



SOReg Annual Report 2023

Part 1 – Surgical statistics and early complications

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Summary

Operation volumes

- During 2021, approximately 5000 operations were performed in Sweden. This is similar to 2022 and an increase compared to 2019 and to the pandemic years 2020-2021.
- All 37 hospitals performing bariatric surgery in Sweden reported data to SOReg.
- There are still large differences between regions in Sweden regarding the number of operations performed per 100,000 inhabitants. In view of the fact that bariatric surgery in Sweden comes under the national healthcare service, unequal access for patients with morbid obesity is unacceptable.
- The percentage of patients paying for their operation during 2023 was 33% which is less than in 2022 but an increase compared to 2019, prior to the pandemic. Large differences remain between counties in Sweden indicating unequal access to bariatric surgery.
- Gastric bypass was the dominant procedure for many years, but since 2012, Sleeve gastrectomy has increased in popularity, and by 2021 sleeve gastrectomy and gastric bypass rates were similar. Over the last 2 years, however, the GBP rate has increased and the rates are now 67% GBP and 33% SG.

Operation results

- Over 99% of operations are performed laparoscopically and the conversion rate is less than 1% suggesting the technical standard of surgery is high throughout Sweden.
- Operation times and number of days in hospital continue to decrease indicating an increasingly effective use of resources.
- The percentage of patients with a postoperative complication decreased over many years but the rate has now levelled out at approximately 2% of patients suffering a severe complication.
- The 90-day mortality rate continues to be low at approximately 0,05% (100% follow up via the Swedish Population Register).
- In this report, results are given for each Swedish county and for each hospital reporting to SOReg.

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Data for this report were extracted 20th Feb. 2024.

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Abbreviations:

GBP	Gastric bypass
SG	Sleeve gastrectomy
DS	Duodenal switch

If you find any errors or have questions on the content please contact: soreg@regionorebrolan.se

Surgical statistics

Number of procedures in Sweden and at each hospital

After 2011, when a zenith in the number of operations performed was noted in Sweden, we saw a steady decline until 2019 when just under 5000 operations were performed. During the covid-19 pandemic 2020-2021, many elective procedures under the public healthcare system were cancelled and a further significant fall to 3400 and 4000 operations respectively occurred. During 2022 and 2023 the number of operations increased to approximately 5000, which is slightly more than 2019, the year before the pandemic. The need for bariatric surgery in Sweden remains unknown. The Swedish Board of Health and Welfare is due to publish new guidelines for the treatment of obesity. In this report it is stated that many more patients are in need of assessment for obesity treatment, including bariatric surgery. It will be interesting to see if implementation of these guidelines will affect the volume of bariatric surgery in Sweden.

The decline in numbers between 2011 and 2019 has several theoretical explanations, the most probable being that the long waiting-list in Sweden prior to 2011 was gradually dealt with. In many hospitals, benign surgery, including bariatric surgery, was forced to give way to cancer surgery that constantly demanded more resources. There is also a general lack of nurses and hospital beds throughout the country, which has also led to a decrease in benign surgery. The significant decrease in numbers seen during 2021-2022 was largely due to the covid-19 pandemic, and we now see a recovery in numbers despite the fact that staffing problems in our public healthcare system is as severe as before the pandemic.

The numbers given in Fig 1 come from the Swedish Department of Health and Welfare for the years leading up to 2007, and from SOReg and other sources from 2007 onwards. The number of operations for 2023 may be 100-200 more than shown in Fig 1 because of late registration. In contrast to the 2022 report, the number of operations for 2023 was corrected upwards for this reason.

Fig 1: Annual number of operations in Sweden 1998 – 2023

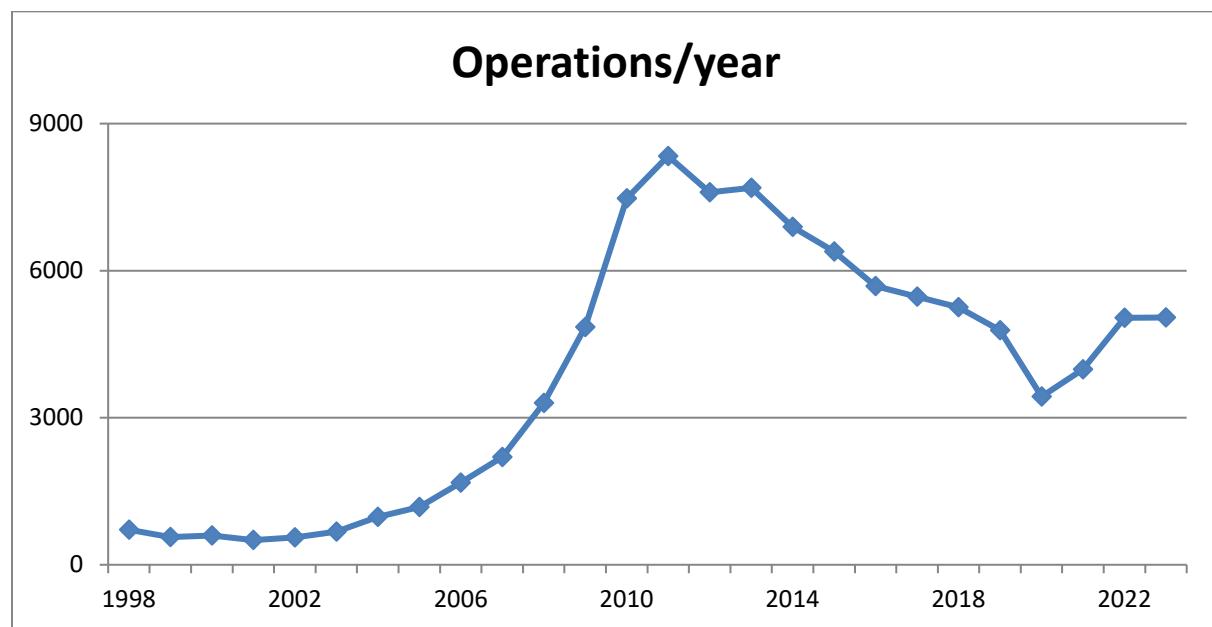


Table 1. Hospitals and number of operations in SOReg and in PAR (Swedish Department of Health and Welfare). Data from PAR for 2023 are not yet available. Please observe that extraction of data for this table was done at an earlier date and the numbers may thus differ slightly to other places in this report.

Year Hospital name	2020		2021		2022		2023
	SOReg	PAR	SOReg	PAR	SOReg	PAR	SOReg
Aleris Obesitas Sthlm	58	0	67	0	106	0	91
Aleris, Skåne	45	0	53	0	57	0	34
Blekinge	36	36	50	50	52	52	38
Capio St Göran, Sthlm	49	49	28	28	65	65	141
Carlanderska, Gbg	97	79	227	9	157	98	182
CFTK, Sthlm	264	0	378	0	380	58	229
CK Klinikerna, Sthlm			27	2	106	10	194
Danderyd	111	113	100	100	164	163	149
Ersta, Sthlm	385	363	477	467	512	507	462
Falun	2	3	0	0	8	8	18
GB Obesitas Skåne	702	1	892	0	914	0	941
Gävleborg	60	59	27	25	54	49	63
Kalmar	14	14	9	10	1	4	0
Kirurgicentrum Skåne	173	0	213	0	123	0	76
Ljungby	24	22	29	30	39	41	26
Lycksele	77	73	82	83	110	107	98
Mora	152	153	208	208	192	193	169
NCK, Östergötland	96	0	163	0	230	0	190
Norrköping	116	113	59	56	117	117	177
Norrtälje	17	20	40	43	58	61	58
Nyköping	20	20	16	17	28	29	4
SU/Östra, Gbg	81	88	25	29	34	34	124
Skövde	142	137	102	106	289	287	315
Sophiahemmet Sthlm	140	0	305	0	415	0	442
Spec. läk. h. Sundsvall	0	0	0	0	7	0	1
Sunderbyn, Luleå	20	18	0	6	9	9	36
Sundsvall	35	13	14	5	9	9	24
Södersjukhus, Sthlm	3	6	16	18	27	29	22
Södertälje	29	29	22	21	41	42	29
Torsby	94	85	100	91	146	156	152
Uppsala	81	80	131	131	181	183	165
Varberg	23	29	1	12	2	13	29
Värnamo	38	38	57	55	58	57	85
Västervik	7	9	10	10	11	11	11
Västerås	54	55	92	92	69	71	42
Örebro/Lindesberg	179	178	184	182	179	177	204
Östersund	16	16	8	8	5	6	18
Sweden	3440	1899	4212	1894	4955	2646	5039

Table 1 shows the number of procedures performed at each hospital. The table includes operations registered in SOReg as well as the number of operations reported to PAR (Swedish Department of

Health and Welfare). Please note that PAR reports have a 1-year delay, thus figures for 2023 are not yet available. During 2023, bariatric surgery was performed at 37 units in Sweden. During 2023 one private clinic (Kirurghuset Västerås) began performing bariatric surgery. Since they registered only 4 operations in 2023 they are not included in this report.

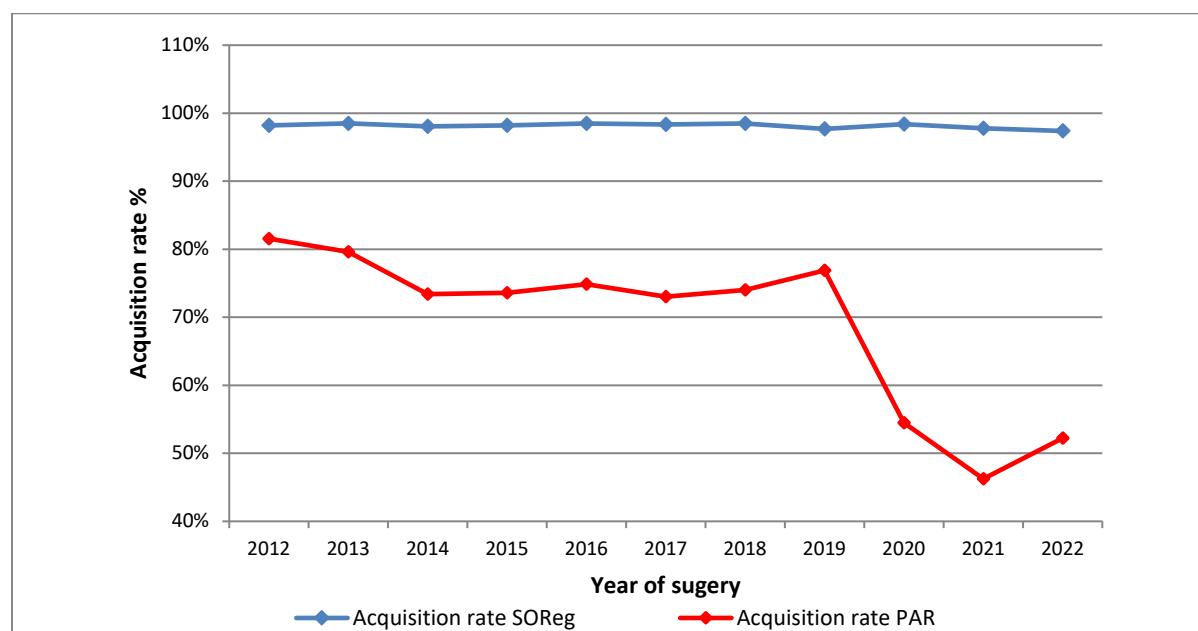
Only those hospitals performing surgery during 2022 and 2023 are included in Table 1. The numbers for Sweden include all bariatric procedures. Since January 1st 2013, all hospitals performing bariatric surgery in Sweden have reported to SOReg.

The covid-19 pandemic had a significant impact on bariatric surgery in Sweden. Since then, many hospitals have returned to their normal bariatric surgical volumes. However, in Table 1 it can be seen that two hospitals, Nyköping and Kalmar, have almost stopped performing bariatric surgery and in a number of other hospitals the volume has decreased significantly compared to before the pandemic (for comparison see Table 1 in Annual Report 2021, Part 1). This is concerning and there are certainly several reasons for this, but one probable cause is difficulty in recruiting staff that has forced some hospitals to deprioritize bariatric surgery in favour of more acute surgery and cancer care. Several national healthcare hospitals with low volume are sending their patients to private clinics. Small public and private hospitals seem to have maintained their volumes best.

Coverage rate

All hospitals in Sweden are required to report all operations to the Swedish Department of Health and Welfare . This register is named PAR. The Department of Health and Welfare reports annual coverage rates for all quality registers in Sweden (intervention registers). SOReg is one of these, and usually achieves a higher coverage than so-called diagnosis-based registers such as the Swedish National Diabetes Register. SOReg coverage has been among the best in the PAR report for many years.

Fig 2. Coverage rate for SOReg and PAR (Swedish Department of Health and Welfare) 2012-2023.



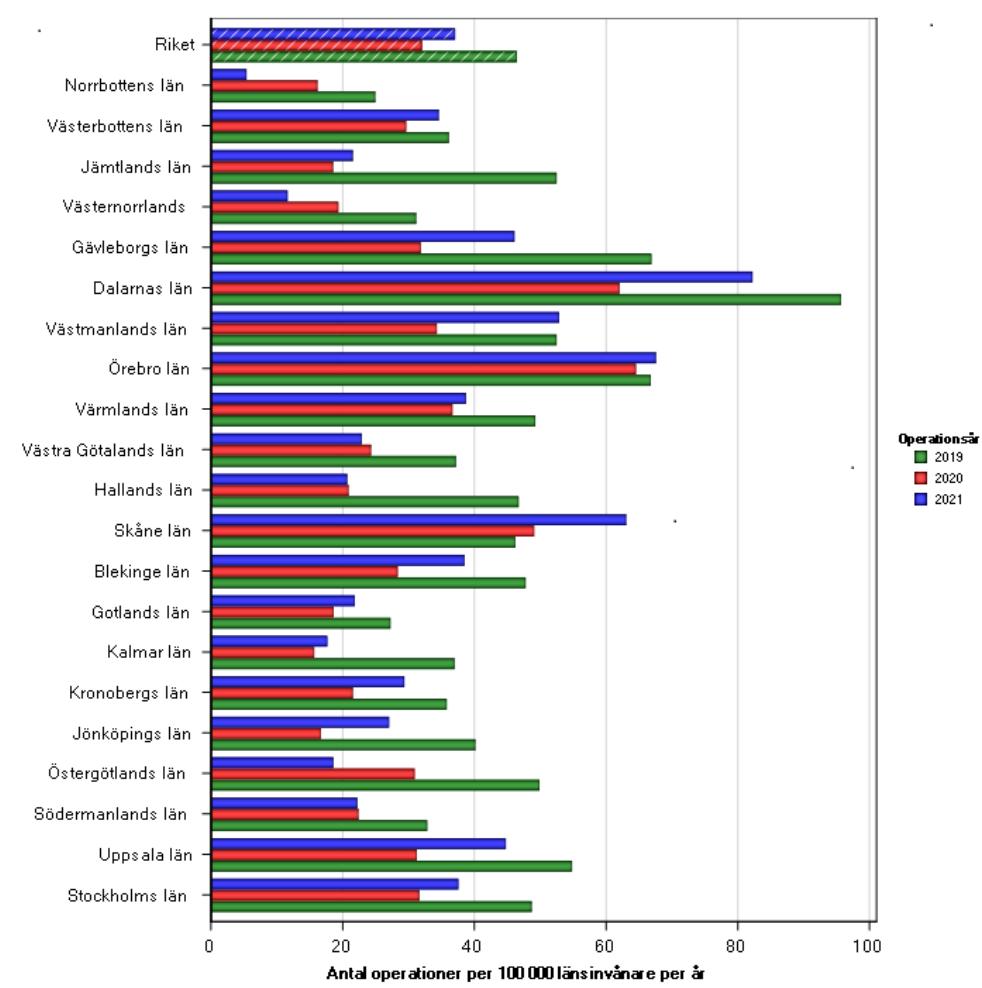
In Fig 2 coverage rates for SOReg and PAR are shown over time. In the denominator we have added all operations from SOReg and PAR. The coverage rate for PAR is very poor, around 75%, largely due to several private units not reporting to PAR. During 2020-22, the acquisition rate for PAR decreased to just over 50% due to private units contributing to a larger percentage of all operations during those years. SOReg coverage is very high, around 98%, and is actually better than shown in Fig 2 because a number of reoperations for complications are reported to PAR as bariatric procedures, whereas they are correctly registered in SOReg as complications.

Number of operations per county

Surgery is an important medical treatment for morbid obesity and it is the tax-financed healthcare system's responsibility to make sure this treatment is available to all Swedish citizens equally.

Despite this, access to bariatric surgery varies significantly between different counties in Sweden as seen in Fig 3. In this figure the patients are grouped according to their home address only, and data on operating place or how the operation was financed have been excluded.

Fig 3. Number of operations per 100,000 inhabitants for each county in Sweden 2021-2023. Län = county, Riket = Sweden. Operationsår = year of surgery. Based on populations the 31st December each year.



Operation methods

Gastric bypass has been the most popular procedure in Sweden for many years. Since 2012, sleeve gastrectomy has increased significantly and from 2018 to 2021, GBP and SG rates were similar. Over the last 2 years the GBP rate has increased and the rates are now 67% GBP and 33% SG (Fig 4). In recent years, a new variation of bypass called One-Anastomosis Gastric Bypass (OAGP) has been introduced. There were only 28 such operations registered in SOReg and they are included in the GBP group in this report.

Fig 4. Percentage gastric bypass (GBP) and percentage sleeve gastrectomy (SG) of all primary procedures 2010-2023.

