campus of first treatment, were not represented in the funnel plot.

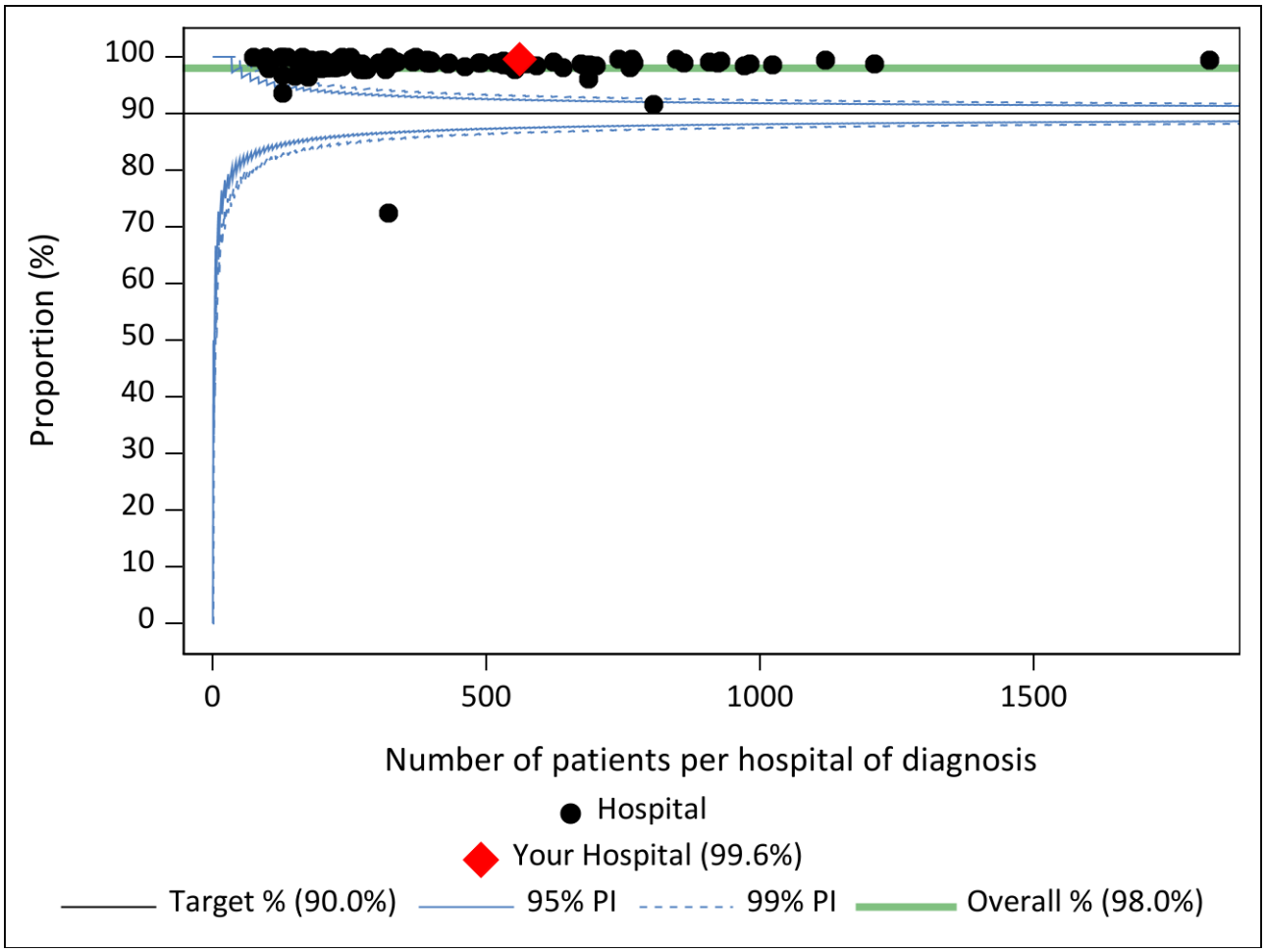
Table 22. Invasive breast cancer (2014-2018) - Proportion of women with invasive breast cancer with histological or cytological assessment before any treatment for Belgium and your hospital, by hospital of diagnosis

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 14), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

	Invasive BC		
	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium			
Overall, by hospital of diagnosis	45 094	44 186	98.0
Your hospital			
Overall, by hospital of diagnosis	560	558	99.6

BC : breast cancer.

Figure 17: Proportion of women with invasive breast cancer with histological or cytological assessment before any treatment, by hospital of diagnosis



Note: there were 100 hospitals reported in the funnel plot. One out of hundred hospitals were situated below the 99% prediction interval, while 97 were situated above the 99% prediction interval. 1 719 patients, who could not be assigned to a centre of diagnosis, were not represented in the funnel plot.

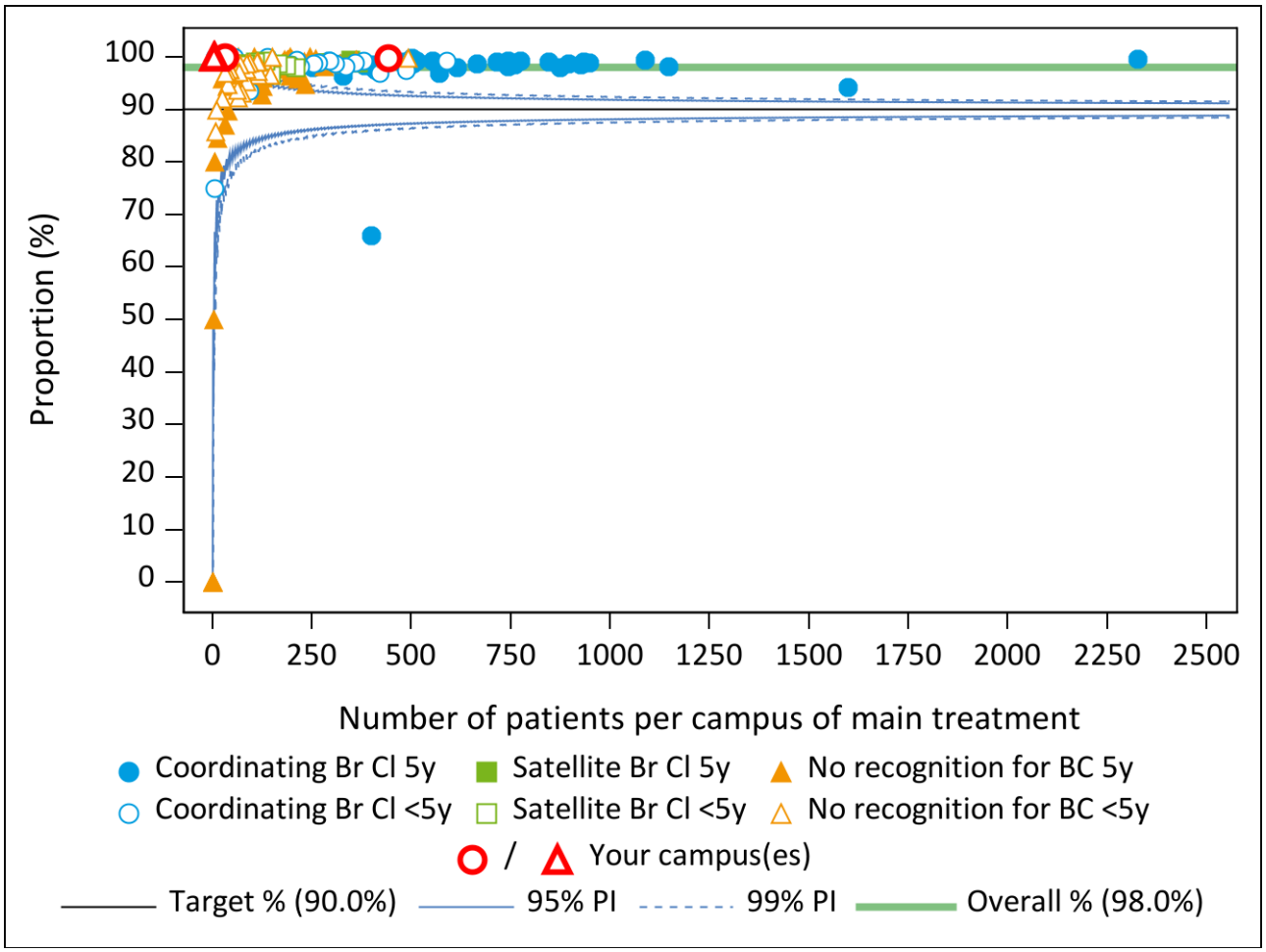
Table 23. Invasive breast cancer (2014-2018) - Proportion of women with invasive breast cancer with histological or cytological assessment before any treatment for Belgium and your hospital, by campus of main treatment

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 14), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

	Campus characteristics		Invasive BC		
	Recognition status	Activity period	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium					
Overall			45 094	44 186	98.0
Coordinating breast clinics			30 332	29 752	98.1
Satellite breast clinics			2 453	2 422	98.7
Campus not recognised for breast cancer			10 229	10 015	97.9
Campus unknown			2 080	1 997	96.0
Your hospital					
Overall	-	-	552	550	99.6
Your campus 1	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	5	5	100.0
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	441	440	99.8
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	3	3	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	32	32	100.0
Campus unknown	-	-	71	70	98.6

BC : breast cancer.

Figure 18: Proportion of women with <u>invasive breast cancer</u> with histological or cytological assessment before any treatment, by campus of main treatment



Note: there were 182 units of analysis reported in the funnel plot, 25 of them having less than ten patients in denominator. One unit was situated below the 99% prediction interval, while 108 were situated above the 99% prediction interval. 2 080 patients, who could not be assigned to a campus of first treatment, were not represented in the funnel plot.

Table 24. Invasive breast cancer (2014-2018) - Proportion of women with invasive breast cancer who received mammography and breast sonography before any treatment for Belgium and your hospital, by campus of first treatment.

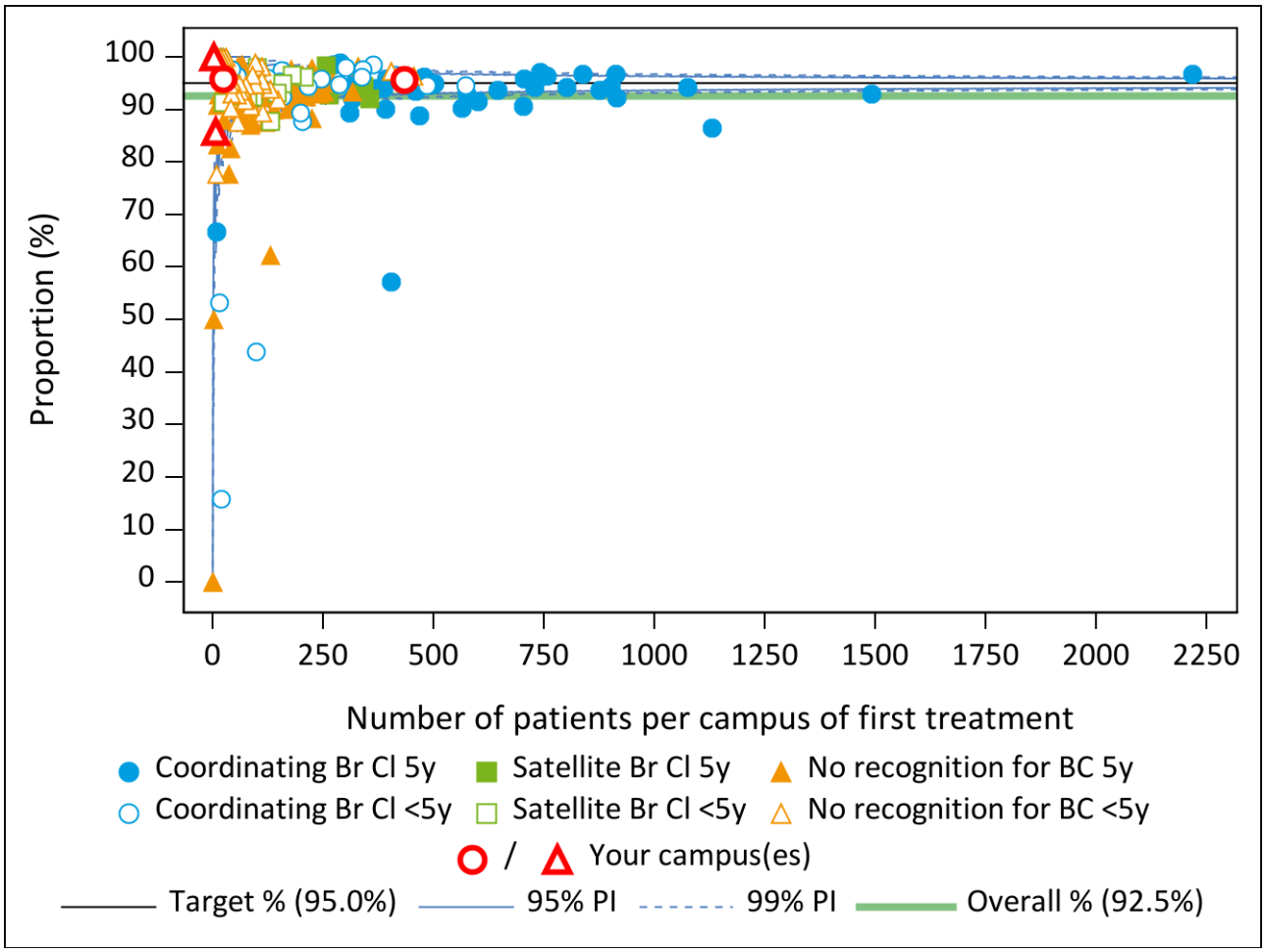
Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 13), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

Limitations due to the billing rules for ultrasound are clearly mentioned in KCE report 365, on page 61.

	Campus characteristics		Invasive BC		
	Recognition status	Activity period	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium					
Overall			45 094	41 727	92.5
Coordinating breast clinics			29 235	27 329	93.5
Satellite breast clinics			2 402	2 262	94.2
Campus not recognised for breast cancer			10 153	9 477	93.3
Campus unknown			3 304	2 659	80.5
Your hospital					
Overall	-	-	516	485	94.0
Your campus 1	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	7	6	85.7
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	434	415	95.6
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	3	3	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	24	23	95.8
Campus unknown	-	-	48	38	79.2

BC : breast cancer.

Figure 19: Proportion of women with <u>invasive breast cancer</u> with mammography and breast sonography before any treatment, by campus of first treatment



Note: there were 184 units of analysis presented in the funnel plot, of which 20 had less than 10 patients in the denominator. An open plot symbol is used when the recognition status or the number of beds changed during the 5-year study period. 3 304 patients for whom the campus could not be identified, are not represented in the funnel plot.

3.2. Quality of treatment

3.2.1 Quality of surgery

Table 25. DCIS (2014-2018) - Proportion of women with DCIS who receive just one operation (excluding reconstruction) for Belgium and your campus, by campus of first surgery.

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 21), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

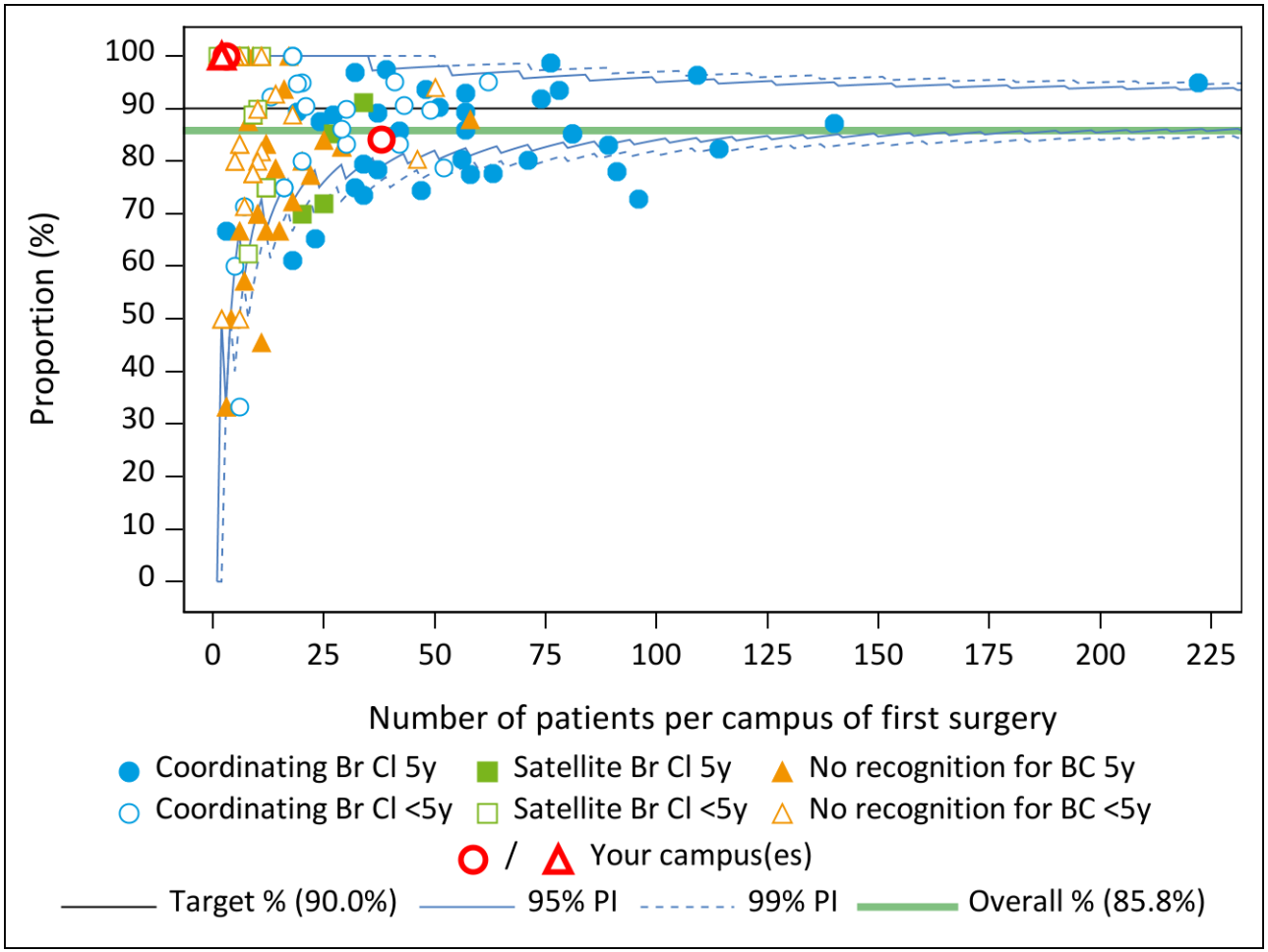
Campus characteristics		DCIS				
Recognition status	Activity period	Denominator (N)	Type of surgery		Numerator (n)	QI-result n/N (%)
			Mastectomy (N)	BCS (N)		
Belgium						
Taking both BCS and mastectomy together						
Overall		3 779	816	2 963	3 242	85.8
Coordinating breast clinics		2 817	629	2 188	2 434	86.4
Satellite breast clinics		185	43	142	154	83.2
Campus not recognised for breast cancer		772	142	630	651	84.3
Campus unknown		5	2	3	3	60.0
When first surgery is BCS						
Overall		2 963	-	2 963	2 452	82.8
Coordinating breast clinics		2 188	-	2 188	1 827	83.5

