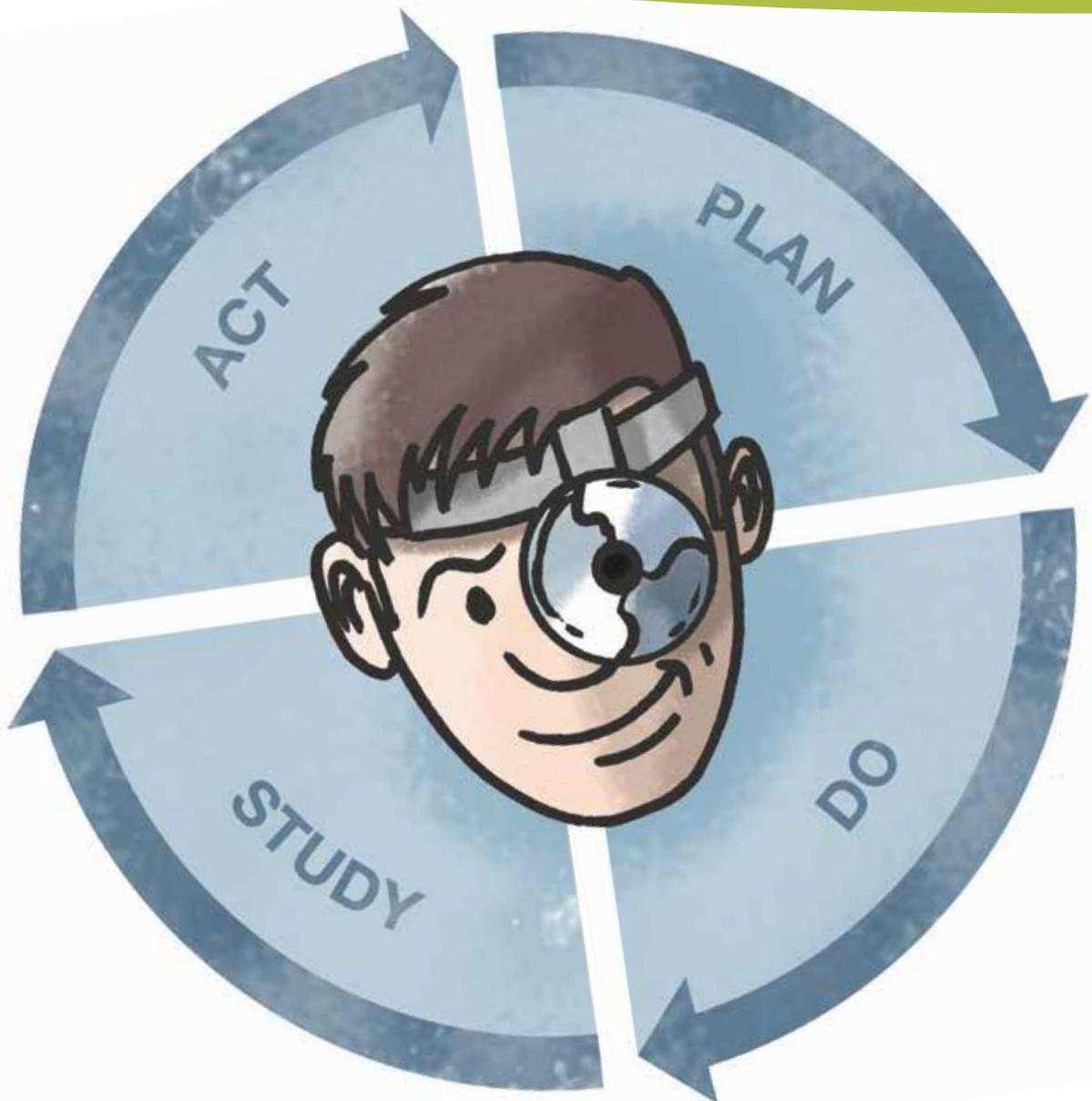


The National Tonsil
Surgery Register in Sweden

Annual Report 2013



Annual Report 2013

The National Tonsil Surgery Register in Sweden
www.entqualitysweden.se

Editor, register director

Joacim Stalfors

Senior consultant, Associate Professor, Ear-, Nose- and Throat Clinic, Sahlgrenska University Hospital, Gothenburg, Sweden
joacim.stalfors@vregion.se

Authors

Joacim Stalfors, Senior consultant, Associate Professor, Ear-, Nose- and Throat Clinic, Sahlgrenska University Hospital, Gothenburg, Sweden

Elisabeth Ericsson, R.N, Associate Professor, School of health and medical Sciences, Örebro University, Örebro, Sweden

Claes Hemlin, Senior consultant, Ph.D, Sollentuna sjukhus, Stockholm, Sweden

Anne-Charlotte Hessén Söderman, Senior consultant, Ph.D, Aleris specialists care center/surgical center, ENT department, Sabbatsberg, Stockholm, Sweden

Erik Odhagen, Consultant, Ph-student, Ear-, Nose- and Throat Clinic, Sahlgrenska University Hospital, Gothenburg, Sweden

Ola Sunnergren, Senior consultant, Ph.D, Ear-, Nose- and Throat Clinic, Länssjukhuset Ryhov, Jönköping, Sweden

Statistician

Bengt Bengtsson

Statistician/SAS programmer, M. Sc. Statistiska Konsultgruppen Stigbergsliden 5, 414 63 Gothenburg, Sweden

Coordinator

Camilla Palmqvist

Centre of Registers Västra Götaland 413 45 Gothenburg, Sweden
camilla.palmqvist@registercentrum.se

Karolinska University Hospital, Stockholm, Sweden
ISSN 2001-9718
Printyear 2014



Contents

■ The National Tonsil Surgery Register in Sweden.....	4
Using register data.....	5
Improvement project “Would you like fewer post-tonsil surgery haemorrhages?”	6
Haemorrhage after tonsillectomy	7
Completeness.....	8
New value compasses	11
Contact with health care.....	38
Other information	40
Response frequency and the percentage of e-mail addresses	42
Indications	44
Postoperative haemorrhage	47
Different kinds of tonsil surgery	54
Benefit of tonsil surgery	60
Questionnaires in the Swedish Tonsil Surgery Register	62
www.tonsiloperation.se	65
Visiting clinics	67
Reference group for tonsil surgery	68
Publications	69



The National Tonsil Surgery Register in Sweden



Introduction

In a number of respects, 2013 has represented a breakthrough for the Swedish Tonsil Surgery Register. During the past year, some 82% of the tonsil operations performed in Sweden were registered. This means that the register is representative in describing the clinical activities for the tonsil surgery process. The register can be used as a tool for measuring improvements in quality over time and in comparisons with other clinics. We are hoping register data is used for clinical improvement programmes and, to stimulate this, for the second year in succession, we have invited clinics to participate in the project entitled "Would you like fewer post-tonsil surgery haemorrhages?". You can read more about it on page 6.

Sweden is unique in that tonsillotomy has largely replaced tonsillectomy in surgery on children with obstructive symptoms. The reason for this is the decreased morbidity with tonsillotomy compared with tonsillectomy with preserved effect on the obstructive symptoms. In 2013, 77% of children aged 1–12 years operated on for obstructive indication underwent tonsillotomy with or without adenoidectomy. This has had a positive effect on patient safety. An evaluation of data from the Swedish Tonsil Surgery Register and the Swedish Board of Health and Welfare's patient register reveals that some 40 children in Sweden avoided being hospitalised for postoperative haemorrhage in 2013, as these children underwent tonsillotomy instead of tonsillectomy.

This annual report focuses on haemorrhage following tonsillectomy. On average, 11% of patients undergoing tonsillectomy are re-admitted as a result of postoperative haemorrhages. This is a high figure and there is a relatively large spread in the frequency of haemorrhage between different units (0.5%–13.8%), which reflects that there is potential for improvement at many units. In this annual report, the data are presented separately

for tonsillectomy and tonsillotomy in order to make the results clearer. Each unit with a result that deviates negatively from the national mean value should analyse the way its surgery was performed, how its education is organised and how the collaboration between anaesthesia, wards and reception functions. A study of register data clearly reveals that applying heat to the tonsillar fossa, regardless of whether this relates to removing the tonsils or stopping a haemorrhage, sharply increases the risk of postoperative haemorrhage. This result could be of interest to units with a high haemorrhage frequency, see page 7 for more details.

Postoperative analgesia is an area in which many units need to reassess their care programmes. The register data for 2013 reveal that 17% of patients contacted the health-care service for advice on pain relief, whereas 10% received antibiotic treatment during the healing process. We believe that the prescription of antibiotics may be associated with insufficient analgesia. To improve postoperative analgesia, national guidelines for pain relief were drawn up and presented in the 2012 annual report (can be downloaded as a pdf at www.entqualitysweden.se). A new feature this year is a dosage tool for postoperative analgesia for children and it is available at www.tonsilloperation.se. This tool can be used by both caregivers and patients and provides a dosage table for analgesics during the first period following surgery.

This annual report can be downloaded as an app to a smartphone or tablet (search for "ÖNH-årsrapport" (ENT annual report) in your AppStore). All the reported data relate to tonsil surgery performed in 2013.

We would like to thank everyone who has helped to ensure that this register has so many registrations of high quality. Together, we are creating a functional register which will help us to develop health care.

The reference group in Sweden for tonsil surgery

Using register data

The long-term aim of quality registers is to improve the quality of health care. Access to data is a fundamental prerequisite for describing of the clinical process and activities, and is the foundation of clinical improvement programmes. The Swedish Tonsil Surgery Register presents data in a number of different ways and this annual report is one of them. When the data from a clinic are analysed, we recommend an initial examination of the value compass. It provides a graphic presentation of a number of indicators that describe a health-care programme in relation to a national average. Supplementary tables make it possible to analyse the data in greater detail and compare the results at one clinic with those at others. A basis is also provided for assessing the scope of the different parameters in the value compass.

The need for clinical improvement relates primarily to postoperative morbidity, first and foremost haemorrhage and pain. To facilitate and follow up developments in these areas, there are opportunities other than an annual report, which is slow to react and does not present the data for one year until the following autumn. Each clinic has the opportunity to obtain more up-to-date data in different ways at the website: www.entqualitysweden.se. After logging in with an SITHS (Swedish e-identity) card, it is possible to study the results for the clinic in real time and also download an Excel file with data for that clinic.

This Excel file can be found under "Register". It is comprehensive and may be difficult to understand in its entirety, but some information is easy to obtain. For example, in the BA (Bleed hospital) and BB (Bleed op again) columns, the patients who needed to be admitted and undergo re-operations because of haemorrhage can be identified. As the database contains Swedish personal ID numbers, it is possible specifically to analyse the course of those patients' illnesses.

This information is supplemented by the bar charts under "Statistics in real time". The number of patients who sought contact with the health-care service or were admitted because of haemorrhages during the past year can be found here and compared with the national average for both tonsillectomy and tonsillotomy.

Access to the data for individual clinics will be further improved. An app for smartphones and tablets has been developed and it will enable interactive analyses of the data from individual clinics. It will be launched during the winter.

Quality registers make it possible to deliver data to clinics to enable them to improve their health-care programmes. To realise a true improvement, we recommend that the results for a clinic should be discussed in detail at clinic meetings with everyone involved. An example of the way this can be done is given in page 6 of this annual report.

Improvement project “Would you like fewer post-tonsil surgery haemorrhages?”

Thanks to the feedback of data from the tonsil quality register, clinics are made aware of their results and are able to make comparisons with other clinics. It may sometimes be difficult to decide where to begin to reduce the frequency of haemorrhages. To support clinics that wanted to reduce the frequency of haemorrhages, the project entitled “Would you like fewer post-tonsil surgery haemorrhages?” was initiated via the reference group for tonsil surgery in the autumn of 2013. Six clinics participated and the project began with a seminar with lectures on quality improvement and a review of research related to tonsil surgery. Each participant analysed the data for his/her clinic under supervision and then drew up a plan of action. When this plan of action had been accepted by the medical director at each clinic, the changes were implemented. Typical procedures that were introduced at a number of clinics included the feedback of results and discussions between physicians. Concrete improvements could include a review of the surgical techniques and haemostasis following tonsillectomy, the organisation of the training of young physicians and information and pain relief for patients. The project ended in the spring of 2014 and the effects will be followed up via the quality register this winter. A new project with a similar design is due to begin in the autumn of 2014, with seven clinics.

Clinics and physicians who took part in the project 2013–14:

- Södra Älvsborgs Sjukhus, **Dr Hugo Davidsson**
- Centralsjukhuset i Karlstad, **Dr Anna Sjögren**
- Norrbottens läns landsting, **Dr Torbjörn Larsson**
- Skaraborgs sjukhus, **Dr Dan Öberg**
- Falu lasarett, **Dr Marek Prucha**
- Västmanlands sjukhus, **Dr Karolina Elinder**

Example from Västmanlands sjukhus

Dr Karolina Elinder from the Västmanlands sjukhus (hospital) in Västerås participated in the improvement project. Of the patients undergoing tonsillectomy in 2009–2012, an average of 15% were re-admitted to hospital due to haemorrhages. A review of the register data revealed that tonsillectomies were largely performed using ultracision or diathermy scissors, techniques which result in a greater risk of haemorrhage, according to both a number of studies and a review of the Swedish Tonsil Surgery Register (see page 7). Together with Dr Johan Knutsson and the medical director, Mats Rosén, an action plan with a specific starting date was approved. On 1 April 2014, the clinic stopped using warm surgical techniques and instead changed to a totally cold technique. This means that only instruments made of cold steel are used for dissection. Any haemorrhages are stopped with three minutes of compression, which may need to be repeated. Bleeding vessels can be ligated, while diathermy is only used in exceptional cases and then at low electric power. One important part of this improvement programme was the training of both nurses and physicians, which took place in co-ordination with the anaesthesia clinic.