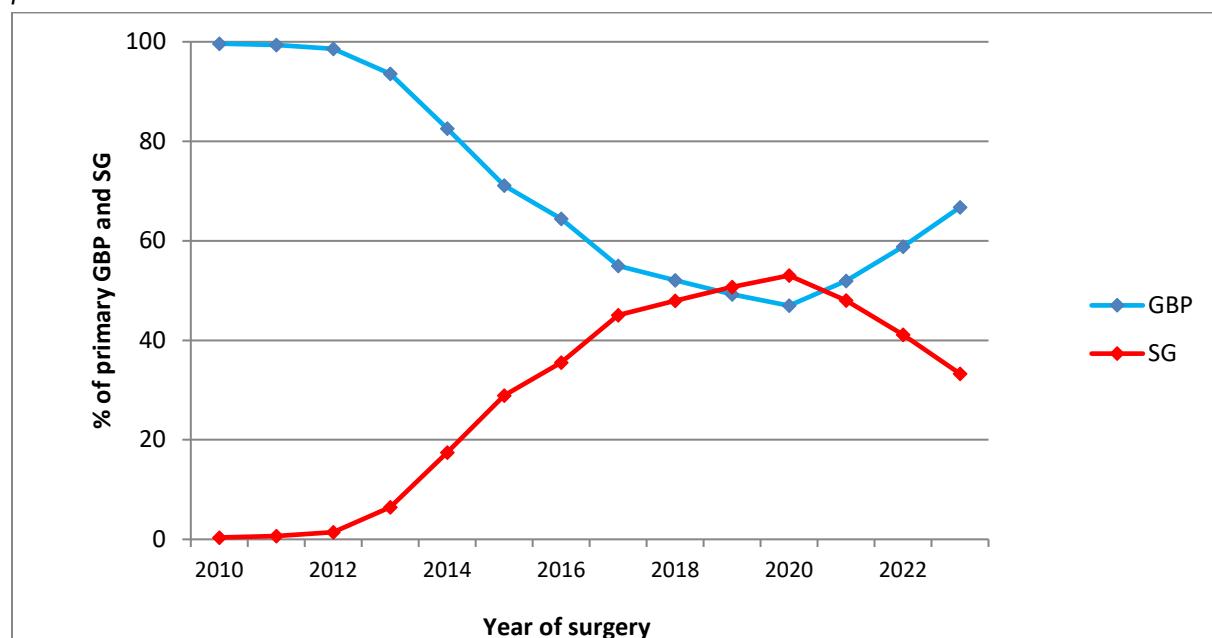


Table 2 shows the percentage distribution when both primary and revisional surgery are included. Interrupted operations are displayed in Table 2 but are excluded in other calculations in this report. Restrictive methods such as gastric banding and VBG dominated during the 1980s and 90s, but are no longer performed. Duodenal switch is only performed in patients with BMI >50-60, and the number was stable at around 50 per year for several years but has fallen in recent years. Single-anastomosis duodeno-ileal bypass with SG (SADI-S), is a variation of DS without jejunostomy. Thirty-six SADI-S were registered in SOReg and they are reported as DS. Table 2 shows that the number of interrupted operations and reversal operations remained at a relatively low level over many years. The percentages for GBP, SG, and revisional procedures at each hospital are displayed in Table 8, Page 24.

Table 2. Operation methods 2007-2023.

Year Operation method	2007-2020		2021		2022		2023	
	n	%	n	%	n	%	n	%
Primary GBP	57594	77,6	2034	49,3	2850	56,4	3154	62,3
Primary SG	12603	17,0	1893	45,9	1976	39,1	1573	31,1
Primary DS	524	0,7	0	0,0	0	0,0	0	0,0
Other primary methods	336	0,5	0	0,0	2	0,0	8	0,2
Revision to GBP	2254	3,0	111	2,7	133	2,6	182	3,6
Revision to other method	205	0,3	26	0,6	27	0,5	72	1,4
Revision using the primary method again	248	0,3	27	0,7	26	0,5	27	0,5
Reversal to normal anatomy	212	0,3	28	0,7	23	0,5	27	0,5
Interrupted operation	225	0,3	8	0,2	19	0,4	21	0,4
Sum	74201		4127		5056		5064	

Recently a new operation method named Single Anastomosis Sleeve Ileal Bypass (SASI) has been introduced and a few hospitals are using it, and since 2023 it is possible to register this method in SOReg. The method is a combination of One Anastomosis Bypass (OABG) and SG. Nine SASIs have been registered in SOReg during 2023 and are classed as "other method" in this report.

It is possible to register endoluminal procedures in SOReg. A number of endoluminal procedures are described in the literature and two of them, the Aspire method and the intragastric balloon method, have been registered in SOReg. Intragastric balloons are placed in the stomach, usually for 6 months, and then removed at endoscopy. SOReg is not designed to register this type of temporary treatment option and since the method is not "surgical" the SOReg steering committee decided in 2019 to stop intragastric balloon registration, and it is not included in this report. The Aspire method includes endoscopic placement of a gastrostomy catheter used to remove gastric content. The method has only been used at one hospital in Blekinge, and all patients have been included in a study protocol. In all, 135 operations were carried out between 2012 and 2016, and of these 119 catheters have been removed (registered in SOReg as "reversal to normal anatomy"). The Aspire technique has not been performed since 2016, and these patients have been omitted in this report.

Access and conversions

The percentage of operations performed laparoscopically increased dramatically during the first years of the SOReg as seen in Figs 5 and 6. The low conversion rate observed, decreasing in recent years to less than 10 cases per year, suggests that laparoscopic bariatric surgery is performed with a high degree of technical skill in Sweden. Today, the main indication for elective open surgery is extensive previous surgery of the upper abdominal tract. The laparoscopically performed operation rate during 2021 was 99,78% and only 9 operations began as an elective open procedure, and only 2 operations needed conversion from laparoscopic to open surgery.

Fig 5. Surgical access each year. All operation methods including revisional surgery. The remaining procedures up to 100 % were laparoscopic.

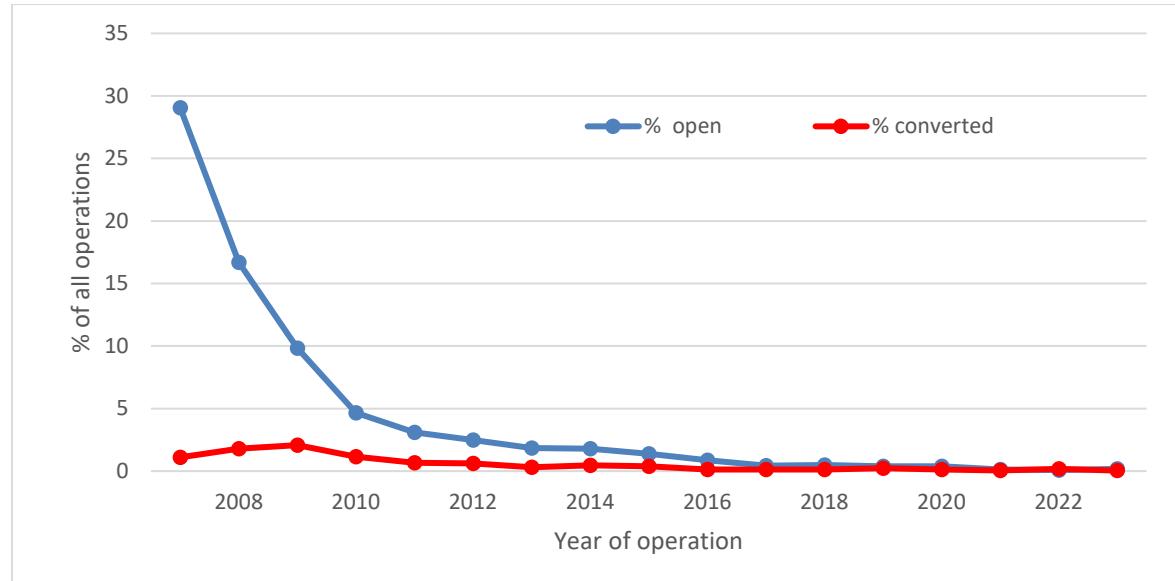
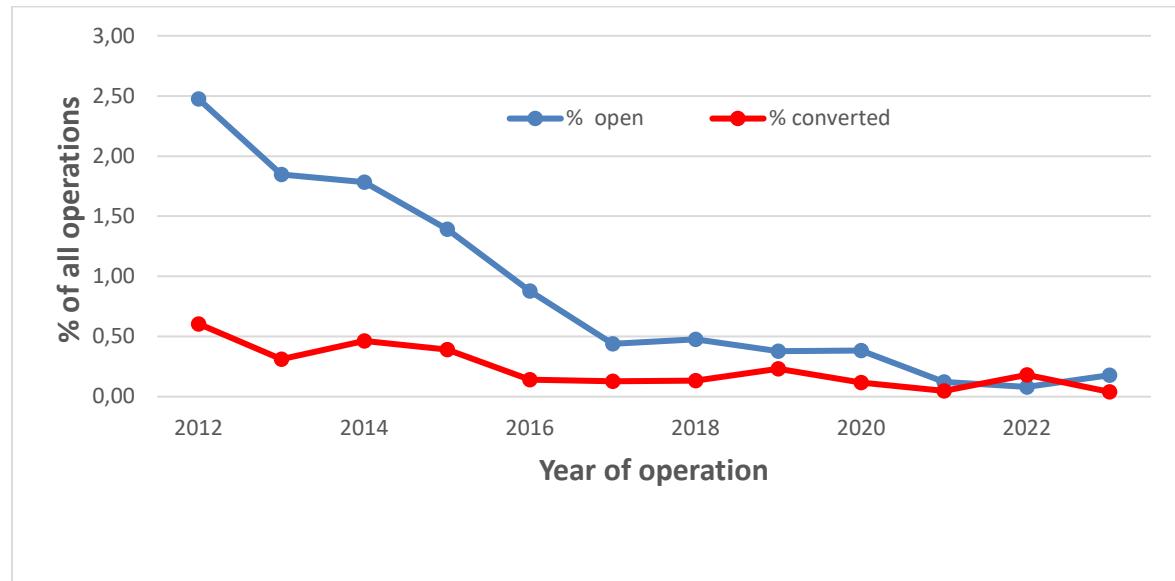


Fig 6. Detailed figure of surgical access from 2012 to 2023. All operation methods including revisional surgery. The remaining procedures up to 100 % were laparoscopic.



Reversion to normal anatomy

Reversion to normal anatomy was reported in Annual Report 2020 Part 1, pages 9-10 and Fig 6. The numbers of reversion operations during 2022 and 2023 were 23 and 27 respectively.

Use of medical resources

Length of hospital stay has steadily decreased since SOReg began in 2007 (see Fig 7). This is largely the result of the increase in laparoscopic surgery, but also a decrease in complication rates.

Furthermore, operation time has steadily decreased since 2007 and the percentage of operations performed laparoscopically (99,8%) leaves little room for improvement. Length of hospital stay is also not expected to decrease much more. Bariatric surgery as a day-case procedure, however, is questionable from the safety point of view. Together with the decrease in complication rate, shown later in this report, data suggest an overall picture of greatly improved quality and efficiency of Swedish bariatric surgery.

Fig 7. Use of resources 2007-2023. Percentage laparoscopic surgery (% left y-axis), mean operation time minutes, left y-axis and mean hospital stay days, right y-axis. Primary operations only.

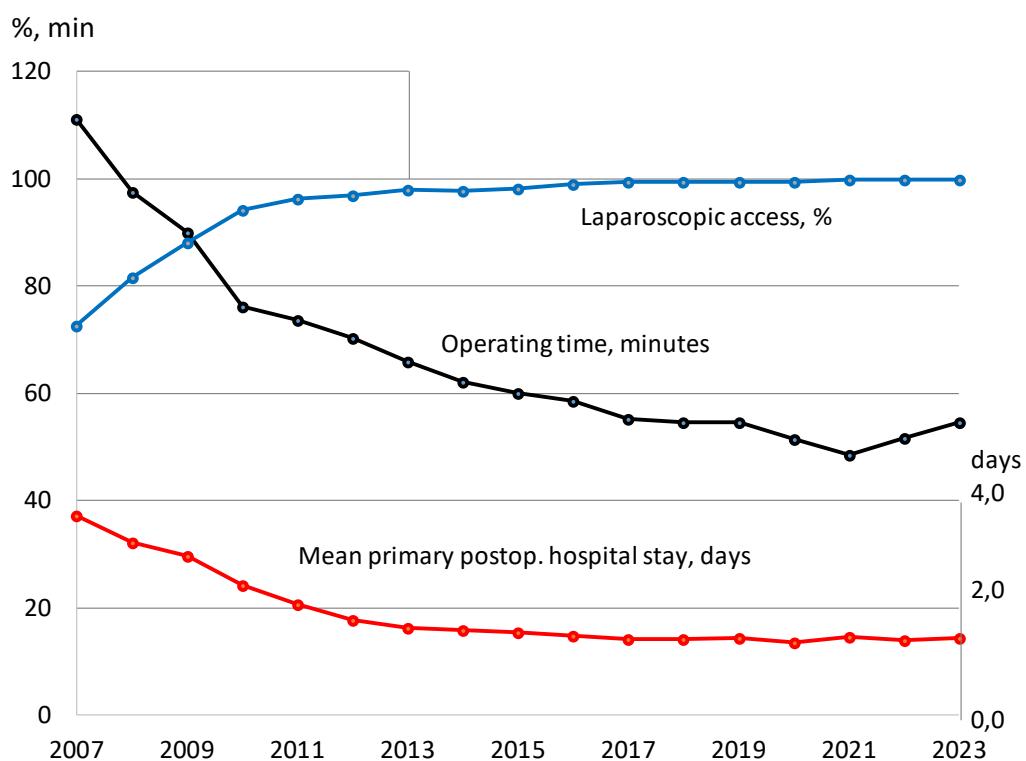
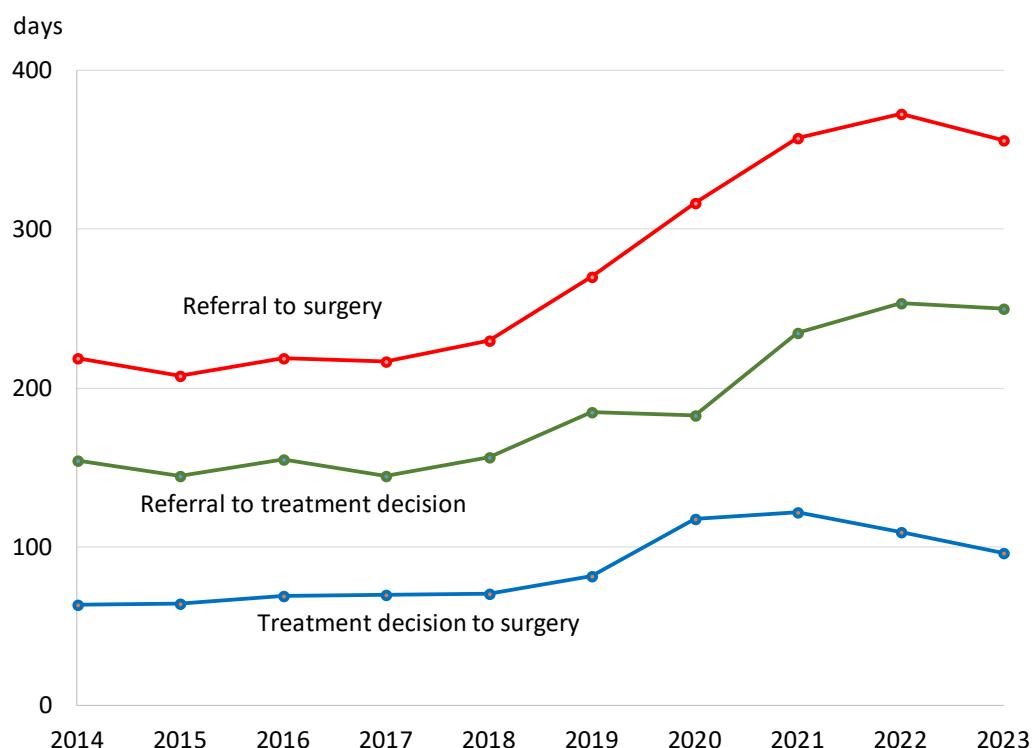


Table 9 with operation time and hospital stay per hospital is shown at the end of this report.

Waiting-list times

SOReg has registered waiting-list times for over 17 years. In general waiting-list times have decreased with increasing surgical volume. During 2007-2011, a rapid increase in surgical volume was seen, but since then volumes have decreased. Waiting-list times continued to decline after 2011 but then levelled out, and since 2017 times have increased, especially during the pandemic years (see Fig 8). During 2022 and 2023, when operation volumes were back to normal levels, a significant decrease in waiting-time was not seen. This suggests that surgical capacity in Sweden is too low.

Fig 8. Changes in time on waiting-lists for bariatric surgery in Sweden 2007-2023 (days, mean), primary operations only. Green line = time from referral to decision to operate. Blue line = from decision to operate to operation. Red line = From referral to operation.



There are no reliable data regarding waiting-list times for bariatric surgery in Sweden. Data from SOReg and official waiting-list data from several hospitals cannot be used for comparison between hospitals since medical practice and surgical registration differ between hospitals. Some hospitals require patients to attend a “weight reduction school” that can last several weeks. This results in a long interval between referral and decision to operate, and little time between decision to operate and surgery. In other hospitals, endocrinological evaluation is mandatory before referral to surgery.