Campus characteristics			DCIS				
	Recognition status	Activity period	Denominator (N)	Type of surgery		Numerator (n)	QI-result n/N (%)
				Mastectomy (N)	BCS (N)		
Satellite breast clinics			142	-	142	112	78.9
Campus not recognised for breast cancer			630	-	630	512	81.3
Campus unknown			3	-	3	1	33.3
When first surgery is mastectomy							
Overall			816	816	-	790	96.8
Coordinating breast clinics			629	629	-	607	96.5
Satellite breast clinics			43	43	-	42	97.7
Campus not recognised for breast cancer			142	142	-	139	97.9
Campus unknown			2	2	-	2	100.0
Your hospital							
Taking both BCS and mastectomy together							
Overall	-	-	43	4	39	37	86.0
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	38	4	34	32	84.2
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	2	0	2	2	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	3	0	3	3	100.0
When first surgery is BCS							
Overall	-	-	39	-	39	33	84.6
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	34	-	34	28	82.4

Campus characteristics			DCIS				
	Recognition status	Activity period	Denominator (N)	Type of surgery		Numerator (n)	QI-result n/N (%)
				Mastectomy (N)	BCS (N)		
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	2	-	2	2	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	3	-	3	3	100.0
When first surgery is mastectomy							
Overall	-	-	4	4	-	4	100.0
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	4	4	-	4	100.0
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	0	0	-	-	-
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	0	0	-	-	-

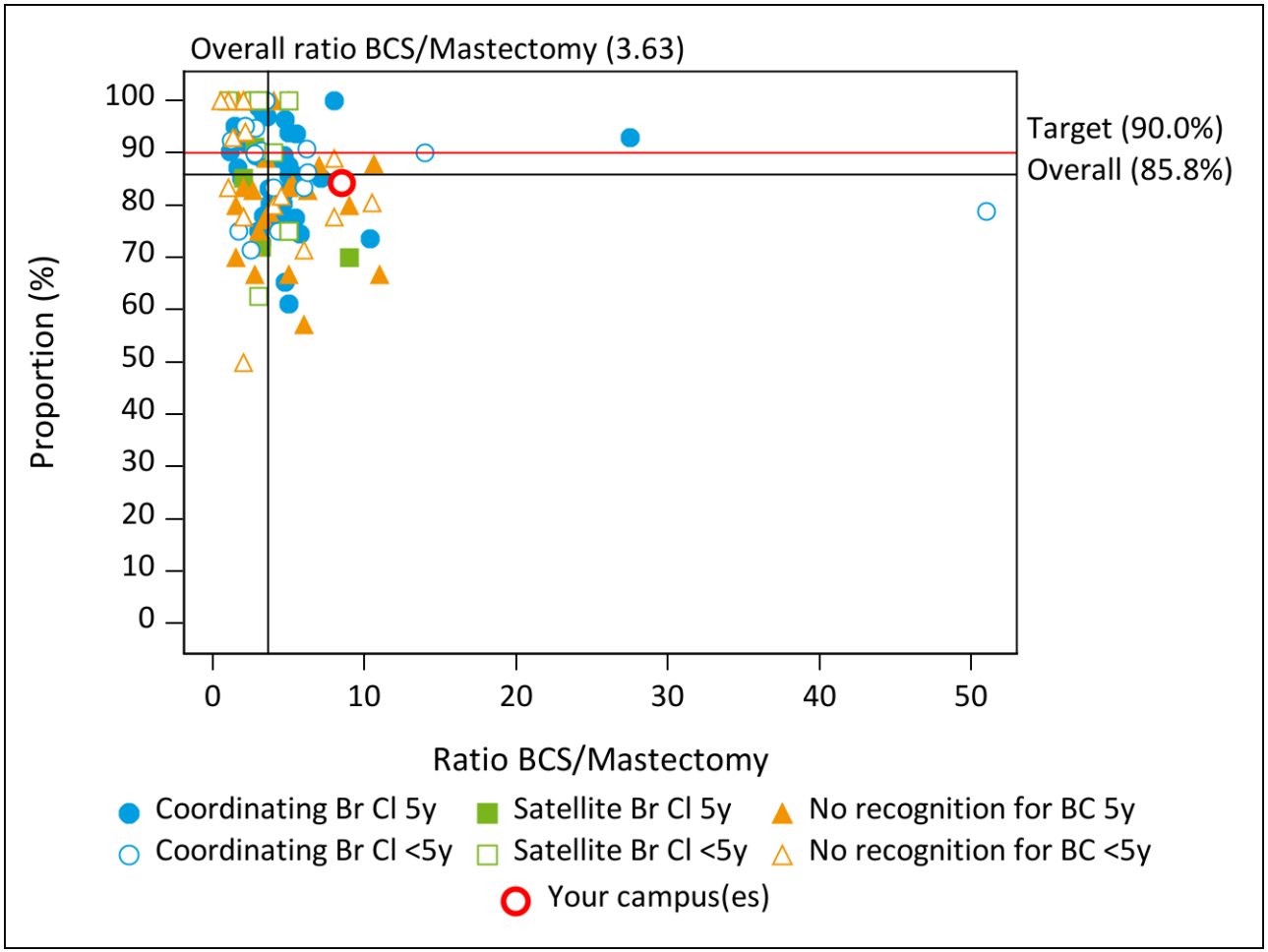
DCIS: ductal carcinoma in situ.

Figure 20: Proportion of women with DCIS who received just one operation (excluding reconstruction), by campus of first surgery



DCIS: ductal carcinoma in situ; 155 units of analysis presented in the funnel plot, of which 65 units had less than ten patients in the denominator. Nine units were situated below the 99% prediction interval, while two were situated above that interval. An open plot symbol is used when the recognition status or the number of beds changed during the five-year study period. Five patients for whom the campus could not be identified, are not represented in the funnel plot.

Figure 21: Proportion of women with DCIS who received just one operation (excluding reconstruction) versus the ratio BCS/mastectomy, by campus of first surgery



DCIS: ductal carcinoma in situ. There are 112 units of analysis reported in the graph: 53 coordinating breast clinics (active for 5 years: 36, active less than 5 years: 17), 12 satellite breast clinics (active for 5 years: 4, active less than 5 years: 8), 47 campuses without recognition for BC (active for 5 years: 31, active less than 5 years: 16). This graph presents 43 units of analysis (218 patients) less than the funnel plot because in these units there were either no BCS or no mastectomies performed, making the calculation of a ratio impossible. An open plot symbol is used when the recognition status or the number of beds changed during the five-year study period. Five patients for whom the campus could not be identified, are not represented in the graph. The quadrants are defined by the overall QI result and the overall ratio BCS/mastectomy.

Table 26. Invasive breast cancer (2014-2018) - Proportion of patients with invasive breast cancer (M0) who received a single (breast) operation for the primary tumour (excluding reconstruction) for Belgium and your campus, by campus of first surgery.

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 22), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

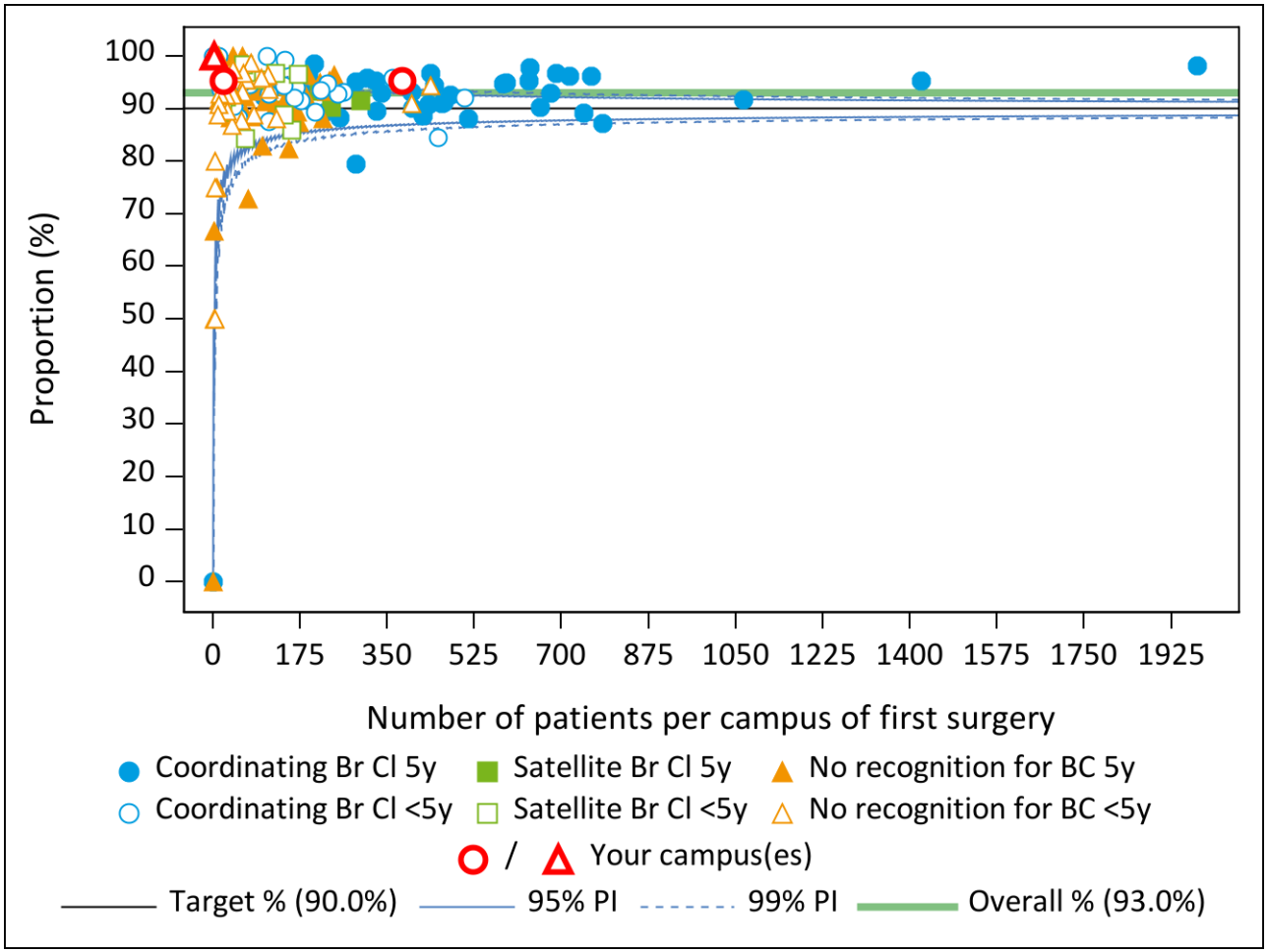
Campus characteristics		Invasive BC				
Recognition status	Activity period	Denominator (N)	Type of surgery		Numerator (n)	QI-result n/N (%)
			Mastectomy (N)	BCS (N)		
Belgium						
Taking both BCS and mastectomy together						
Overall		33 015	10 063	22 952	30 696	93.0
Coordinating breast clinics		23 696	7 401	16 295	22 097	93.3
Satellite breast clinics		1 817	441	1 376	1 671	92.0
Campus not recognised for breast cancer		7 460	2 211	5 249	6 905	92.6
Campus unknown		42	10	32	23	54.8
When first surgery is BCS						
Overall		22 952	-	22 952	20 815	90.7
Coordinating breast clinics		16 295	-	16 295	14 826	91.0
Satellite breast clinics		1 376	-	1 376	1 241	90.2

Campus characteristics			Invasive BC				
	Recognition status	Activity period	Denominator (N)	Type of surgery		Numerator (n)	QI-result n/N (%)
				Mastectomy (N)	BCS (N)		
Campus not recognised for breast cancer			5 249	-	5 249	4 733	90.2
Campus unknown			32	-	32	15	46.9
When first surgery is mastectomy							
Overall			10 063	10 063	-	9 881	98.2
Coordinating breast clinics			7 401	7 401	-	7 271	98.2
Satellite breast clinics			441	441	-	430	97.5
Campus not recognised for breast cancer			2 211	2 211	-	2 172	98.2
Campus unknown			10	10	-	8	80.0
Your hospital							
Taking both BCS and mastectomy together							
Overall	-	-	403	80	323	384	95.3
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	380	73	307	362	95.3
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	2	1	1	2	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	21	6	15	20	95.2
When first surgery is BCS							
Overall	-	-	323	-	323	304	94.1
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	307	-	307	289	94.1
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	1	-	1	1	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	15	-	15	14	93.3

Campus characteristics			Invasive BC				
	Recognition status	Activity period	Denominator (N)	Type of surgery		Numerator (n)	QI-result n/N (%)
				Mastectomy (N)	BCS (N)		
When first surgery is mastectomy							
Overall	-	-	80	80	-	80	100.0
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	73	73	-	73	100.0
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	1	1	-	1	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	6	6	-	6	100.0

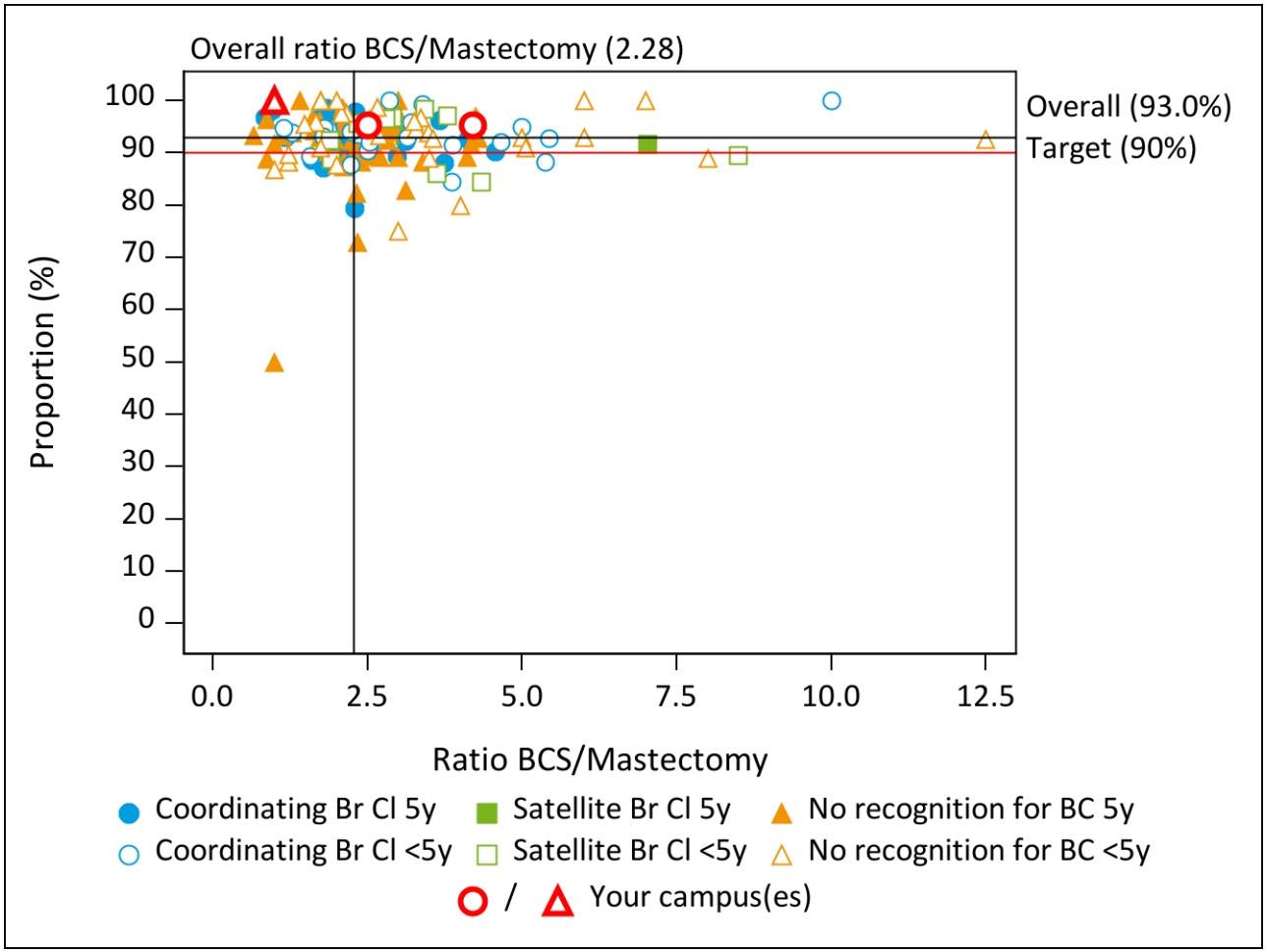
BC : breast cancer.

Figure 22: Proportion of women with <u>invasive breast cancer</u> who received just one operation (excluding reconstruction), by campus of first surgery



Note: there were 167 units of analysis reported in the funnel plot, of which twenty units had less than ten patients in the denominator. Four units were situated below the 99% prediction interval, while 28 were situated above that interval. An open plot symbol is used when the recognition status or the number of beds changed during the five-year study period. 42 patients for whom the campus could not be identified, are not represented in the funnel plot.

Figure 23: Proportion of women with <u>invasive breast cancer</u> who received just one operation (excluding reconstruction) versus the ratio BCS/mastectomy, by campus of first surgery



Note: there are 155 units of analysis reported in the graph: 60 coordinating breast clinics (active for 5 years: 36, active less than 5 years: 24), 14 satellite breast clinics (active for 5 years: 4, active less than 5 years: 10), 81 campuses without recognition for BC (active for 5 years: 51, active less than 5 years: 30). This graph present twelve units (21 patients) less than the funnel plot because in these units there were either no BCS or no mastectomies performed, making the calculation of a ratio impossible. An open plot symbol is used when the recognition status or the number of beds changed during the five-year study period. 42 patients for whom the campus could not be identified, are not represented in the funnel plot.

3.2.2 Quality of radiotherapy

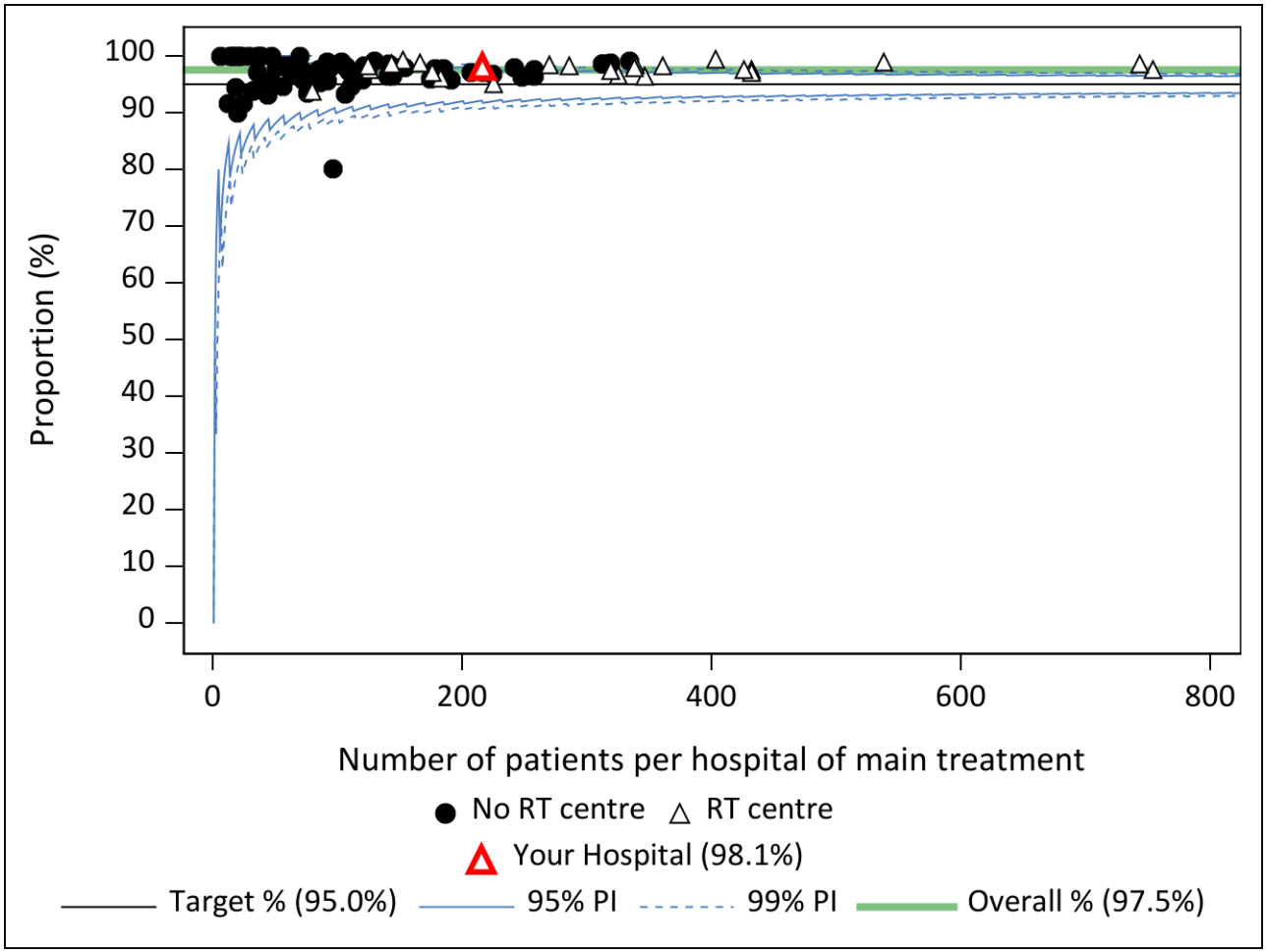
Table 27. Invasive breast cancer (2014-2018) - Proportion of women <70 years old with invasive breast cancer (M0) who started radiotherapy within 9 months after breast conserving surgery for Belgium and your hospital, by hospital of main treatment.