From 1 April to mid-August, 38 tonsillectomies were performed and three of these patients were re-admitted because of haemorrhage. This gives a haemorrhage frequency of 7.8%, i.e. half the previous figure. It is far too soon to be able to draw any reliable conclusions, but developments so far look encouraging and we shall be following the results from Västerås with interest!

Haemorrhage after tonsillectomy

When a new surgical technique is introduced, it should be compared with the routine technique that was previously used. When it comes to tonsillectomy, the cold technique is the “gold standard” with which all new techniques should be compared (1). The reason for this is that the cold technique has been shown to be associated with the lowest frequency of late postoperative haemorrhage.

During the past decade, a number of multicentre studies have been published on the connection between the technique used for tonsillectomy and postoperative haemorrhage. They include the large British study from 2004 (2) and an Austrian study that was published in 2011 (3). Both these studies unequivocally reveal that warm techniques carry a greater risk of late postoperative haemorrhage than cold techniques. Based on the results of the British study, the authors recommend that “techniques such as diathermy and coblation ... should therefore be used with care and only after suitable training” (2). This has also been suggested by other authors. In a review of publications on surgical techniques used for tonsillectomy (4), the authors come to the conclusion that “surgical techniques for tonsillectomy that should probably cease to be used comprise monopolar diathermy, coblation, laser and the harmonic scalpel”.

Is this relevant to Swedish conditions? The British and Austrian results are confirmed by analyses of the Swedish Tonsil Surgery Register. Compared with a totally cold technique (no heat or electricity in connection with either dissection or haemostasis), the risk of re-admission as a result of haemorrhage is 2.8 times higher in conjunction with the use of cold dissection with diathermy for haemostasis, 3.2 times higher using the coblation technique, 4.3 times higher with diathermy scissors and 5.6 times higher using ultracision.

As this report reveals, a number of different techniques are used for both dissection and haemostasis in connection with tonsillectomy in Sweden. The re-admission frequency as a result of postoperative haemorrhage varies between 0% and more than 15%. One of the purposes of this annual report is to present the results from each

clinic and offer every clinic an opportunity to compare its results with those of others in order to stimulate improvement programmes whenever necessary. This is illustrated by the improvement project in Västerås, which is presented on page 6.

Based on current knowledge, it is reasonable to recommend that all ENT physicians during training are given the chance to learn to perform tonsillectomy using a totally cold technique, without using any form of heat, including diathermy. Only when the cold technique has been mastered can hot instruments be used. The warm technique can have advantages, such as fewer postoperative haemorrhages and shorter operating times.

Regardless of the technique that is chosen, each clinic needs to keep a constant check on its results and, whenever necessary, change its techniques.

1. Blanchford H, Lowe D. Cold versus hot tonsillectomy: state of the art and recommendations. *ORL J Otorhinolaryngol Relat Spec.* 2013;75(3):136–41. PubMed PMID: 23978797. Epub 2013/08/28. eng.
2. Lowe D, van der Meulen J. Tonsillectomy technique as a risk factor for postoperative haemorrhage. *Lancet.* 2004 Aug 21–27;364(9435):697–702. PubMed PMID: 15325834. Epub 2004/08/25. eng.
3. Sarny S, Ossimitz G, Habermann W, Stammberger H. Hemorrhage following tonsil surgery: a multi-center prospective study. *Laryngoscope.* 2011 Dec;121(12):2553–60. PubMed PMID: 22109752.
4. Gysin C, Dulguerov P. Hemorrhage after tonsillectomy: does the surgical technique really matter? *ORL J Otorhinolaryngol Relat Spec.* 2013;75(3):123–32. PubMed PMID: 23978795.

Completeness

The Swedish Tonsil Surgery Register has now reached an important point. In 2013, our coverage level was 81.4%, which means that, of 13,811 known tonsil operations, 11,238 were registered in the quality register. It is also pleasing to report that 17 clinics register more than 90% of their tonsil operations in the register.

How completeness is calculated

The calculations have been performed in collaboration with the Register Service at the Swedish Board of Health and Welfare. Patients undergoing surgery and registered with surgery numbers EMB10, EMB15, EMB20 or EMB99, combined with a non-malignant diagnosis, have been identified in the Patient Register (PAR) and matched, via their personal ID numbers, against the National Quality Register in Sweden (NTSRS).

The following results of this matching process are presented.

- Total number of patients undergoing surgery in Sweden. This column is a synthesis of individual data from both the NTSRS and the PAR.
- Completeness level, i.e. the percentage of patients in the NTSRS from all those undergoing tonsil surgery in Sweden.
- Number of patients in the NTSRS
- Number of patients in the PAR
- Number of patients only listed in the NTSRS
- Number of patients only listed in the PAR

Results

A total of 13,811 tonsil operations are registered in the patient register or the quality register. There are 13,263 patients registered in the patient register, while the quality register contains 11,238 valid patients. There are 1,022 more registrations in the quality register compared with 2012. In some cases, patients are registered in the quality register but not in the patient register (n=548), but the opposite also applies (n=2,573). Matching the two registers reveals that a total of 13,811 (known) tonsil operations were performed in 2013, making the completeness level 81.4%. In all, 64 units in Sweden perform surgery and, of these, 53 participated in the register in 2013, making a participation rate of 83%.

FACTS BOX:

The coverage level is given at both individual level (completeness), i.e. the percentage of patients in the quality register of all the patients undergoing tonsil surgery in Sweden, and at clinic level, i.e. the percentage of participating clinics of all those performing tonsil surgery (participating percentage/coverage).

Table 1. The table shows the completeness of data between the National Tonsil Surgery Register (NTSRS) and the Patient Register (PAR), Swedish Board of Health and Welfare.

Hospital		Total (numbers)	Completeness (%)	NTSRS (numbers)	PAR (numbers)	Only NTSRS (numbers)	Only PAR (numbers)
Total for Sweden		13811	81.4	11238	13263	548	2573
Hallands läns landsting	Hallands sjukhus Halmstad	423	81.6	345	415	8	78
	Kungsbacka sjukhus	1	–	–	1	–	1
Jämtlands läns landsting	Östersunds sjukhus	163	77.3	126	150	13	37
Landstinget Blekinge	Blekingesjukhuset	142	88.7	126	140	2	16
Landstinget Dalarna	Falu lasarett	450	79.1	356	428	22	94
	Mora lasarett	1	–	–	1	–	1
Landstinget Gävleborg	Gävle sjukhus	264	78.0	206	254	10	58
	Hudiksvalls sjukhus	206	82.5	170	202	4	36
Landstinget i Jönköpings län	Högländssjukhuset Eksjö	127	78.7	100	121	6	27
	Länssjukhuset Ryhov Jönköping	392	91.1	357	381	11	35
	Värnamo sjukhus	55	94.5	52	54	1	3
Landstinget i Kalmar län	Länssjukhuset i Kalmar	192	87.5	168	192	–	24
	Västerviks sjukhus	67	98.5	66	67	–	1
Landstinget i Sörmland	ÖNH-kliniken Sörmland	243	62.1	151	234	9	92
	Nyköpings lasarett	20	–	–	20	–	20
Landstinget i Värmland	Centralsjukhuset Karlstad	342	93.0	318	334	8	24
Landstinget i Västmanland	Västmanlands sjukhus Västerås	357	93.6	334	354	3	23
Landstinget i Östergötland	Universitetssjukhuset i Linköping	41	–	–	41	–	41
	Vrinnevisjukhuset i Norrköping	413	93.9	388	408	5	25
Landstinget Kronoberg	Ljungby lasarett	39	87.2	34	37	2	5
	Växjö lasarett	163	–	–	163	–	163
Landstinget Västernorrland	Sollefteå sjukhus	44	93.2	41	44	–	3
	Länssjukhuset i Sundsvall	242	68.2	165	229	13	77
	Örnsköldsviks sjukhus	51	82.4	42	51	–	9
Norrbottens läns landsting	Sunderby sjukhus, Gällivare sjukhus, Piteå Älvdals sjukhus	382	85.6	327	377	5	55
Region Gotland	Visby lasarett	48	91.7	44	44	4	4
Region Skåne	Helsingborgs lasarett	275	90.9	250	275	–	25
	Centralsjukhuset Kristianstad	452	94	425	440	12	27
	Lasarett i Landskrona	127	92.1	117	125	2	10
	Skånes Universitetssjukhus	105	13.3	14	103	2	91
	Lasarett i Trelleborg	292	82.2	240	286	6	52
	Lasarett i Ystad	425	97.9	416	414	11	9
	Ängelholms sjukhus	137	94.2	129	137	–	8

The table continues on the next page

Table 1. The table shows the completeness of data between the National Tonsil Surgery Register (NTSRS) and the Patient Register (PAR), Swedish Board of Health and Welfare.

	Hospital	Total (numbers)	Completeness (%)	NTSRS (numbers)	PAR (numbers)	Only NTSRS (numbers)	Only PAR (numbers)
Stockholm läns landsting	Capio Öron Näs Hals Globen	94	100	94	93	1	.
	Forum VC / Nacka	100	–	–	100	–	100
	Handens sjukhus	27	48.1	13	27	–	14
	Högdalens ÖNH-centrum	88	–	–	88	–	88
	Öron- Näs- Halscenter Jakobsberg	116	87.9	102	113	3	14
	Karolinska Universitetssjukhuset	741	74.6	553	728	13	188
	Aleris Specialistvård Nacka	149	51.7	77	144	5	72
	Aleris Specialistvård Sabbatsberg	526	75.9	399	511	15	127
	Serafimerlasarettet	92	84.8	78	90	2	14
	Skärholmens ÖNH-centrum	563	95.0	535	555	8	28
	Sollentuna Sjukhus	56	–	–	56	–	56
	Sophiahemmet	810	93.0	753	706	104	57
	Strandkliniken, Öron-, Näs- och Hals – Specialistmottagning	164	74.4	122	159	5	42
	Öron-, näs- och halsmottagningen Södermalms Läkarhus	252	90.1	227	250	2	25
	Södertälje sjukhus	123	82.9	102	119	4	21
	Täby Närsjukhus	39	–	–	39	–	39
	Patients operated by unspecified private practitioners in Stockholm	61	–	–	61	–	61
Uppsala-Örebro sjukvårdsregion	Akademiska sjukhuset	397	82.4	327	349	48	70
	Aleris Specialistvård Elisabethsjukhuset	109	98.2	107	109	–	2
	Karlskoga lasarett	51	80.4	41	48	3	10
	Lindesbergs lasarett	91	82.4	75	86	5	16
	Capio Läkargruppen Örebro	131	95.4	125	131	–	6
	Universitetssjukhuset Örebro	92	83.7	77	85	7	15
Västerbottens läns landsting	Norrlands Universitetssjukhus	380	79.7	303	343	37	77
	Skellefteå lasarett	20	–	–	20	–	20
Västra Götalandsregionen	Carlanderska	25	–	–	25	–	25
	Capio Lundby sjukhus	221	95.0	210	139	82	11
	NU-sjukvården, Trollhättan	332	93.1	309	328	4	23
	Sahlgrenska universitetssjukhuset	559	76.4	427	540	19	132
	Skaraborgs sjukhus	238	92.0	219	230	8	19
	Södra Älvsborgs sjukhus	355	94.4	335	344	11	20
	Frölunda Specialistsjukhus	128	94.5	121	125	3	7

New value compasses

The value compasses comprise 10 variables and are produced to provide a quick, pedagogic overview. One new feature this year is that the results for tonsillectomy and tonsillotomy respectively are presented separately in the value compasses. All the data that are presented in the value compasses come from the quality register.

The value compass should be used as a qualitative indicator of health care. Its simplified signal system is able to identify areas in which it is necessary to conduct more in-depth analyses of data that can be found in other parts of the report.

The values for the clinic are shown in green, while red represents the national average. The limit values on each axis represent the largest and smallest value for a variable. Please note that the scales on each axis therefore differ depending on the maximum or minimum value of the variable. The lowest value for the variables is at the zero point and the highest is on the periphery. A clinic with red fields has a poorer value than the national average for the variable in question. The values that form the basis of the individual axes in the value compass are presented next to the axes.

Next to the value compasses, there is a table showing coverage, the response frequencies for the questionnaires and the percentage of registered e-mail addresses. A different signal system is used for these variables to describe the quality of the register work at each clinic.