Sometimes operations are referred to a private unit and this unit registers this as the referral date. Data on waiting-list times should be mainly used by individual hospitals for comparison between one year and another. Revisional surgery has been excluded from waiting-list time data since SOReg does not have date of referral or operation decision date for these procedures. Date of referral is an optional variable in SOReg, but date of decision and date of operation are mandatory variables. This means that time from operation decision to surgery has almost no missing data whereas the other two waiting-list times has data missing for approximately one third of patients.

The waiting-list times in private clinics when patients pay for surgery themselves is significantly shorter. This is shown in Annual Report 2021, Part 1, page 14, Fig 10.

Table 3. Waiting-list time from referral to operating decision per county in Sweden, mean, days. Primary operations only. n op = number of operations, n data = number of patients with data.

From referral to decision	2015-21 mean	2022 mean	2023				
			n op	n data	mean	SD	median
Blekinge	237	243	59	39	395	337	343
Dalarna	311	122	233	188	101	39	97
Gotland	129	112	19	2	174	216	174
Gävleborg	206	446	182	64	358	305	281
Halland	136	212	170	56	435	471	251
Jämtland	205	260	78	18	397	261	327
Jönköping	177	46	133	12	16	11	12
Kalmar	152	256	44	14	283	276	153
Kronoberg	142	208	136	99	36	38	21
Norrbotten	198	573	92	53	475	388	585
Skåne	126	230	812	669	198	129	205
Stockholm	114	206	1 062	813	195	162	159
Södermanland	275	336	118	22	269	426	27
Uppsala	84	123	210	166	115	98	93
Värmland	402	804	179	102	671	378	728
Västerbotten	209	359	124	97	270	110	271
Västernorrland	251	407	76	20	506	460	512
Västmanland	369	555	123	66	530	456	734
Västra Götaland	126	125	792	337	319	430	30
Örebro	219	221	233	201	209	206	158
Östergötland	113	382	247	173	431	166	426
Sweden	167	253	5 132	3 218	250	271	164
Sweden women	160	250	4 087	2 514	241	267	158
Sweden men	187	265	1 045	704	279	280	185

Tables 3-5 show times on waiting-list for each county in Sweden. Observe that figures in Tables 3-5 use the patients county of residence, even though the operation might have been performed at a private or public hospital in another county. Many private hospitals have short waiting-lists which may influence the waiting times for a county, depending on the proportions of public and private operations (see Fig 9 and Table 6). A county which does not prioritise bariatric surgery thereby

"forcing" its patients to pay for surgery themselves, may, from a waiting-list perspective, show falsely positive figures.

Women generally have a slightly shorter waiting time.

Individual hospital waiting-list times are shown in Tables 10-12 later in this report.

Table 4. Times between decision to operate and operation, per county, mean, days. Primary operations only. n op = number of operations n data = number of patients with data.

From decision to surgery	2015-21 mean	2022 mean	2023				
			n op	n data	mean	SD	median
Blekinge	107	139	59	43	147	118	106
Dalarna	83	146	233	211	138	70	135
Gotland	110	254	19	18	118	80	119
Gävleborg	116	164	182	86	187	244	145
Halland	46	61	170	61	74	105	36
Jämtland	110	70	78	26	327	358	273
Jönköping	27	30	133	120	27	63	9
Kalmar	84	199	44	30	129	172	43
Kronoberg	119	194	136	123	75	124	34
Norrbotten	77	71	92	80	44	44	29
Skåne	55	49	812	702	54	55	36
Stockholm	105	159	1 062	932	112	83	99
Södermanland	74	92	118	99	37	58	22
Uppsala	94	114	210	186	110	118	94
Värmland	44	62	179	145	39	41	35
Västerbotten	91	98	124	108	105	149	72
Västernorrland	135	92	76	37	132	297	25
Västmanland	60	93	123	91	47	96	28
Västra Götaland	59	64	792	671	49	45	37
Örebro	119	156	233	223	156	89	153
Östergötland	79	210	247	236	254	201	246
Sweden	81	109	5 132	4 237	96	118	61
Sweden women	78	105	4 087	3 350	93	113	57
Sweden men	89	124	1 045	887	110	135	76

Table 5. Times between referral and operation per county, mean, days. Primary operations only. n op = number of operations n data = number of patients with data.

From referral to surgery	2015-21 mean	2022 mean	2023				
			n op	n data	mean	SD	median
Blekinge	343	396	59	38	518	301	485
Dalarna	396	280	233	188	254	74	265
Gotland	242	253	19	2	259	327	259
Gävleborg	326	646	182	63	564	338	512
Halland	179	264	170	59	489	481	323
Jämtland	321	356	78	18	868	367	803
Jönköping	206	74	133	13	51	42	43
Kalmar	239	504	44	16	399	301	474
Kronoberg	197	236	136	102	71	45	63
Norrbotten	257	842	92	53	522	407	703
Skåne	176	270	812	675	249	146	255
Stockholm	231	393	1 062	814	317	184	282
Södermanland	359	505	118	22	341	460	63
Uppsala	184	246	210	166	237	156	223
Värmland	444	862	179	101	711	373	790
Västerbotten	299	454	124	97	384	196	359
Västernorrland	382	537	76	21	575	541	412
Västmanland	426	666	123	67	595	493	782
Västra Götaland	179	174	792	344	350	429	79
Örebro	339	392	233	201	381	219	330
Östergötland	197	672	247	173	752	240	721
Sweden	249	373	5 132	3 240	356	299	282
Sweden women	240	366	4 087	2 534	346	298	279
Sweden men	276	396	1 045	706	391	302	308

Adherence to guidelines

The decrease in complication rate in recent years may have several explanations, one being compliance with "best practice" *i.e.*, adherence to methods that are known to improve outcome. These include preoperative weight reduction, antibiotic prophylaxis, leak test, and thromboembolic prophylaxis.

The principle of prescribed preoperative weight reduction began with the introduction of laparoscopic surgery, the purpose being to improve surgical access. Two articles based on SOReg data have shown that preoperative weight reduction results in better weight outcome 1 year after surgery with fewer early complications.

Adherence to guidelines is presented in Tables 13-17.

These figures should be interpreted with some caution since the variables mentioned above are not mandatory variables in SOReg. Some hospitals have reason to improve their reporting of these variables.

The leak test is considered to be valuable and best practice in GBP. In SG, however, the value of the leak test is not so clear, and its use varies between surgeons and between hospitals.

It can be seen that the length of thromboembolic prophylaxis varies between 5 and 20 days between hospitals. Little research in this area of bariatric surgery has been published, and we cannot see any difference in thromboembolic complications between hospitals with long or short prophylaxis. The low thromboembolic complication rate makes it difficult to comment on optimal length of thromboembolic prophylaxis based on our data.

Who pays for the operation?

Sweden has a tax-financed healthcare system available to all citizens. This includes bariatric surgery with generally accepted indications. Furthermore, a large proportion of surgery performed at private units is publicly funded. Many years ago we introduced a funding variable in SOReg and it has been a mandatory variable since 2014.

Many operations in Sweden are performed at private clinics but financed by the county via various contracts. All these operations are considered publicly funded in this report.

In Fig 9 and Table 6 it is seen that a large proportion of patients pay for their operation. In debates on healthcare it has been claimed that people with money or insurance steal resources from other patients. This is not the case for obese patients in need of surgery to avoid early death, progression of comorbidity, and societal discrimination. On the contrary, these figures indicate that poor access to bariatric surgery under the public healthcare system forces people to pay for their operation. During the pandemic years of 2020 and 2021, tax-paid operations decreased markedly whereas privately financed surgery remained at the same level, meaning that the proportion of privately financed operations increased significantly. Differences between regions are large indicating unequal access to healthcare.

The percentage of operations funded by a private insurance scheme is small (<0,5%), and there are no signs of this increasing.

It is true that some patients who pay for their operation do not fulfil the indication criteria (mainly BMI) usually applied in the public healthcare system. This is described in Annual Report 2021, Part 1, page 18, Fig 12. The number of patients with a BMI below 35 operated privately has remained constant at around 400/year but the number of privately financed operations with a BMI >35 has increased. This is yet another indication that the publicly financed healthcare system cannot keep up with the demand for bariatric surgery.

Fig 9. Number of primary procedures 2014-2023 under the public healthcare system (blue line) and number of privately financed operations (red line). Operations paid by private insurance/employer are few and not shown.

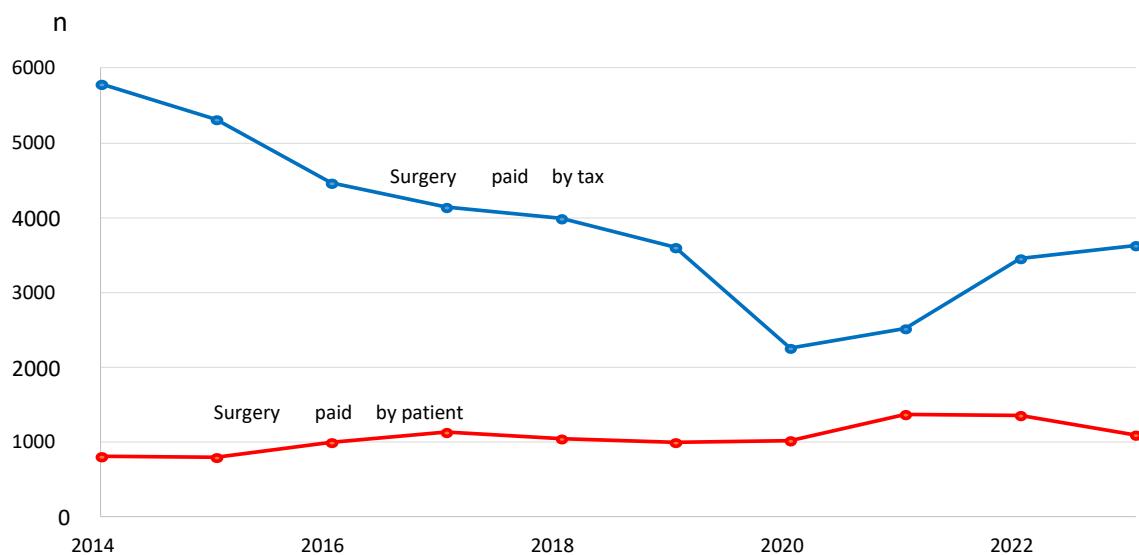


Table 6. Total number of operations, percentage publicly funded (%pub) and percentage privately funded (%priv) operations presented according to county of residence. N op = number of operations, % pub = percentage publicly funded, % priv = percentage privately funded.

	2015-2021			2022			2023		
	n	%pub	%priv	n	%pub	%priv	n	%pub	%priv
Värmland	999	88,4	11,0	166	86,7	13,3	148	89,2	10,8
Örebro	1 400	89,7	10,3	201	86,1	13,9	226	86,7	13,3
Norrbotten	532	69,7	30,1	122	82,0	18,0	86	86,0	14,0
Jämtland	341	81,2	18,5	47	63,8	36,2	77	85,7	14,3
Västerbotten	753	89,9	9,7	122	88,5	11,5	112	84,8	15,2
Halland	936	74,9	25,0	101	67,3	32,7	167	83,2	16,2
Dalarna	1 719	88,1	11,8	233	84,1	15,9	215	83,3	16,7
Kronoberg	557	85,8	14,0	105	90,5	9,5	131	83,2	16,8
Stockholm	7 781	80,7	18,9	1 101	76,1	23,9	973	82,0	17,9
Blekinge	502	84,5	15,5	60	81,7	18,3	43	81,4	18,6
Gävleborg	1 159	85,4	14,4	150	82,7	17,3	172	81,4	18,6
Uppsala	1 396	82,2	17,5	222	81,1	18,9	197	78,7	21,3
Skåne	5 069	73,0	27,0	895	71,1	28,8	729	74,9	25,1
Västernorrland	574	77,7	22,1	53	39,6	60,4	68	73,5	26,5
Östergötland	1 693	84,7	15,3	182	60,4	39,0	237	72,2	27,8
Jönköping	903	81,0	19,0	110	59,1	40,9	123	69,9	30,1
Gotland	135	76,3	23,0	34	85,3	14,7	18	66,7	33,3
Västra Götaland	4 584	64,0	35,8	614	51,3	48,7	743	65,4	34,6
Södermanland	654	59,8	40,2	100	48,0	52,0	111	63,1	36,9
Västmanland	993	77,0	22,7	119	58,0	42,0	97	59,8	40,2
Kalmar	840	87,7	12,3	77	76,6	23,4	41	48,8	51,2
Sweden	33 699	78,0	21,8	4 819	71,8	28,2	4 723	76,7	23,2
Sweden women	26 316	75,3	24,5	3 815	69,5	30,5	3 748	74,8	25,2
Sweden men	7 383	87,7	12,2	1 004	80,4	19,6	975	84,3	15,7

Indications

Indications for bariatric surgery have remained stable since the 1980s. These indications were formulated 1991 in a NIH document. In short, bariatric surgery is indicated in adults with a BMI over 40 kg/m² and a BMI over 35 kg/m² with comorbidity or severely impaired quality-of-life. When this document was written it was based on opinion but over recent years a substantial amount of scientific evidence to support these guidelines has been published.

After a careful review of the literature, evidenced-based guidelines on indications for bariatric surgery in Sweden were presented in 2007 and revised in 2009 (NIOK can be downloaded from <https://www.sfoak.se/riktlinjerrapporter/>). In short, bariatric surgery is now accepted for adults with a BMI >35 kg/m² without specific comorbidity. However, these guidelines were never accepted at the nationwide level.

Last year the Swedish Department of Health and Welfare published new guidelines for treatment of obesity, including indications for bariatric surgery. In these guidelines bariatric surgery is indicated for patients with BMI>35 regardless of comorbidity. This has also been expanded to include BMIs 30-35 in certain conditions. . It is for mainly for patients with severe comorbidity such as poorly controlled type-2 diabetes that the indication has been expanded. The present national healthcare programme is being revised based on national guidelines already published. It will be interesting to see how the new healthcare programme increases the need for further surgical resources.

Previously there was an age limit of 60 years for bariatric surgery. This age limit has more or less disappeared, and a significant number of patients in SOReg have had primary bariatric surgery above this age.

Early complications (0-30 days)

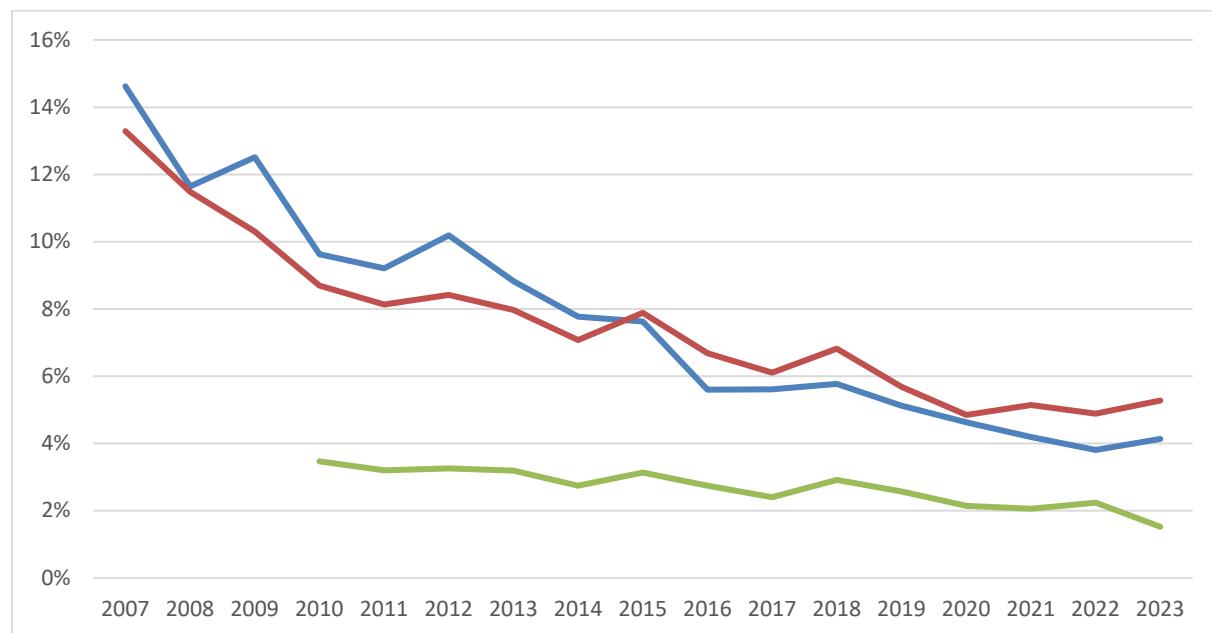
Early complications are registered in SOReg at a 6-week visit, and this is supposed to cover the first 30 postoperative days or time to discharge if this occurs after 30 days (rare). A number of specific complications and reoperations are registered. Definitions and explanations on registration of early complications are found in the 2016 Annual Report Part 1, pages 30-31 (Swedish only).

Changes over time

The number of complications has decreased significantly since the register began. The risk for any type of complication has decreased by circa 60% since 2007, and the risk for a severe complication has decreased by circa 40% since 2010 (the year when the Clavien-Dindo severity score was introduced in the register). This has contributed to the decrease in length of hospital stay (Fig 7) and readmission rate (Table 19).

Over recent years, the number of complications have remained stable or fallen lower than that described as a relevant goal in an international benchmark publication (*Gero et al. Ann Surg 2019;270(5):859-867*).

Fig 10. Percentage of operations followed by any complication (red line), severe complication (Clavien-Dindo $\geq 3b$) (green line), and readmission to hospital regardless of diagnosis or department (blue line), 0 – 30 days. The Clavien-Dindo classification was introduced in SOReg 2010. All primary GBPs and SGs.