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 23), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

	Invasive, non-metastatic BC		
	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium			
Overall	15 670	15 283	97.5
Your hospital			
Overall	216	212	98.1

BC : breast cancer.

Figure 24: Proportion of women <70 years old with <u>invasive breast cancer (M0)</u> who started radiation therapy within 9 months after breast conserving surgery, by hospital of main treatment



Note: there were 98 hospitals reported in the funnel plot, one of them having less than ten patients in the denominator. 1 out of 100 hospitals was situated below the 99% prediction interval, while sixteen were situated above the 99% prediction interval. 25 hospitals are recognised as RT centre.

3.3. Descriptive indicators

Table 28. Breast cancer (2014-2018) - Proportion of women with breast cancer discussed during a multidisciplinary team (MDT) meeting for Belgium and your hospital, by hospital of diagnosis.

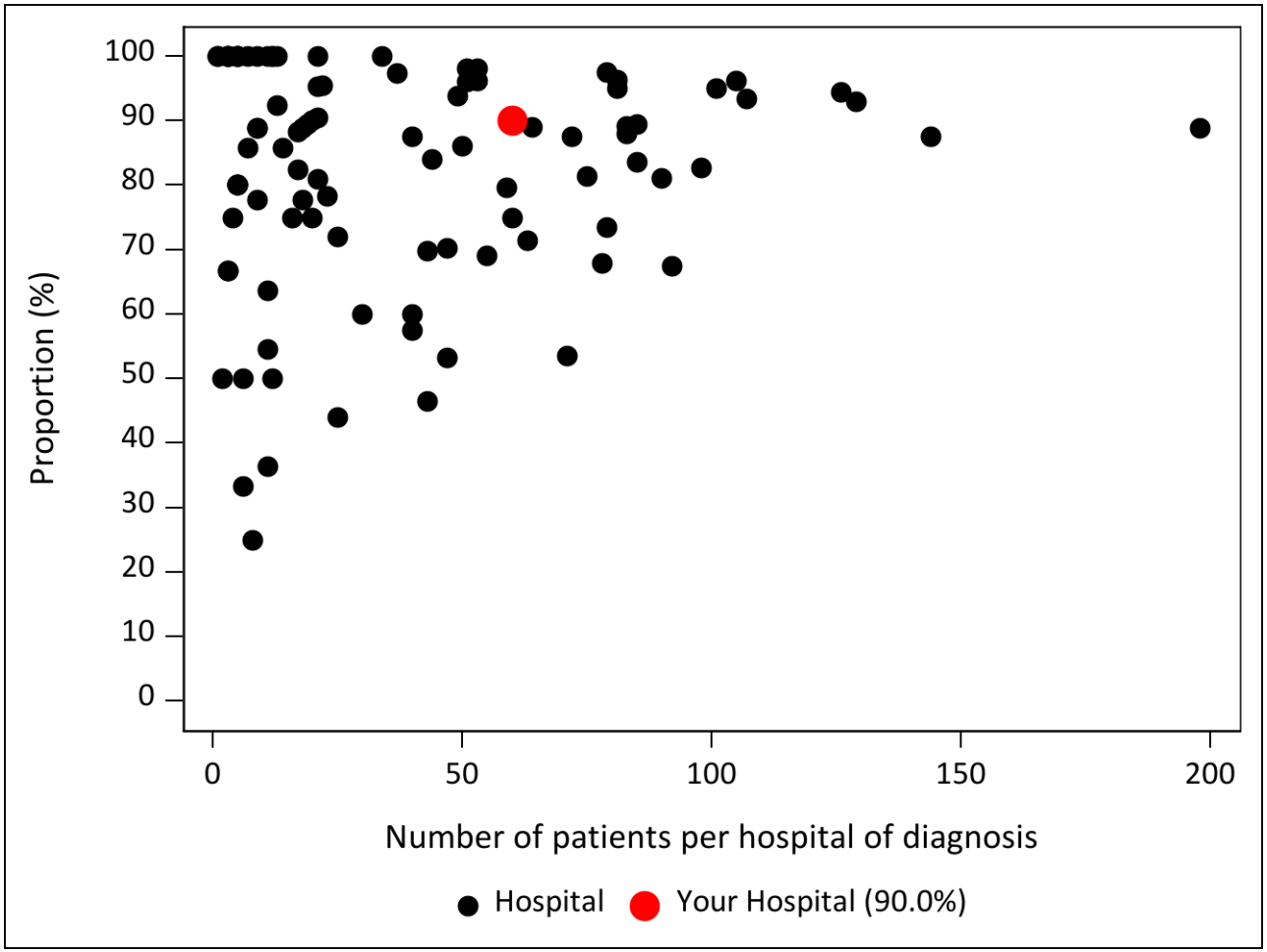
Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 16), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

Limitations due to billing rules for MDTs are clearly mentioned in KCE report 365, on page 61.

	DCIS			Invasive BC		
	Denominator (N)	Numerator (n)	QI-result n/N (%)	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium						
Overall	3 973	3 320	83.6	46 035	41 480	90.1
Your hospital						
Overall	60	54	90.0	570	550	96.5

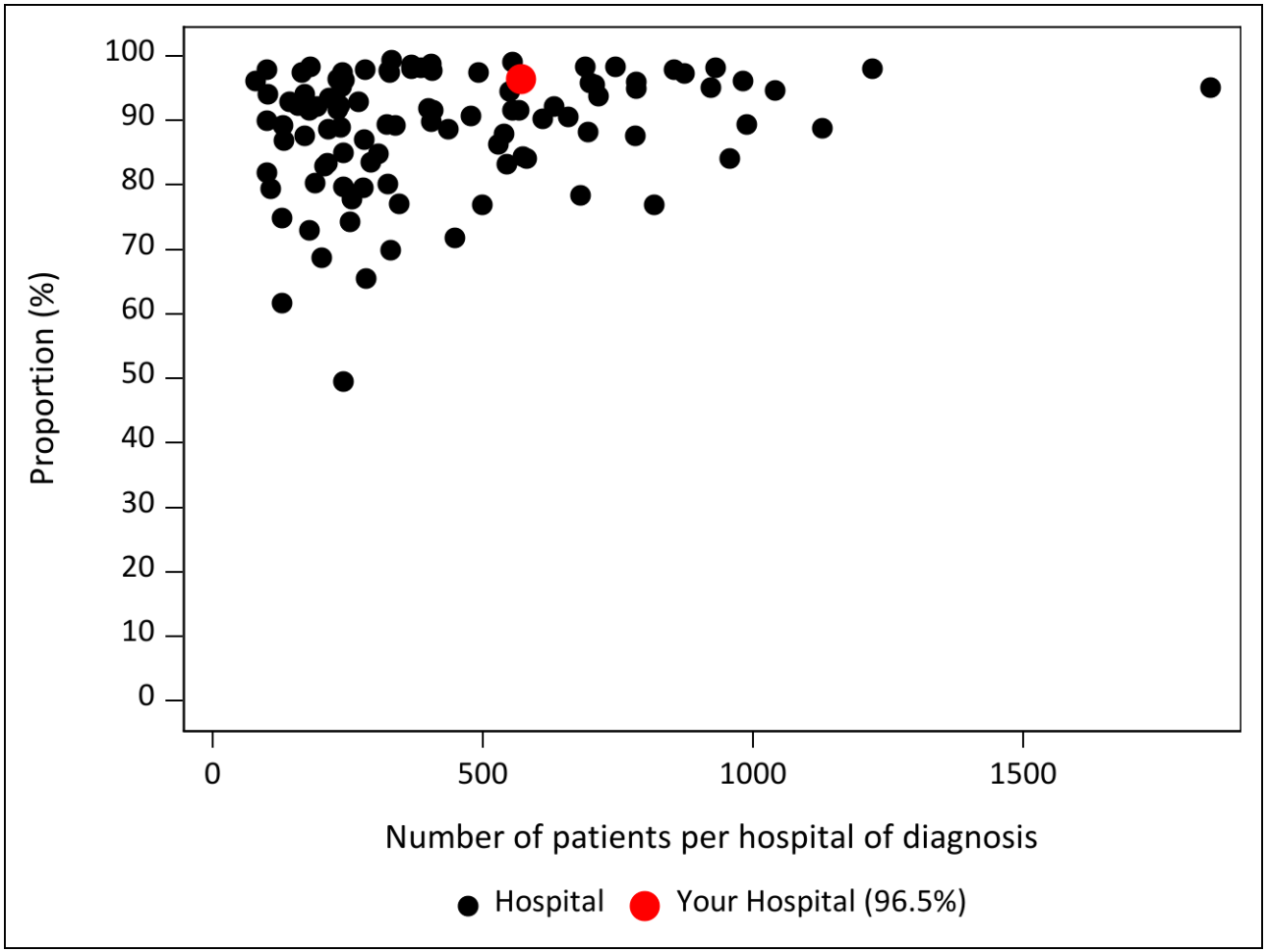
DCIS: ductal carcinoma in situ; BC : breast cancer.

Figure 25: Proportion of women with ductal carcinoma in situ (DCIS) for whom a multidisciplinary team (MDT) meeting was charged within 1 month before until 2 months after incidence date, by hospital of diagnosis



Note: there were 98 hospitals reported in the scatter plot, including 27 hospitals having less than ten patients in denominator. 138 patients, who could not be assigned to a hospital of diagnosis, were not represented in the scatter plot.

Figure 26: Proportion of women with invasive breast cancer for whom a multidisciplinary team (MDT) meeting was charged within 1 month before until 2 months after incidence date, by hospital of diagnosis



Note: there were 100 hospitals reported in the scatter plot; 1 859 patients, who could not be assigned to a hospital of diagnosis, were not represented in the scatter plot.

Table 29. Invasive breast cancer (2014-2018) - Proportion of patients with invasive breast cancer and clinically negative axilla who undergo sentinel lymph-node biopsy (SLNB) only (excluding patients who received neo-adjuvant systemic treatment) for Belgium and your campus, by campus of first surgery.

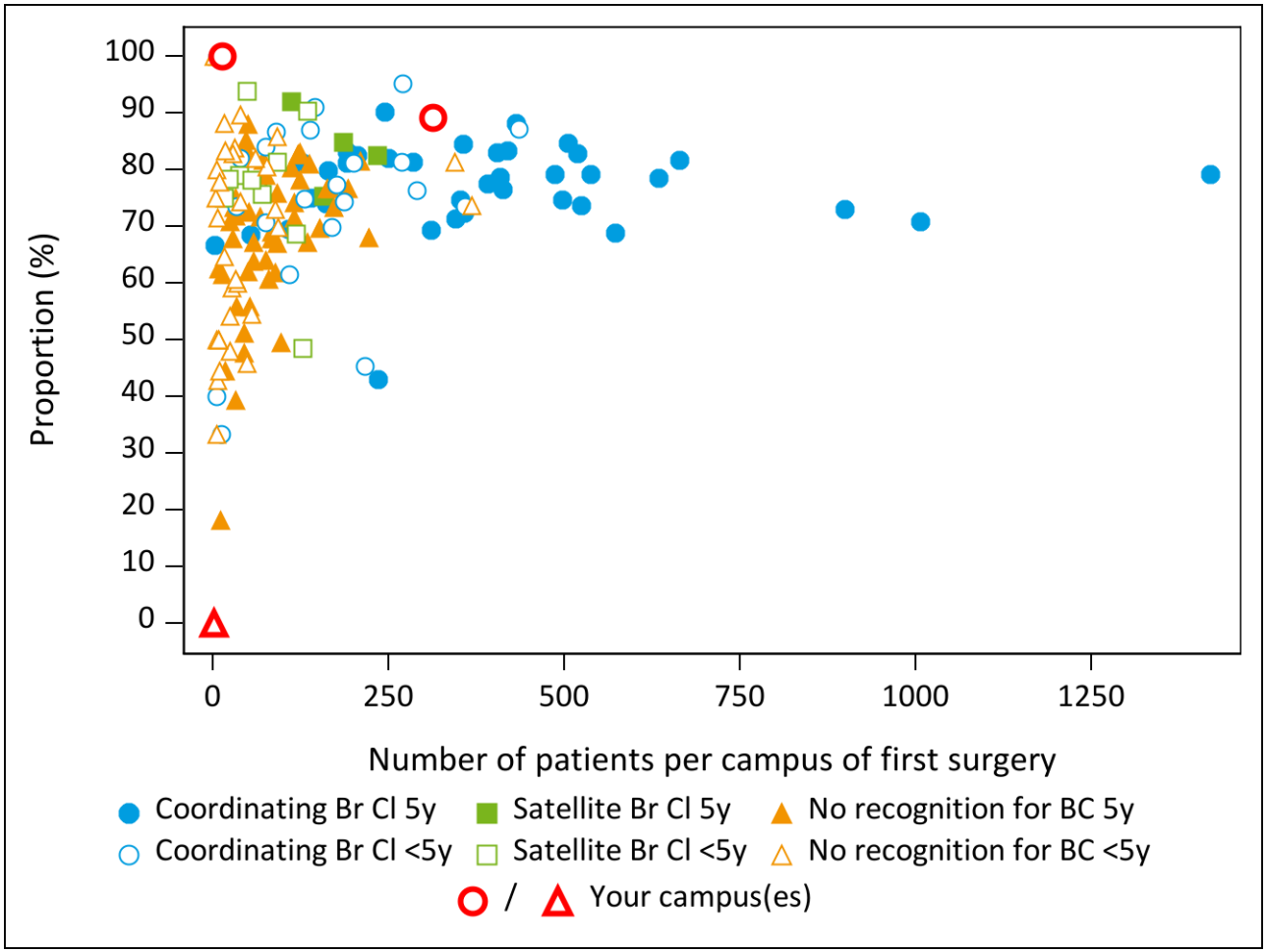
Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 20), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

Given the non-specific existing nomenclature codes, it was difficult to calculate this process indicator with a high precision (it is impossible to make a distinction between patients having a ALND or those who have not based on nomenclature codes): that's the reason why it is only given as a descriptive indicator.

Campus characteristics			Invasive BC		
	Recognition status	Activity period	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium					
Overall			25 884	19 821	76.6
Coordinating breast clinics			18 576	14 430	77.7
Satellite breast clinics			1 411	1 112	78.8
Campus not recognised for breast cancer			5 861	4 251	72.5
Campus unknown			36	28	77.8
Your hospital					
Overall	-	-	327	292	89.3
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	313	279	89.1
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	1	0	0.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	13	13	100.0

BC : breast cancer.

Figure 27: Proportion of women with invasive breast cancer and clinically negative axilla who underwent SLNB only (excluding pts who received neo-adjuvant systemic treatment), by campus of first surgery



Note: there were 163 units of analysis presented in the scatter plot, of which 21 had less than 10 patients in the denominator. An open plot symbol is used when the recognition status or the number of beds changed during the 5-year study period. 36 patients for whom the campus could not be identified, are not represented in the scatter plot.

Table 30. DCIS (2014-2018) - Proportion of women with DCIS who do not undergo axillary lymph node dissection (ALND) as first axillary surgery for Belgium and your campus, by campus of first surgery

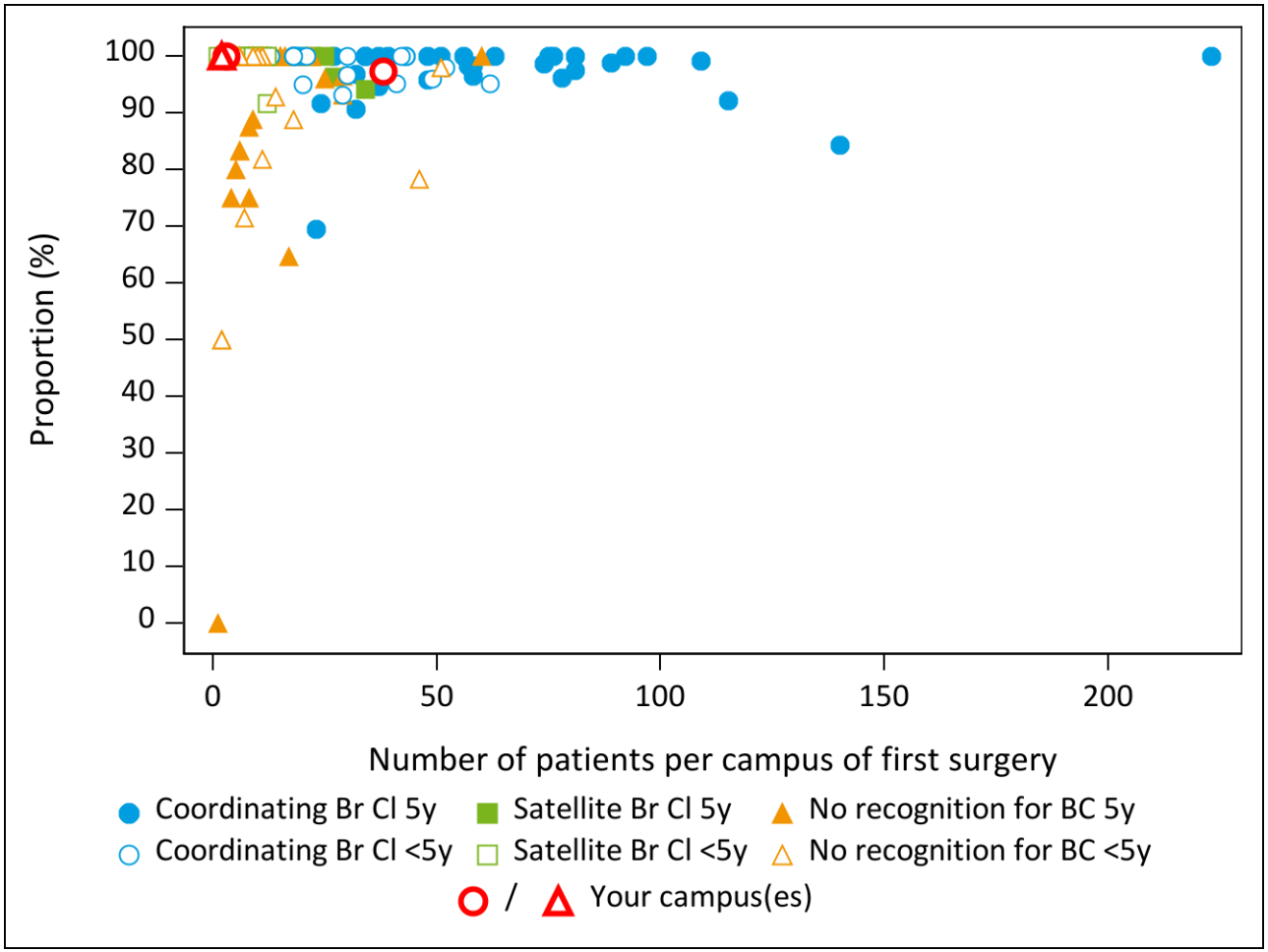
Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 19), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

Given the non-specific existing nomenclature codes, it was difficult to calculate this process indicator with a high precision (it is impossible to make a distinction between patients having a ALND or those who have not based on nomenclature codes): that's the reason why it is only given as a descriptive indicator.