Coverage:

 Coverage > 80%

 Coverage 70–80%

 Coverage < 70%

Response frequency:

 > 50% response frequency to patient questionnaires

 40–50% response frequency to patient questionnaires

 < 40% response frequency to patient questionnaires

Percentage of e-mail addresses

 > 75% have given e-mail addresses

 < 75% have given e-mail addresses

The variables that are presented for tonsillectomy and tonsillotomy respectively

- **Re-admitted because of haemorrhage** – the percentage of patients who reported that they were re-admitted to hospital because of postoperative haemorrhage.
- **Re-operation because of haemorrhage** – the percentage of patients who reported that they had undergone a re-operation because of postoperative haemorrhage.
- **Contact because of pain** – the percentage of patients who reported that they had needed to make unplanned contact with the health-care service because of postoperative pain.
- **Freedom from symptoms** – the percentage of patients who reported that “my problems have disappeared” or “I have recovered fairly well from my problems”.

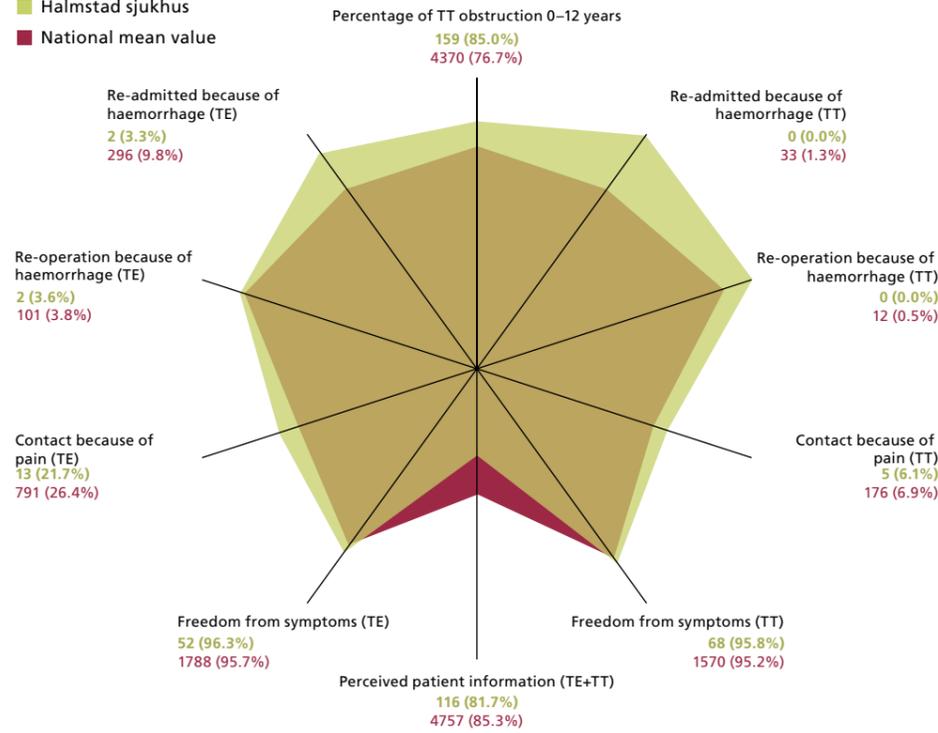
The variables that are presented for all tonsil surgery

- **Perceived patient information** – the percentage of patients who reported that the information they received prior to surgery matched their perception of surgery and the following period.
- **Percentage of TT obstruction 0–12 years** – the percentage of patients undergoing tonsillotomy (TT) of those undergoing surgery for the indication of obstruction and are 0–12 years of age.

Units with fewer than 30 registered operations are excluded from presentations of the value compasses.
TE=tonsillectomy or tonsillectomy with adenoidectomy
TT=tonsillotomy or tonsillotomy with adenoidectomy

Hallands läns landsting, Halmstad sjukhus

■ Halmstad sjukhus
■ National mean value

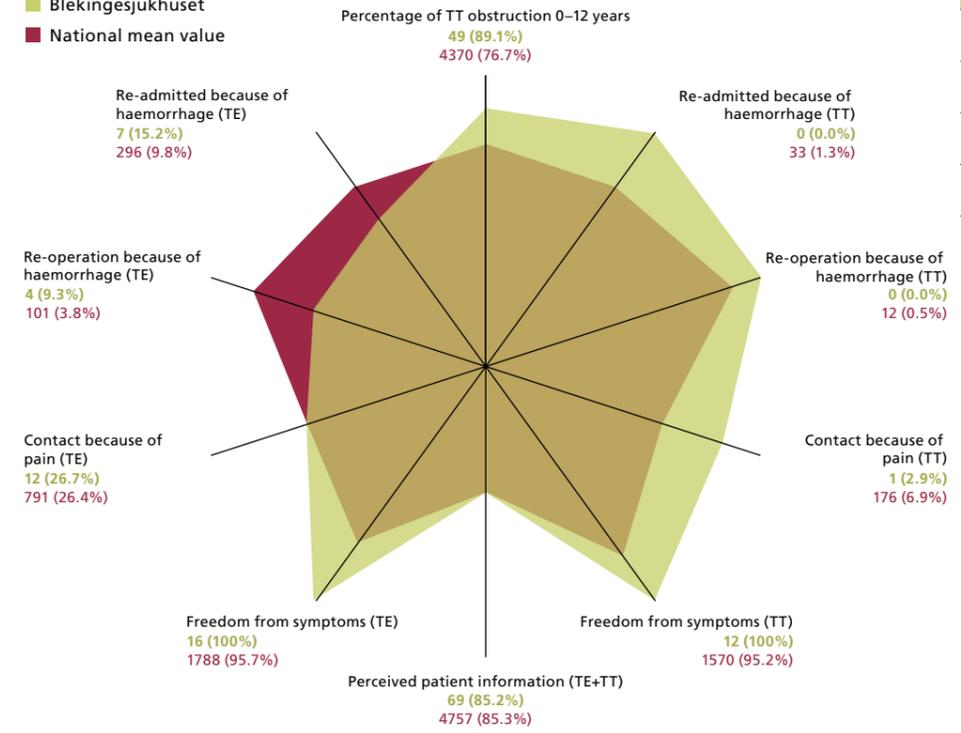


Number of TE+TT (TE/TT): 345 (182/163)

	Numbers (%)
Completeness	81.6% 😊
Response rate 30 days TT+TE	144 (41.8%) 😐
Response rate 6 months TT+TE	126 (36.5%) 😞
E-mail addresses registered	181 (47.0%) 🗑️

Landstinget Blekinge, Blekingesjukhuset

■ Blekingesjukhuset
■ National mean value

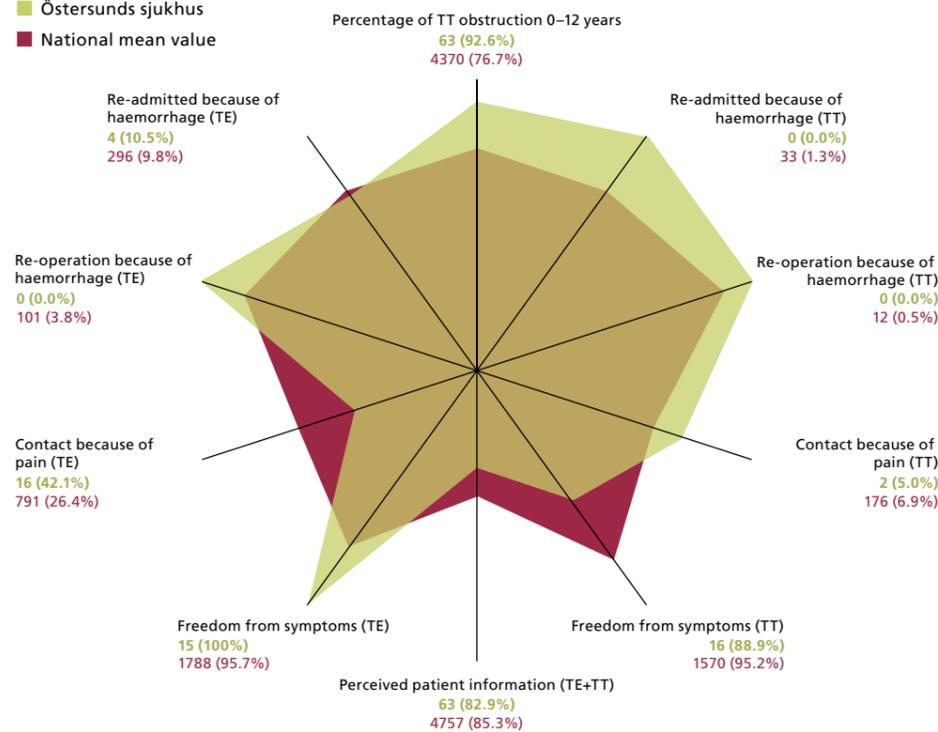


Number of TE+TT (TE/TT): 126 (71/55)

	Numbers (%)
Completeness	88.7% 😊
Response rate 30 days TT+TE	81 (64.2%) 😊
Response rate 6 months TT+TE	28 (22.2%) 😞
E-mail addresses registered	107 (84.7%) 👍

Jämtlands läns landsting, Östersunds sjukhus

■ Östersunds sjukhus
■ National mean value

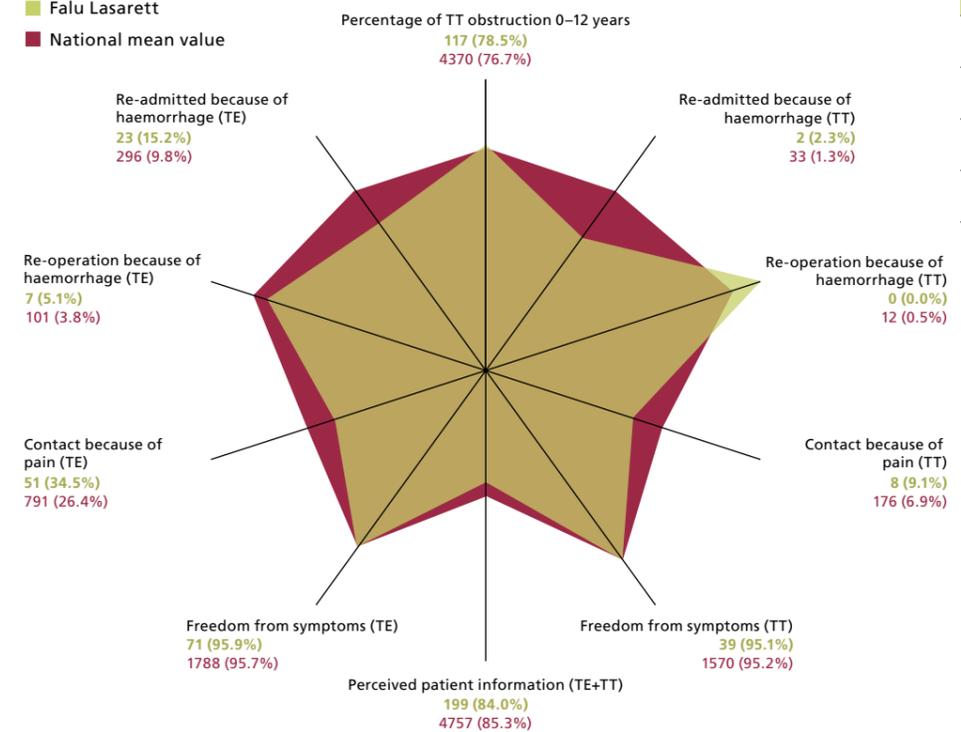


Number of TE+TT (TE/TT): 127 (58/69)

	Numbers (%)
Completeness	77.3% 😐
Response rate 30 days TT+TE	79 (62.4%) 😊
Response rate 6 months TT+TE	33 (26.0%) 😞
E-mail addresses registered	88 (69.4%) 🗑️

Landstinget Dalarna, Falu Lasarett

■ Falu Lasarett
■ National mean value

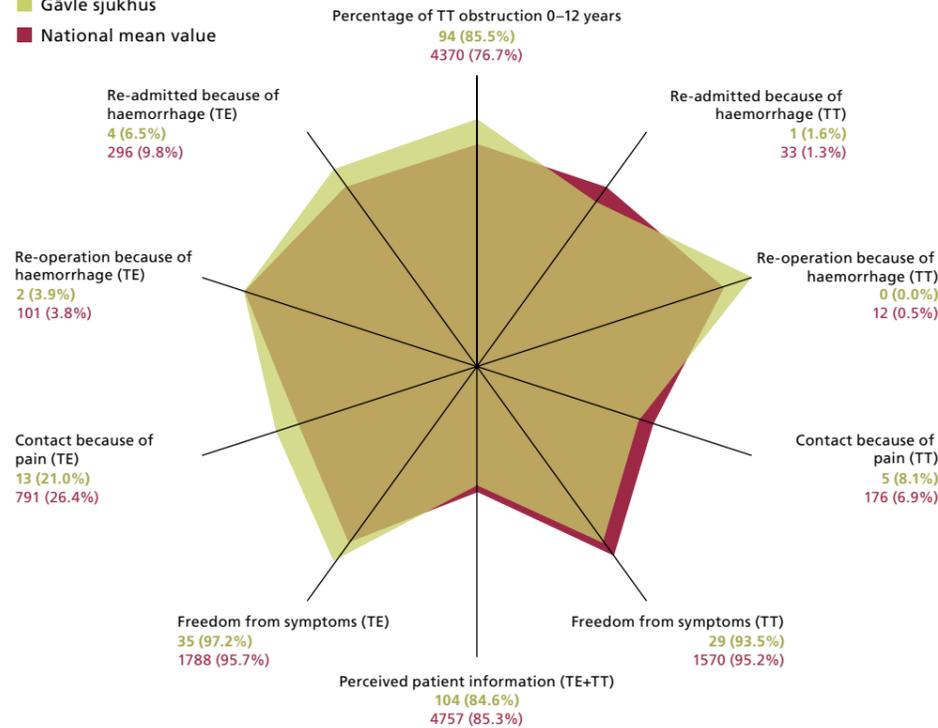


Number of TE+TT (TE/TT): 356 (225/131)