All intraoperative complications are registered in SOReg (Fig 11). Although these complications are handled during surgery, they increase the risk for postoperative complications as shown in a study based on SOReg data published in Annals of Surgery. The number of intraoperative complications has decreased since the start of the register.

Intraoperative complications per hospital are presented in Table 18.

Reduction in the total number of complications was a result of a concomitant reduction in occurrence of several specific complications. Fig 12 shows rates of three specific severe complications over time. An increase in bleeding complications with both GBP and SG was noted in the 2018 – 2021 Annual Report. This has now turned and lower numbers are reported for 2022 and 2023.

Fig 11. Intraoperative complication rates during primary GBPs and SGs. Blue line = all complications. Purple line = unspecified complication, red line = spleen injury, green line = bowel injury

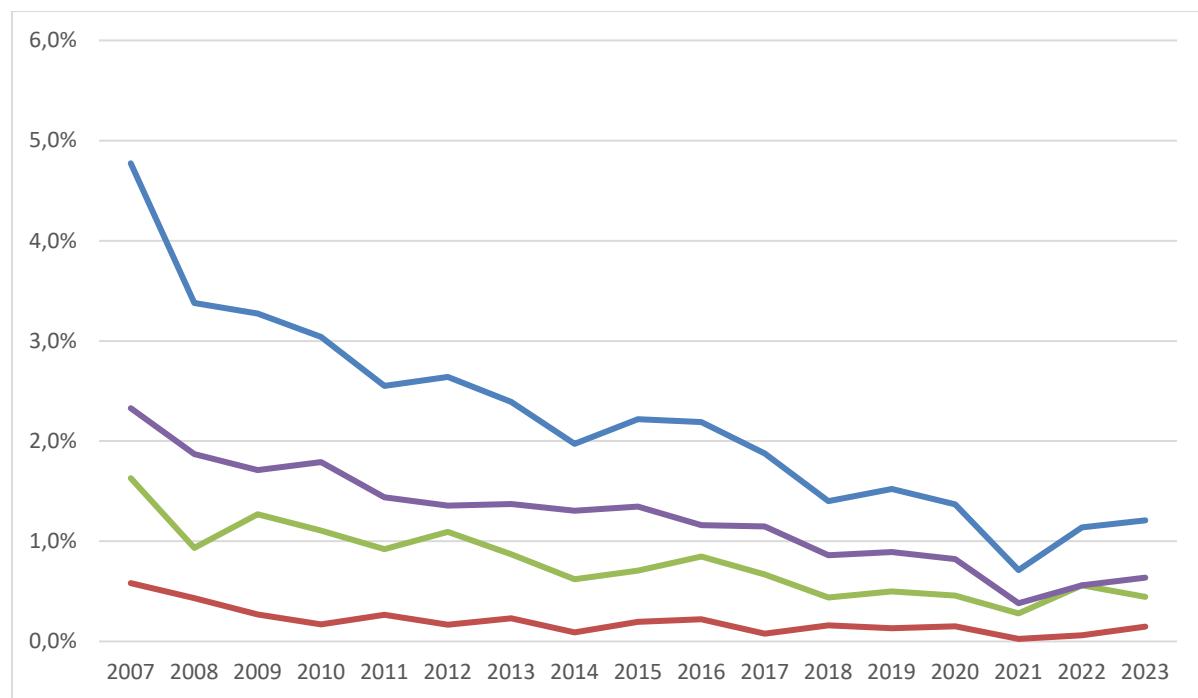
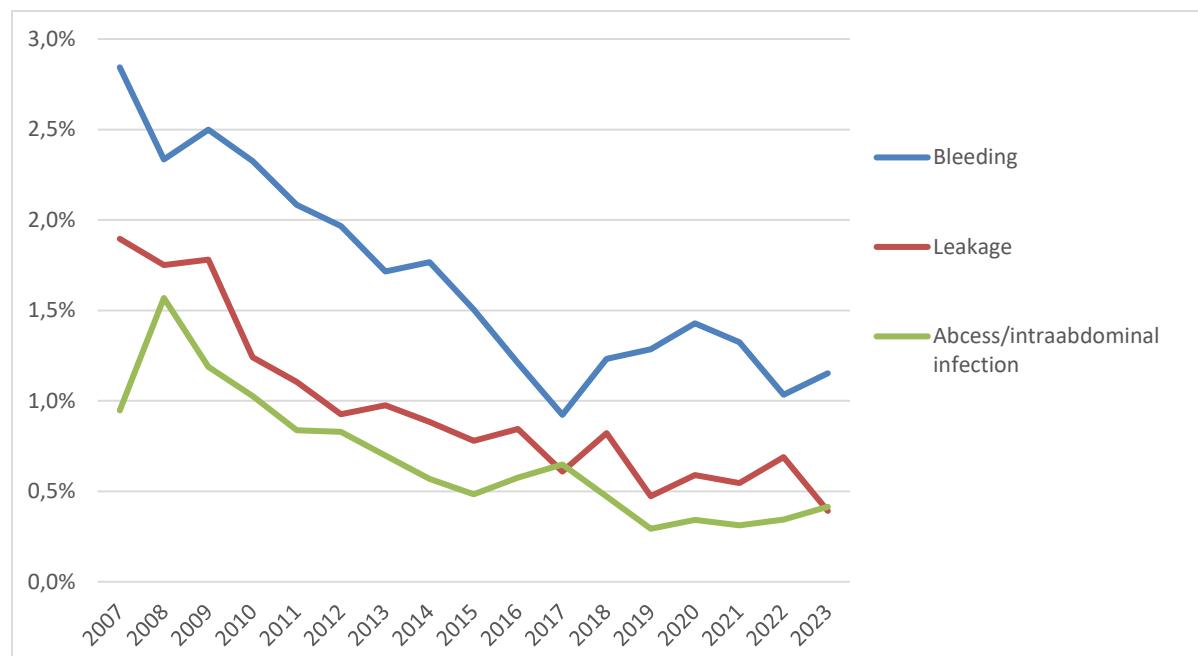
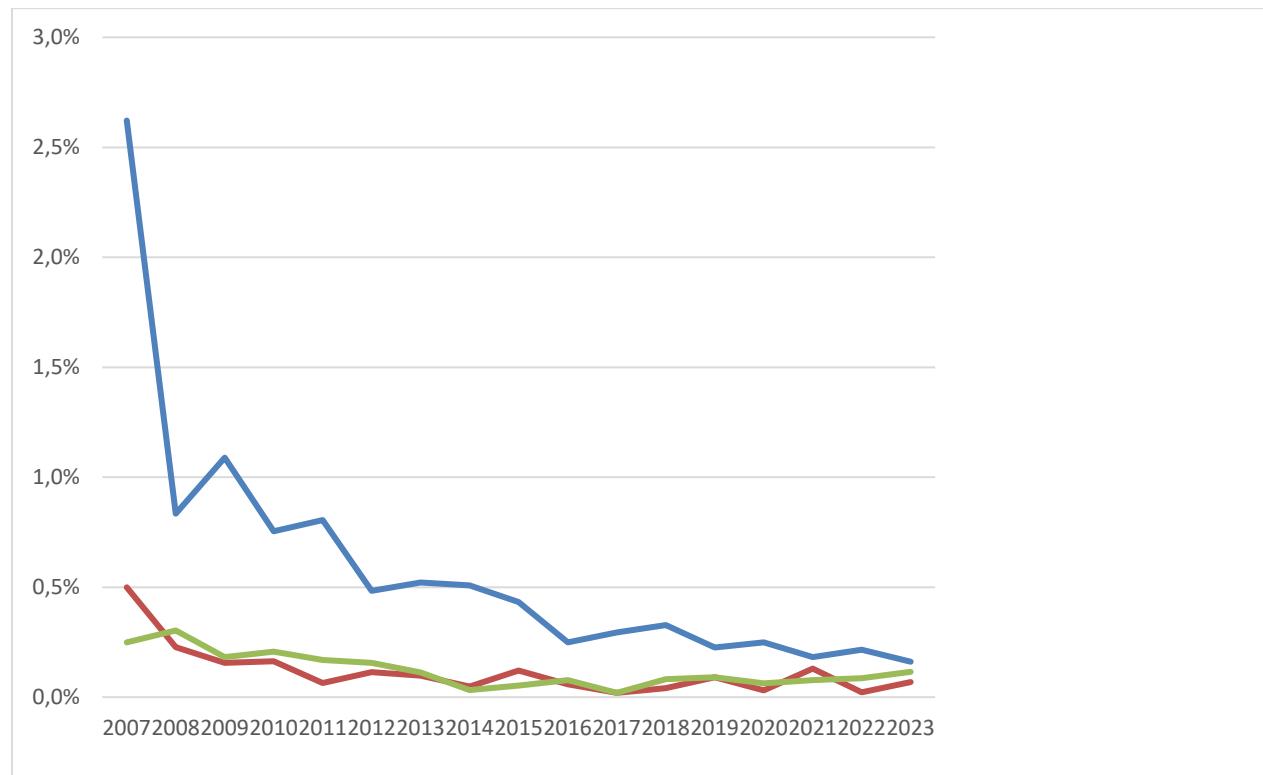


Fig 12. Three specific complications (leakage, bleeding, and abscess/intraabdominal infection) 0 – 30 days postoperatively, as % of primary GBPs and SGs.



Even complications of medical nature have decreased (Fig 13).

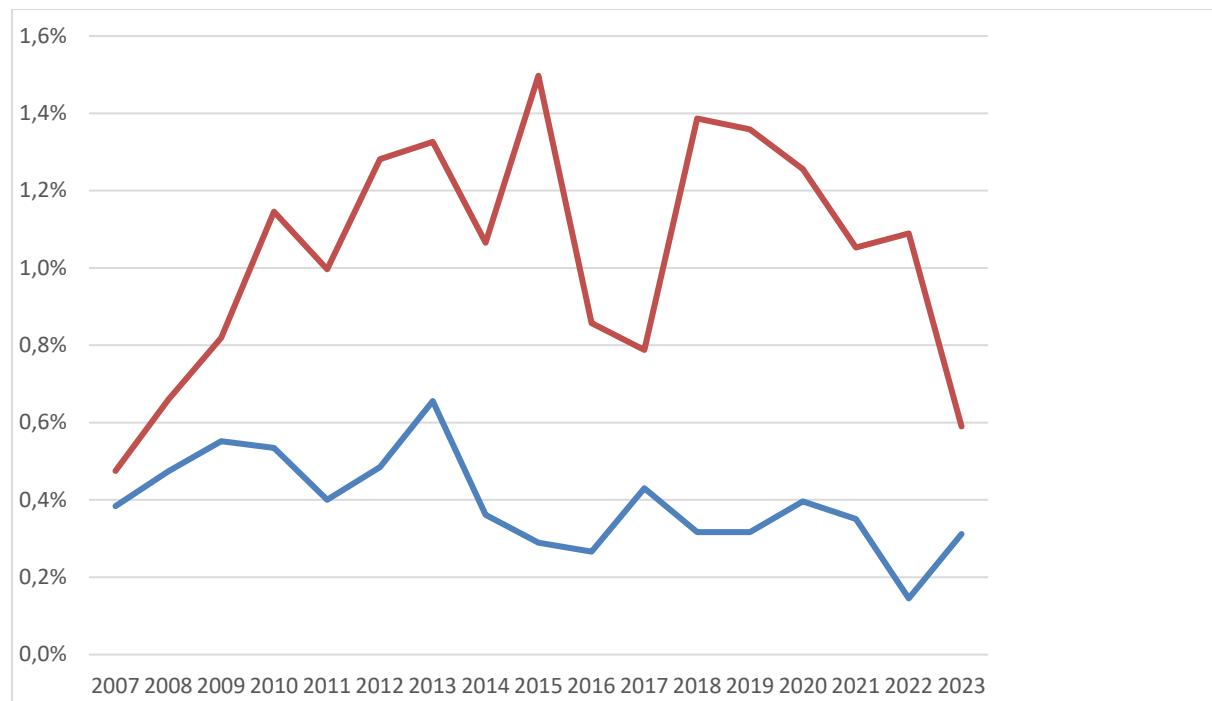
Fig 13. Pulmonary, cardiovascular, and thromboembolic complication rates Days 0-30, primary GBPs and SGs. Blue line = PE/DVT, green line = cardiovascular complication, red line = pulmonary complication.



Early bowel obstruction has been extensively studied using data from SOReg. The aim has been to find the cause and hopefully reduce the risk. When laparoscopic GBP was introduced, a substantial increase in bowel obstruction in the internal spaces (internal herniation) was seen. In a register-based RCT (randomised control trial), published in Lancet 2016, and with long-term results in JAMA Surgery 2023, it was shown that the risk for bowel obstruction is significantly decreased when the internal spaces are closed at the primary operation. However, closure of the internal spaces comes at a price in the form of an increased risk for early bowel obstruction due to kinking in the jejunojejunostomy. Closure of the internal spaces may be regarded as a technically difficult manoeuvre with a long learning curve. Increased focus on this complication coincided with a decrease in rate 2016-2017. As can be seen in Fig 14, this complication has varied in rate over time. In 2023 the rate fell once again.

Some international studies report that ulceration in the margin between the gastric pouch and jejunum (marginal ulcer) is a common complication after GBP. However, in Sweden, marginal ulcers during the first 30 days is a rather unusual complication as seen in Fig 14. This was evaluated in a research project published in SOARD 2020.

Fig 14. Early bowel obstruction and marginal ulcer 0-30 days after primary GBP. Red line = bowel obstruction, blue line = marginal ulcer.



Early complications *per hospital*

Early complications *per hospital* are presented in Tables 19-25. It is meaningless to compare these figures without taking case-mix into consideration. A hospital performing more revisional surgery and on older and sicker patients is expected to have more complications than a hospital operating on younger selected healthier patients.

The value of presenting complications *per hospital* is that each hospital is able to analyse its own results and act if necessary. It has been shown that analysing one's own data from SOReg has been a good starting point for quality improvement projects.

We believe that transparency at the hospital level has a value in itself, and is one reason why complication rates have fallen. There may have been complications in patients operated late 2023 that have yet to be registered.

Mortality

SOREg is cross-matched with the Swedish Population Register on a regular basis and receives data on deceased patients. The most recent cross-match was in January 2024, showing that we have 100% follow-up on mortality data. Each year we carry out a cross-match with the Cause-of-Death Register. These results will be presented in Part 3 of this report in November.

Table 7. All mortality, regardless of cause of death, up to January 2024.

Operation year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Operation number	993	3094	4458	7444	8271	7513	7609	6811	6303
30 day mortality %	0,10	0,10	0,02	0,05	0,02	0,04	0,00	0,04	0,02
90-day mortality %	0,10	0,13	0,07	0,11	0,07	0,04	0,04	0,06	0,02
1-year mortality %	0,40	0,26	0,18	0,24	0,23	0,16	0,13	0,15	0,10
2-year mortality %	0,81	0,42	0,43	0,44	0,40	0,33	0,39	0,34	0,30
5-year mortality %	1,41	1,65	1,37	1,44	1,55	1,28	1,25	1,28	1,22
10-year mortality %	4,43	4,95	4,02	3,88	4,28	3,54	3,50		
Operation year	2016	2017	2018	2019	2020	2021	2022	2023	
Operation number	5579	5366	5124	4685	3339	3984	4871	4802	
30 day mortality %	0,00	0,00	0,06	0,02	0,00	0,05	0,00	0,00	
90-day mortality %	0,02	0,04	0,08	0,02	0,00	0,10	0,02	0,08	
1-year mortality %	0,13	0,17	0,14	0,06	0,15	0,13	0,10		
2-year mortality %	0,30	0,28	0,27	0,32	0,30	0,33			
5-year mortality %	1,31	1,21	1,03						

Over 90,200 patients have been registered in SOReg, and up to December ^{31st} 2023, 3194 patients had died. In Table 7, annual mortality data from 2007 to 2023 are presented. A total of 24 patients died during the first 30 days postoperatively and 50 died within 90 days. This gives a 30-day mortality rate of 0,027% and a 90-day mortality rate of 0,055%. These mortality rates are relatively low in an international comparison published recently: Sundbom M, Näslund E, Vidarsson B, Thorell A, Ottosson J. Low Overall Mortality During Ten Years of Bariatric Surgery: Nationwide Study on 63 469 Procedures from The Scandinavian Obesity Register. *Surg Obes Rel Dis* 2020; 16(1):65-70.

Mortality rates at 1, 2, and possibly 5 and 10 years show a decreasing trend over time. The implication of this trend is not clear and needs further analysis with reference to the general population.

Operations per hospital

Table 8. Number of operations, percentage GBP, SG, and revisional surgery. Numbers include all operation methods.