Campus characteristics			DCIS		
	Recognition status	Activity period	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium					
Overall			3 809	3 691	96.9
Coordinating breast clinics			2 832	2 758	97.4
Satellite breast clinics			188	184	97.9
Campus not recognised for breast cancer			784	745	95.0
Campus unknown			5	4	80.0
Your hospital					
Overall	-	-	43	42	97.7
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	38	37	97.4
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	2	2	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	3	3	100.0

DCIS: ductal carcinoma in situ.

Figure 28: Proportion of women with DCIS who did not receive ALND as first axillary surgery, by campus of first surgery



Note: there were 155 units of analysis presented in the scatter plot, of which 65 campuses had less than 10 patients in the denominator. An open plot symbol is used when the recognition status or the number of beds changed during the 5-year study period; 5 patients for whom the campus could not be identified, are not represented in the scatter plot.

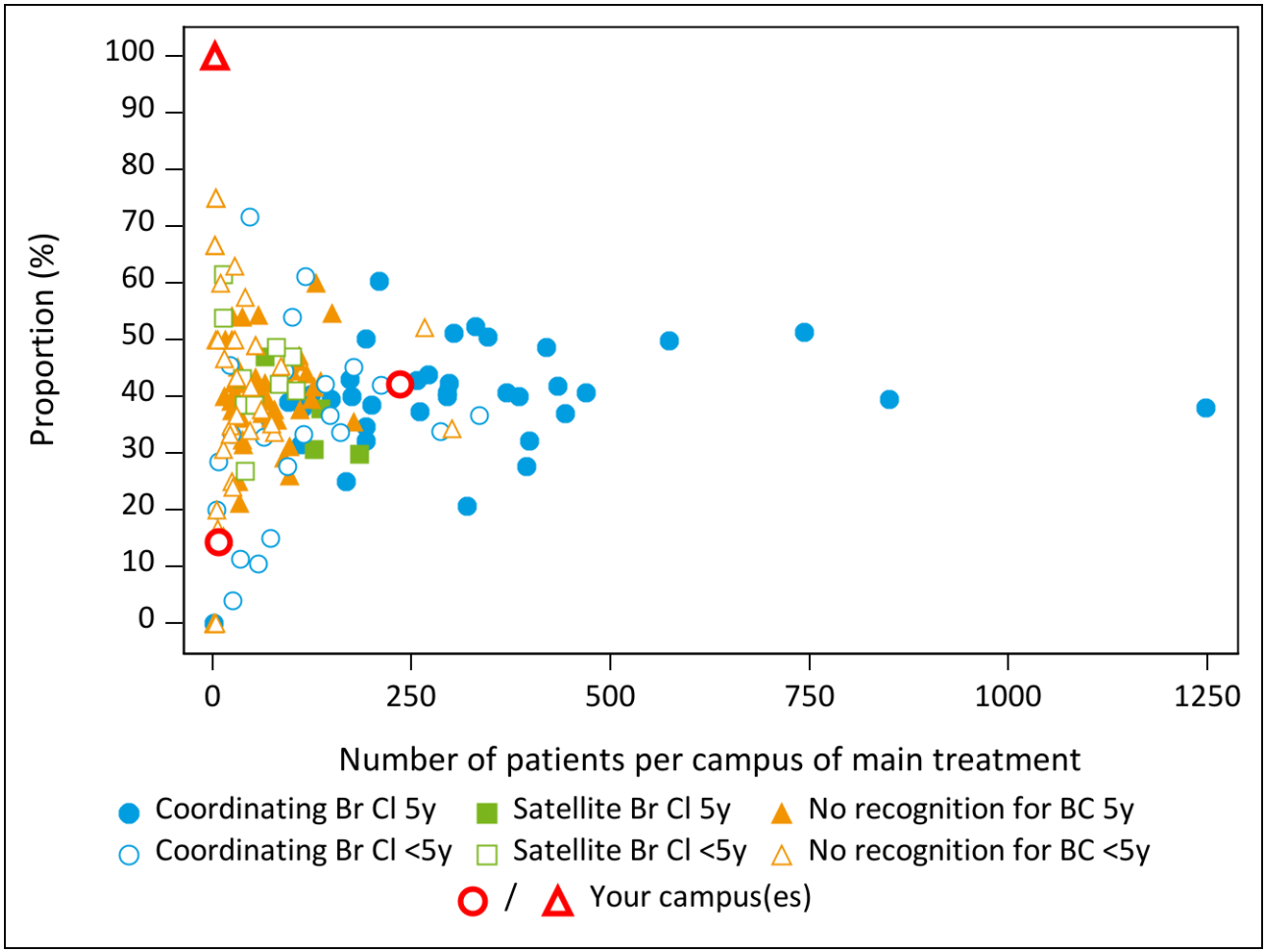
Table 31a. Invasive breast cancer (2014-2018): Proportion of women <70 years old with invasive breast cancer (M0) who received adjuvant chemotherapy for Belgium and your hospital, by campus of main treatment

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 24), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

	Campus characteristics		Invasive, non-metastatic BC		
	Recognition status	Activity period	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium					
Overall			20 080	8 177	40.7
Coordinating breast clinics			14 437	5 866	40.6
Satellite breast clinics			1 075	417	38.8
Campus not recognised for breast cancer			4 546	1 891	41.6
Campus unknown			22	3	13.6
Your hospital					
Overall	-	-	244	102	41.8
Your campus 1	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	0	-	-
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	235	99	42.1
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	2	2	100.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	7	1	14.3
Campus unknown	-	-	0	-	-

BC : breast cancer.

Figure 29: Proportion of women <70 years old with <u>invasive breast cancer (M0)</u> who received adjuvant chemotherapy within 4 months after surgery, by campus of main treatment



Note: there were 162 units of analysis presented in the scatter plot, of which 23 units had less than 10 patients in the denominator. An open plot symbol is used when the recognition status or the number of beds changed during the 5-year study period. 22 patients for whom the campus could not be identified, are not represented in the scatter plot.

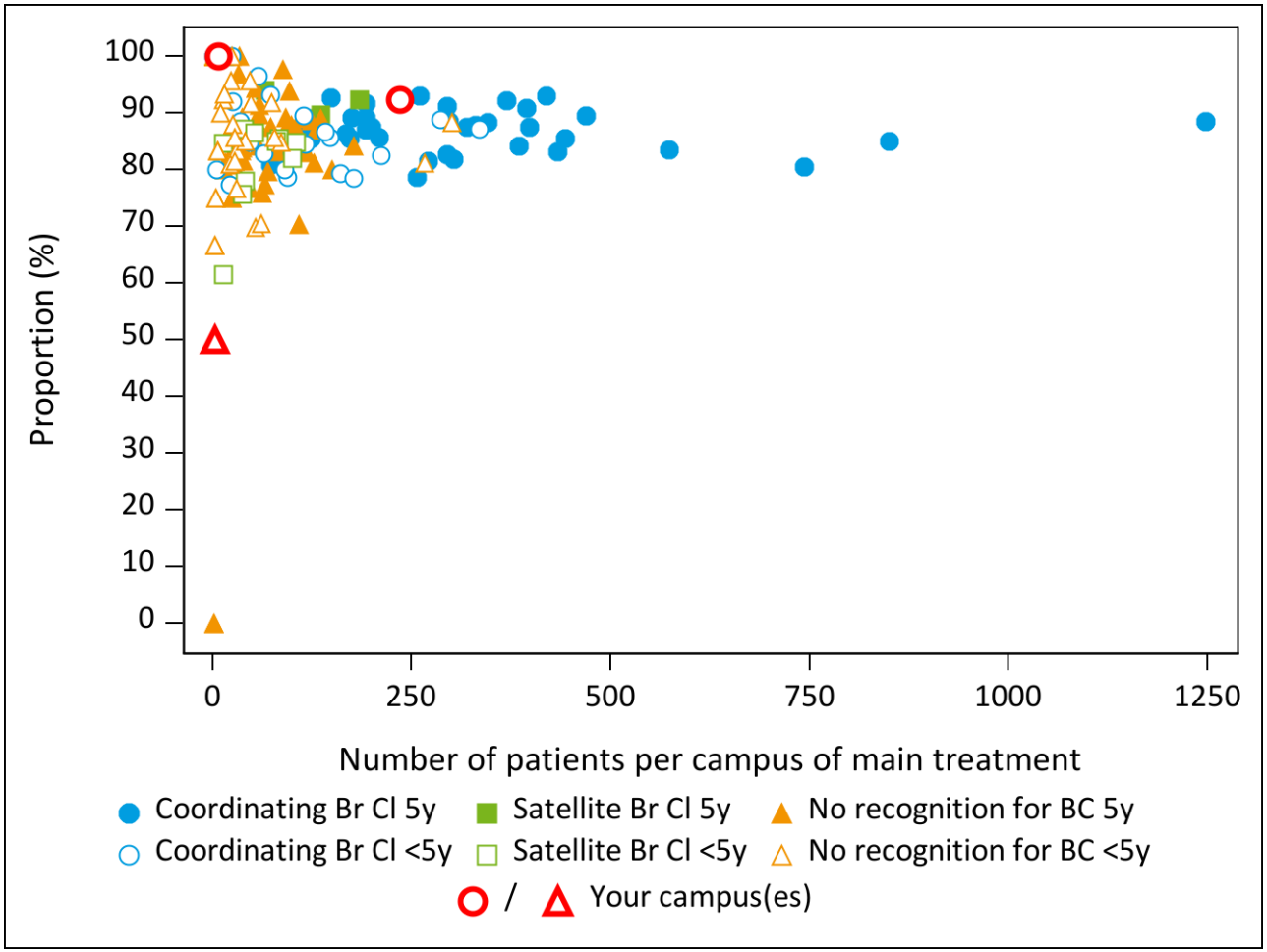
Table 31b. Invasive breast cancer (2014-2018): Proportion of women <70 years old with invasive breast cancer (M0) who received adjuvant endocrine therapy for Belgium and your hospital, by campus of main treatment

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 24), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

	Campus characteristics		Invasive, non-metastatic BC		
	Recognition status	Activity period	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium					
Overall			20 080	17 308	86.2
Coordinating breast clinics			14 437	12 487	86.5
Satellite breast clinics			1 075	934	86.9
Campus not recognised for breast cancer			4 546	3 868	85.1
Campus unknown			22	19	86.4
Your hospital					
Overall	-	-	244	225	92.2
Your campus 1	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	0	-	-
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	235	217	92.3
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	2	1	50.0
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	7	7	100.0
Campus unknown	-	-	0	-	-

BC : breast cancer.

Figure 30: Proportion of women <70 years old with <u>invasive breast cancer (M0)</u> who received adjuvant endocrine therapy within 9 months after surgery, by campus of main treatment



Note: there were 162 units of analysis presented in the scatter plot, of which 23 units had less than 10 patients in the denominator. An open plot symbol is used when the recognition status or the number of beds changed during the 5-year study period. 22 patients for whom the campus could not be identified, are not represented in the scatter plot.

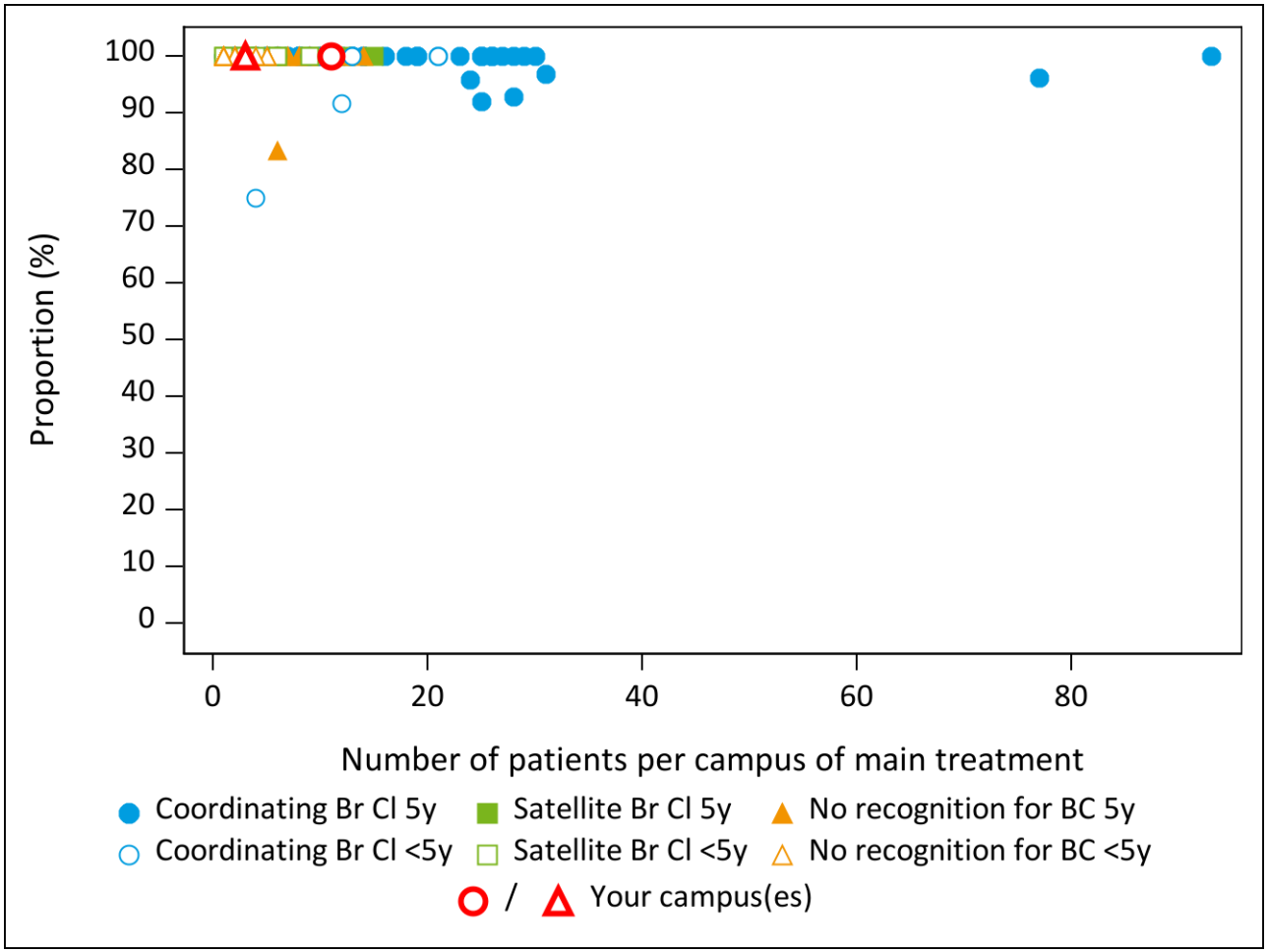
Table 32. Invasive breast cancer (2014-2018) - Proportion of women <70 years old with metastatic breast cancer who received systemic therapy for Belgium and your hospital, by campus of main treatment

Note: if no patients were allocated to your hospital based on the indicated algorithm and the selection criteria described for a specific quality indicator (see KCE Report 365, Appendix 25), then no result will be shown for the quality indicator for your hospital in the table and your centre will not appear on the funnel plot for the quality indicator. If fewer than **10 patients** are allocated to your hospital for a specific quality indicator, the result should be interpreted with caution.

	Campus characteristics		Invasive, metastatic BC		
	Recognition status	Activity period	Denominator (N)	Numerator (n)	QI-result n/N (%)
Belgium					
Overall			1 572	1 458	92.7
Coordinating breast clinics			894	883	98.8
Satellite breast clinics			80	80	100.0
Campus not recognised for breast cancer			253	252	99.6
Campus unknown			345	243	70.4
Your hospital					
Overall	-	-	32	31	96.9
Your campus 1	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	3	3	100.0
Your campus 2	Coordinating breast clinic	Jan 2014 - Sep 2018	11	11	100.0
Your campus 3	Campus not recognised for breast cancer	Jan 2014 - Sep 2018	0	-	-
Your campus 4	Coordinating breast clinic	Oct 2018 - Dec 2018	0	-	-
Campus unknown	-	-	18	17	94.4

BC : breast cancer.

Figure 31: Proportion of women <70 year with metastatic breast cancer who received systemic therapy, by campus of main treatment



Note: there were 141 units of analysis presented in the scatter plot, of which 100 had less than 10 patients in the denominator. An open plot symbol is used when the recognition status or the number of beds changed during the 5-year study period. 345 patients for whom the campus could not be identified, are not represented in the scatter plot.

4. Outcome indicator results

4.1. Observed survival

4.1.1. Unadjusted observed survival

Unadjusted observed survival results are considered less accurate when survival analyses were performed on the basis of less than 40 patients. It is not possible to draw meaningful conclusions based on such a small number "at risk". Therefore, unadjusted observed survival was not reported if your hospital or (one of) your campus(es) has (had) fewer than 40 patients assigned, or if any of the subgroups listed in the tables below included fewer than 40 patients.