	Numbers (%)
Completeness	79.1% 😐
Response rate 30 days TT+TE	240 (67.4%) 😊
Response rate 6 months TT+TE	116 (32.5%) 😞
E-mail addresses registered	260 (73.1%) 🗑️

Landstinget Gävleborg, Gävle sjukhus

■ Gävle sjukhus
■ National mean value

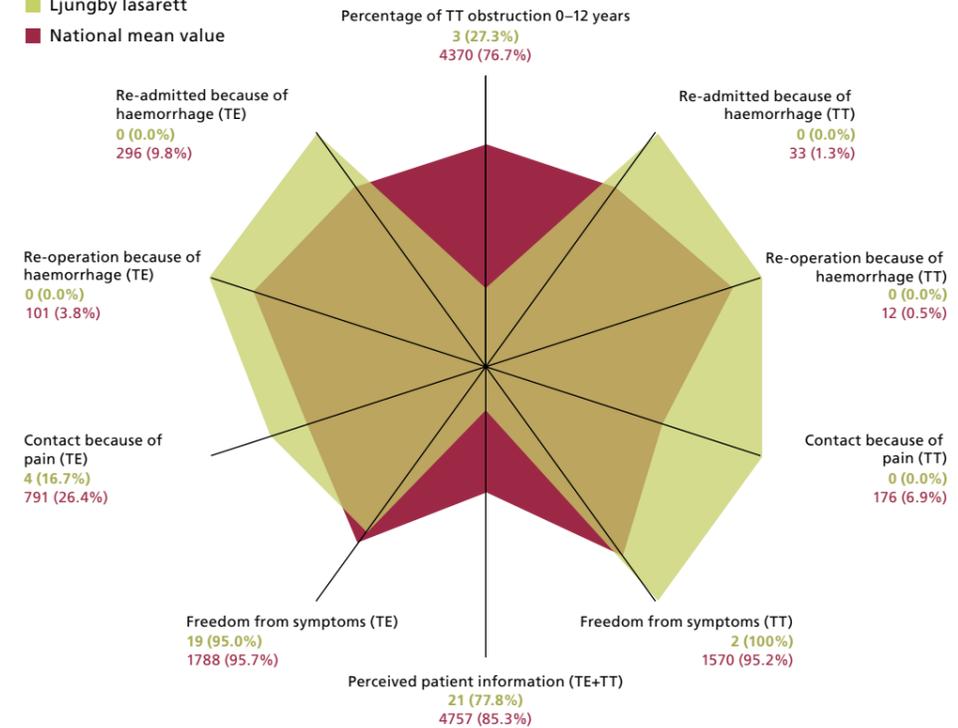


Number of TE+TT (TE/TT): 206 (100/106)

	Numbers (%)
Completeness	78.0% 😞
Response rate 30 days TT+TE	125 (60.7%) 😊
Response rate 6 months TT+TE	67 (32.6%) 😞
E-mail addresses registered	97 (47.0%) 🗑️

Landstinget Kronoberg, Ljungby lasarett

■ Ljungby lasarett
■ National mean value

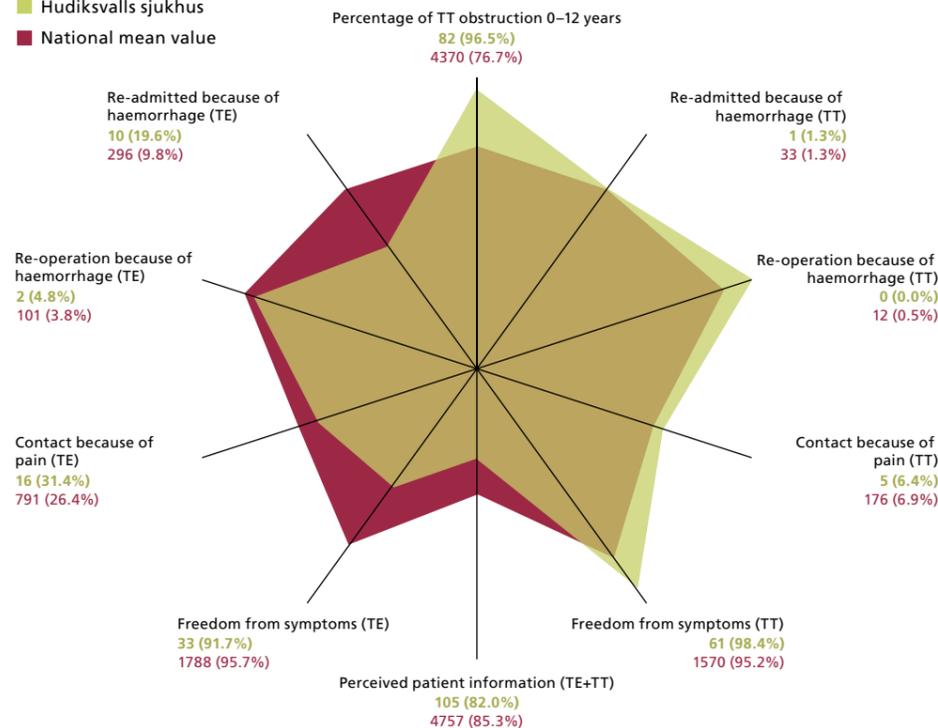


Number of TE+TT (TE/TT): 34 (31/3)

	Numbers (%)
Completeness	87.2% 😊
Response rate 30 days TT+TE	34 (100%) 😊
Response rate 6 months TT+TE	34 (100%) 😊
E-mail addresses registered	6 (18.5%) 🗑️

Landstinget Gävleborg, Hudiksvalls sjukhus

■ Hudiksvalls sjukhus
■ National mean value

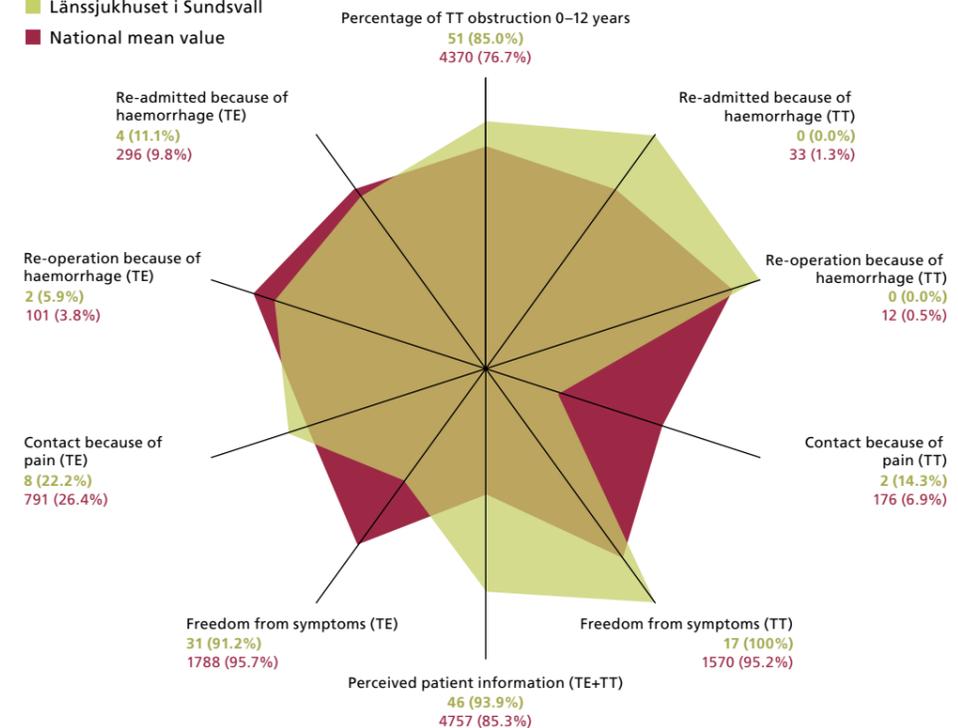


Number of TE+TT (TE/TT): 170 (69/101)

	Numbers (%)
Completeness	82.5% 😊
Response rate 30 days TT+TE	140 (82.1%) 😊
Response rate 6 months TT+TE	121 (71.4%) 😊
E-mail addresses registered	105 (61.8%) 🗑️

Landstinget Västernorrland, Länssjukhuset i Sundsvall

■ Länssjukhuset i Sundsvall
■ National mean value

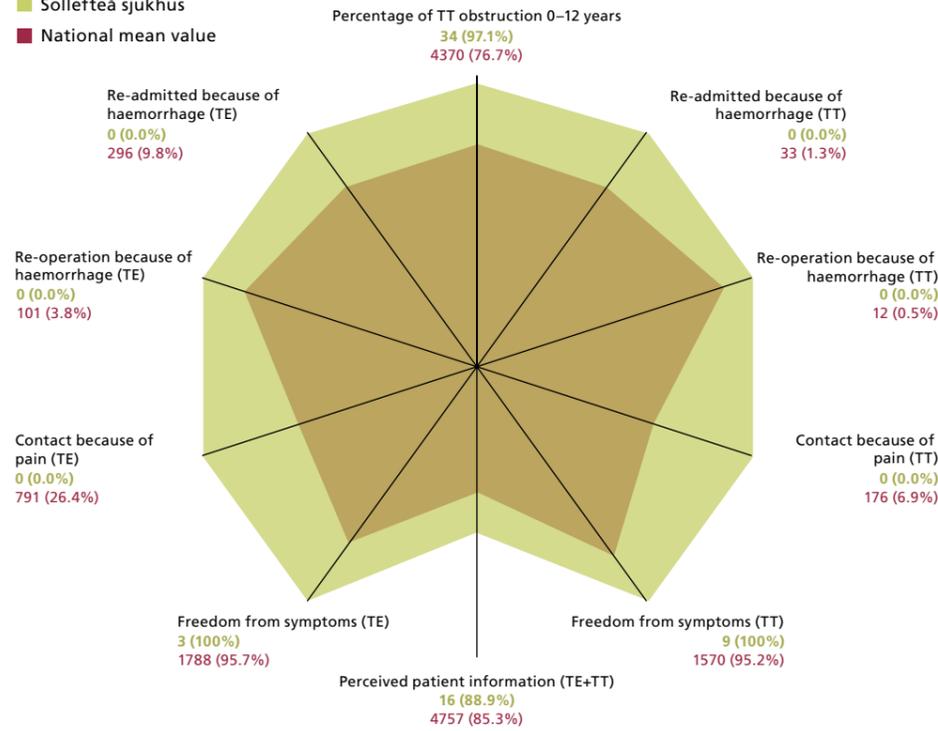


Number of TE+TT (TE/TT): 165 (107/58)

	Numbers (%)
Completeness	68.2% 😞
Response rate 30 days TT+TE	50 (30.4%) 😞
Response rate 6 months TT+TE	51 (31.2%) 😞
E-mail addresses registered	152 (92.3%) 👍

Landstinget Västernorrland, Sollefteå sjukhus

Sollefteå sjukhus
National mean value

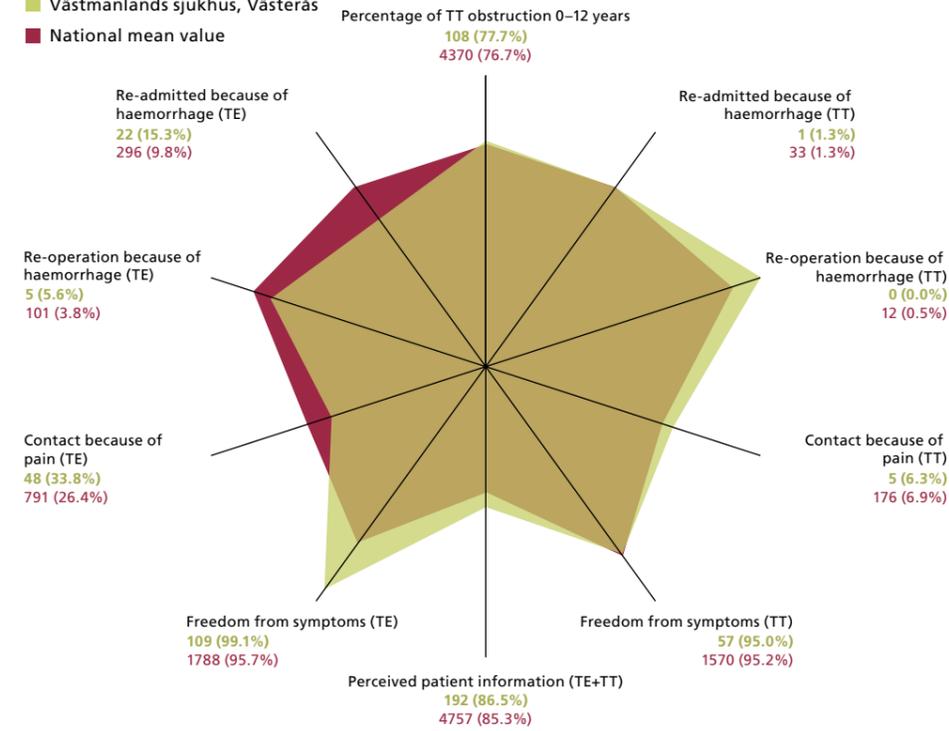


Number of TE+TT (TE/TT): 41 (3/38)