Operation year	Op 2017-21				Op 2022				Op 2023			
	Number	%GBP	%SG	%rev	Number	%GBP	%SG	%rev	Number	%GBP	%SG	%rev
Aleris Obes. Sthlm	358	30,4	69,3	1,1	100	40,0	60,0	3,0	90	46,7	53,3	4,4
Aleris, Skåne	1919	58,6	40,9	2,0	58	56,9	43,1	0,0	34	82,4	17,6	5,9
Blekinge	299	71,6	28,1	7,0	51	47,1	52,9	5,9	38	28,9	71,1	10,5
Capio S:t G. Sthlm	480	37,9	61,9	0,8	65	49,2	50,8	3,1	141	48,9	51,1	1,4
Carlanderska Gbg	832	92,3	7,5	1,1	206	81,6	18,4	1,9	182	78,6	20,9	1,1
CFTK, Sthlm	1442	5,5	94,5	0,0	380	30,8	69,2	0,3	229	42,8	57,2	2,6
CK Kir.klin. Sthlm	27	14,8	85,2	0,0	106	84,9	15,1	4,7	194	57,7	42,3	3,6
Danderyd, Sthlm	855	64,1	35,4	4,1	165	77,6	20,0	6,7	149	83,9	15,4	2,7
Ersta, Sthlm	2392	42,0	56,5	4,3	513	57,3	41,7	7,8	462	65,4	32,0	9,3
Falun	19	73,7	26,3	26,3	8	100,0	0,0	12,5	18	94,4	5,6	5,6
GB Obesitas Skåne	1770	59,9	34,9	8,2	914	74,4	23,2	4,8	941	76,6	16,8	11,6
Gävleborg	409	40,1	58,9	2,4	54	53,7	44,4	11,1	63	46,0	52,4	1,6
Kalmar	332	63,6	36,1	3,6	1	100,0	0,0	0,0				
Kirurgicent. Skåne	519	18,7	81,3	1,0	125	16,8	83,2	1,6	76	26,3	73,7	1,3
Ljungby	206	75,7	22,8	2,9	44	70,5	27,3	9,1	26	96,2	0,0	15,4
Lycksele	465	58,1	37,8	4,9	110	64,5	31,8	6,4	98	67,3	28,6	5,1
Mora	975	72,5	27,5	2,1	192	80,7	19,3	2,1	169	89,3	10,7	5,9
NCK, Östergötland	494	9,1	84,6	7,9	230	13,9	85,7	1,3	190	26,3	73,2	2,1
Norrköping	850	81,5	14,5	6,5	117	89,7	6,0	6,8	177	97,2	0,6	4,0
Norrtälje	270	14,8	84,4	0,7	59	33,9	64,4	5,1	58	58,6	39,7	6,9
Nyköping	218	6,4	89,4	6,0	28	10,7	89,3	3,6	4	0,0	100,0	0,0
Skövde	1016	52,6	44,7	4,8	289	61,2	37,0	2,8	315	66,3	30,5	6,7
Sophiah. Sthlm	1028	34,9	65,0	2,3	421	53,0	47,0	2,1	443	54,6	45,4	1,4
Spec. läkarh. S-vall					6	0,0	100,0	0,0	1	0,0	100,0	0,0
SU/Östra	553	62,7	32,9	10,8	34	61,8	14,7	38,2	124	81,5	17,7	4,8
Sunderby, Luleå	187	97,3	2,1	5,3	9	77,8	22,2	11,1	36	83,3	16,7	2,8
Sundsvall	255	0,4	99,6	0,4	11	0,0	100,0	0,0	24	16,7	83,3	12,5
Södersjukh. Sthlm	120	40,0	60,0	4,2	29	41,4	58,6	0,0	22	40,9	59,1	0,0
Södertälje	327	42,8	55,7	4,3	41	34,1	65,9	2,4	29	75,9	24,1	3,4
Torsby	590	40,0	45,6	10,7	159	48,4	45,3	8,2	152	46,1	38,8	17,8
Uppsala	838	63,0	27,1	4,3	182	74,2	25,3	1,1	165	78,2	18,8	5,5
Varberg	210	2,4	97,6	0,0	12	0,0	100,0	0,0	29	10,3	89,7	0,0
Värnamo	457	100,0	0,0	1,1	58	100,0	0,0	1,7	85	98,8	1,2	3,5
Västervik	59	18,6	81,4	10,2	11	0,0	100,0	0,0	11	63,6	36,4	9,1
Västerås	443	80,1	19,4	1,1	69	73,9	26,1	1,4	42	81,0	19,0	4,8
Örebro/Lindesberg	930	60,8	37,1	3,9	179	70,4	28,5	4,5	204	78,9	20,6	3,9
Östersund	175	75,4	24,6	1,7	6	0,0	100,0	0,0	18	61,1	38,9	0,0
Sweden	23080	51,0	46,7	4,0	5037	59,2	39,4	4,1	5043	66,2	31,3	6,1

*Table 9. Operation time (min) and hospital stay (days). Mean (m) + S.D. Primary operations only.
Empty space means few or no data available.*

Operation year	Operation time, min						Hospital stay, days					
	Op 2017-21		Op 2022		Op 2023		Op 2017-21		Op 2022		Op 2023	
	m	S.D.	m	S.D.	m	S.D.	m	S.D.	m	S.D.	m	S.D.
Aleris Obes. Sthlm	37,8	12,3	39,0	15,2	33,8	8,0	1,2	3,2	1,3	1,9	1,0	0,0
Aleris, Skåne	32,9	12,3	36,2	8,1	37,5	6,8	1,1	0,5	1,9	7,3	1,0	0,0
Blekinge	94,6	41,6	52,3	18,1	59,8	34,1	3,1	14,6	1,3	0,5	1,5	1,0
Capio S:t G. Sthlm	46,4	21,7	47,8	21,7	54,7	19,8	1,2	0,7	1,1	0,3	1,2	1,2
Carlanderska Gbg	48,9	11,7	39,4	15,4	38,9	15,8	1,5	4,6	1,6	6,4	2,1	7,4
CFTK, Sthlm	35,7	11,8	28,9	10,5	29,9	10,5	2,0	0,2	1,8	0,4	2,0	0,2
CK Kir.klin. Sthlm	69,8	20,4	80,1	29,5	54,9	16,7	2,0	0,7	1,6	0,6	1,1	0,4
Danderyd, Sthlm	67,8	29,1	64,5	27,2	70,7	24,7	1,2	1,8	4,0	29,7	1,5	3,5
Ersta, Sthlm	49,5	20,5	59,5	21,4	59,4	26,8	1,3	1,6	1,2	0,9	1,3	2,8
Falun	122,8	73,2	136,9	80,8	103,3	40,8	7,4	22,2	1,6	1,3	1,8	1,9
GB Obesitas Skåne	34,8	18,2	32,9	12,5	34,9	14,2	1,1	0,7	1,1	0,5	1,1	3,1
Gävleborg	54,1	26,6	69,8	28,3	68,8	30,5	1,3	4,5	1,8	5,5	2,0	6,0
Kalmar	35,0	17,4					1,4	2,6				
Kirurgicent. Skåne	38,0	15,3	39,6	15,9	41,0	15,7	1,1	2,1	1,0	0,0	1,0	0,0
Ljungby	56,9	38,7	68,0	51,6	63,8	38,1	2,1	4,2	5,0	17,2	1,3	0,5
Lycksele	77,6	30,4	79,6	23,6	80,2	34,1	2,2	2,7	2,1	0,9	3,9	13,5
Mora	75,4	30,3	74,2	22,2	67,9	18,7	1,2	1,9	1,0	0,3	1,1	0,6
NCK, Östergötland	48,4	19,4	44,0	14,7	49,7	20,4	2,0	0,1	2,0	0,1	1,9	0,6
Norrköping	78,5	32,0	95,9	35,0	92,7	30,3	1,3	2,2	2,3	12,6	1,4	4,9
Norrtälje	52,9	28,1	63,8	29,3	93,2	39,4	1,6	2,7	1,4	0,9	1,4	2,1
Nyköping	62,8	33,2	54,0	17,5			1,6	0,7	2,2	5,0		
Skövde	43,2	21,6	41,6	18,2	41,6	21,0	1,5	8,6	1,3	2,3	1,1	0,4
Sophiah. Sthlm	46,1	17,7	50,3	17,4	52,3	17,5	1,1	0,5	1,1	0,4	1,1	0,3
Spec. läkarh. S-vall			46,5	10,3					1,0	0,0		
SU/Östra	83,7	36,5	144,1	163,8	80,0	29,8	1,9	4,6	3,1	3,5	1,3	0,8
Sunderby, Luleå	80,0	28,5	88,6	18,9	84,8	25,1	1,2	0,6	1,2	0,4	1,2	0,9
Sundsvall	37,1	13,8	51,4	15,1	54,2	21,8	1,6	6,8	1,1	0,3	1,3	0,6
Södersjukh. Sthlm	66,0	32,3	84,1	24,3	98,3	44,0	1,8	0,7	1,9	1,5	2,7	2,8
Söderköping	65,2	22,5	76,8	33,3	86,2	21,7	1,9	7,0	1,1	0,5	1,1	0,5
Torsby	72,4	35,7	69,1	28,7	61,7	19,5	2,3	5,2	1,8	5,8	1,2	1,2
Uppsala	71,4	38,2	59,5	20,9	56,1	19,8	1,8	2,4	1,1	0,6	1,7	4,7
Varberg	57,0	16,0	60,5	2,3	54,8	14,3	2,2	1,0	1,3	0,6	1,6	2,6
Värnamo	85,7	30,7	107,8	30,6	104,6	24,2	1,2	0,9	1,6	1,7	1,9	5,7
Västervik	77,2	40,6	56,1	9,4	80,4	45,9	4,0	9,0	2,0	0,0	2,0	0,5
Västerås	68,1	28,0	70,5	19,4	72,6	23,2	1,0	1,3	1,0	1,0	1,0	0,2
Örebro/Lindesberg	79,5	29,9	87,6	32,8	89,1	36,6	1,6	3,3	1,3	1,2	1,9	4,9
Östersund	88,2	58,0	89,3	33,7	99,9	40,2	2,7	5,3	1,5	0,5	1,8	1,1
Sweden	55,0	30,8	53,3	32,3	55,6	29,7	1,5	3,6	1,5	6,3	1,4	3,6

Table 10. Time waiting between referral and decision to operate (days). Number (N) = all primary operations, % miss = % missing data, m = mean, pc = percentile. Please observe that referral date is not a mandatory variable; some hospitals do not register this at all, and some hospitals on only a few occasions. Empty space means no or few data available.

Referral to decision	2015-21			2022			2023				
	N	m	%miss	N	m	%miss	N	m	%miss	10e pc	90e pc
Aleris Obes. Sthlm	71	73,8	81,5	18	93,6	82,7	0		100,0		
Aleris, Skåne	2 803	78,3	12,6	50	38,3	12,3	32	57,8	3,0	26,1	121,4
Blekinge-Karlsh.	397	262,3	0,0	48	258,3	0,0	34	447,3	24,4	231,8	808,5
Capio S:t G. Sthlm	308	171,8	65,2	67	475,6	0,0	135	269,4	0,7	64,8	483,8
Carlanderska Gbg	1 076	36,5	3,6	195	47,7	3,0	173	26,2	3,9	5,2	49,0
CFTK, Sthlm	1	99,9		0	100,0		0		100,0		
CK Kir.klin. Sthlm	8	70,4		93	19,2	7,9	186	27,4	0,0	8,0	52,0
Danderyd, Sthlm	1 352	66,8	1,1	127	203,0	17,5	132	154,6	9,0	26,1	298,6
Ersta, Sthlm	3 195	123,5	2,5	466	169,2	0,9	414	211,1	1,0	97,0	378,2
Falun	105	427,6	0,0	7	0,0		17	105,4	0,0	60,0	149,2
GB Obesitas Skåne	1 279	197,9	11,8	854	224,2	1,8	817	167,0	1,8	10,0	315,0
Gävleborg	517	224,8	21,3	47	478,5	2,1	57	396,2	6,6	128,8	883,0
Kalmar	192	108,7	70,7	0	100,0		0				
Kirurgicent. Skåne	-			0	100,0		0		100,0		
Ljungby	43	136,3	86,3	0	100,0		0		100,0		
Lycksele	677	212,7	0,3	103	369,1	1,0	92	283,1	1,1	159,1	383,4
Mora	1 287	311,3	0,2	191	122,3	0,0	159	105,3	0,0	76,0	147,8
NCK, Östergötland	3			2	99,1		0		100,0		
Norrköping	1 325	120,8	0,3	109	409,2	0,9	168	442,9	1,2	312,7	616,0
Norrtälje	126	84,4	70,2	10	89,3	82,1	42	95,1	23,6	19,0	284,4
Nyköping	259	324,0	1,9	26	454,7	3,7	4		0,0		
Skövde	16	431,1	98,9	2	99,3		0		100,0		
Sophiahem. Sthlm	0	100,0		0	100,0		0		100,0		
Spec. läkarh. S-vall	-			2	71,4		0		100,0		
SU/Östra	946	205,8	1,8	21	875,2	0,0	116	868,0	3,3	588,0	1251,5
Sunderby, Luleå	359	220,2	0,6	6	25,0		34	724,2	0,0	401,9	986,0
Sundsvall	214	261,7	49,8	7	30,0		13	854,5	38,1	414,8	1120,6
Södersjukh. Sthlm	204	198,2	0,5	29	314,1	0,0	22	227,8	12,0	40,6	464,2
Söderås	548	106,7	0,2	40	284,1	0,0	28	180,0	0,0	61,4	311,6
Torsby	873	417,1	0,1	146	833,1	0,0	89	791,1	28,8	551,0	1104,2
Uppsala	1 263	86,7	0,3	179	130,4	0,0	156	121,4	0,0	51,0	180,0
Varberg	218	302,7	0,0	12	534,2	0,0	29	807,6	0,0	396,4	1179,4
Värnamo	207	194,0	67,6	0	100,0		0		100,0		
Västervik	102	273,2	0,0	8	27,3		10	378,3	0,0	136,4	733,0
Västerås	651	385,7	6,2	68	671,4	0,0	40	867,6	35,5	648,8	1185,6
Örebro/Lindesberg	1 251	221,7	0,9	170	221,8	0,6	198	209,5	0,0	119,0	272,7
Östersund	254	211,7	1,9	6	0,0		18	396,9	0,0	172,3	555,1
Sweden	24 008	166,7	28,8	3 110	253,5	35,6	3 218	249,6	32,5	18,0	648,3
Women	18 336	160,4	30,4	2 428	250,2	36,5	2 514	241,4	33,4	16,0	630,7
Men	5 672	187,0	23,3	682	265,2	32,1	704	279,0	28,9	24,0	702,1

Table 11. Waiting time from decision to operate and operation (days). Number (N) = all primary operations, % miss = % missing data, m = mean, pc = percentile. Empty space means no or few data available.

Decision to operation	2015-21			2022			2023				
	N	m	%miss	N	m	%miss	N	m	%miss	10e pc	90e pc
Aleris Obes. Sthlm	291	47,1	24,0	79	44,1	24,0	87	49,3	0,0	26,0	91,0
Aleris, Skåne	3 141	42,1	2,1	6	89,5		0		100,0		
Blekinge-Karlsh.	395	120,0	0,5	48	168,4	0,0	34	177,3	24,4	82,9	354,9
Capio S:t G. Sthlm	879	69,2	0,8	66	154,6	1,5	136	128,7	0,0	37,0	224,5
Carlanderska Gbg	1 111	51,0	0,4	198	45,9	1,5	180	44,6	0,0	16,9	91,4
CFTK, Sthlm	1 795	45,9	1,3	369	42,1	1,9	213	3,3	4,5	1,0	5,0
CK Kir.klin. Sthlm	27	65,8	0,0	100	27,0	1,0	182	16,4	2,2	4,0	35,0
Danderyd, Sthlm	1 362	126,6	0,4	153	219,6	0,6	145	161,1	0,0	87,2	257,4
Ersta, Sthlm	3 278	118,5	0,0	470	203,1	0,0	418	119,2	0,0	76,0	175,3
Falun	104	87,0	1,0	7	0,0		17	138,7	0,0	53,4	232,0
GB Obesitas Skåne	1 431	56,7	1,3	870	45,6	0,0	832	50,4	0,0	12,1	101,9
Gävleborg	642	132,0	2,3	47	219,0	2,1	61	235,9	0,0	120,0	316,0
Kalmar	650	77,0	0,9	1	0,0		0				
Kirurgicent. Skåne	502	48,6	0,8	119	50,1	0,0	71	44,9	0,0	18,0	89,0
Ljungby	312	178,8	1,0	39	394,1	0,0	22	330,9	0,0	169,2	448,3
Lycksele	679	94,4	0,0	103	107,0	1,0	93	118,6	0,0	34,2	183,2
Mora	1 289	86,6	0,1	190	159,9	0,5	159	161,1	0,0	118,8	212,8
NCK, Östergötland	555	35,9	0,9	225	35,9	0,9	187	36,0	0,0	13,0	63,4
Norrköping	1 328	88,9	0,1	110	313,0	0,0	170	337,7	0,0	173,5	533,7
Norrtälje	401	90,6	5,2	56	112,1	0,0	55	97,3	0,0	45,0	135,8
Nyköping	264	104,0	0,0	26	228,8	3,7	4		0,0		
Skövde	1 399	61,1	0,3	278	79,6	0,7	293	55,9	0,3	22,0	112,0
Sophiahem. Sthlm	45	60,2	97,1	8	98,0		2		99,5		
Spec. läkarh. S-vall	-			4	42,9		1		0,0		
SU/Östra	949	64,8	1,5	18	179,6	14,3	118	54,7	1,7	22,0	101,5
Sunderby, Luleå	359	85,9	0,6	8	0,0		31	71,2	8,8	29,0	142,0
Sundsvall	419	163,4	1,6	6	40,0		19	253,2	9,5	24,8	757,4
Södersjukh. Sthlm	204	111,8	0,5	28	88,3	3,4	24	79,3	4,0	22,8	203,7
Södertälje	549	119,9	0,0	40	326,3	0,0	28	253,5	0,0	131,2	356,5
Torsby	874	43,0	0,0	146	65,8	0,0	122	43,5	2,4	7,0	70,0
Uppsala	1 266	101,8	0,1	179	127,5	0,0	156	138,2	0,0	26,5	224,5
Varberg	214	53,4	1,8	12	100,4	0,0	29	107,0	0,0	27,0	333,8
Värnamo	636	12,9	0,3	57	25,1	0,0	82	16,0	1,2	7,0	9,0
Västervik	85	183,6	16,7	6	45,5		6		40,0		
Västerås	694	62,7	0,0	68	126,9	0,0	40	82,4	35,5	33,5	134,1
Örebro/Lindesberg	1 262	127,3	0,0	171	175,0	0,0	198	178,1	0,0	112,1	243,3
Östersund	259	123,0	0,0	6	0,0		18	471,3	0,0	121,8	1067,3
Sweden	31 834	80,7	5,6	4 317	109,4	10,6	4 237	96,3	11,1	9,0	211,0
Women	24 767	78,2	5,9	3 407	105,5	10,9	3 350	92,8	11,3	8,0	205,0
Men	7 067	89,2	4,4	910	124,0	9,5	887	109,8	10,4	15,0	238,0

Table 12. Time waiting between referral and operation (days) Number (N) = all primary operations, % miss = % missing data, m = mean, pc = percentile. Empty space means no or few data available.