4.1.1.1. For patients diagnosed with invasive breast cancer

Table 33. Unadjusted observed survival probability for patients diagnosed with invasive breast cancer assigned to your hospital on the basis of main treatment

	Unadjusted observed survival probability (%, 95% CI)					
	Your Hospital		Campus 2		Campus Unknown	
	N at risk	5-year	N at risk	5-year	N at risk	5-year
Overall	***552***	***80.5 [76.8,83.7]***	***441***	***89.3 [85.8,91.9]***	***71***	***31.1 [20.0,42.7]***
Age at diagnosis (years)						
<40 years	30	NA (N<40)	22	NA (N<40)	1	NA (N<40)
40-49 years	78	94.5 [85.9,97.9]	71	95.6 [86.9,98.6]	2	NA (N<40)
50-59 years	129	95.0 [89.0,97.7]	115	96.5 [91.0,98.7]	5	NA (N<40)
60-69 years	131	85.7 [78.1,90.8]	106	94.8 [87.7,97.8]	15	NA (N<40)
70-79 years	100	75.5 [65.2,83.1]	77	85.5 [74.4,92.0]	18	NA (N<40)

	Unadjusted observed survival probability (%, 95% CI)					
	Your Hospital		Campus 2		Campus Unknown	
	N at risk	5-year	N at risk	5-year	N at risk	5-year
80+ years	84	41.6 [30.2,52.6]	50	56.2 [40.2,69.4]	30	NA (N<40)
WHO performance status at time of diagnosis						
0 – Asymptomatic	8	NA (N<40)	3	NA (N<40)	3	NA (N<40)
1 – Symptomatic but completely ambulatory	534	82.4 [78.7,85.5]	437	89.2 [85.7,91.8]	59	37.9 [24.8,50.9]
2 – Symptomatic, <50% in bed during the day	4	NA (N<40)	0	NA (N<40)	4	NA (N<40)
3 – Symptomatic, >50% in bed, but not bedbound	4	NA (N<40)	0	NA (N<40)	4	NA (N<40)
4 – Bedbound	0	NA (N<40)	0	NA (N<40)	0	NA (N<40)
Missing	2	NA (N<40)	1	NA (N<40)	1	NA (N<40)
Cardiovascular comorbidity						
Absent	304	90.0 [85.9,93.0]	257	94.3 [90.5,96.6]	22	NA (N<40)
Present	248	68.8 [62.2,74.5]	184	82.1 [75.2,87.2]	49	20.4 [10.0,33.4]
Respiratory comorbidity						
Absent	503	80.6 [76.7,84.0]	404	89.2 [85.6,92.0]	62	30.9 [19.2,43.4]
Present	49	79.6 [65.4,88.5]	37	NA (N<40)	9	NA (N<40)
Diabetes						

	Unadjusted observed survival probability (%, 95% CI)					
	Your Hospital		Campus 2		Campus Unknown	
	N at risk	5-year	N at risk	5-year	N at risk	5-year
Absent	508	82.8 [79.1,85.9]	414	89.6 [86.1,92.3]	58	38.9 [26.3,51.3]
Present	44	54.5 [37.1,68.9]	27	NA (N<40)	13	NA (N<40)
Number of comorbidities						
0	281	90.7 [86.5,93.6]	239	94.2 [90.3,96.6]	19	NA (N<40)
1	204	72.8 [65.8,78.7]	158	83.3 [76.0,88.6]	33	NA (N<40)
2	64	60.3 [46.5,71.6]	42	82.1 [65.7,91.1]	19	NA (N<40)
3	3	NA (N<40)	2	NA (N<40)	0	NA (N<40)
Number of inpatient bed days in year prior to incidence						
0 days	406	83.8 [79.5,87.2]	329	89.1 [85.0,92.2]	43	48.7 [32.3,63.3]
1-5 days	98	81.8 [72.3,88.4]	83	93.8 [85.7,97.4]	11	NA (N<40)
6-15 days	27	NA (N<40)	19	NA (N<40)	6	NA (N<40)
>15 days	21	NA (N<40)	10	NA (N<40)	11	NA (N<40)
Incidence year						
2014	107	83.2 [74.6,89.0]	88	93.2 [85.5,96.9]	16	NA (N<40)
2015	95	83.2 [74.0,89.3]	85	89.4 [80.6,94.3]	10	NA (N<40)
2016	112	79.5 [70.7,85.8]	93	90.3 [82.2,94.8]	16	NA (N<40)

	Unadjusted observed survival probability (%, 95% CI)					
	Your Hospital		Campus 2		Campus Unknown	
	N at risk	5-year	N at risk	5-year	N at risk	5-year
2017	117	81.8 [72.7,88.1]	105	85.3 [75.7,91.3]	11	NA (N<40)
2018	121	NA (FU<5yr)	70	NA (FU<5yr)	18	NA (N<40)
Combined stage[6]						
(y)0˜	11	NA (N<40)	8	NA (N<40)	0	NA (N<40)
(y)is	3	NA (N<40)	2	NA (N<40)	0	NA (N<40)
(y)I	218	95.2 [90.8,97.5]	209	95.6 [91.2,97.8]	2	NA (N<40)
(y)II	178	82.2 [75.3,87.4]	150	85.0 [77.9,90.0]	11	NA (N<40)
(y)III	80	73.7 [62.1,82.3]	60	87.6 [75.6,94.0]	13	NA (N<40)
(y)IV	61	29.7 [18.4,41.8]	12	NA (N<40)	45	26.9 [14.6,40.9]
Unknown	1	NA (N<40)	0	NA (N<40)	0	NA (N<40)
Differentiation grade						
Well-differentiated	25	NA (N<40)	22	NA (N<40)	1	NA (N<40)
Moderately differentiated	247	83.6 [78.1,87.8]	199	91.7 [86.6,95.0]	32	NA (N<40)
Poorly differentiated	264	79.4 [73.8,83.9]	215	87.3 [81.8,91.2]	28	NA (N<40)
Unknown	16	NA (N<40)	5	NA (N<40)	10	NA (N<40)
Treatment modality						
Surgery < adjuvant RT	4	NA (N<40)	4	NA (N<40)	0	NA (N<40)
Surgery < adjuvant systemic Tx	47	77.2 [60.2,87.6]	45	76.8 [59.8,87.4]	0	NA (N<40)

	Unadjusted observed survival probability (%, 95% CI)					
	Your Hospital		Campus 2		Campus Unknown	
	N at risk	5-year	N at risk	5-year	N at risk	5-year
Surgery < adjuvant RT + systemic Tx	344	92.4 [88.8,94.9]	325	93.6 [90.2,95.9]	0	NA (N<40)
Neo-adjuvant Tx < Surgery (< adjuvant Tx)	63	93.1 [82.5,97.4]	49	95.8 [84.2,98.9]	0	NA (N<40)
Surgery only	2	NA (N<40)	2	NA (N<40)	0	NA (N<40)
Primary systemic and/or RT (no surgery)	92	30.5 [20.9,40.6]	16	NA (N<40)	71	31.1 [20.0,42.7]
No oncological treatment	0	NA (N<40)	0	NA (N<40)	0	NA (N<40)

˜: in correspondence with TNM 7th & 8th edition, cTis cN0 cM0 tumours are categorized as cStage 0. For invasive breast cancer, these tumours were clinically assessed as in situ but appeared to be invasive after resection; [δ]: patients might have had neo-adjuvant therapy (NAT), resulting in a ypStage in these cases. Note that a distinction was made between ypStage 0, i.e. complete pathological response after NAT (ypT0 ypN0,x ypM0,x) and ypStage is, i.e. in situ component remains after NAT (ypTis, ypN0,x ypM0,x); the combined stage is a summary of the information included in the clinical stage and the pathological stage and is defined as follows: a known pathological stage takes priority over a known clinical stage, except when the presence of metastasis is specified in the clinical stage; RT: radiotherapy; Tx: treatment. Results related to the Belgian population can be found in KCE report 365: table 88, page 230.

Figure 32: Unadjusted observed survival probability for patients diagnosed with invasive breast cancer assigned to your hospital on the basis of main treatment

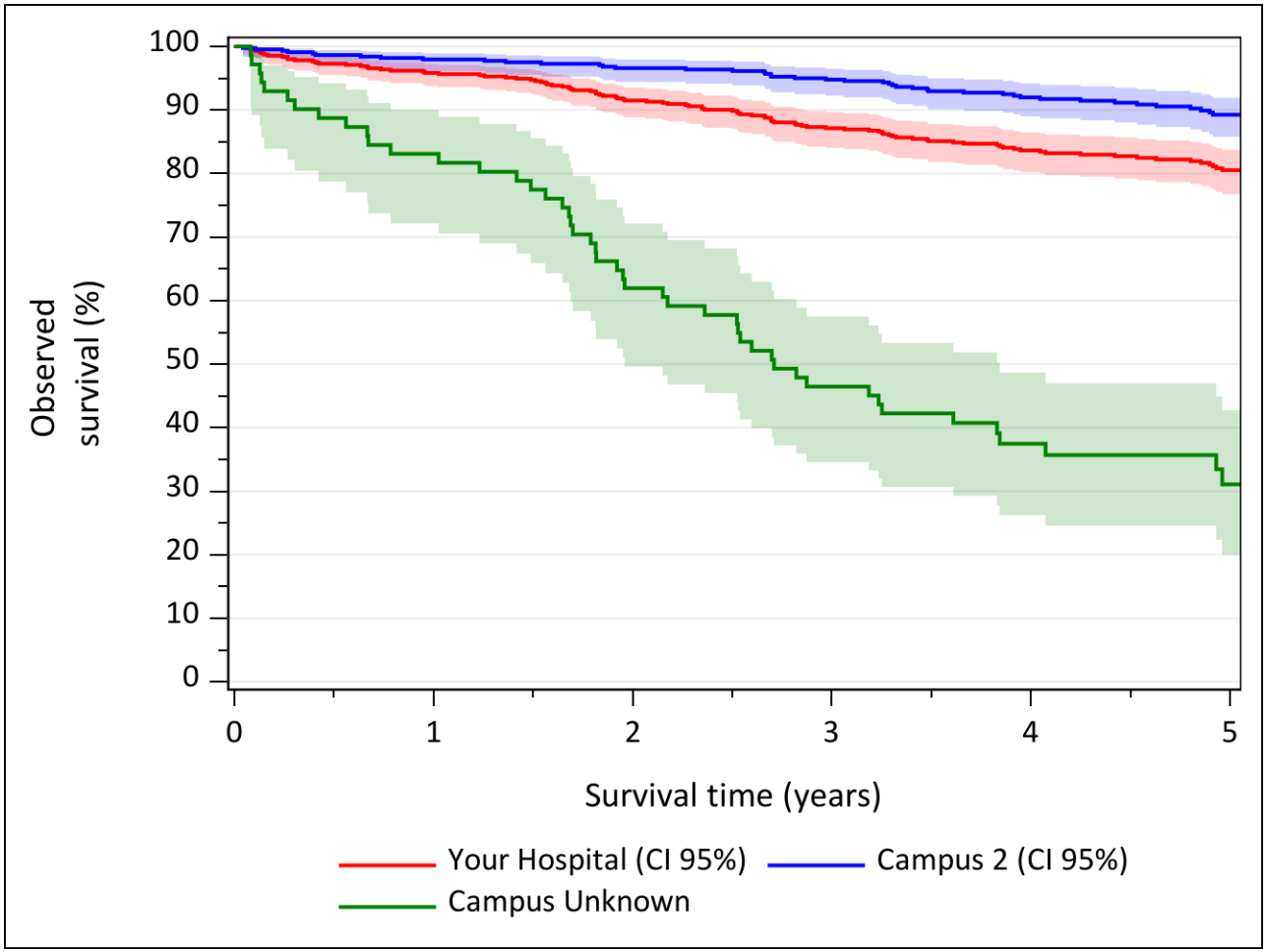
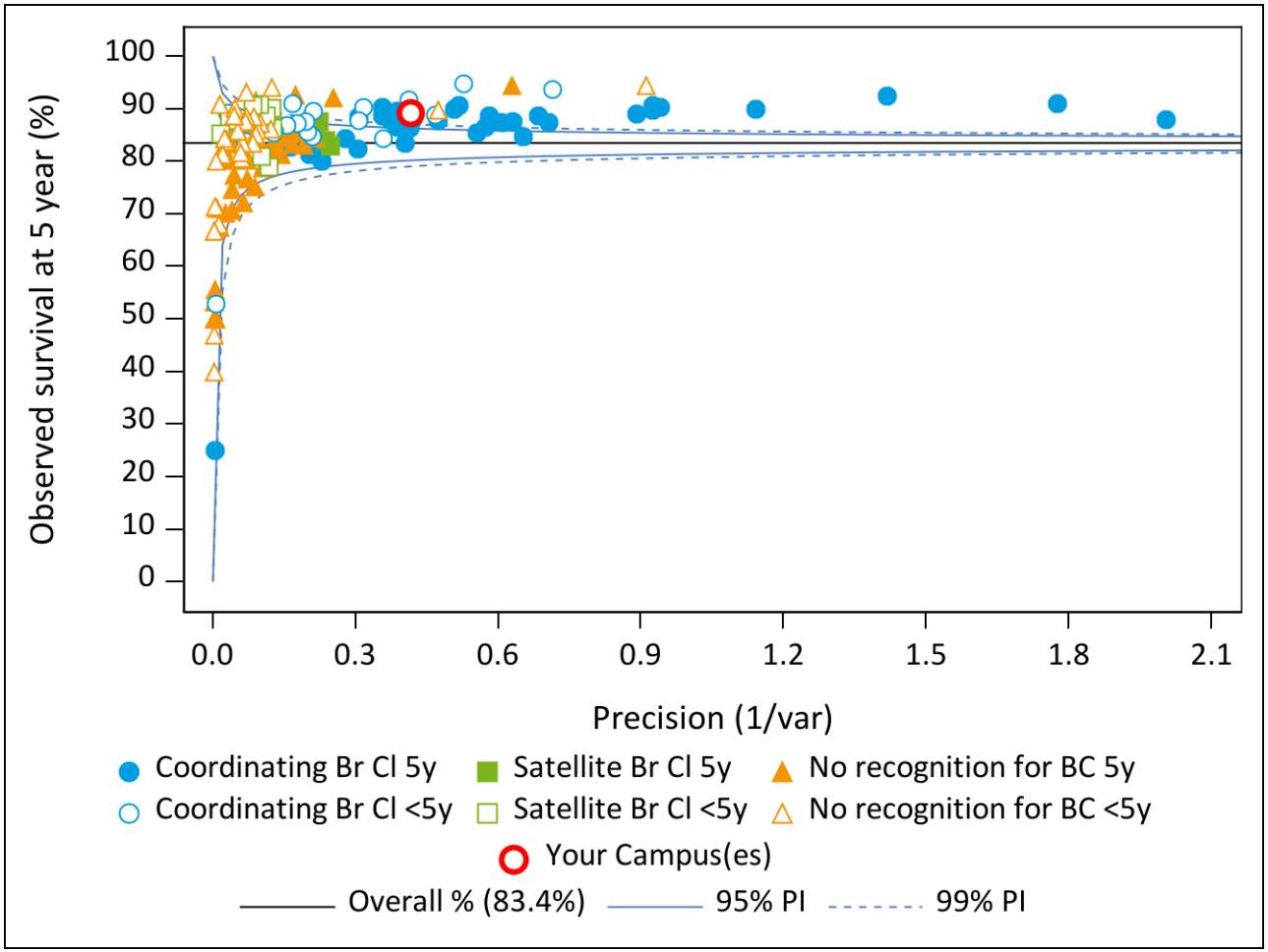


Figure 33: Unadjusted 5-year observed survival probability for patients diagnosed with invasive breast cancer, by campus of main treatment



To quantify the degree of heterogeneity among campuses, the reciprocal of the estimated effect variance (i.e. precision) was used instead of the volume (as was done for the other QIs). 161 units of analysis presented on the funnel plot. 16 units of analysis which did not achieve a follow-up of 5 years, are not presented on the funnel plot; 23 units of analysis with an observed survival of 0 or 100%, for which the precision does not exist, are not presented on the funnel plot. Note: The funnel plot, which illustrates the variability between the campuses, should be interpreted with caution. First, these results do not take the differences in case-mix between campuses into account. Secondly, the funnel is drawn around the national results of the whole 2014-2018 cohort of patients with IBC, which also includes a subgroup of patients who could not be assigned to a campus of main treatment. This subgroup, which represents six percent of the study cohort, had an overall survival of only 35% and thus 'pulled down' the reference line of the funnel, which is based on the national average. This gives the false impression that the funnel itself is positioned 'too low'.

4.1.1.2. For patients diagnosed with non-metastatic invasive breast cancer who had surgery

Table 34. Unadjusted observed survival probability for operated patients diagnosed with non-metastatic invasive breast cancer assigned to your hospital on the basis of main treatment

	Unadjusted observed survival probability (%, 95% CI)			
	Your Hospital		Campus 2	
	N at risk	5-year	N at risk	5-year
Overall	***403***	***91.1 [87.6,93.7]***	***380***	***91.8 [88.3,94.3]***
Age at diagnosis (years)				
<40 years	19	NA (N<40)	17	NA (N<40)
40-49 years	60	96.4 [86.2,99.1]	57	96.3 [85.9,99.1]
50-59 years	106	98.1 [92.7,99.5]	100	99.0 [93.1,99.9]
60-69 years	100	96.4 [88.9,98.9]	94	97.3 [89.2,99.3]
70-79 years	73	85.9 [74.3,92.5]	70	85.6 [73.9,92.4]
80+ years	45	60.5 [43.2,73.9]	42	63.0 [45.2,76.5]
WHO performance status at time of diagnosis				
0 – Asymptomatic	4	NA (N<40)	3	NA (N<40)
1 – Symptomatic but completely ambulatory	398	91.0 [87.5,93.6]	376	91.8 [88.2,94.3]

	Unadjusted observed survival probability (%, 95% CI)			
	Your Hospital		Campus 2	
	N at risk	5-year	N at risk	5-year
2 – Symptomatic, <50% in bed during the day	0	NA (N<40)	0	NA (N<40)
3 – Symptomatic, >50% in bed, but not bedbound	0	NA (N<40)	0	NA (N<40)
4 – Bedbound	0	NA (N<40)	0	NA (N<40)
Missing	1	NA (N<40)	1	NA (N<40)
Cardiovascular comorbidity				
Absent	231	96.2 [92.4,98.1]	217	96.9 [93.2,98.6]
Present	172	84.2 [77.1,89.2]	163	84.9 [77.7,89.8]
Respiratory comorbidity				
Absent	371	90.9 [87.1,93.6]	349	91.7 [87.9,94.3]
Present	32	NA (N<40)	31	NA (N<40)
Diabetes				
Absent	377	91.8 [88.2,94.3]	357	92.3 [88.8,94.8]
Present	26	NA (N<40)	23	NA (N<40)
Number of comorbidities				
0	217	95.9 [91.9,98.0]	204	96.7 [92.8,98.5]
1	145	85.8 [78.1,90.9]	137	86.0 [78.2,91.2]
2	38	NA (N<40)	37	NA (N<40)

	Unadjusted observed survival probability (%, 95% CI)			
	Your Hospital		Campus 2	
	N at risk	5-year	N at risk	5-year
3	3	NA (N<40)	2	NA (N<40)
Number of inpatient bed days in year prior to incidence				
0 days	306	90.3 [86.0,93.4]	285	91.0 [86.6,93.9]
1-5 days	73	98.5 [89.6,99.8]	72	98.5 [89.6,99.8]
6-15 days	16	NA (N<40)	15	NA (N<40)
>15 days	8	NA (N<40)	8	NA (N<40)
Incidence year				
2014	75	93.3 [84.7,97.2]	74	93.2 [84.5,97.1]
2015	70	95.7 [87.3,98.6]	70	95.7 [87.3,98.6]
2016	85	95.3 [87.9,98.2]	84	95.2 [87.8,98.2]
2017	96	83.8 [73.3,90.5]	96	83.8 [73.3,90.5]
2018	77	NA (FU<5yr)	56	NA (FU<5yr)
Combined stage[6]				
(y)0˜	9	NA (N<40)	7	NA (N<40)
(y)is	3	NA (N<40)	2	NA (N<40)
(y)I	195	94.7 [89.9,97.2]	190	95.1 [90.4,97.6]
(y)II	142	88.2 [81.1,92.8]	132	87.8 [80.5,92.5]

	Unadjusted observed survival probability (%, 95% CI)			
	Your Hospital		Campus 2	
	N at risk	5-year	N at risk	5-year
(y)III	54	86.1 [72.7,93.2]	49	88.9 [75.0,95.3]
(y)IV	0	NA (N<40)	0	NA (N<40)
Unknown	0	NA (N<40)	0	NA (N<40)
Differentiation grade				
Well-differentiated	21	NA (N<40)	20	NA (N<40)
Moderately differentiated	187	92.6 [87.3,95.8]	178	92.5 [87.0,95.7]
Poorly differentiated	192	90.5 [85.0,94.0]	179	92.2 [86.8,95.4]
Unknown	3	NA (N<40)	3	NA (N<40)
Treatment modality				
Surgery < adjuvant RT	4	NA (N<40)	4	NA (N<40)
Surgery < adjuvant systemic Tx	41	79.4 [60.9,89.8]	39	NA (N<40)
Surgery < adjuvant RT + systemic Tx	309	93.2 [89.6,95.7]	297	93.7 [90.1,96.1]
Neo-adjuvant Tx < Surgery (< adjuvant Tx)	47	90.9 [77.5,96.5]	38	NA (N<40)
Surgery only	2	NA (N<40)	2	NA (N<40)
Primary systemic and/or RT (no surgery)	0	NA (N<40)	0	NA (N<40)
No oncological treatment	0	NA (N<40)	0	NA (N<40)

	Unadjusted observed survival probability (%, 95% CI)			
	Your Hospital		Campus 2	
	N at risk	5-year	N at risk	5-year

˜: in correspondence with TNM 7th & 8th edition, cTis cN0 cM0 tumours are categorized as cStage 0. For invasive breast cancer, these tumours were clinically assessed as in situ but appeared to be invasive after resection; $^{\delta}$: patients might have had neo-adjuvant therapy (NAT), resulting in a ypStage in these cases. Note that a distinction was made between ypStage 0, i.e. complete pathological response after NAT (ypT0 ypN0,x ypM0,x) and ypStage is, i.e. in situ component remains after NAT (ypTis, ypN0,x ypM0,x); the combined stage is a summary of the information included in the clinical stage and the pathological stage and is defined as follows: a known pathological stage takes priority over a known clinical stage, except when the presence of metastasis is specified in the clinical stage; RT: radiotherapy; Tx: treatment. Overall results related to the Belgian population can be found in KCE report 365: table 7, page 72.