	Numbers (%)	
Completeness	93.2%	😊
Response rate 30 days TT+TE	26 (62.8%)	😊
Response rate 6 months TT+TE	21 (51.0%)	😊
E-mail addresses registered	0 (0.0%)	👤

Landstinget Västmanland, Västmanlands sjukhus, Västerås

Västmanlands sjukhus, Västerås
National mean value

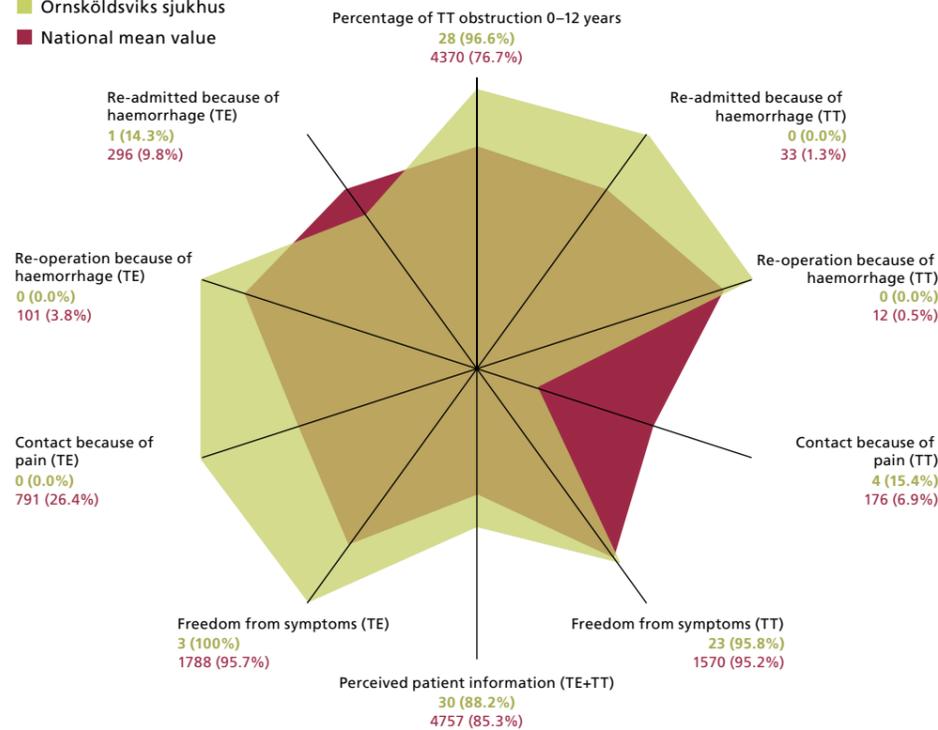


Number of TE+TT (TE/TT): 335 (218/117)

	Numbers (%)	
Completeness	93.6%	😊
Response rate 30 days TT+TE	283 (84.5%)	😊
Response rate 6 months TT+TE	172 (51.5%)	😊
E-mail addresses registered	0 (0.0%)	👤

Landstinget Västernorrland, Örnsköldsviks sjukhus

Örnsköldsviks sjukhus
National mean value

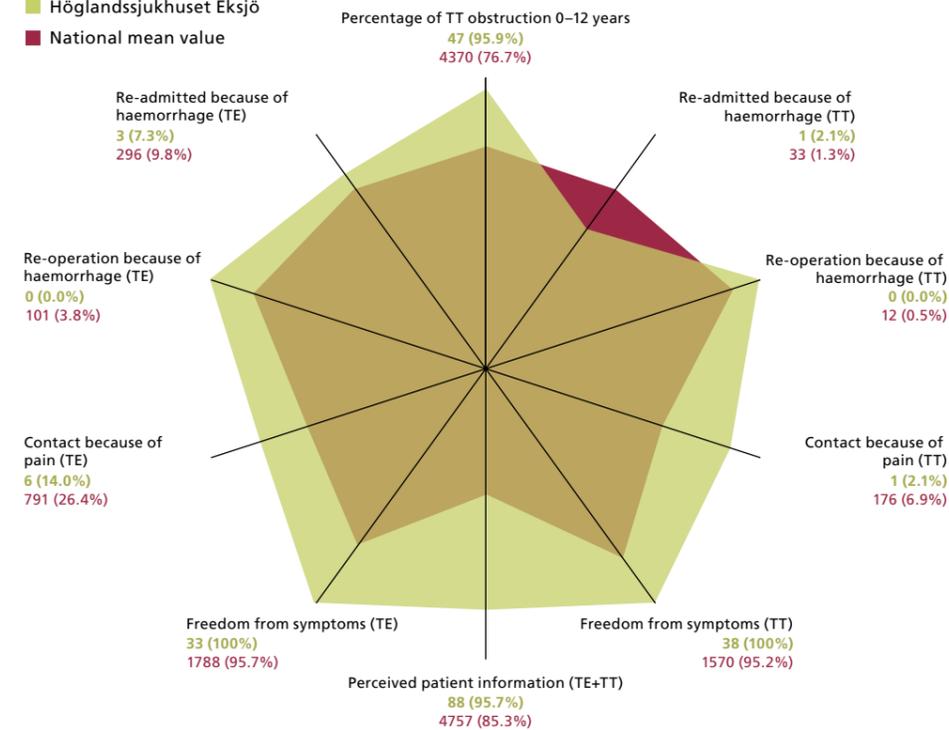


Number of TE+TT (TE/TT): 42 (9/33)

	Numbers (%)	
Completeness	82.4%	😊
Response rate 30 days TT+TE	34 (80.2%)	😊
Response rate 6 months TT+TE	24 (56.8%)	😊
E-mail addresses registered	0 (0.0%)	👤

Landstinget i Jönköpings län, Höglandssjukhuset Eksjö

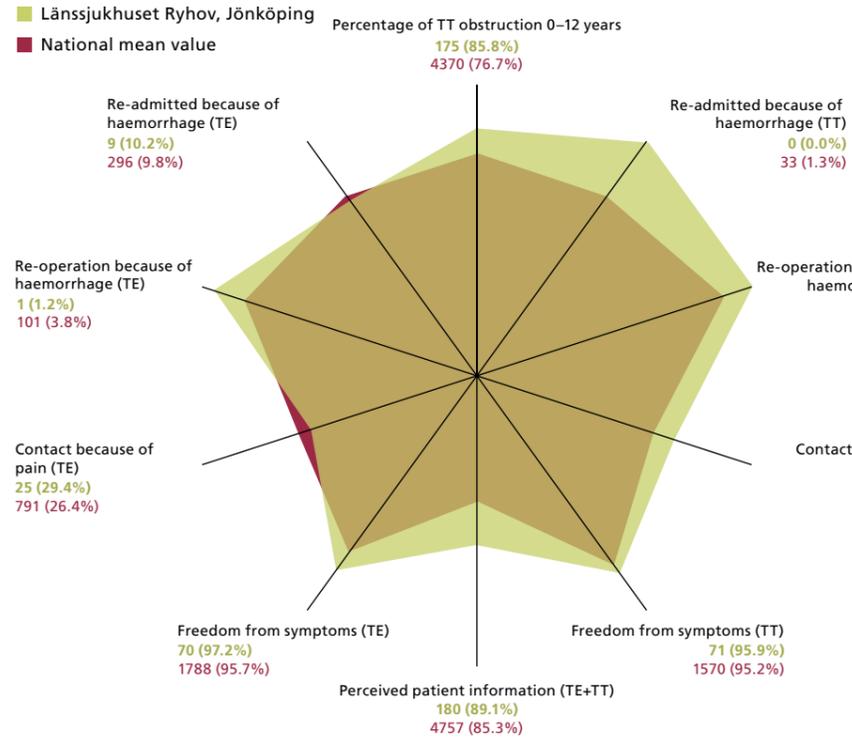
Höglandssjukhuset Eksjö
National mean value



Number of TE+TT (TE/TT): 100 (47/53)

	Numbers (%)	
Completeness	78.7%	😊
Response rate 30 days TT+TE	94 (94.0%)	😊
Response rate 6 months TT+TE	72 (72.0%)	😊
E-mail addresses registered	12 (12.1%)	👤

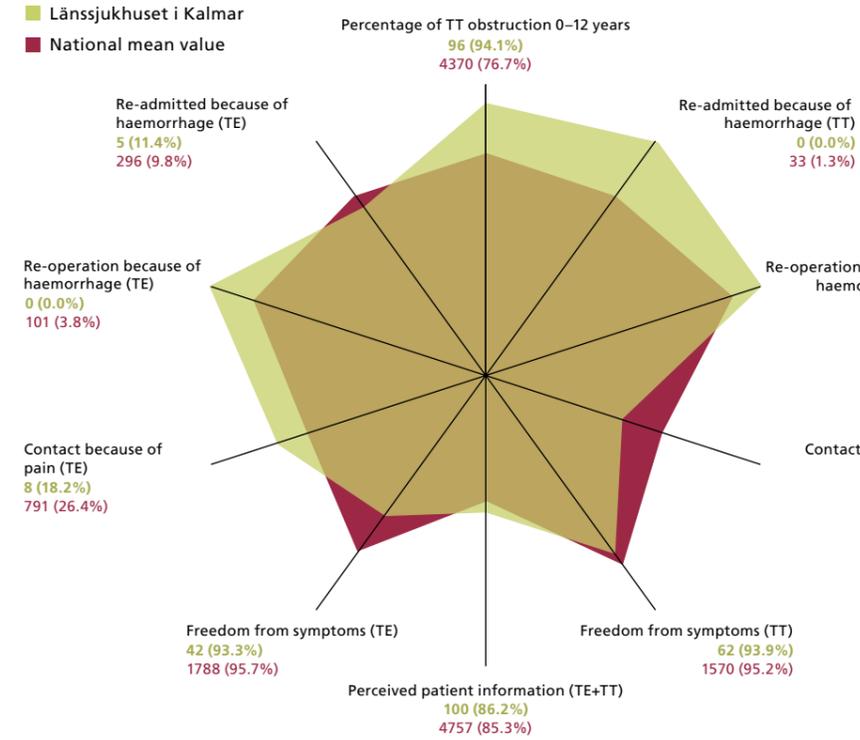
Landstinget i Jönköpings län, Länssjukhuset Ryhov Jönköping



Number of TE+TT (TE/TT): 357 (175/182)

	Numbers (%)	
Completeness	91.1%	😊
Response rate 30 days TT+TE	203 (56.8%)	😊
Response rate 6 months TT+TE	147 (41.2%)	😐
E-mail addresses registered	194 (54.2%)	👤

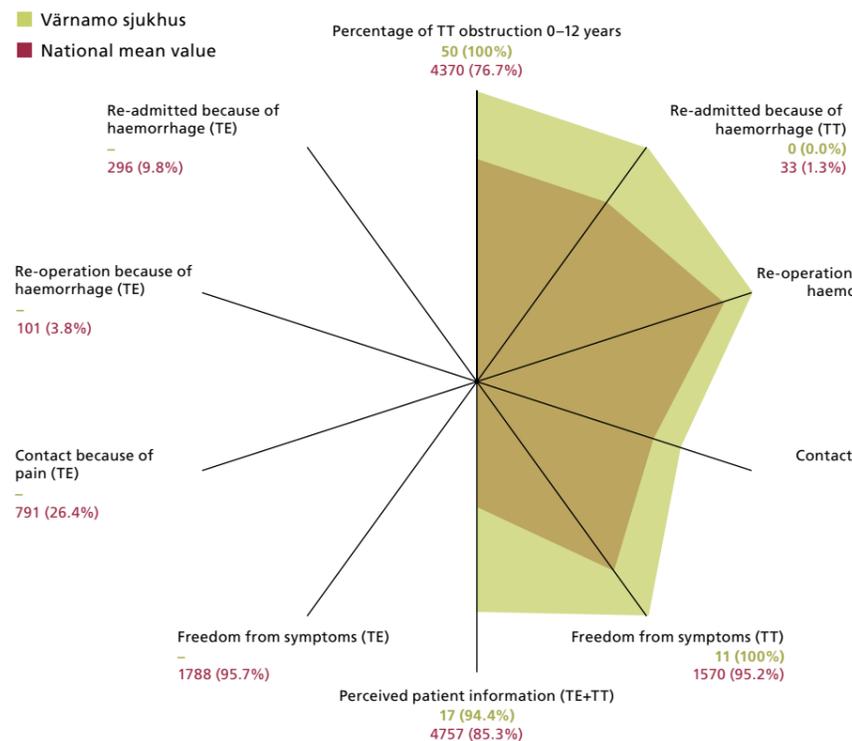
Landstinget i Kalmars län, Länssjukhuset i Kalmar



Number of TE+TT (TE/TT): 168 (71/97)

	Numbers (%)	
Completeness	87.5%	😊
Response rate 30 days TT+TE	118 (70.2%)	😊
Response rate 6 months TT+TE	112 (66.4%)	😊
E-mail addresses registered	86 (50.9%)	👤