Please observe that referral date is not a mandatory variable; some hospitals do not register this at all and some hospitals on only a few occasions.

Referral to operation	2015-21			2022			2023				
	N	m	%miss	N	m	%miss	N	m	%miss	10e pc	90e pc
Aleris Obes. Sthlm	130	65,4	66,1	18	72,3	82,7	0		100,0		
Aleris, Skåne	2 883	117,4	10,1	51	39,2	10,5	32	57,8	3,0	26,1	121,4
Blekinge-Karlsh.	397	381,7	0,0	48	426,7	0,0	33	585,8	26,7	384,0	807,8
Capio S:t G. Sthlm	308	279,2	65,2	67	627,9	0,0	135	398,0	0,7	183,4	606,6
Carlanderska Gbg	1 113	86,2	0,3	198	90,4	1,5	180	69,8	0,0	25,9	128,6
CFTK, Sthlm	1	99,9		0	100,0		0		100,0		
CK Kir.klin. Sthlm	26	77,2	3,7	101	44,4	0,0	186	43,4	0,0	17,5	85,5
Danderyd, Sthlm	1 362	192,3	0,4	127	411,0	17,5	133	313,2	8,3	174,0	567,4
Ersta, Sthlm	3 209	242,4	2,1	466	372,5	0,9	414	330,5	1,0	196,0	509,6
Falun	105	513,7	0,0	7	0,0		17	244,1	0,0	123,6	339,4
GB Obesitas Skåne	1 322	247,6	8,8	869	264,8	0,1	832	214,3	0,0	35,0	383,0
Gävleborg	517	353,5	21,3	47	693,7	2,1	56	602,5	8,2	294,5	1063,0
Kalmar	193	175,8	70,6	0	100,0		0				
Kirurgicent. Skåne	-			0	100,0		0		100,0		
Ljungby	44	278,2	86,0	0	100,0		0		100,0		
Lycksele	677	306,2	0,3	102	466,1	1,9	92	402,5	1,1	280,1	597,8
Mora	1 288	396,9	0,2	190	281,7	0,5	159	266,3	0,0	219,8	316,8
NCK, Östergötland	7	98,8		2	99,1		0		100,0		
Norrköping	1 326	209,7	0,2	110	718,5	0,0	168	773,3	1,2	569,7	1048,8
Norrtälje	129	156,1	69,5	10	221,5	82,1	42	185,8	23,6	70,1	391,4
Nyköping	259	427,3	1,9	26	673,4	3,7	4		0,0		
Skövde	23	498,0	98,4	2	99,3		1		99,7		
Sophiahem. Sthlm	0	100,0		0	100,0		0		100,0		
Spec. läkarh. S-vall	-			2	71,4		1		0,0		
SU/Östra	946	267,5	1,8	21	1029,1	0,0	115	912,1	4,2	605,6	1318,4
Sunderby, Luleå	360	304,9	0,3	6	25,0		34	789,2	0,0	448,1	1048,4
Sundsvall	218	414,3	48,8	7	30,0		13	1002,5	38,1	476,6	1290,2
Södersjukh. Sthlm	205	308,5	0,0	28	347,9	3,4	22	296,0	12,0	79,6	527,9
Södertälje	549	226,4	0,0	40	610,4	0,0	28	433,5	0,0	216,0	624,7
Torsby	873	460,0	0,1	146	898,9	0,0	88	834,8	29,6	605,1	1083,8
Uppsala	1 264	188,4	0,2	179	257,9	0,0	156	259,6	0,0	135,5	360,5
Varberg	218	355,1	0,0	12	634,6	0,0	29	914,7	0,0	543,0	1216,6
Värnamo	207	215,6	67,6	0	100,0		0		100,0		
Västervik	102	424,4	0,0	8	27,3		10	606,6	0,0	370,9	733,0
Västerås	652	446,1	6,1	68	798,3	0,0	41	953,3	33,9	757,0	1316,0
Örebro/Lindesberg	1 255	343,6	0,6	171	395,6	0,0	198	387,6	0,0	265,0	520,4
Östersund	259	330,7	0,0	6	0,0		18	868,2	0,0	545,0	1316,0
Sweden	24 548	248,5	27,2	3 136	372,6	35,0	3 240	356,0	32,0	44,0	810,1
Women	18 811	240,2	28,6	2 451	366,0	35,9	2 534	346,4	32,9	41,0	804,4
Men	5 737	275,8	22,4	685	395,9	31,8	706	390,6	28,7	65,0	833,0

Table 13. Adherence to guidelines regarding intraoperative leak test, non-mandatory variable. N = numbers, %yes = %performed leak test, % miss = % missing data. No data provided for hospitals with volume less than 10 operations. Primary operations only.

Leak test	2015-21		2022		2023		
	N	%yes	N	%yes	N	%yes	%miss
Aleris Obes. Sthlm	232	32,3	33	36,4	1	100	98,9
Aleris, Skåne	3 110	71,6	1		0		100
Blekinge-Karlsh.	348	82,8	51	49	49	28,6	2
Capio S:t G. Sthlm	892	99,6	53	96,2	0		100
Carlanderska Gbg	1 025	98,2	100	79	167	72,5	8,2
CFTK, Sthlm	1 714	10,2	380	30,8	230	43,5	0
CK Kir.klin. Sthlm	27	18,5	105	97,1	194	59,3	0
Danderyd, Sthlm	1 446	99,4	164	98,8	148	100	1,3
Ersta, Sthlm	3 394	99,5	507	99	452	99,3	3,2
Falun	117	94	8		18	94,4	0
GB Obesitas Skåne	1 581	65,3	912	77,1	935	75,5	1,2
Gävleborg	577	54,4	35	60	59	49,2	7,8
Kalmar	675	60,4	1				
Kirurgicent. Skåne	519	19,1	125	16,8	76	26,3	0
Ljungby	259	99,2	40	97,5	22	100	15,4
Lycksele	666	97	114	93,9	103	93,2	0
Mora	1 307	74,4	194	80,9	169	90,5	0
NCK, Östergötland	135	39,3	0		0		100
Norrköping	1 411	98,4	118	98,3	178	98,3	0,6
Norrtälje	59	91,5	2		25	100	58,3
Nyköping	294	25,2	28	14,3	4		
SU/Östra	1 058	80,1	32	75	125	80,8	3,1
Skövde	910	61,5	140	58,6	141	66,7	55,8
Sophiahem. Sthlm	1 568	99,4	411	99,8	442	99,1	0
Spec. läkarh. S-vall	-		4		1		0
Sunderby, Luleå	377	99,2	9		36	100	0
Sundsvall	117	4,3	6		11	9,1	56
Södersjukh. Sthlm	210	75,2	29	34,5	25	44	0
Söderköping	554	96	40	100	28	100	3,4
Torsby	934	45,9	158	50,6	151	50,3	2,6
Uppsala	1 227	71	180	74,4	164	78,7	3,5
Varberg	211	97,6	2		23	8,7	20,7
Värnamo	643	97,7	58	100	85	98,8	1,2
Västervik	105	97,1	11	100	9		18,2
Västerås	664	98,8	69	98,6	64	100	1,5
Örebro/Lindesberg	1 290	78,9	179	72,1	206	79,1	1
Östersund	41	97,6	3		15	80	16,7
Sweden	31 808	76,4	4 304	76,4	4 361	79	15
Women	24 915	75,3	3 408	75,5	3 456	78,6	15,4
Men	6 893	80,2	896	80,1	905	80,3	13,4

Table 14. Adherence to guidelines for antibiotic prophylaxis during surgery, non-mandatory variable.
 N = numbers, %yes = % performed leak test, %miss = % missing data. No data provided for hospitals with volume less than 10 operations. Primary operations only.

Antibiotic prophylaxis	2015-21		2022		2023		
	N	%yes	N	%yes	N	%yes	%miss
Aleris Obes. Sthlm	235	97,9	33	100,0	0		100,0
Aleris, Skåne	3 189	98,9	1		0		100,0
Blekinge-Karlsh.	346	99,1	51	100,0	49	95,9	2,0
Capio S:t G. Sthlm	892	99,8	52	98,1	0		100,0
Carlanderska Gbg	1 036	98,7	101	98,0	167	98,8	8,2
CFTK, Sthlm	1 742	99,7	380	100,0	230	99,6	0,0
CK Kir.klin. Sthlm	27	100,0	106	98,1	194	99,5	0,0
Danderyd, Sthlm	1 446	99,7	164	100,0	148	97,3	1,3
Ersta, Sthlm	3 387	99,8	507	99,4	455	99,6	2,6
Falun	117	99,1	8		18	100,0	0,0
GB Obesitas Skåne	1 575	97,1	913	96,3	942	97,6	0,4
Gävleborg	578	99,3	35	100,0	59	96,6	7,8
Kalmar	673	98,5	1		0		100,0
Kirurgicent. Skåne	519	99,6	125	100,0	76	100,0	0,0
Ljungby	260	99,6	40	100,0	22	100,0	15,4
Lycksele	660	98,8	115	99,1	103	97,1	0,0
Mora	1 312	97,3	194	95,4	167	95,2	1,2
NCK, Östergötland	451	99,8	0		0		100,0
Norrköping	1 411	99,1	118	99,2	178	98,3	0,6
Norrtälje	241	98,8	3		22	90,9	63,3
Nyköping	294	95,9	28	100,0	4		0,0
SU/Östra	1 064	99,6	33	100,0	124	98,4	3,9
Skövde	900	98,1	140	94,3	143	95,1	55,2
Sophiahem. Sthlm	1 573	99,5	412	100,0	442	99,3	0,0
Spec. läkarh. S-vall	-		4		1		0,0
Sunderby, Luleå	380	99,5	9		36	100,0	0,0
Sundsvall	136	97,8	6		11	100,0	56,0
Södersjukh. Sthlm	211	99,1	29	100,0	25	100,0	0,0
Söderköping	557	98,6	40	100,0	27	100,0	6,9
Torsby	937	97,9	157	98,7	152	99,3	1,9
Uppsala	1 224	98,9	181	99,4	163	100,0	4,1
Varberg	202	99,5	2		23	100,0	20,7
Värnamo	643	98,4	58	98,3	85	98,8	1,2
Västervik	108	98,1	10	100,0	9		18,2
Västerås	665	99,5	69	100,0	64	100,0	1,5
Örebro/Lindesberg	1 292	99,6	179	100,0	207	100,0	0,5
Östersund	32	100,0	3		15	100,0	16,7
Sweden	32 547	99,0	4 309	98,5	4 366	98,5	14,9
Women	25 518	99,0	3 414	98,5	3 459	98,6	15,4
Men	7 029	98,9	895	98,4	907	98,0	13,2

Table 15. Adherence to guidelines for thromboprophylaxis given at surgery, non-mandatory variable.
 N = numbers with available data, %yes = % with given prophylaxis, %miss = % missing data. No data provided for hospitals with volume less than 10 operations. Primary operations only.

Tromboprophylaxis	2015-21		2022		2023		
	N	%yes	N	%yes	N	%yes	%miss
Aleris Obes. Sthlm	358	99,4	88	100,0	86	100,0	6,5
Aleris, Skåne	3 054	99,7	50	100,0	32	100,0	8,6
Blekinge-Karlsh.	384	99,5	47	100,0	41	100,0	18,0
Capio S:t G. Sthlm	832	99,8	60	100,0	123	100,0	12,8
Carlanderska Gbg	1 028	99,8	185	100,0	149	100,0	18,1
CFTK, Sthlm	1 696	99,5	327	99,1	196	100,0	14,8
CK Kir.klin. Sthlm	23	100,0	75	97,3	155	100,0	20,1
Danderyd, Sthlm	1 350	99,6	143	99,3	131	99,2	12,7
Ersta, Sthlm	3 170	99,6	440	99,5	377	99,5	19,3
Falun	105	100,0	7		17	100,0	5,6
GB Obesitas Skåne	1 433	99,4	798	99,7	806	99,8	14,8
Gävleborg	623	99,5	43	100,0	59	100,0	7,8
Kalmar	614	99,8	1		1		
Kirurgicent. Skåne	471	99,6	108	100,0	66	98,5	13,2
Ljungby*	294	100,0	41	100,0	24	100,0	7,7
Lycksele	655	99,8	99	100,0	89	100,0	13,6
Mora	1 222	99,7	169	98,8	137	99,3	18,9
NCK, Östergötland	578	99,3	170	99,4	171	100,0	10,9
Norrköping	1 303	99,5	105	100,0	143	100,0	20,1
Norrtälje	402	100,0	54	100,0	48	97,9	20,0
Nyköping	261	99,6	24	100,0	3		
SU/Östra**	999	99,9	29	96,6	114	100,0	11,6
Skövde	1 313	99,8	256	100,0	269	100,0	15,7
Sophiahem. Sthlm	1 471	99,9	353	99,2	362	99,4	18,1
Spec. läkarh. S-vall	-		7		1		
Sunderby, Luleå	354	99,7	7		34	100,0	5,6
Sundsvall	402	100,0	10	100,0	22	100,0	12,0
Södersjukh. Sthlm	197	99,5	25	100,0	20	100,0	20,0
Söderköping	510	99,8	33	100,0	20	100,0	31,0
Torsby	873	99,4	137	100,0	138	100,0	11,0
Uppsala	1 238	99,6	157	99,4	139	100,0	18,2
Varberg	200	99,5	9		24	100,0	17,2
Värnamo	604	99,7	44	100,0	71	98,6	17,4
Västervik	105	99,0	9		10	100,0	9,1
Västerås	649	99,4	68	100,0	58	100,0	10,8
Örebro/Lindesberg	1 212	99,6	148	100,0	172	100,0	17,3
Östersund	250	98,8	6		16	100,0	11,1
Sweden	32 397	99,6	4 335	99,6	4 329	99,7	15,6
Women	25 358	99,6	3 448	99,6	3 446	99,7	15,7
Men	7 039	99,6	887	99,7	883	99,9	15,5

Table 16. Length of tromboprophylaxis given at surgery, non-mandatory variable. N = number of patients with information on length of prophylaxis, m = mean, SD = standard deviation. No data provided for hospitals with volume less than 10 operations. Only primary surgery.

Length of trombopro- phylaxis, days	2015-21		2022		2023		
	N	m	N	m	N	m	SD
Aleris Obes. Sthlm	227	10,4	32	10,0	0		
Aleris, Skåne	80	10,5	0		0		
Blekinge-Karlsh.	345	12,6	51	21,0	49	21,0	0,1
Capio S:t G. Sthlm	891	12,0	51	12,0	0		
Carlanderska Gbg	65	9,8	101	10,0	166	10,0	0,0
CFTK, Sthlm	1 734	9,4	380	10,0	229	10,1	1,0
CK Kir.klin. Sthlm	27	5,3	106	7,8	194	7,0	0,0
Danderyd, Sthlm	1 438	10,0	164	10,0	148	10,0	0,0
Ersta, Sthlm	3 204	7,8	504	8,0	453	8,0	0,0
Falun	117	10,4	8		18	10,0	0,0
GB Obesitas Skåne	543	10,0	719	10,0	857	10,0	0,0
Gävleborg	573	10,3	34	10,0	59	12,4	6,3
Kalmar	668	10,1	1		0		
Kirurgicent. Skåne	518	9,1	124	7,0	76	7,0	0,0
Ljungby	259	8,0	40	9,7	22	7,9	3,1
Lycksele	652	4,4	115	5,0	102	5,0	0,5
Mora	1 302	7,3	194	7,2	162	7,0	0,4
NCK, Östergötland	425	10,1	0		0		
Norrköping	1 404	13,7	114	10,1	177	10,2	2,6
Norrtälje	227	10,0	4		33	9,8	0,9
Nyköping	283	5,5	28	5,0	3		
SU/Östra	842	5,3	33	7,7	125	8,1	4,4
Skövde	854	10,0	140	10,0	137	10,1	1,2
Sophiahem. Sthlm	542	9,6	412	10,2	442	11,0	0,0
Spec. läkarh. S-vall			3		1		
Sunderby, Luleå	371	10,1	9		34	10,1	0,9
Sundsvall	122	7,4	6		11	11,0	8,9
Södersjukh. Sthlm	211	10,0	29	10,0	24	10,0	0,0
Söderköping	547	10,4	40	10,0	26	10,0	0,0
Torsby	714	6,3	114	6,6	113	6,9	2,0
Uppsala	1 212	18,4	180	27,4	163	27,2	2,2
Varberg	199	7,3	2		22	7,7	1,3
Värnamo	640	14,0	57	13,5	85	12,2	0,8
Västervik	103	15,1	11	14,0	9		
Västerås	662	7,2	69	7,1	62		
Örebro/Lindesberg	1 287	8,1	177	8,0	206	8,0	0,3
Östersund	29	7,4	3		13	10,0	0,0
Sweden	25 283	9,7	4 057	10,1	4 223	10,1	4,2
Women	19 864	9,7	3 236	10,1	3 365	10,0	4,2
Men	5 419	9,6	821	10,0	858	10,1	4,2

Table 17. Adherence to guidelines: percentage of patients with prescribed preoperative weight loss, non-mandatory variable. %yes = % of patients with prescribed weight loss, m,kg = mean weight loss in kg, %miss = % missing data, SD = standard deviation.