Figure 34: Unadjusted observed survival probability for operated patients diagnosed with non-metastatic invasive breast cancer assigned to your hospital on the basis of main treatment

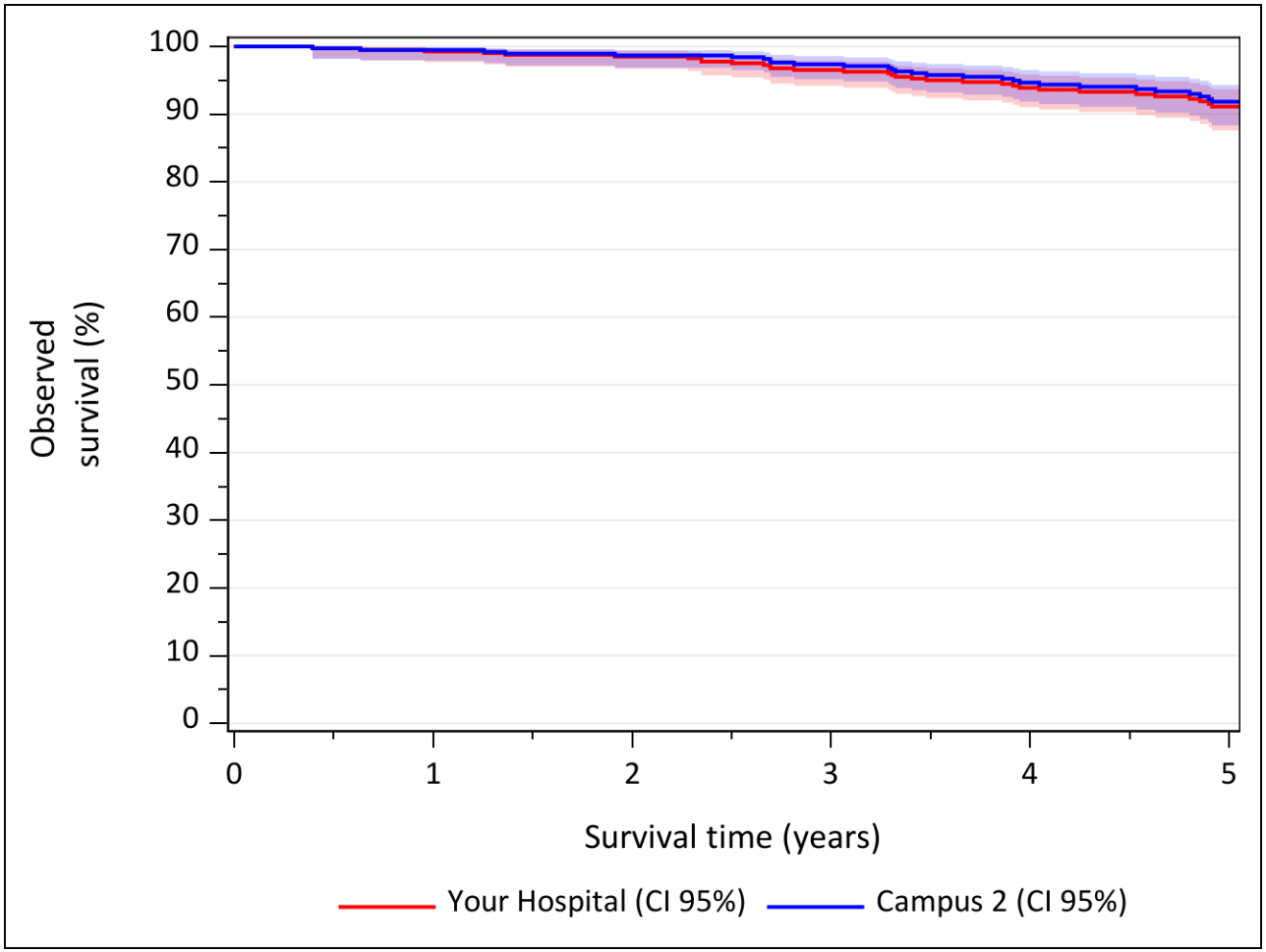
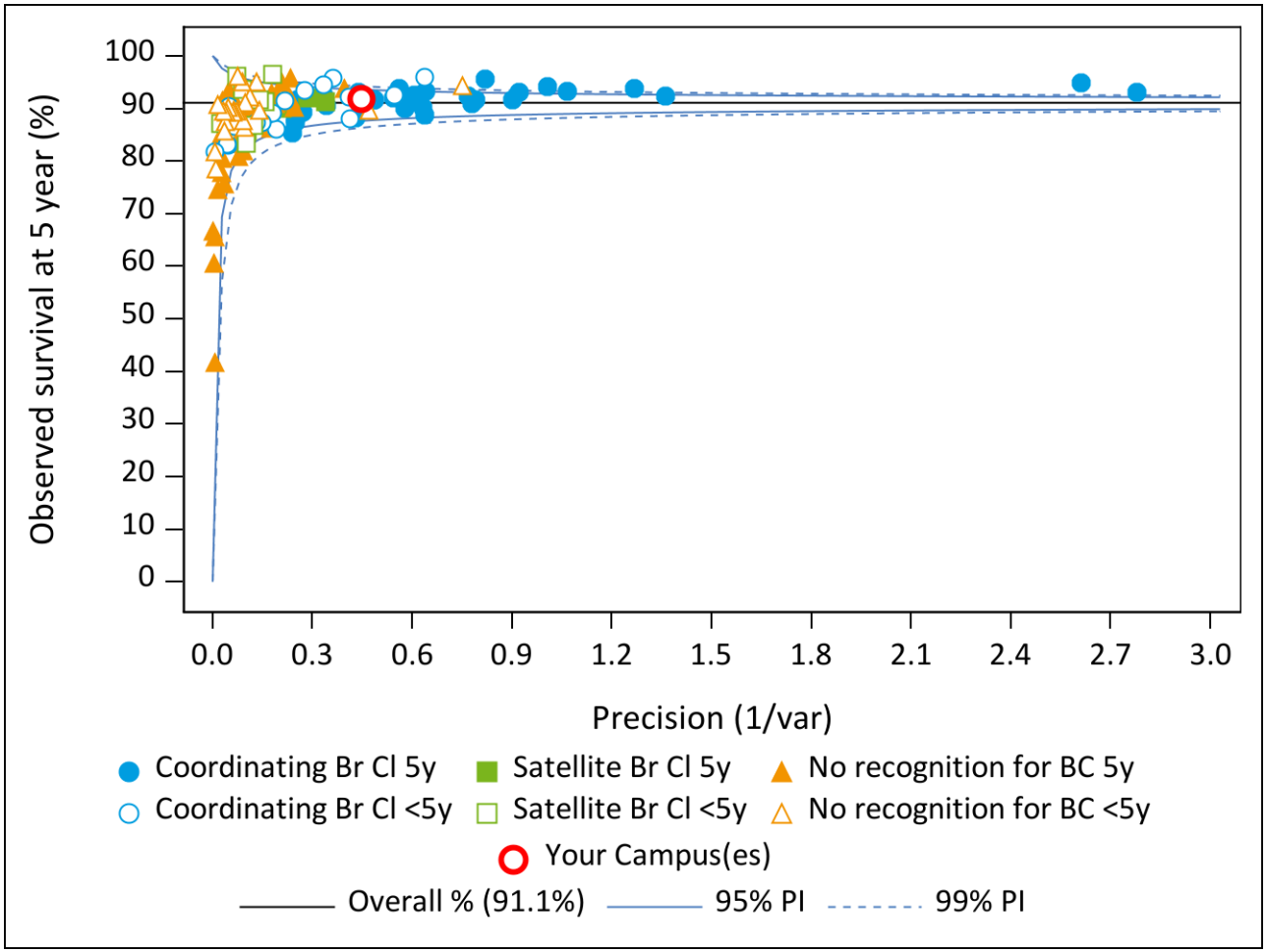


Figure 35: Unadjusted 5-year observed survival probability for operated patients diagnosed with non-metastatic invasive breast cancer assigned to your hospital on the basis of main treatment



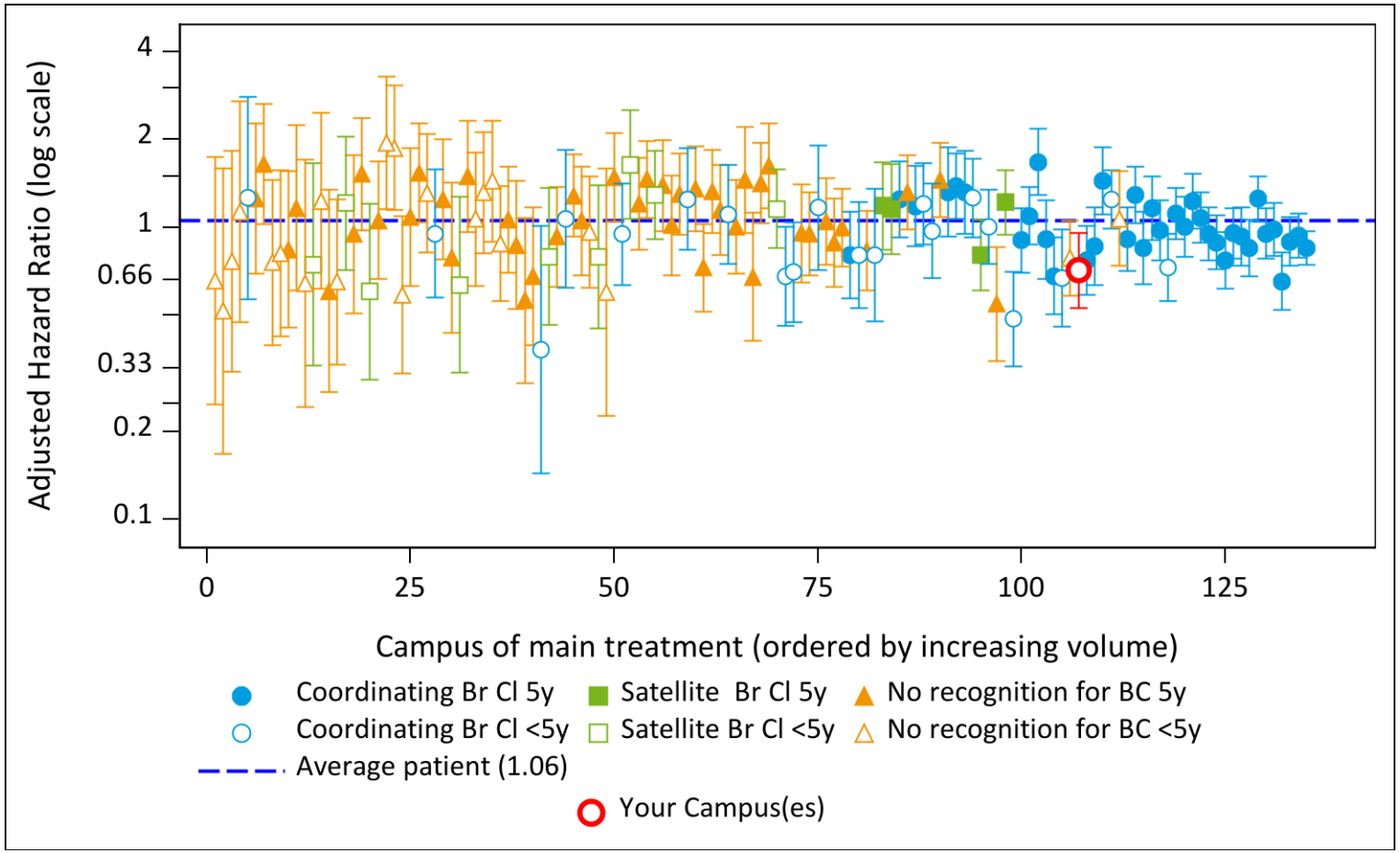
To quantify the degree of heterogeneity among campuses, the reciprocal of the estimated effect variance (i.e. precision) was used instead of the volume (as was done for the other QIs). 161 units of analysis presented on the funnel plot. 16 units of analysis which did not achieve a follow-up of 5 years, are not presented on the funnel plot; 23 units of analysis with an observed survival of 0 or 100%, for which the precision does not exist, are not presented on the funnel plot. Note: The funnel plot, which illustrates the variability between the campuses, should be interpreted with caution. First, these results do not take the differences in case-mix between campuses into account. Secondly, the funnel is drawn around the national results of the whole 2014-2018 cohort of patients with IBC, which also includes a subgroup of patients who could not be assigned to a campus of main treatment. This subgroup, which represents six percent of the study cohort, had an overall survival of only 35% and thus 'pulled down' the reference line of the funnel, which is based on the national average. This gives the false impression that the funnel itself is positioned 'too low'.

4.1.2. Adjusted observed survival

The event for observed survival is death due to any cause. The hazard for this event is adjusted for differences in case mix between campuses and the hazard ratio is reported. Adjusted observed survival results are considered less accurate when survival analyses were performed on the basis of less than 40 patients. It is not possible to draw meaningful conclusions based on such a small number "at risk". Therefore, adjusted observed survival was not reported if your campus(es) has (had) fewer than 40 patients assigned.

4.1.2.1. For patients diagnosed with invasive breast cancer

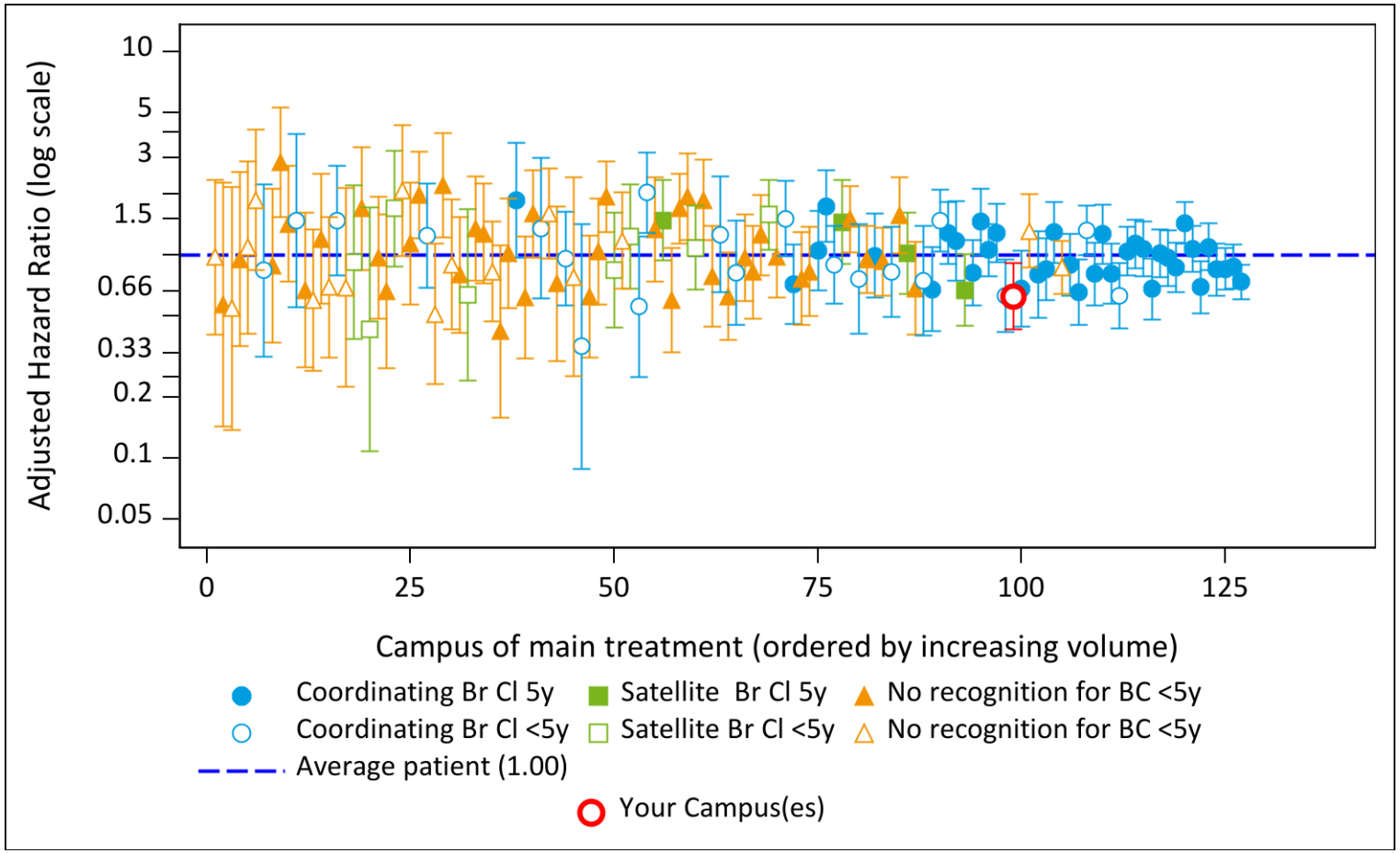
Figure 36: Case-mix adjusted hazard ratio for all-cause death in patients with <u>invasive breast cancer</u> assigned to your hospital on the basis of main treatment



Hazard ratios were determined over the [0,5] year survival time interval. A minimum campus size of 40 assigned patients was applied, with size referring to the number of patients available for the analysis. For 138 campuses the adjusted HR could be obtained. The hazard ratios were adjusted for age at diagnosis, WHO score, number of previous hospital bed days, cardiovascular disease, respiratory disease, diabetes, combined tumour stage, differentiation grade. Value 1.0 represents the average campus and the dashed blue line is the HR for the average patient (which equals the weighted sum of all campus HR, with the number of patients per campus as weight). The campuses are ranked according to the number of patients assigned to them: from smallest (left) to largest (right). A HR which is lower than 1.0, indicates a lower hazard (or instantaneous risk) to die, and thus a higher survival. When the vertical lines, which represent the 95% CI on the campus HR, include value 1.0 (dashed line), the HR of that campus is not statistically significantly different from the average campus (average patient).