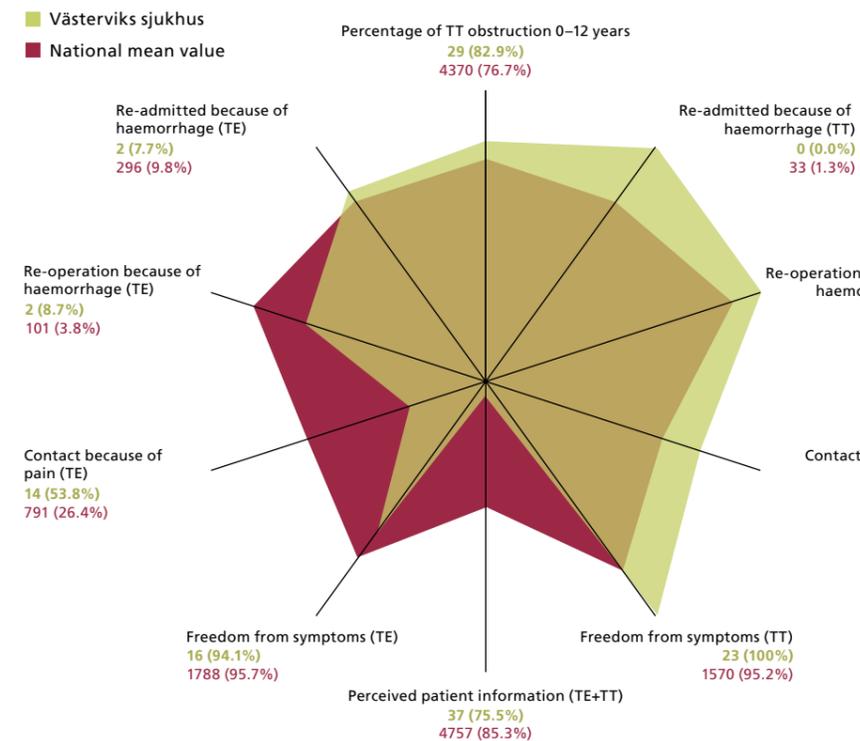
Landstinget i Jönköpings län, Värnamo sjukhus



Number of TE+TT (TE/TT): 52 (–/52)

	Numbers (%)	
Completeness	94.5%	😊
Response rate 30 days TT+TE	19 (36.5%)	😞
Response rate 6 months TT+TE	11 (21.2%)	😞
E-mail addresses registered	46 (88.5%)	👍

Landstinget i Kalmars län, Västerviks sjukhus

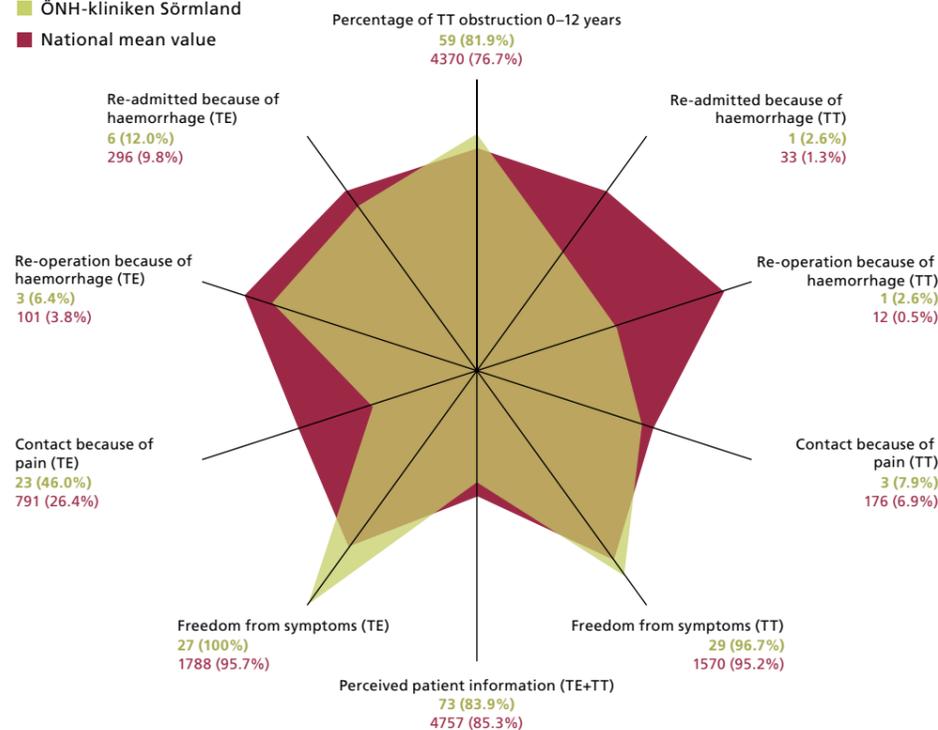


Number of TE+TT (TE/TT): 66 (35/31)

	Numbers (%)	
Completeness	98.5%	😊
Response rate 30 days TT+TE	56 (84.9%)	😊
Response rate 6 months TT+TE	40 (61.1%)	😊
E-mail addresses registered	5 (7.7%)	👤

Landstinget i Sörmland, ÖNH-kliniken Sörmland

■ ÖNH-kliniken Sörmland
■ National mean value

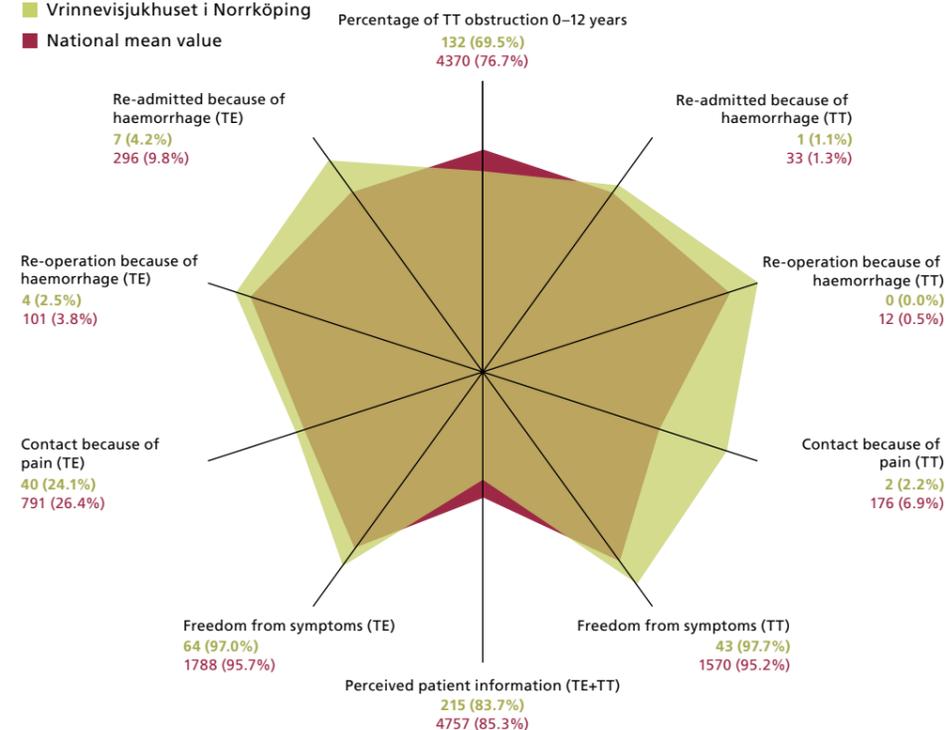


Number of TE+TT (TE/TT): 151 (91/60)

	Numbers (%)	
Completeness	62.1%	☹️
Response rate 30 days TT+TE	140 (92.4%)	😊
Response rate 6 months TT+TE	85 (56.1%)	😊
E-mail addresses registered	0 (0.0%)	👎

Landstinget i Östergötland, Vrinnevisjukhuset i Norrköping

■ Vrinnevisjukhuset i Norrköping
■ National mean value

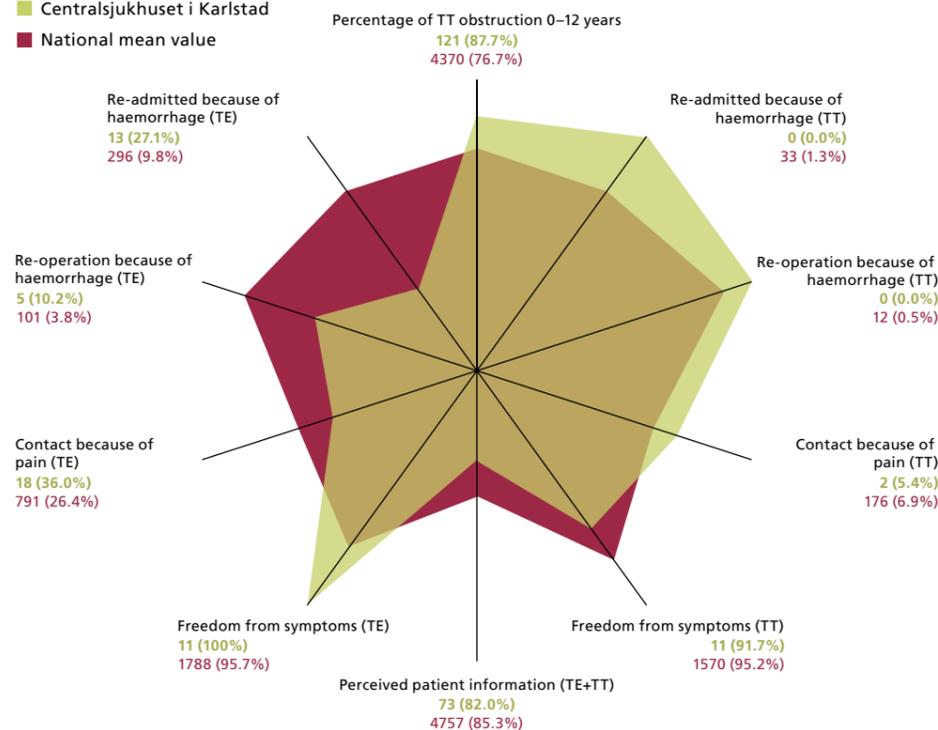


Number of TE+TT (TE/TT): 388 (250/138)

	Numbers (%)	
Completeness	93.9%	😊
Response rate 30 days TT+TE	262 (67.6%)	😊
Response rate 6 months TT+TE	115 (29.5%)	☹️
E-mail addresses registered	324 (83.5%)	👍

Landstinget i Värmland, Centralsjukhuset i Karlstad

■ Centralsjukhuset i Karlstad
■ National mean value

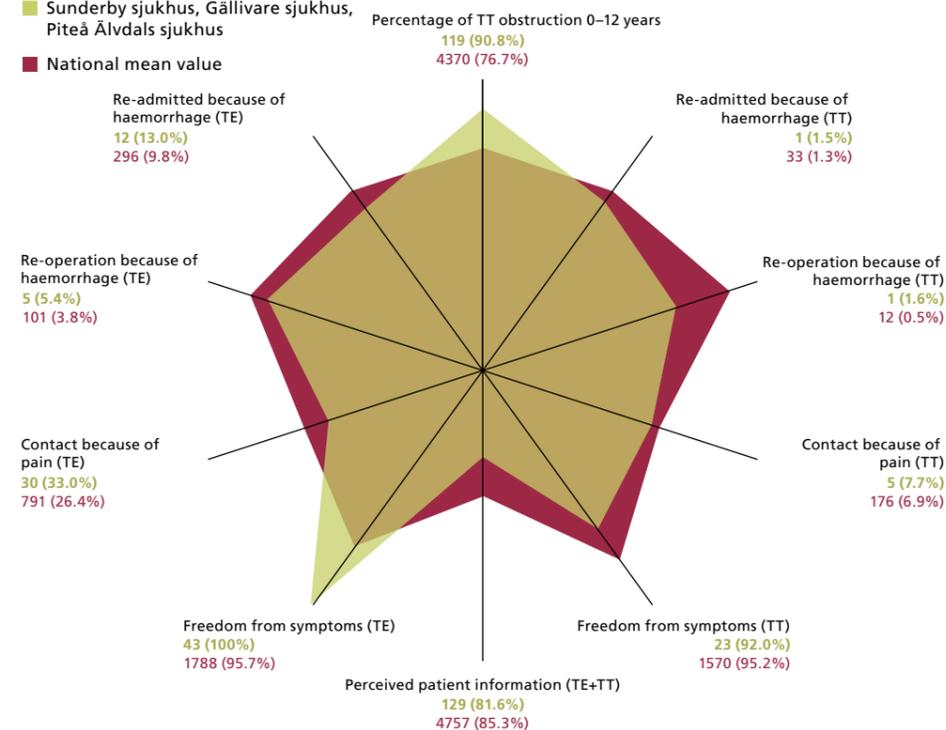


Number of TE+TT (TE/TT): 318 (188/130)

	Numbers (%)	
Completeness	93.0%	😊
Response rate 30 days TT+TE	90 (28.2%)	☹️
Response rate 6 months TT+TE	24 (7.4%)	☹️
E-mail addresses registered	16 (5.0%)	👎

Norrbottnens läns landsting, Sunderby sjukhus, Gällivare sjukhus, Piteå Älvdals sjukhus