Preoperative Weight loss	2015-21			2022			2023			
	%yes	m,kg	%miss	%yes	m,kg	%miss	%yes	m,kg	SD	%miss
Aleris Obes. Sthlm	94,9	5,0	38,9	93,5	3,3	70,2				100,0
Aleris, Skåne	99,4	6,0	2,4			87,7				100,0
Blekinge-Karlsh.	96,8	6,8	6,5	97,9	7,4	0,0	97,8	4,9	7,5	0,0
Capio S:t G. Sthlm	98,9	7,9	0,1	100,0	9,7	23,9				100,0
Carlanderska Gbg	97,0	4,5	76,3	97,0	3,7	50,7	96,4	4,1	4,3	8,3
CFTK, Sthlm	85,8	4,5	6,4	100,0	4,6	0,5	100,0	4,4	3,7	0,0
CK Kir.klin. Sthlm	100,0	3,5	0,0	99,0	5,2	4,0	99,5	6,4	3,8	1,1
Danderyd, Sthlm	99,6	5,7	0,1	98,1	5,9	0,0	93,1	6,1	5,1	0,0
Ersta, Sthlm	98,2	5,2	5,1	98,3	6,7	1,1	98,5	6,1	6,6	1,4
Falun	100,0	8,4	0,0			0,0	100,0	8,6	5,9	0,0
GB Obesitas Skåne	98,3	5,2	0,6	96,8	5,4	0,1	97,0	5,5	5,7	0,2
Gävleborg	97,9	10,5	7,5	95,5	9,6	8,3	93,3	10,1	6,1	1,6
Kalmar	97,4	8,4	0,8			0,0				
Kirurgicent. Skåne	99,6	6,0	0,0	100,0	5,6	0,0	100,0	5,9	2,6	0,0
Ljungby	97,5	7,9	10,5	97,3	9,9	5,1	100,0	7,9	4,7	22,7
Lycksele	94,5	6,0	1,3	95,1	6,0	1,9	92,5	6,7	4,1	0,0
Mora	99,6	9,5	0,0	100,0	8,4	0,0	98,7	7,4	5,4	0,6
NCK, Östergötland	94,1	4,3	93,9			100,0				100,0
Norrköping	98,3	8,9	1,1	99,1	8,3	0,9	99,4	8,6	7,3	2,4
Norrtälje	97,0	6,3	52,7			91,1	100,0	5,7	4,6	10,9
Nyköping	97,7	7,1	0,8	100,0	5,4	0,0				0,0
SU/Östra	98,5	7,7	0,3	95,2	8,2	0,0	97,5	7,4	5,1	1,7
Skövde	95,3	8,9	36,4	96,8	9,2	45,0	97,5	8,6	7,4	32,0
Sophiahem. Sthlm	93,2	4,3	9,2	93,7	7,6	1,5	96,7	8,1	4,2	0,7
Spec. läkarh. S-vall						14,3				0,0
Sunderby, Luleå	98,6	9,9	0,3			0,0	97,1	8,5	5,7	0,0
Sundsvall	97,0	9,6	46,0			40,0	100,0	8,7	5,3	14,3
Södersjukh. Sthlm	98,0	6,5	0,0	93,1	5,7	0,0	100,0	4,8	3,7	0,0
Söderköping	97,2	6,2	2,0	90,0	6,8	0,0	100,0	7,8	3,0	0,0
Torsby	99,4	9,6	0,7	99,3	9,9	1,4	98,4	7,9	4,9	0,8
Uppsala	97,4	7,1	3,9	98,9	6,5	0,0	100,0	6,8	5,3	1,3
Varberg	98,1	9,5	1,4			91,7				79,3
Värnamo	98,4	10,7	0,0	98,2	10,1	0,0	98,8	13,6	4,5	0,0
Västervik	99,0	7,0	4,9	100,0	8,0	0,0	90,0	10,9	7,1	0,0
Västerås	99,4	8,2	2,7	95,6	6,3	0,0	100,0	6,1	3,7	0,0
Örebro/Lindesberg	98,4	9,3	0,8	100,0	9,5	1,2	99,0	8,1	5,2	0,5
Östersund	100,0	7,7	46,3			0,0	100,0	10,8	4,4	0,0
Sweden	97,3	7,1	10,7	97,6	6,7	14,3	97,8	6,8	5,6	12,9
Women	97,1	6,4	10,9	97,5	6,0	14,7	97,9	6,2	5,1	13,3
Men	98,0	9,5	10,0	97,8	9,3	12,8	97,4	9,1	7,0	11,3

Table 18. Percentage with intraoperative complication fixed at surgery. All operations included. All = all complications, spleen = spleen injury, bowel = bowel injury, other = other complication.

Operation year	Op 2017-21				Op 2022				Op 2023			
	All (%)	Spleen (%)	Bowel (%)	Other (%)	All (%)	Spleen (%)	Bowel (%)	Other k%)	All (%)	Spleen (%)	Bowel (%)	Other (%)
Aleris Obes. Sthlm	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Aleris, Skåne	0,3	0,0	0,0	0,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Blekinge	10,0	1,0	2,3	8,0	2,0	0,0	0,0	2,0	0,0	0,0	0,0	0,0
Capio S:t G. Sthlm	0,6	0,0	0,4	0,2	0,0	0,0	0,0	0,0	7,8	1,4	0,0	6,4
Carlanderska Gbg	0,1	0,1	0,0	0,0	0,0	0,0	0,0	0,0	1,1	0,0	1,1	0,0
CFTK, Sthlm	0,4	0,1	0,1	0,2	0,5	0,0	0,3	0,3	0,9	0,4	0,0	0,4
CK Kir.klin. Sthlm	3,7	0,0	0,0	3,7	1,9	0,0	0,0	1,9	0,5	0,0	0,0	0,5
Danderyd, Sthlm	0,6	0,1	0,0	0,5	3,0	0,0	2,4	1,2	1,3	0,0	0,7	0,7
Ersta, Sthlm	1,5	0,1	0,5	0,8	0,4	0,0	0,2	0,2	0,9	0,0	0,6	0,2
Falun	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
GB Obesitas Skåne	0,1	0,0	0,0	0,1	0,1	0,0	0,0	0,1	0,1	0,0	0,0	0,1
Gävleborg	1,2	0,0	0,2	1,0	1,9	0,0	1,9	0,0	1,6	0,0	0,0	1,6
Kalmar	1,2	0,0	0,6	0,6	0,0	0,0	0,0	0,0				
Kirurgicent. Skåne	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	1,3	1,3	0,0	0,0
Ljungby	2,4	0,0	1,0	1,5	2,3	0,0	0,0	2,3	0,0	0,0	0,0	0,0
Lycksele	5,4	0,4	3,7	1,3	11,8	0,9	9,1	2,7	5,1	0,0	4,1	1,0
Mora	1,4	0,4	0,4	0,6	1,0	0,0	0,0	1,0	0,0	0,0	0,0	0,0
NCK, Östergötland	2,0	0,0	0,0	2,0	0,0	0,0	0,0	0,0	0,5	0,0	0,0	0,5
Norrköping	3,5	0,0	1,1	2,5	2,6	0,0	1,7	0,9	4,5	0,0	2,8	1,7
Norrtälje	0,7	0,4	0,0	0,4	0,0	0,0	0,0	0,0	5,2	0,0	1,7	3,4
Nyköping	1,4	0,0	0,0	1,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Skövde	1,5	0,0	0,7	0,7	2,1	0,0	0,3	1,7	0,3	0,0	0,0	0,3
Sophiah. Sthlm	0,5	0,1	0,0	0,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Spec. läkarh. S-vall					0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
SU/Östra	2,2	0,0	0,7	1,6	5,9	0,0	2,9	2,9	2,4	0,0	1,6	0,8
Sunderby, Luleå	3,2	0,0	2,1	1,1	11,1	0,0	11,1	0,0	2,8	2,8	0,0	0,0
Sundsvall	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Södersjukh. Sthlm	2,5	1,7	0,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Södertälje	2,4	0,0	0,9	1,5	2,4	2,4	0,0	0,0	3,4	0,0	0,0	3,4
Torsby	0,8	0,2	0,2	0,5	0,6	0,0	0,6	0,0	0,0	0,0	0,0	0,0
Uppsala	3,7	0,1	1,1	2,6	1,6	0,5	0,0	1,1	2,4	1,2	0,6	0,6
Varberg	0,5	0,0	0,0	0,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Värnamo	3,5	0,4	2,2	1,1	6,9	0,0	5,2	1,7	3,5	0,0	3,5	0,0
Västervik	5,1	0,0	1,7	3,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Västerås	1,6	0,2	0,9	0,7	4,3	0,0	2,9	1,4	0,0	0,0	0,0	0,0
Örebro/Lindesberg	1,8	0,1	0,8	1,0	2,8	0,0	1,1	1,7	2,0	0,0	0,5	2,0
Östersund	4,6	0,0	0,6	4,0	0,0	0,0	0,0	0,0	5,6	0,0	0,0	5,6
Sweden	1,5	0,1	0,5	0,9	1,2	0,1	0,6	0,6	1,2	0,1	0,5	0,6

Table 19. Early complications per hospital: Part 1. Empty space = <6 operations. Early complications are displayed in 7 parts, Tables 19-25. Surgery = additional surgery on day 0-30 postoperatively.

Part 1	Number of operations			Readmitted day 0-30 (%)			Surgery day 0-30 (%)		
	2017-21	2022	2023	2017-21	2022	2023	2017-21	2022	2023
Aleris Obes. Sthlm	358	100	90	2,5	0,0	2,2	0,8	0,0	0,0
Aleris, Skåne	1919	58	34	6,7	8,6	0,0	2,3	5,2	0,0
Blekinge	299	51	38	6,0	5,9	0,0	6,7	2,0	2,6
Capio S:t G. Sthlm	480	65	141	4,8	1,5	2,8	1,7	0,0	3,5
Carlanderska Gbg	832	206	182	4,7	1,9	2,7	1,6	1,5	1,1
CFTK, Sthlm	1442	380	229	2,4	2,4	3,1	1,7	1,1	2,6
CK Kir.klin. Sthlm	27	106	194	3,7	3,8	3,6	7,4	2,8	0,5
Danderyd, Sthlm	855	165	149	5,8	4,2	5,4	2,2	4,2	2,7
Ersta, Sthlm	2392	513	462	5,8	4,7	6,5	4,1	3,9	4,1
Falun	19	8	18	10,5	0,0	11,1	10,5	0,0	11,1
GB Obesitas Skåne	1770	914	941	5,3	4,0	3,2	1,9	1,6	0,7
Gävleborg	409	54	63	6,1	1,9	3,2	2,9	0,0	6,3
Kalmar	332	1	0	6,9			4,2		
Kirurgicent. Skåne	519	125	76	2,5	2,4	2,6	1,7	2,4	0,0
Ljungby	206	44	26	7,3	6,8	0,0	6,3	11,4	0,0
Lycksele	465	110	98	4,3	3,6	3,1	2,2	4,5	4,1
Mora	975	192	169	5,4	4,7	3,0	1,8	3,1	2,4
NCK, Östergötland	494	230	190	1,6	0,9	0,0	1,2	1,3	0,0
Norrköping	850	117	177	9,6	10,3	9,0	4,7	5,1	2,8
Norrtälje	270	59	58	0,4	0,0	0,0	0,7	0,0	0,0
Nyköping	218	28	4	3,7	10,7		2,3	0,0	
Skövde	1016	289	315	6,3	3,1	1,6	3,2	3,8	1,3
Sophiah. Sthlm	1028	421	443	1,9	1,2	3,6	1,1	1,4	1,1
Spec. läkarh. S-vall	0	6	1		0,0			0,0	
SU/Östra	553	34	124	5,8	20,6	0,8	2,0	5,9	0,8
Sunderby, Luleå	187	9	36	5,9	0,0	5,6	5,9	0,0	5,6
Sundsvall	255	11	24	3,5	9,1	8,3	2,7	0,0	0,0
Södersjukh. Sthlm	120	29	22	5,8	10,3	0,0	0,8	3,4	0,0
Söderköping	327	41	29	4,9	9,8	10,3	3,1	0,0	3,4
Torsby	590	159	152	5,9	5,7	6,6	3,4	3,8	3,9
Uppsala	838	182	165	2,9	2,2	4,2	2,0	1,6	2,4
Varberg	210	12	29	2,4	0,0	6,9	1,9	0,0	3,4
Värnamo	457	58	85	10,1	8,6	10,6	3,7	3,4	2,4
Västervik	59	11	11	8,5	0,0	9,1	6,8	0,0	0,0
Västerås	443	69	42	11,5	17,4	7,1	3,6	4,3	0,0
Örebro/Lindesberg	930	179	204	5,6	7,8	6,4	2,7	5,0	2,9
Östersund	175	6	18	12,0	0,0	5,6	7,4	0,0	5,6
Sweden	23080	5037	5043	5,3	4,1	3,9	2,7	2,5	1,9

Table 20. Early complications per hospital: Part 2. Empty space = <6 operations. Severe complication = Clavien-Dindo >3a.

Part 2	All complications (%)			Severe complications (%)		
	2017-21	2022	2023	2017-21	2022	2023
Aleris Obes. Sthlm	6,1	0,0	2,2	0,8	0,0	0,0
Aleris, Skåne	6,4	6,9	2,9	2,1	3,4	0,0
Blekinge	10,4	5,9	0,0	6,0	2,0	0,0
Capio S:t G. Sthlm	5,6	3,1	7,8	1,5	0,0	3,5
Carlanderska Gbg	5,2	3,4	4,4	1,9	2,4	0,5
CFTK, Sthlm	2,3	2,1	2,6	1,0	0,5	1,7
CK Kir.klin. Sthlm	7,4	5,7	3,1	7,4	2,8	0,0
Danderyd, Sthlm	6,1	7,9	6,7	2,2	3,6	0,7
Ersta, Sthlm	9,0	8,2	11,5	4,4	4,5	4,5
Falun	10,5	0,0	5,6	10,5	0,0	5,6
GB Obesitas Skåne	4,9	5,1	3,5	1,7	1,8	0,6
Gävleborg	5,1	0,0	6,3	2,7	0,0	3,2
Kalmar	7,2			4,2		
Kirurgicent. Skåne	2,7	2,4	0,0	2,1	2,4	0,0
Ljungby	7,8	9,1	0,0	4,9	6,8	0,0
Lycksele	6,0	5,5	5,1	1,9	3,6	2,0
Mora	4,6	7,8	4,1	1,8	2,6	2,4
NCK, Östergötland	1,4	1,3	1,6	1,0	0,0	0,0
Norrköping	9,3	6,8	4,5	3,9	3,4	1,7
Norrtälje	4,8	1,7	1,7	0,7	0,0	0,0
Nyköping	6,0	0,0		1,8	0,0	
Skövde	6,7	3,8	2,2	3,2	3,1	1,3
Sophiah. Sthlm	1,9	1,0	7,4	1,0	1,0	0,9
Spec. läkarh. S-vall		0,0			0,0	
SU/Östra	9,2	29,4	0,8	2,2	5,9	0,8
Sunderby, Luleå	5,9	0,0	8,3	5,9	0,0	5,6
Sundsvall	3,1	0,0	0,0	2,7	0,0	0,0
Södersjukh. Sthlm	7,5	20,7	0,0	0,8	13,8	0,0
Söderköping	7,6	4,9	10,3	3,4	0,0	3,4
Torsby	5,3	6,3	10,5	2,9	4,4	3,9
Uppsala	5,5	2,2	7,9	2,0	2,2	2,4
Varberg	3,8	0,0	6,9	1,9	0,0	0,0
Värnamo	9,2	17,2	9,4	2,8	3,4	1,2
Västervik	6,8	0,0	0,0	5,1	0,0	0,0
Västerås	10,8	18,8	4,8	3,6	4,3	0,0
Örebro/Lindesberg	6,6	10,6	5,4	2,8	5,0	2,5
Östersund	13,1	0,0	16,7	6,9	0,0	0,0
Sweden	6,1	5,2	5,2	2,6	2,4	1,5

Table 21. Early complications per hospital: Part 3. Empty space = <6 operations. Deep inf = deep infection.