4.1.2.2. For patients diagnosed with non-metastatic invasive breast cancer who had surgery

Figure 37: Case-mix adjusted hazard ratio for all-cause death in patients with non-metastatic invasive breast cancer who had surgery assigned to your hospital on the basis of main treatment



Hazard ratios were determined over the [0,5] year survival time interval. A minimum unit size of 40 assigned patients was applied, with size referring to the number of patients available for the analysis. For 127 units of analysis the adjusted HR could be obtained. The hazard ratios were adjusted for age at diagnosis, WHO score, number of previous hospital bed days, cardiovascular disease, respiratory disease, diabetes, combined tumour stage, differentiation grade. Value 1.0 represents the average campus and the dashed blue line is the HR for the average patient (which equals the weighted sum of all campus HR, with the number of patients per campus as weight). The campuses are ranked according to the number of patients assigned to them: from smallest (left) to largest (right). A HR which is lower than 1.0, indicates a lower hazard (or instantaneous risk) to die, and thus a higher survival. When the vertical lines, which represent the 95% CI on the campus HR, include value 1.0 (dashed line), the HR of that campus is not statistically significantly different from the average campus (average patient).

4.2 Relative survival

4.2.1 Unadjusted relative survival

Unadjusted relative survival results are considered less accurate when survival analyses were performed on the basis of less than 50 patients. It is not possible to draw meaningful conclusions based on such a small number "at risk". Therefore, unadjusted relative survival was not reported if your hospital or (one of) your campus(es) has (had) fewer than 50 patients assigned, or if any of the subgroups listed in the tables below included fewer than 50 patients.

4.2.1.1. For patients diagnosed with invasive breast cancer

Table 35. Unadjusted relative survival for patients diagnosed with invasive breast cancer assigned to your hospital on the basis of main treatment

	Unadjusted relative survival probability (%, 95% CI)					
	Your Hospital		Campus 2		Campus Unknown	
	N at risk	5-year	N at risk	5-year	N at risk	5-year
Overall	***552***	***90.3 [86.1,93.8]***	***441***	***98.6 [94.8,101.5]***	***71***	***42.2 [27.9,57.1]***
Age at diagnosis (years)						
<40 years	30	NA (N<50)	22	NA (N<50)	1	NA (N<50)
40-49 years	78	95.4 [87.1,98.8]	71	96.5 [87.9,99.4]	2	NA (N<50)
50-59 years	129	96.8 [90.9,99.5]	115	98.2 [92.6,100.4]	5	NA (N<50)
60-69 years	131	89.8 [82.1,95.0]	106	99.2 [92.2,102.3]	15	NA (N<50)
70-79 years	100	87.3 [75.5,96.1]	77	99.1 [86.4,106.6]	18	NA (N<50)
80+ years	84	78.4 [57.5,98.3]	50	102.1 [73.6,125.7]	30	NA (N<50)

	Unadjusted relative survival probability (%, 95% CI)					
	Your Hospital		Campus 2		Campus Unknown	
	N at risk	5-year	N at risk	5-year	N at risk	5-year
WHO performance status at time of diagnosis						
0 – Asymptomatic	8	NA (N<50)	3	NA (N<50)	3	NA (N<50)
1 – Symptomatic but completely ambulatory	534	92.3 [88.3,95.8]	437	98.5 [94.7,101.5]	59	52.1 [35.2,68.7]
2 – Symptomatic, <50% in bed during the day	4	NA (N<50)	0	NA (N<50)	4	NA (N<50)
3 – Symptomatic, >50% in bed, but not bedbound	4	NA (N<50)	0	NA (N<50)	4	NA (N<50)
4 – Bedbound	0	NA (N<50)	0	NA (N<50)	0	NA (N<50)
Missing	2	NA (N<50)	1	NA (N<50)	1	NA (N<50)
Cardiovascular comorbidity						
Absent	304	94.7 [90.4,97.8]	257	98.2 [94.3,100.5]	22	NA (N<50)
Present	248	84.4 [76.6,91.2]	184	99.0 [90.9,105.1]	49	NA (N<50)
Respiratory comorbidity						
Absent	503	90.4 [86.0,94.1]	404	98.6 [94.6,101.6]	62	42.2 [26.8,58.4]
Present	49	NA (N<50)	37	NA (N<50)	9	NA (N<50)
Diabetes						
Absent	508	92.0 [87.9,95.4]	414	98.6 [94.8,101.5]	58	51.0 [34.9,66.8]
Present	44	NA (N<50)	27	NA (N<50)	13	NA (N<50)
Number of comorbidities						

	Unadjusted relative survival probability (%, 95% CI)					
	Your Hospital		Campus 2		Campus Unknown	
	N at risk	5-year	N at risk	5-year	N at risk	5-year
0	281	95.2 [90.8,98.2]	239	98.1 [94.0,100.6]	19	NA (N<50)
1	204	87.9 [79.5,94.8]	158	99.3 [90.9,105.4]	33	NA (N<50)
2	64	74.1 [57.5,87.6]	42	NA (N<50)	19	NA (N<50)
3	3	NA (N<50)	2	NA (N<50)	0	NA (N<50)
Number of inpatient bed days in year prior to incidence						
0 days	406	94.0 [89.4,97.8]	329	98.7 [94.2,102.0]	43	NA (N<50)
1-5 days	98	89.7 [79.6,96.7]	83	101.8 [93.2,105.6]	11	NA (N<50)
6-15 days	27	NA (N<50)	19	NA (N<50)	6	NA (N<50)
>15 days	21	NA (N<50)	10	NA (N<50)	11	NA (N<50)
Incidence year						
2014	107	93.3 [83.7,99.8]	88	102.6 [94.2,106.7]	16	NA (N<50)
2015	95	93.4 [83.0,100.3]	85	99.9 [90.1,105.4]	10	NA (N<50)
2016	112	87.3 [77.7,94.3]	93	97.7 [89.0,102.6]	16	NA (N<50)
2017	117	92.4 [82.8,99.2]	105	94.4 [84.7,100.5]	11	NA (N<50)
2018	121	NA (FU<5yr)	70	NA (FU<5yr)	18	NA (N<50)
Combined stage[δ]						
(y)0˜	11	NA (N<50)	8	NA (N<50)	0	NA (N<50)
(y)is	3	NA (N<50)	2	NA (N<50)	0	NA (N<50)

	Unadjusted relative survival probability (%, 95% CI)					
	Your Hospital		Campus 2		Campus Unknown	
	N at risk	5-year	N at risk	5-year	N at risk	5-year
(y)I	218	103.5 [98.9,105.9]	209	103.7 [99.1,106.0]	2	NA (N<50)
(y)II	178	94.5 [86.6,100.3]	150	97.1 [89.0,102.7]	11	NA (N<50)
(y)III	80	86.9 [73.6,96.6]	60	97.1 [84.0,103.9]	13	NA (N<50)
(y)IV	61	33.6 [21.1,47.0]	12	NA (N<50)	45	NA (N<50)
Unknown	1	NA (N<50)	0	NA (N<50)	0	NA (N<50)
Differentiation grade						
Well-differentiated	25	NA (N<50)	22	NA (N<50)	1	NA (N<50)
Moderately differentiated	247	94.0 [87.9,98.7]	199	101.7 [96.1,105.2]	32	NA (N<50)
Poorly differentiated	264	87.5 [81.4,92.5]	215	95.5 [89.5,99.7]	28	NA (N<50)
Unknown	16	NA (N<50)	5	NA (N<50)	10	NA (N<50)
Treatment modality						
Surgery < adjuvant RT	4	NA (N<50)	4	NA (N<50)	0	NA (N<50)
Surgery < adjuvant systemic Tx	47	NA (N<50)	45	NA (N<50)	0	NA (N<50)
Surgery < adjuvant RT + systemic Tx	344	100.9 [97.0,103.5]	325	102.3 [98.5,104.8]	0	NA (N<50)
Neo-adjuvant Tx < Surgery (< adjuvant Tx)	63	97.3 [86.8,101.5]	49	NA (N<50)	0	NA (N<50)
Surgery only	2	NA (N<50)	2	NA (N<50)	0	NA (N<50)
Primary systemic and/or RT (no surgery)	92	39.3 [27.5,51.7]	16	NA (N<50)	71	42.2 [27.9,57.1]
No oncological treatment	0	NA (N<50)	0	NA (N<50)	0	NA (N<50)

	Unadjusted relative survival probability (%, 95% CI)					
	Your Hospital		Campus 2		Campus Unknown	
	N at risk	5-year	N at risk	5-year	N at risk	5-year

˜: in correspondence with TNM 7th & 8th edition, cTis cN0 cM0 tumours are categorized as cStage 0. For invasive breast cancer, these tumours were clinically assessed as in situ but appeared to be invasive after resection. δ: patients might have had neo-adjuvant therapy (NAT), resulting in a ypStage in these cases. Note that a distinction was made between ypStage 0, i.e. complete pathological response after NAT (ypT0 ypN0,x ypM0,x) and ypStage is, i.e. in situ component remains after NAT (ypTis, ypN0,x ypM0,x). The combined stage is a summary of the information included in the clinical stage and the pathological stage and is defined as follows: a known pathological stage takes priority over a known clinical stage, except when the presence of metastasis is specified in the clinical stage. RT: radiotherapy. Tx: treatment. Results related to the Belgian population can be found in KCE report 365: table 88, page 230.

4.2.1.2. For patients diagnosed with non-metastatic invasive breast cancer who had surgery

Table 36. Unadjusted relative survival for operated patients diagnosed with non-metastatic invasive breast cancer assigned to your hospital on the basis of main treatment

	Unadjusted relative survival probability (%, 95% CI)			
	Your Hospital		Campus 2	
	N at risk	5-year	N at risk	5-year
Overall	***403***	***100.9 [97.1,103.6]***	***380***	***101.7 [98.0,104.4]***
Age at diagnosis (years)				
<40 years	19	NA (N<50)	17	NA (N<50)
40-49 years	60	97.4 [87.6,100.0]	57	97.2 [87.2,99.9]
50-59 years	106	99.9 [94.3,101.3]	100	100.8 [94.8,101.7]
60-69 years	100	100.9 [93.7,103.3]	94	101.8 [94.3,103.8]
70-79 years	73	99.7 [86.4,107.2]	70	99.5 [86.0,107.2]
80+ years	45	NA (N<50)	42	NA (N<50)
WHO performance status at time of diagnosis				
0 – Asymptomatic	4	NA (N<50)	3	NA (N<50)
1 – Symptomatic but completely ambulatory	398	100.9 [97.0,103.7]	376	101.7 [97.9,104.4]
2 – Symptomatic, <50% in bed during the day	0	NA (N<50)	0	NA (N<50)

	Unadjusted relative survival probability (%, 95% CI)			
	Your Hospital		Campus 2	
	N at risk	5-year	N at risk	5-year
3 – Symptomatic, >50% in bed, but not bedbound	0	NA (N<50)	0	NA (N<50)
4 – Bedbound	0	NA (N<50)	0	NA (N<50)
Missing	1	NA (N<50)	1	NA (N<50)
Cardiovascular comorbidity				
Absent	231	100.5 [96.7,102.5]	217	101.2 [97.4,102.9]
Present	172	101.2 [93.0,107.0]	163	102.3 [93.9,108.1]
Respiratory comorbidity				
Absent	371	100.7 [96.6,103.6]	349	101.6 [97.6,104.5]
Present	32	NA (N<50)	31	NA (N<50)
Diabetes				
Absent	377	100.9 [97.2,103.6]	357	101.8 [98.0,104.4]
Present	26	NA (N<50)	23	NA (N<50)
Number of comorbidities				
0	217	100.0 [96.0,102.1]	204	101.0 [97.0,102.8]
1	145	102.7 [94.0,108.5]	137	103.0 [94.2,108.9]
2	38	NA (N<50)	37	NA (N<50)
3	3	NA (N<50)	2	NA (N<50)
Number of inpatient bed days in year prior to incidence				

	Unadjusted relative survival probability (%, 95% CI)			
	Your Hospital		Campus 2	
	N at risk	5-year	N at risk	5-year
0 days	306	100.5 [95.9,103.8]	285	101.3 [96.6,104.5]
1-5 days	73	106.2 [97.4,107.5]	72	106.3 [97.4,107.6]
6-15 days	16	NA (N<50)	15	NA (N<50)
>15 days	8	NA (N<50)	8	NA (N<50)
Incidence year				
2014	75	103.9 [94.4,108.1]	74	103.9 [94.3,108.2]
2015	70	107.2 [97.8,110.4]	70	107.2 [97.8,110.4]
2016	85	103.2 [95.3,106.4]	84	103.2 [95.1,106.4]
2017	96	93.4 [82.8,100.2]	96	93.4 [82.8,100.2]
2018	77	NA (FU<5yr)	56	NA (FU<5yr)
Combined stage[6]				
(y)0~	9	NA (N<50)	7	NA (N<50)
(y)is	3	NA (N<50)	2	NA (N<50)
(y)I	195	103.2 [98.2,105.9]	190	103.7 [98.7,106.3]
(y)II	142	100.1 [92.1,105.1]	132	99.6 [91.4,104.9]
(y)III	54	96.2 [81.6,104.0]	49	NA (N<50)
(y)IV	0	NA (N<50)	0	NA (N<50)
Unknown	0	NA (N<50)	0	NA (N<50)
Differentiation grade				

	Unadjusted relative survival probability (%, 95% CI)			
	Your Hospital		Campus 2	
	N at risk	5-year	N at risk	5-year
Well-differentiated	21	NA (N<50)	20	NA (N<50)
Moderately differentiated	187	102.8 [97.0,106.2]	178	102.9 [96.9,106.4]
Poorly differentiated	192	99.1 [93.3,103.0]	179	101.1 [95.4,104.6]
Unknown	3	NA (N<50)	3	NA (N<50)
Treatment modality				
Surgery < adjuvant RT	4	NA (N<50)	4	NA (N<50)
Surgery < adjuvant systemic Tx	41	NA (N<50)	39	NA (N<50)
Surgery < adjuvant RT + systemic Tx	309	102.1 [98.1,104.7]	297	102.7 [98.7,105.2]
Neo-adjuvant Tx < Surgery (< adjuvant Tx)	47	NA (N<50)	38	NA (N<50)
Surgery only	2	NA (N<50)	2	NA (N<50)
Primary systemic and/or RT (no surgery)	0	NA (N<50)	0	NA (N<50)
No oncological treatment	0	NA (N<50)	0	NA (N<50)

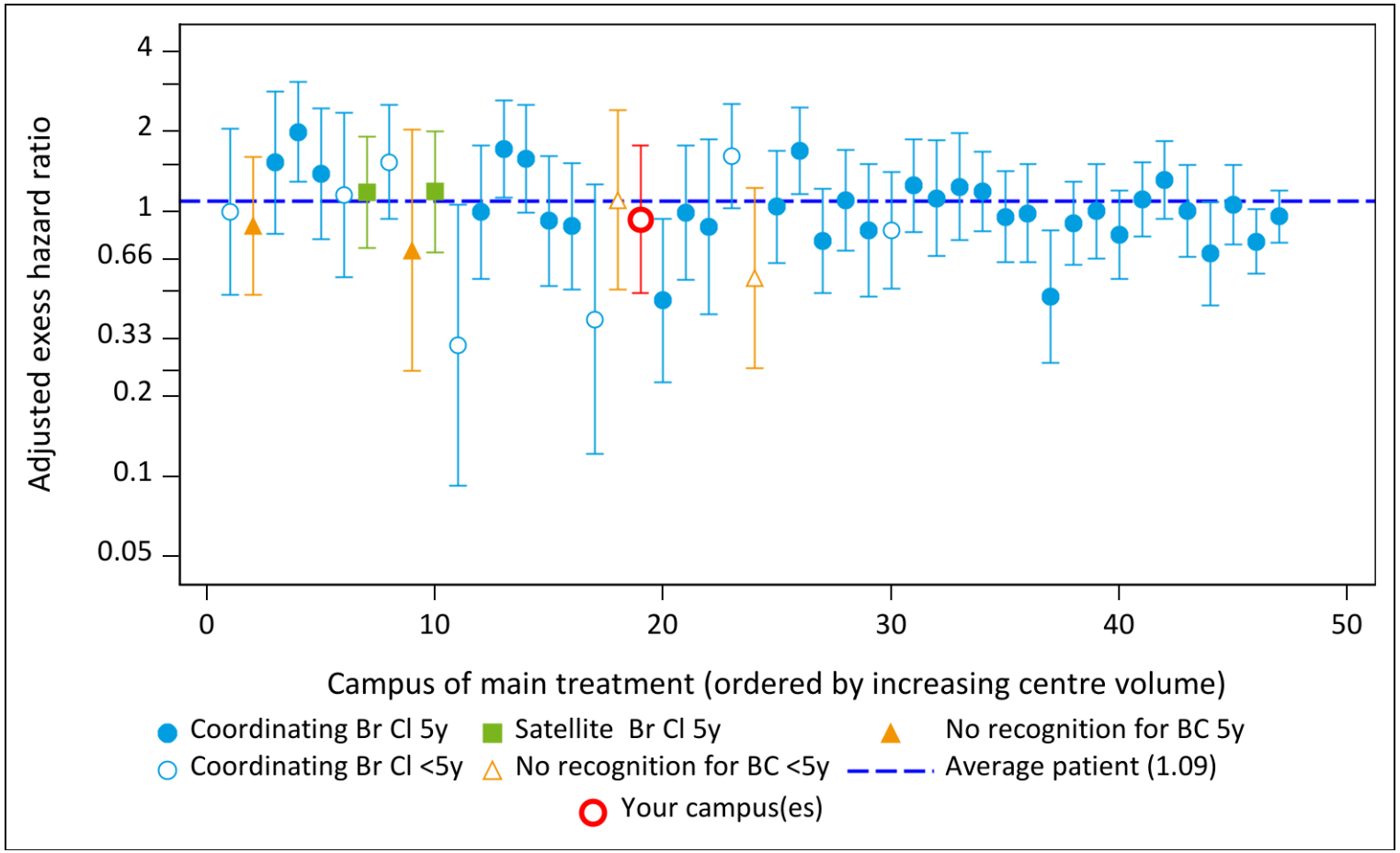
˜: in correspondence with TNM 7th & 8th edition, cTis cN0 cM0 tumours are categorized as cStage 0. For invasive breast cancer, these tumours were clinically assessed as in situ but appeared to be invasive after resection. $^{\delta}$: patients might have had neo-adjuvant therapy (NAT), resulting in a ypStage in these cases. Note that a distinction was made between ypStage 0, i.e. complete pathological response after NAT (ypT0 ypN0,x ypM0,x) and ypStage is, i.e. in situ component remains after NAT (ypTis, ypN0,x ypM0,x). The combined stage is a summary of the information included in the clinical stage and the pathological stage and is defined as follows: a known pathological stage takes priority over a known clinical stage, except when the presence of metastasis is specified in the clinical stage. RT: radiotherapy. Tx: treatment. Overall results related to the Belgian population can be found in KCE report 365: table 7, page 72.

4.2.2. Adjusted relative survival

The event for the relative survival is excess death due to breast cancer. The excess hazard is adjusted for differences in case mix between campuses and the excess hazard ratio is reported. Adjusted relative survival results where only possible for campuses with at least 300 patients. Therefore, adjusted relative survival was not reported if your campus(es) has (had) fewer than 300 patients assigned.

4.2.2.1. For patients diagnosed with invasive breast cancer

Figure 38: Adjusted excess hazard ratio for breast cancer-related excess death in patients with invasive breast cancer assigned to your hospital on the basis of main treatment



Excess hazard ratios (EHR) were determined over the [0,5] year survival time interval. A minimum campus size of 300 assigned patients was applied, with size referring to the number of patients available for the analysis. For 47 campuses the adjusted EHR could be obtained. The excess hazard ratios were adjusted for age at diagnosis and combined tumour stage. Value 1.0 represents the average campus and the dashed blue line is the EHR for the average patient (which equals the weighted sum of all campus EHR, with the number of patients per campus as weight). The campuses are ranked according to the number of patients assigned to them: from smallest (left) to largest (right). An EHR which is lower than 1.0, indicates a lower excess hazard (or instantaneous risk) to die, and thus a higher survival. When the vertical lines, which represent the 95% CI on the campus EHR, include value 1.0 (dashed line), the EHR of that campus is not statistically significantly different from the average campus (average patient).