■ Sunderby sjukhus, Gällivare sjukhus, Piteå Älvdals sjukhus
■ National mean value

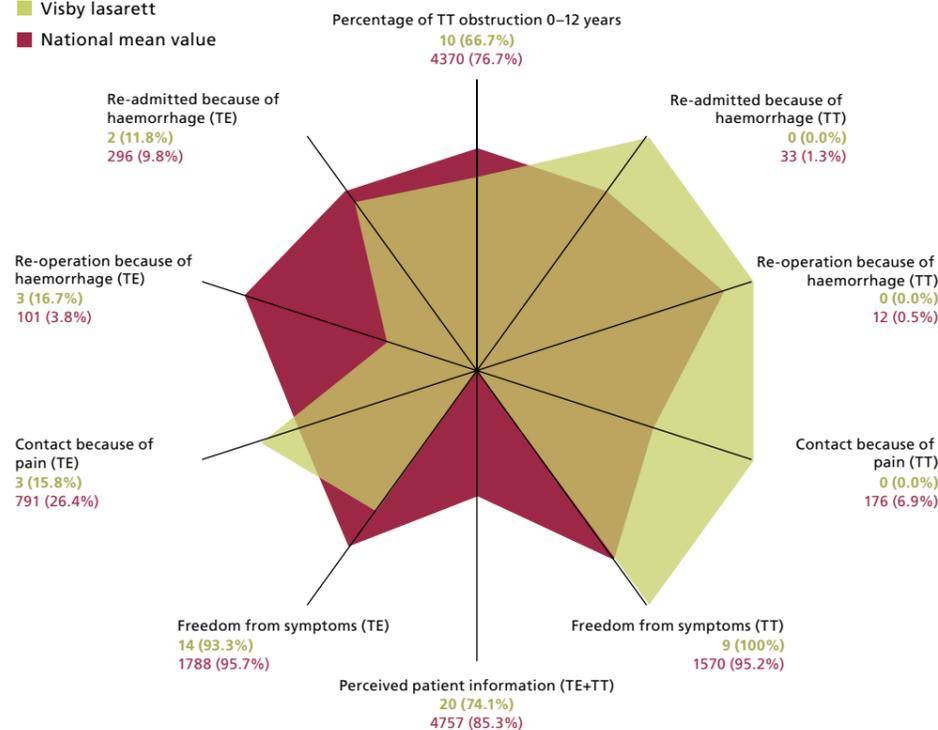


Number of TE+TT (TE/TT): 328 (193/135)

	Numbers (%)	
Completeness	85.6%	😊
Response rate 30 days TT+TE	158 (48.2%)	😐
Response rate 6 months TT+TE	69 (21.1%)	☹️
E-mail addresses registered	219 (66.9%)	👎

Region Gotland, Visby lasarett

■ Visby lasarett
■ National mean value

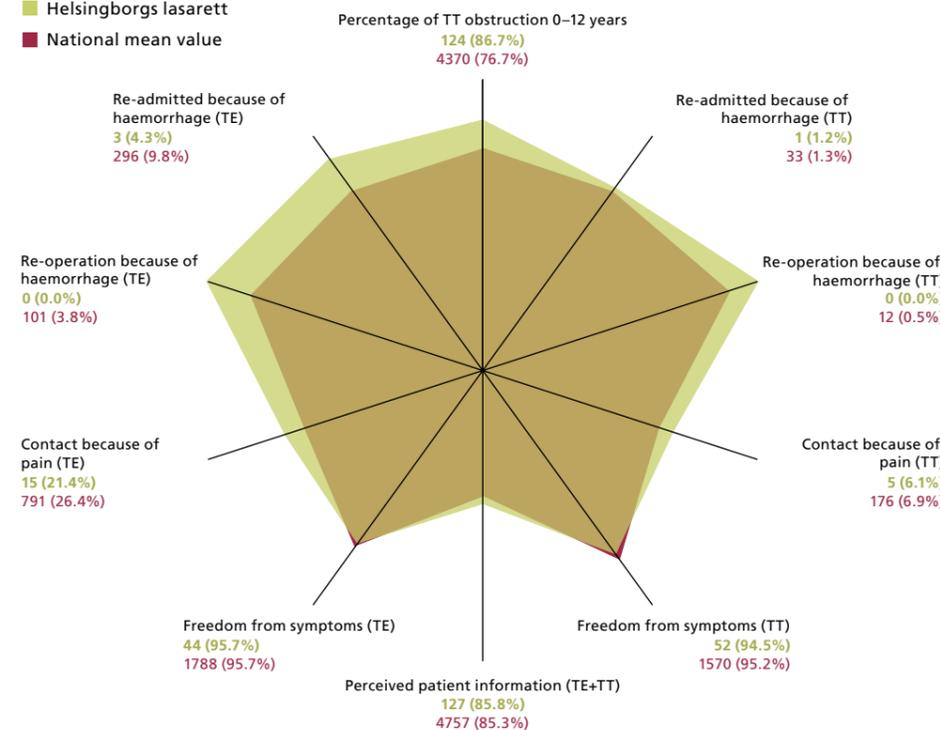


Number of TE+TT (TE/TT): 44 (32/12)

	Numbers (%)	
Completeness	91.7%	😊
Response rate 30 days TT+TE	27 (60.7%)	😊
Response rate 6 months TT+TE	27 (60.6%)	😊
E-mail addresses registered	0 (0.0%)	👤

Region Skåne, Helsingborgs lasarett

■ Helsingborgs lasarett
■ National mean value

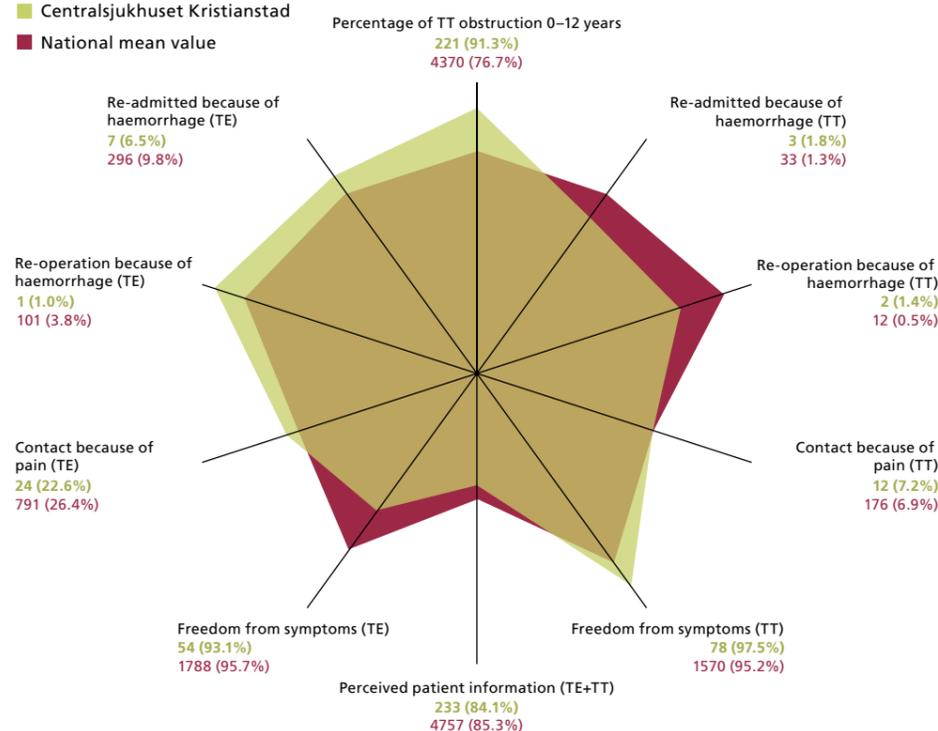


Number of TE+TT (TE/TT): 250 (112/138)

	Numbers (%)	
Completeness	90.9%	😊
Response rate 30 days TT+TE	196 (78.4%)	😊
Response rate 6 months TT+TE	114 (45.6%)	😐
E-mail addresses registered	136 (54.5%)	👤

Region Skåne, Centralsjukhuset Kristianstad

■ Centralsjukhuset Kristianstad
■ National mean value

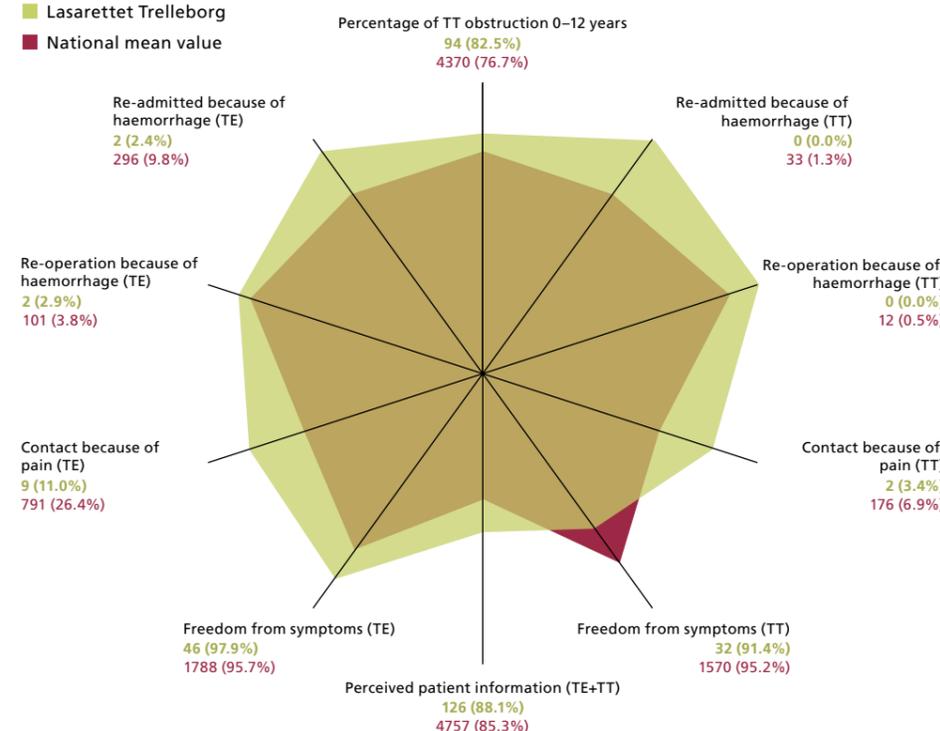


Number of TE+TT (TE/TT): 427 (177/250)

	Numbers (%)	
Completeness	94.0%	😊
Response rate 30 days TT+TE	287 (67.2%)	😊
Response rate 6 months TT+TE	141 (33.1%)	😞
E-mail addresses registered	263 (61.5%)	👤

Region Skåne, Lasarettet Trelleborg

■ Lasarettet Trelleborg
■ National mean value

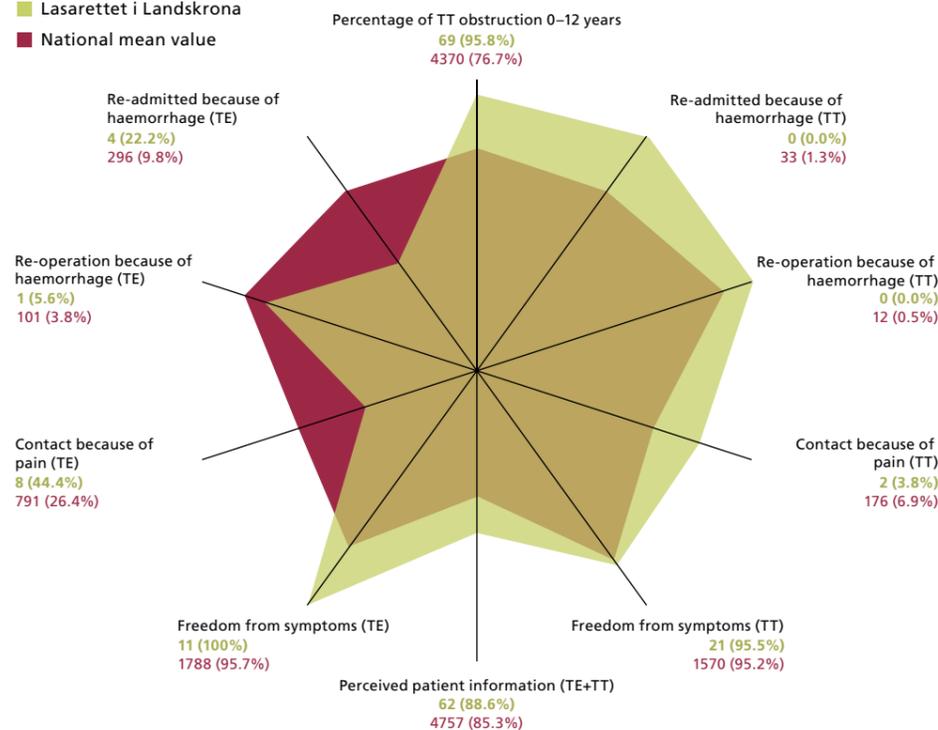


Number of TE+TT (TE/TT): 240 (138/102)

	Numbers (%)	
Completeness	82.2%	😊
Response rate 30 days TT+TE	148 (61.7%)	😊
Response rate 6 months TT+TE	82 (34.2%)	😞
E-mail addresses registered	118 (49.2%)	👤