Part 3	Bleeding (%)			Leakage (%)			Abscess/Deep inf (%)		
	2017-21	2022	2023	2017-21	2022	2023	2017-21	2022	2023
Aleris Obes. Sthlm	0,3	0,0	0,0	0,3	0,0	0,0	0,0	0,0	0,0
Aleris, Skåne	0,5	3,4	0,0	0,6	0,0	0,0	0,5	0,0	0,0
Blekinge	3,0	0,0	0,0	3,7	2,0	0,0	1,3	0,0	0,0
Capio S:t G. Sthlm	1,0	0,0	1,4	0,2	0,0	1,4	0,4	0,0	0,0
Carlanderska Gbg	0,8	0,0	0,5	0,6	1,5	0,0	0,1	1,0	0,0
CFTK, Sthlm	0,6	0,3	1,7	0,1	0,3	0,0	0,2	0,3	0,0
CK Kir.klin. Sthlm	3,7	1,9	0,0	3,7	0,0	0,0	0,0	0,0	1,0
Danderyd, Sthlm	1,3	1,2	2,0	1,1	1,8	0,0	1,1	0,6	0,0
Ersta, Sthlm	2,3	1,9	2,2	0,7	0,8	0,9	0,8	0,2	1,3
Falun	0,0	0,0	0,0	10,5	0,0	0,0	5,3	0,0	0,0
GB Obesitas Skåne	0,7	0,9	0,2	0,7	0,9	0,7	0,4	0,3	0,7
Gävleborg	1,5	0,0	4,8	0,2	0,0	0,0	0,0	0,0	0,0
Kalmar	1,2			0,9			0,3		
Kirurgicent. Skåne	0,8	1,6	0,0	0,0	0,0	0,0	0,0	0,8	0,0
Ljungby	2,4	2,3	0,0	1,0	2,3	0,0	1,0	2,3	0,0
Lycksele	1,5	0,0	3,1	0,6	0,9	0,0	0,0	2,7	0,0
Mora	0,6	1,6	1,8	0,6	0,0	0,0	0,2	0,5	0,0
NCK, Östergötland	0,2	0,9	0,5	0,2	0,0	0,0	0,0	0,4	0,5
Norrköping	1,8	1,7	1,1	0,9	2,6	0,0	0,7	0,9	0,0
Norrtälje	0,4	0,0	0,0	0,7	0,0	0,0	0,4	0,0	0,0
Nyköping	0,5	0,0	0,0	0,0	0,0		0,0	0,0	
Skövde	1,9	2,1	1,0	0,9	0,3	0,6	0,6	0,3	0,0
Sophiah. Sthlm	0,8	0,5	0,5	0,3	0,2	0,0	0,2	0,0	0,0
Spec. läkarh. S-vall		0,0			0,0			0,0	
SU/Östra	0,9	0,0	0,0	1,1	0,0	0,0	1,4	0,0	0,0
Sunderby, Luleå	2,1	0,0	2,8	0,0	0,0	0,0	0,0	0,0	0,0
Sundsvall	2,0	0,0	0,0	0,4	0,0	0,0	0,4	0,0	0,0
Södersjukh. Sthlm	0,0	3,4	0,0	0,0	3,4	0,0	0,0	0,0	0,0
Söderköping	2,8	0,0	0,0	1,8	0,0	3,4	0,9	0,0	0,0
Torsby	0,5	0,0	2,6	1,0	2,5	0,7	1,5	0,0	1,3
Uppsala	1,6	0,5	4,8	0,4	0,0	0,0	0,0	0,0	0,6
Varberg	1,0	0,0	0,0	0,5	0,0	3,4	0,0	0,0	0,0
Värnamo	1,1	3,4	0,0	0,7	0,0	0,0	0,4	1,7	1,2
Västervik	1,7	0,0	0,0	1,7	0,0	0,0	0,0	0,0	0,0
Västerås	2,3	2,9	2,4	0,9	4,3	0,0	0,9	1,4	0,0
Örebro/Lindesberg	1,4	2,2	1,0	0,6	1,1	0,5	0,4	0,0	0,5
Östersund	1,7	0,0	0,0	0,6	0,0	0,0	1,1	0,0	0,0
Sweden	1,2	1,1	1,1	0,7	0,7	0,4	0,5	0,4	0,4

Table 22. Early complications per hospital: Part 4. Empty space = <6 operations. Superf. wound inf = superficial wound infection, port site c = port site complication.

Part 4	Wound dehision (%)			Superf. wound inf. (%)			Port site c. (%)		
	2017-21	2022	2023	2017-21	2022	2023	2017-21	2022	2023
Aleris Obes. Sthlm	0,0	0,0	0,0	1,1	0,0	0,0	0,6	0,0	0,0
Aleris, Skåne	0,0	0,0	0,0	0,3	0,0	0,0	0,5	0,0	0,0
Blekinge	0,3	0,0	0,0	1,0	0,0	0,0	0,7	0,0	0,0
Capio S:t G. Sthlm	0,0	0,0	0,0	0,6	0,0	0,0	0,6	0,0	0,7
Carlanderska Gbg	0,0	0,0	0,0	0,5	0,0	0,0	0,2	0,0	0,0
CFTK, Sthlm	0,0	0,0	0,0	0,3	0,5	0,0	0,1	0,3	0,0
CK Kir.klin. Sthlm	0,0	0,0	0,0	0,0	0,9	0,0	0,0	2,8	0,0
Danderyd, Sthlm	0,0	0,0	0,0	0,6	1,2	0,7	0,5	0,0	0,0
Ersta, Sthlm	0,1	0,0	0,2	1,2	1,4	1,1	0,5	1,4	0,6
Falun	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
GB Obesitas Skåne	0,0	0,2	0,0	0,1	0,4	0,5	0,5	0,5	0,1
Gävleborg	0,0	0,0	0,0	0,7	0,0	0,0	0,5	0,0	1,6
Kalmar	0,0			0,0			2,1		
Kirurgicent. Skåne	0,0	0,0	0,0	0,2	0,0	0,0	1,0	0,8	0,0
Ljungby	0,0	0,0	0,0	0,0	0,0	0,0	2,9	0,0	0,0
Lycksele	0,2	0,0	0,0	0,9	0,9	0,0	0,4	1,8	1,0
Mora	0,0	0,0	0,0	0,3	0,5	0,0	0,4	1,6	1,8
NCK, Östergötland	0,0	0,0	0,0	0,0	0,0	0,0	0,2	0,0	0,0
Norrköping	0,1	0,0	0,0	0,9	1,7	0,6	0,8	0,0	1,7
Norrtälje	0,0	0,0	0,0	0,0	0,0	1,7	0,0	0,0	0,0
Nyköping	0,0	0,0		0,9	0,0		0,5	0,0	
Skövde	0,0	0,0	0,0	0,7	0,0	0,0	0,9	1,4	0,0
Sophiah. Sthlm	0,0	0,0	0,0	0,2	0,0	1,8	0,0	0,0	0,0
Spec. läkarh. S-vall		0,0			0,0			0,0	
SU/Östra	0,0	0,0	0,8	1,3	8,8	0,0	0,5	2,9	0,0
Sunderby, Luleå	0,0	0,0	0,0	0,0	0,0	2,8	0,5	0,0	0,0
Sundsvall	0,8	0,0	0,0	0,0	0,0	0,0	0,4	0,0	0,0
Södersjukh. Sthlm	0,0	0,0	0,0	0,8	0,0	0,0	0,8	0,0	0,0
Söderköping	0,0	0,0	0,0	0,6	2,4	0,0	0,6	0,0	3,4
Torsby	0,0	0,0	0,0	0,5	0,0	0,7	0,3	1,9	0,0
Uppsala	0,2	0,0	0,6	1,8	0,0	0,6	0,7	1,1	0,6
Varberg	0,0	0,0	0,0	0,0	0,0	0,0	0,5	0,0	0,0
Värnamo	0,0	0,0	0,0	0,4	1,7	0,0	2,4	1,7	1,2
Västervik	0,0	0,0	0,0	0,0	0,0	0,0	3,4	0,0	0,0
Västerås	0,0	0,0	0,0	2,0	2,9	0,0	0,9	0,0	0,0
Örebro/Lindesberg	0,1	0,6	0,0	1,2	2,2	1,0	1,4	2,8	1,5
Östersund	0,0	0,0	0,0	2,3	0,0	5,6	4,0	0,0	0,0
Sweden	0,0	0,1	0,1	0,7	0,6	0,5	0,6	0,8	0,4

Table 23. Early complications per hospital: Part 5. Empty space = <6 operations.

Part 5	Bowel obstruction			Stricture			Marginal ulcer		
	2017-21	2022	2023	2017-21	2022	2023	2017-21	2022	2023
Aleris Obes. Sthlm	0,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Aleris, Skåne	0,2	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0
Blekinge	0,0	0,0	0,0	0,3	0,0	0,0	0,3	0,0	0,0
Capio S:t G. Sthlm	0,2	0,0	0,0	0,2	0,0	0,0	0,0	0,0	0,7
Carlanderska Gbg	0,1	1,0	0,5	0,1	0,0	0,0	0,0	0,0	1,6
CFTK, Sthlm	0,1	0,0	0,0	0,0	0,0	0,0	0,2	0,0	0,0
CK Kir.klin. Sthlm	0,0	0,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Danderyd, Sthlm	0,2	0,6	0,0	0,2	0,0	0,0	0,6	0,0	0,7
Ersta, Sthlm	0,5	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0
Falun	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
GB Obesitas Skåne	0,2	0,1	0,3	0,1	0,0	0,0	0,2	0,2	0,0
Gävleborg	0,0	0,0	0,0	0,2	0,0	0,0	0,5	0,0	0,0
Kalmar	0,0			0,3			0,6		
Kirurgicent. Skåne	0,0	0,0	0,0	0,4	0,0	0,0	0,0	0,0	0,0
Ljungby	1,0	0,0	0,0	0,5	2,3	0,0	1,0	2,3	0,0
Lycksele	1,1	0,0	0,0	0,0	0,0	0,0	0,9	0,0	0,0
Mora	0,4	0,5	0,0	0,0	0,0	0,0	0,3	0,0	0,0
NCK, Östergötland	0,0	0,0	0,0	0,4	0,0	0,0	0,0	0,0	0,0
Norrköping	0,2	0,0	0,0	0,1	0,0	0,0	0,1	0,0	0,0
Norrtälje	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Nyköping	0,5	0,0		0,9	0,0		0,0	0,0	
Skövde	0,4	0,0	0,0	0,1	0,0	0,3	0,3	0,0	0,0
Sophiah. Sthlm	0,0	0,0	0,0	0,1	0,2	0,0	0,2	0,0	0,2
Spec. läkarh. S-vall		0,0			0,0			0,0	
SU/Östra	0,5	2,9	0,0	0,4	0,0	0,0	0,0	2,9	0,0
Sunderby, Luleå	0,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Sundsvall	0,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Södersjukh. Sthlm	0,0	0,0	0,0	0,0	10,3	0,0	0,0	0,0	0,0
Södertälje	0,6	2,4	0,0	0,0	2,4	3,4	0,3	0,0	3,4
Torsby	0,5	0,0	0,0	0,2	0,0	0,0	0,0	0,0	0,7
Uppsala	0,2	0,5	0,0	0,0	0,0	0,0	0,2	0,0	0,0
Varberg	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Värnamo	0,4	0,0	0,0	0,0	1,7	2,4	0,9	0,0	1,2
Västervik	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Västerås	0,0	0,0	0,0	0,2	0,0	0,0	0,7	0,0	0,0
Örebro/Lindesberg	0,4	2,2	0,0	0,0	0,6	0,0	0,3	0,6	0,5
Östersund	1,1	0,0	5,6	0,0	0,0	5,6	0,0	0,0	0,0
Sweden	0,3	0,3	0,1	0,1	0,2	0,1	0,2	0,1	0,2

Table 24. Early complications per hospital: Part 6. Empty space = <6 operations. Cardiovascular c = cardiovascular complication, DVT/PE = Deep venous thrombosis/pulmonary emboli. Pulmonary c = other pulmonary complication.

Part 6	Cardiovascular c. (%)			DVT/PE (%)			Pulmonary c. (%)		
	2017-21	2022	2023	2017-21	2022	2023	2017-21	2022	2023
Aleris Obes. Sthlm	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Aleris, Skåne	0,0	0,0	0,0	0,1	0,0	0,0	0,4	0,0	0,0
Blekinge	0,0	0,0	0,0	0,3	0,0	0,0	1,0	0,0	0,0
Capio S:t G. Sthlm	0,0	0,0	0,0	0,0	0,0	0,0	0,2	0,0	0,0
Carlanderska Gbg	0,1	0,0	0,0	0,0	0,0	0,0	0,7	0,0	0,0
CFTK, Sthlm	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
CK Kir.klin. Sthlm	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Danderyd, Sthlm	0,1	0,0	0,0	0,2	0,0	0,0	0,6	1,8	0,7
Ersta, Sthlm	0,2	0,0	0,4	0,0	0,0	0,2	0,3	0,2	0,2
Falun	0,0	0,0	0,0	0,0	0,0	0,0	5,3	0,0	0,0
GB Obesitas Skåne	0,0	0,0	0,1	0,3	0,1	0,1	0,1	0,4	0,0
Gävleborg	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Kalmar	0,3			0,0			1,2		
Kirurgicent. Skåne	0,2	0,0	0,0	0,4	0,0	0,0	0,2	0,0	0,0
Ljungby	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Lycksele	0,2	0,0	0,0	0,0	0,0	0,0	0,2	0,0	0,0
Mora	0,2	0,0	0,0	0,1	0,0	0,0	0,3	0,5	0,0
NCK, Östergötland	0,0	0,0	0,0	0,2	0,0	0,0	0,0	0,0	0,0
Norrköping	0,0	0,0	0,0	0,0	0,0	0,0	0,0	1,7	0,6
Norrtälje	0,0	1,7	0,0	0,0	0,0	0,0	0,4	0,0	0,0
Nyköping	0,0	0,0		0,0	0,0		0,0	0,0	
Skövde	0,0	0,3	0,3	0,2	0,0	0,0	0,5	0,0	0,0
Sophiah. Sthlm	0,0	0,0	0,2	0,1	0,0	0,0	0,0	0,0	0,0
Spec. läkarh. S-vall		0,0			0,0			0,0	
SU/Östra	0,0	0,0	0,0	0,0	0,0	0,0	0,2	0,0	0,0
Sunderby, Luleå	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	2,8
Sundsvall	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Södersjukh. Sthlm	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Söderköping	0,3	0,0	3,4	0,3	0,0	3,4	0,3	0,0	3,4
Torsby	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,6	0,7
Uppsala	0,0	0,0	0,0	0,0	0,0	0,0	0,4	0,0	0,0
Varberg	0,0	0,0	0,0	0,0	0,0	0,0	0,5	0,0	0,0
Värnamo	0,0	0,0	0,0	0,0	0,0	0,0	0,9	0,0	1,2
Västervik	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Västerås	0,0	2,9	0,0	0,0	0,0	0,0	0,5	0,0	0,0
Örebro/Lindesberg	0,0	0,0	0,0	0,0	0,0	0,0	0,6	0,0	0,0
Östersund	0,6	0,0	0,0	0,0	0,0	0,0	0,6	0,0	0,0
Sweden	0,1	0,1	0,1	0,1	0,0	0,1	0,3	0,2	0,1

Table 25. Early complications per hospital: Part 7. Empty space = <6 operations. UTI = urinary tract infection.

Part 7	UTI			Other complication		
	2017-21	2022	2023	2017-21	2022	2023
Aleris Obes. Sthlm	0,8	0,0	0,0	3,4	0,0	2,2
Aleris, Skåne	0,1	0,0	0,0	4,0	3,4	2,9
Blekinge	0,7	0,0	0,0	2,7	3,9	0,0
Capio S:t G. Sthlm	1,3	3,1	0,7	1,5	0,0	3,5
Carlanderska Gbg	0,2	0,5	0,0	2,6	0,5	2,2
CFTK, Sthlm	0,3	0,0	0,0	0,8	0,5	0,9
CK Kir.klin. Sthlm	0,0	0,0	1,0	0,0	0,9	1,0
Danderyd, Sthlm	0,0	0,0	1,3	2,2	3,6	2,0
Ersta, Sthlm	0,4	0,8	0,9	3,6	2,7	6,1
Falun	0,0	0,0	0,0	0,0	0,0	5,6
GB Obesitas Skåne	0,1	0,1	0,1	2,5	2,3	1,4
Gävleborg	0,0	0,0	0,0	2,0	0,0	0,0
Kalmar	0,0			2,1		
Kirurgicent. Skåne	0,0	0,0	0,0	1,0	0,0	0,0
Ljungby	0,0	0,0	0,0	1,0	0,0	0,0
Lycksele	0,0	0,0	0,0	0,9	0,9	1,0
Mora	0,2	1,0	0,6	1,6	4,2	0,6
NCK, Östergötland	0,2	0,0	0,0	0,0	0,0	1,1
Norrköping	1,4	0,0	0,0	3,8	0,9	0,6
Norrtälje	0,0	0,0	0,0	3,7	1,7	0,0
Nyköping	0,0	0,0		3,7	0,0	
Skövde	0,4	0,0	0,0	2,3	0,0	0,3
Sophiah. Sthlm	0,0	0,0	0,2	0,3	0,0	4,5
Spec. läkarh. S-vall	0,0			0,0		
SU/Östra	0,0	0,0	0,0	5,2	20,6	0,0
Sunderby, Luleå	0,0	0,0	0,0	3,7	0,0	2,8
Sundsvall	0,0	0,0	0,0	0,8	0,0	0,0
Södersjukh. Sthlm	0,8	0,0	0,0	5,8	6,9	0,0
Söderköping	0,3	0,0	0,0	1,8	0,0	0,0
Torsby	0,0	0,0	0,0	2,0	2,5	5,3
Uppsala	0,2	0,0	0,0	0,8	0,0	0,6
Varberg	0,0	0,0	0,0	1,9	0,0	6,9
Värnamo	0,0	1,7	2,4	3,7	10,3	3,5
Västervik	0,0	0,0	0,0	1,7	0,0	0,0
Västerås	0,5	0,0	0,0	4,5	11,6	2,4
Örebro/Lindesberg	0,2	0,6	0,0	2,2	2,2	2,0
Östersund	0,0	0,0	0,0	4,6	0,0	11,1
Sweden	0,3	0,2	0,3	2,5	1,8	2,2



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