5. Cohort 2009-2013: observed survival of all patients diagnosed with an invasive breast cancer, by hospital of main treatment

Unadjusted observed survival results are considered less accurate when survival analyses were performed on the basis of less than 40 patients. It is not possible to draw meaningful conclusions based on such a small number "at risk". Therefore, unadjusted observed survival was not reported if your hospital has fewer than 40 patients assigned, or if any of the subgroups listed in the tables below included fewer than 40 patients.

Table 37. Unadjusted observed survival for patients diagnosed with invasive breast cancer assigned to your hospital on the basis of main treatment

	Unadjusted observed survival probability (%, 95% CI)		
		Your Hospital	
	N at risk	5-year	10-year
Overall	***572***	***81.4 [78.0,84.4]***	***70.1 [66.1,73.7]***
Age at diagnosis			
<40 years	15	NA (N<40)	NA (N<40)
40-49 years	110	90.0 [82.7,94.3]	83.9 [75.3,89.7]
50-59 years	145	93.1 [87.5,96.2]	88.0 [81.4,92.4]
60-69 years	125	90.4 [83.7,94.4]	79.7 [71.4,85.8]
70-79 years	104	76.9 [67.6,83.9]	56.7 [46.0,66.1]
80+ years	73	35.6 [24.9,46.5]	12.8 [6.2,21.9]
WHO performance status at time of diagnosis			
0 – Asymptomatic	5	NA (N<40)	NA (N<40)
1 – Symptomatic but completely ambulatory	551	82.5 [79.1,85.5]	71.9 [67.9,75.6]
2 – Symptomatic, <50% in bed during the day	4	NA (N<40)	NA (N<40)
3 – Symptomatic, >50% in bed, but not bedbound	1	NA (N<40)	NA (N<40)
4 – Bedbound	0	NA (N<40)	NA (N<40)
Missing	11	NA (N<40)	NA (N<40)
Cardiovascular comorbidity			

	Unadjusted observed survival probability (%, 95% CI)		
		Your Hospital	
	N at risk	5-year	10-year
Absent	359	87.4 [83.5,90.5]	77.9 [73.1,81.9]
Present	213	71.4 [64.8,76.9]	57.1 [50.1,63.6]
Respiratory comorbidity			
Absent	534	81.4 [77.9,84.5]	70.8 [66.7,74.6]
Present	38	NA (N<40)	NA (N<40)
Diabetes			
Absent	530	82.2 [78.7,85.2]	71.7 [67.6,75.4]
Present	42	71.4 [55.2,82.6]	51.1 [34.7,65.3]
Number of comorbidities			
0	332	86.4 [82.2,89.7]	77.7 [72.8,81.9]
1	190	77.4 [70.7,82.7]	64.5 [57.1,71.0]
2	47	63.8 [48.4,75.7]	39.4 [25.3,53.3]
3	3	NA (N<40)	NA (N<40)
Number of inpatient bed days in year prior to incidence			
0 days	422	86.0 [82.3,89.0]	75.7 [71.2,79.6]
1-5 days	90	75.6 [65.3,83.2]	65.0 [54.1,74.0]
6-15 days	34	NA (N<40)	NA (N<40)
>15 days	26	NA (N<40)	NA (N<40)
Incidence year			
2009	123	78.9 [70.5,85.1]	66.7 [57.6,74.2]
2010	108	86.1 [78.0,91.4]	75.0 [65.7,82.1]
2011	110	77.1 [68.0,83.9]	63.3 [53.5,71.6]
2012	118	79.7 [71.2,85.9]	74.5 [65.6,81.4]
2013	113	85.8 [77.9,91.1]	NA (FU<10yr)
Combined stage[6]			

	Unadjusted observed survival probability (%, 95% CI)		
		Your Hospital	
	N at risk	5-year	10-year
(y)0˜	2	NA (N<40)	NA (N<40)
(y)is	1	NA (N<40)	NA (N<40)
(y)I	218	94.5 [90.5,96.8]	88.5 [83.2,92.1]
(y)II	222	86.4 [81.2,90.3]	72.8 [66.3,78.4]
(y)III	70	67.1 [54.8,76.8]	54.3 [42.0,65.1]
(y)IV	55	30.9 [19.3,43.2]	10.6 [4.2,20.5]
Unknown	4	NA (N<40)	NA (N<40)
Differentiation grade			
Well-differentiated	44	88.4 [74.4,95.0]	78.7 [63.0,88.3]
Moderately differentiated	252	85.7 [80.8,89.5]	75.0 [69.0,80.0]
Poorly or undifferentiated	252	77.4 [71.7,82.1]	65.2 [58.8,70.8]
Unknown	24	NA (N<40)	NA (N<40)
Treatment modality			
Surgery < adjuvant RT	11	NA (N<40)	NA (N<40)
Surgery < adjuvant systemic Tx	70	92.8 [83.5,96.9]	74.3 [61.7,83.3]
Surgery < adjuvant RT + systemic Tx	377	91.8 [88.5,94.1]	83.7 [79.4,87.1]
Neo-adjuvant Tx < Surgery (< adjuvant Tx)	25	NA (N<40)	NA (N<40)
Surgery only	9	NA (N<40)	NA (N<40)
Primary systemic and/or RT (no surgery)	80	27.5 [18.3,37.5]	11.1 [5.4,19.1]
No oncological treatment	0	NA (N<40)	NA (N<40)

˜: in correspondence with TNM 7th & 8th edition, cTis cN0 cM0 tumours are categorized as cStage 0. For invasive breast cancer, these tumours were clinically assessed as in situ but appeared to be invasive after resection; [δ]: patients might have had neo-adjuvant therapy (NAT), resulting in a ypStage in these cases. Note that a distinction was made between ypStage 0, i.e. complete pathological response after NAT (ypT0 ypN0,x ypM0,x) and ypStage is, i.e. in situ component remains after NAT (ypTis, ypN0,x ypM0,x); the combined stage is a summary of the information included in the clinical stage and the pathological stage and is defined as follows: a known pathological stage takes priority over a known clinical stage, except when the presence of metastasis is specified in the clinical stage; RT: radiotherapy; Tx: treatment. Overall results related to the Belgian population can be found in KCE report 365: table 100, page 258.

Figure 39: Unadjusted observed survival probability for patients diagnosed with invasive breast cancer assigned to your hospital on the basis of main treatment

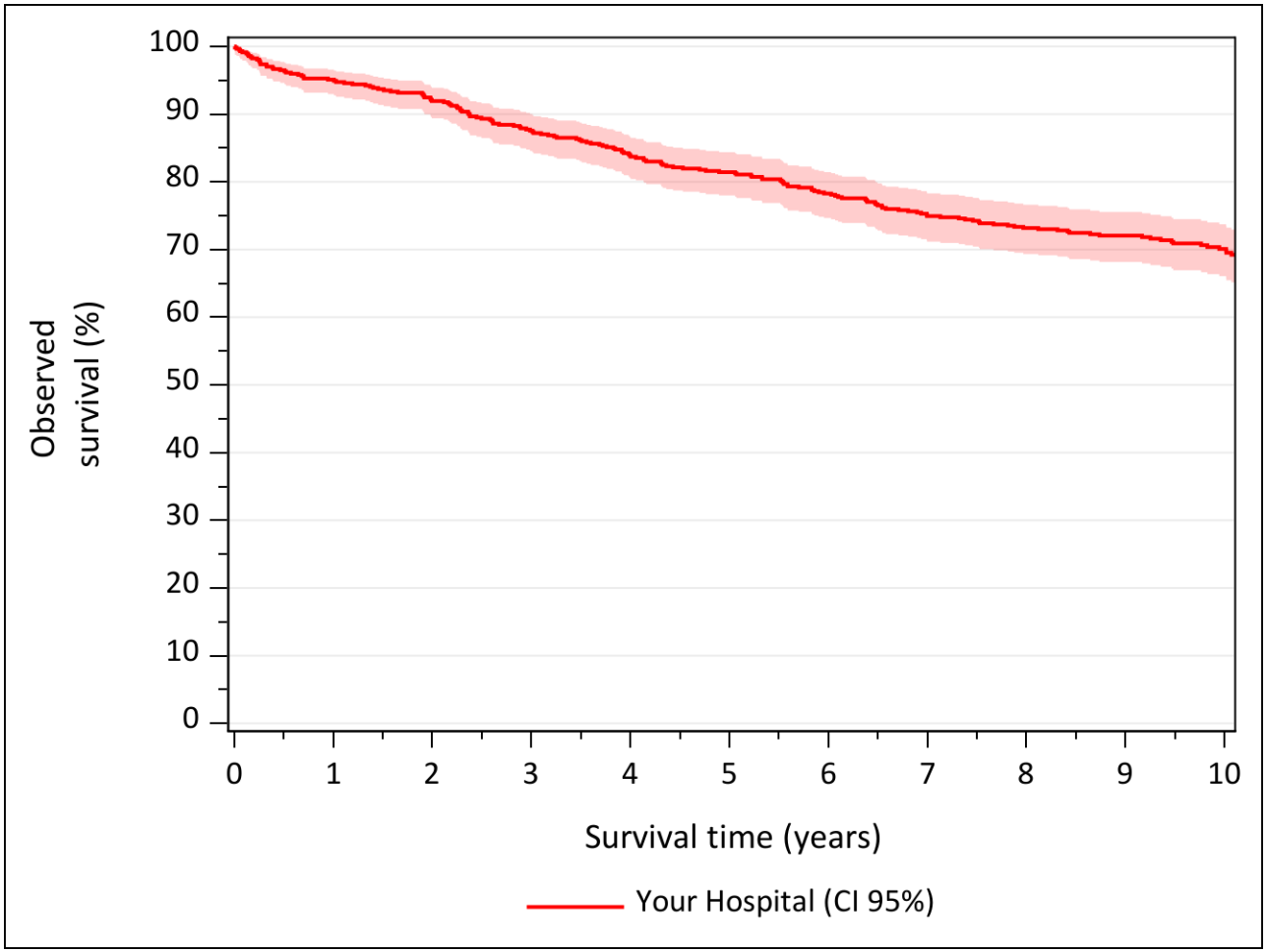
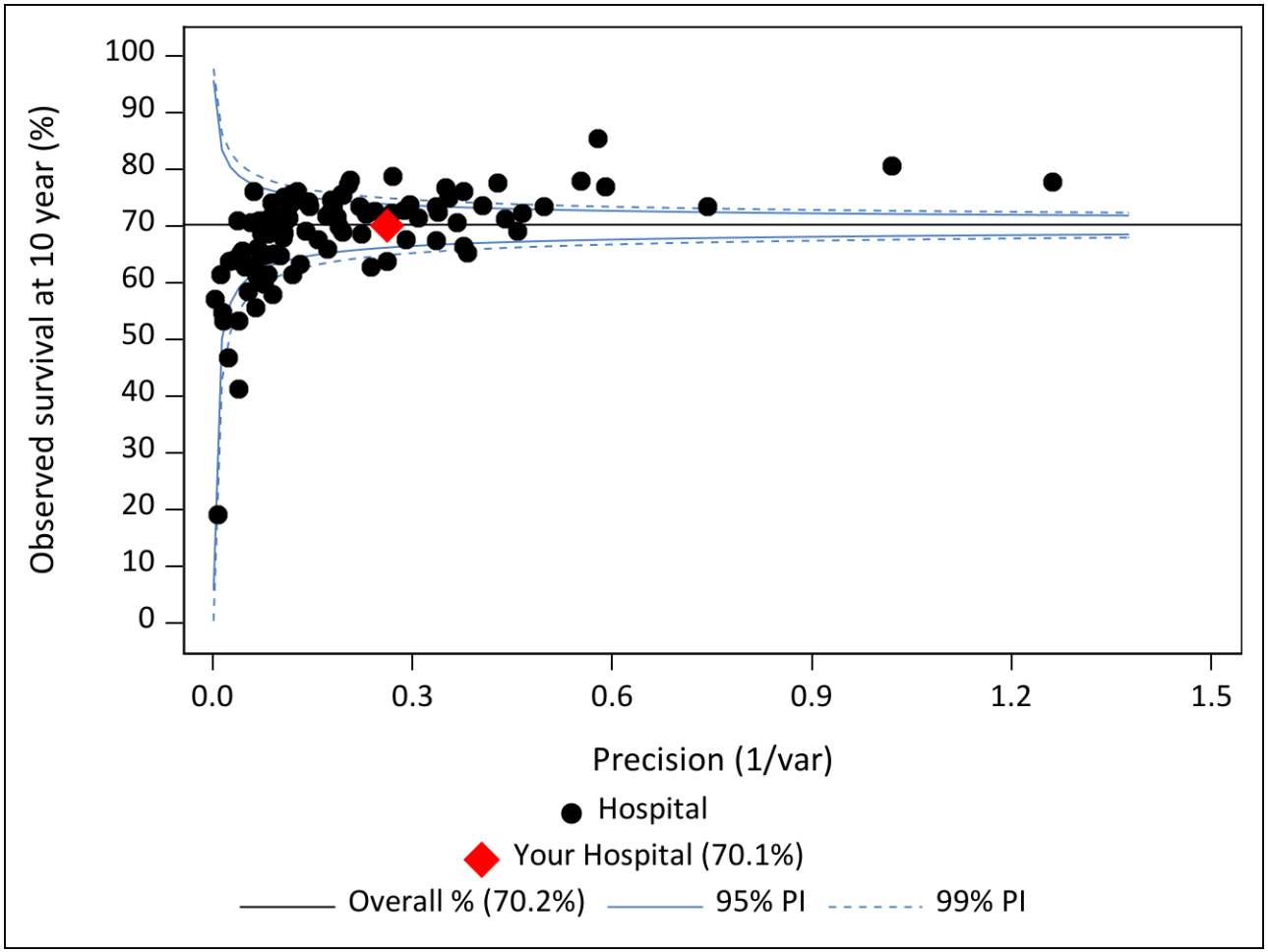
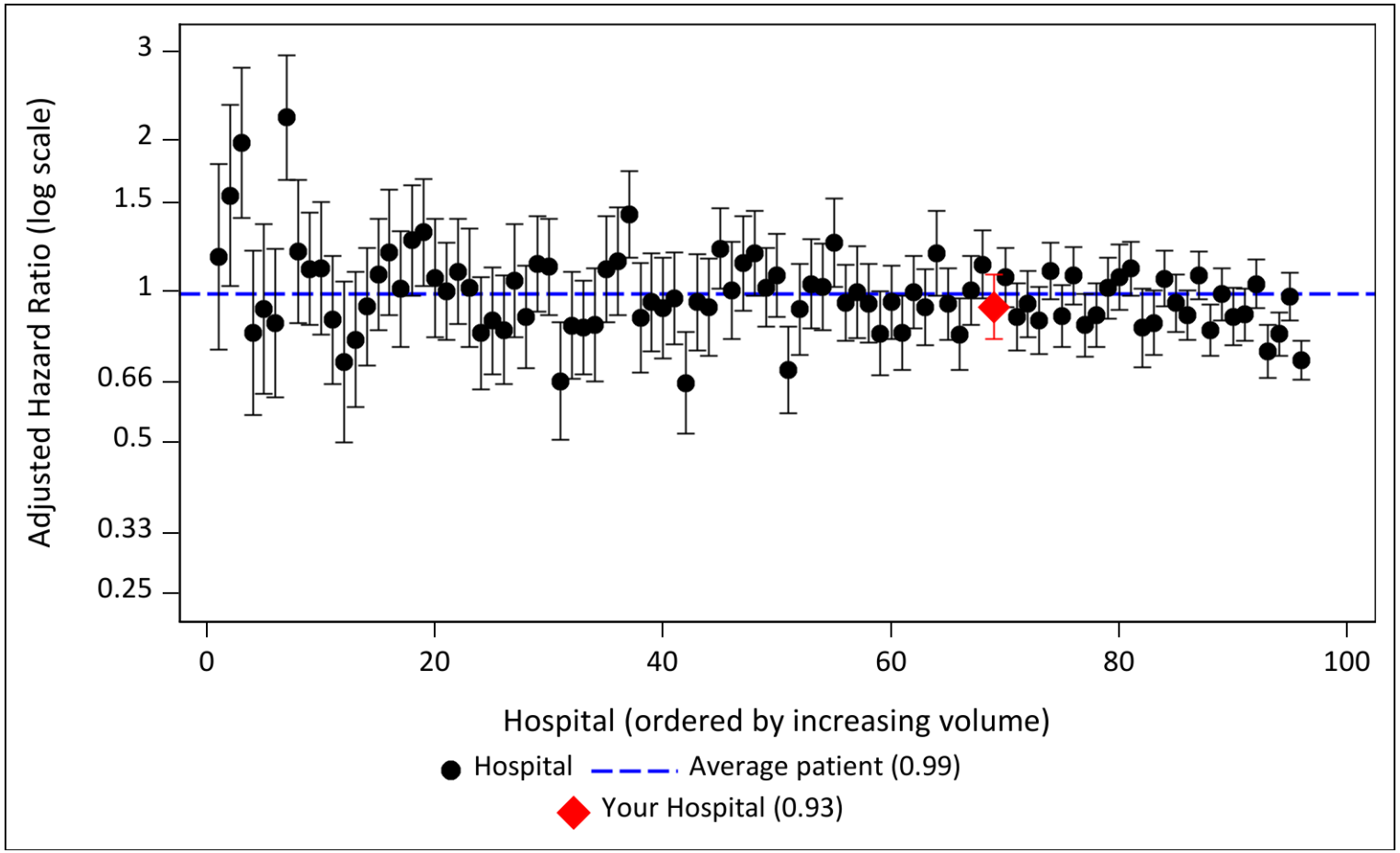


Figure 40: Unadjusted 10-year observed survival probability for patients diagnosed with <u>invasive breast cancer</u> assigned to your hospital on the basis of main treatment



To quantify the degree of heterogeneity among centres, the reciprocal of the estimated effect variance (i.e. precision) was used instead of the volume (as was done for the other QIs); hospitals which did not achieve a follow-up of 10 years, are not presented on the funnel plot; hospitals with an observed survival of 0 or 100%, for which the precision does not exist, are not presented on the funnel plot. If your centre has (had) fewer than 40 patients assigned, it is not highlighted in the figure.

Figure 41: Case-mix adjusted hazard ratio for all-cause death in patients with invasive breast cancer assigned to your hospital on the basis of main treatment



Hazard ratios were determined over the [0,10] year survival time interval. A minimum hospital size of 40 assigned patients was applied, with size referring to the number of patients available for the analysis. For 96 hospitals the adjusted HR could be obtained. The hazard ratios were adjusted for age at diagnosis, WHO score, number of previous hospital bed days, cardiovascular disease, respiratory disease, diabetes, combined tumour stage, differentiation grade. Value 1.0 represents the average hospital and the dashed blue line is the HR for the average patient (which equals the weighted sum of all hospitals HR, with the number of patients per hospital as weight). The hospitals are ranked according to the number of patients assigned to them: from smallest (left) to largest (right). A HR which is lower than 1.0, indicates a lower hazard (or instantaneous risk) to die, and thus a higher survival. When the vertical lines, which represent the 95% CI on the hospital HR, include value 1.0 (dashed line), the HR of that hospital is not statistically significantly different from the average hospital (average patient).