Region Skåne, Lasarettet i Landskrona

Lasarettet i Landskrona
National mean value

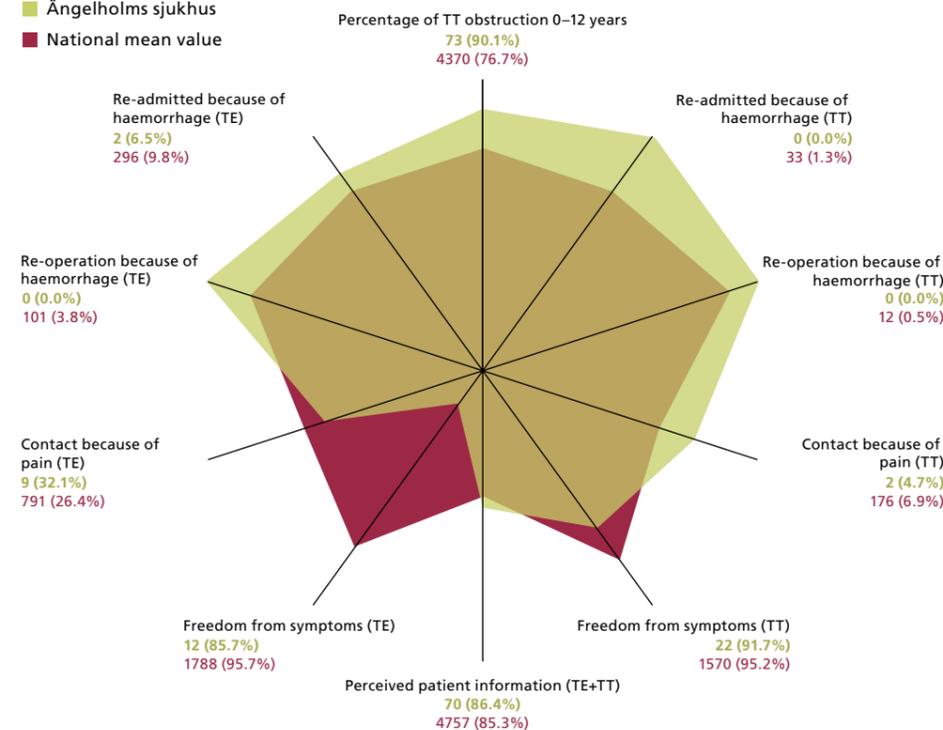


Number of TE+TT (TE/TT): 117 (27/90)

	Numbers (%)
Completeness	92.1% 😊
Response rate 30 days TT+TE	72 (61.4%) 😊
Response rate 6 months TT+TE	36 (31.1%) 😞
E-mail addresses registered	108 (91.9%) 👍

Region Skåne, Ängelholms sjukhus

Ängelholms sjukhus
National mean value

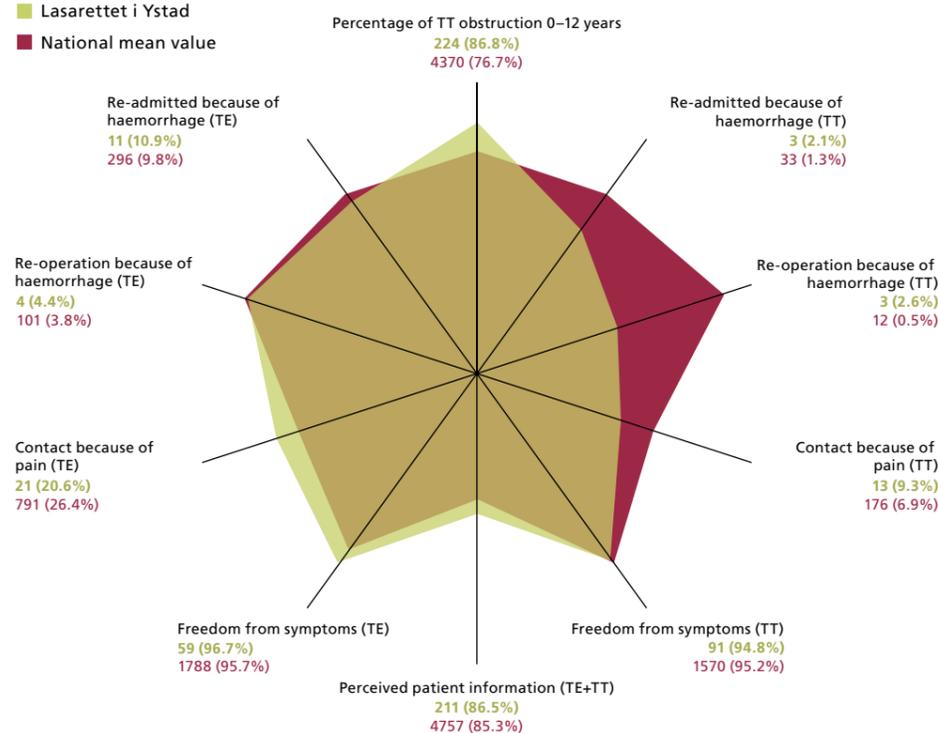


Number of TE+TT (TE/TT): 129 (47/82)

	Numbers (%)
Completeness	94.2% 😊
Response rate 30 days TT+TE	94 (73.1%) 😊
Response rate 6 months TT+TE	67 (51.8%) 😊
E-mail addresses registered	99 (76.4%) 👍

Region Skåne, Lasarettet i Ystad

Lasarettet i Ystad
National mean value

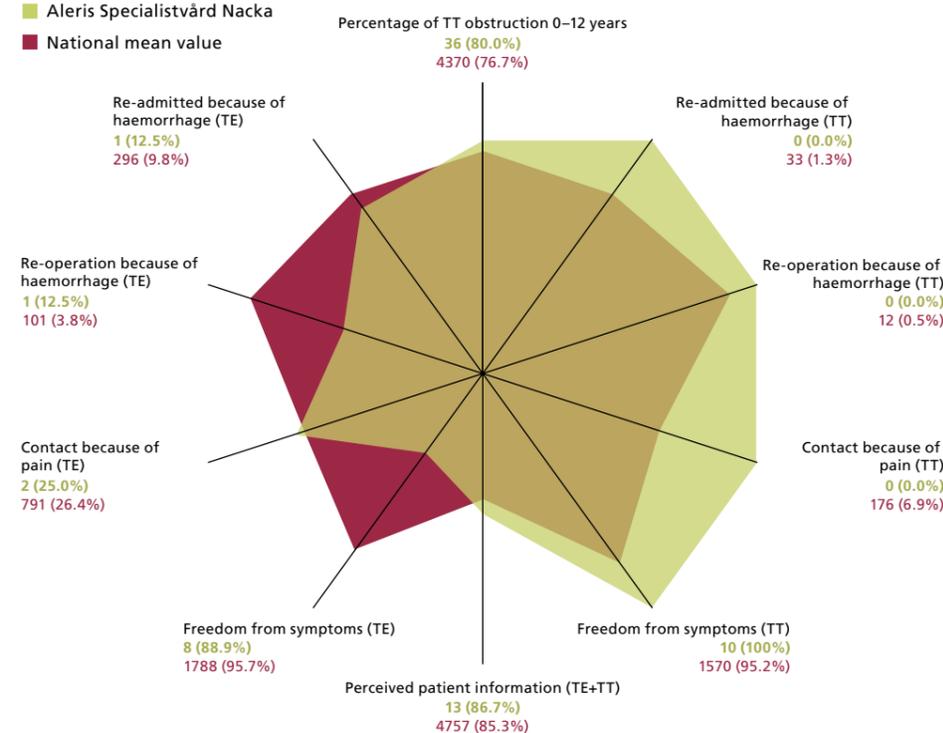


Number of TE+TT (TE/TT): 416 (176/240)

	Numbers (%)
Completeness	97.9% 😊
Response rate 30 days TT+TE	245 (58.8%) 😊
Response rate 6 months TT+TE	157 (37.7%) 😞
E-mail addresses registered	256 (61.6%) 👎

Stockholms läns landsting, Aleris Specialistvård Nacka

Aleris Specialistvård Nacka
National mean value

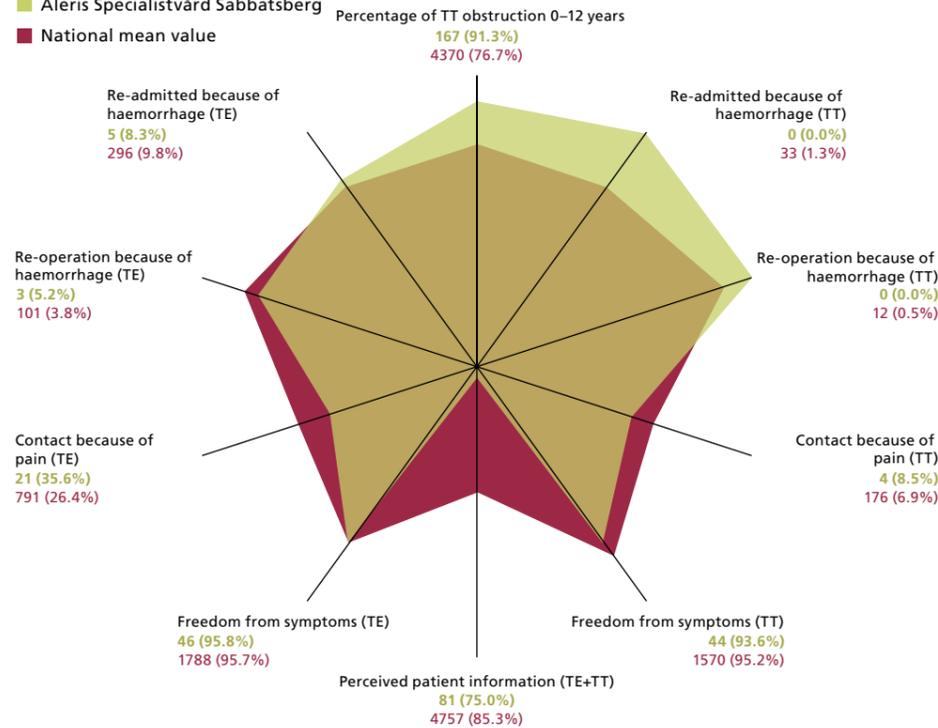


Number of TE+TT (TE/TT): 77 (41/36)

	Numbers (%)
Completeness	51.7% 😞
Response rate 30 days TT+TE	16 (20.7%) 😞
Response rate 6 months TT+TE	19 (24.8%) 😞
E-mail addresses registered	57 (74.0%) 👎

Stockholms läns landsting, Aleris Specialistvård Sabbatsberg

■ Aleris Specialistvård Sabbatsberg
■ National mean value

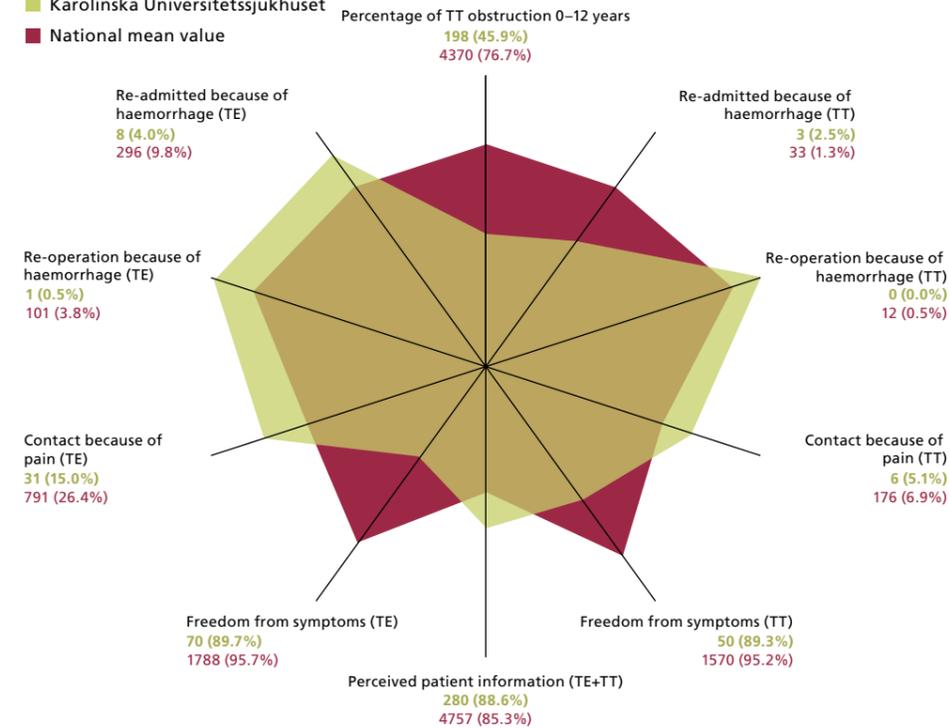


Number of TE+TT (TE/TT): 399 (226/173)

	Numbers (%)
Completeness	75.9% ☹️
Response rate 30 days TT+TE	108 (27.1%) 😞
Response rate 6 months TT+TE	97 (24.3%) 😞
E-mail addresses registered	388 (97.3%) 👍

Stockholms läns landsting, Karolinska Universitetssjukhuset

■ Karolinska Universitetssjukhuset
■ National mean value

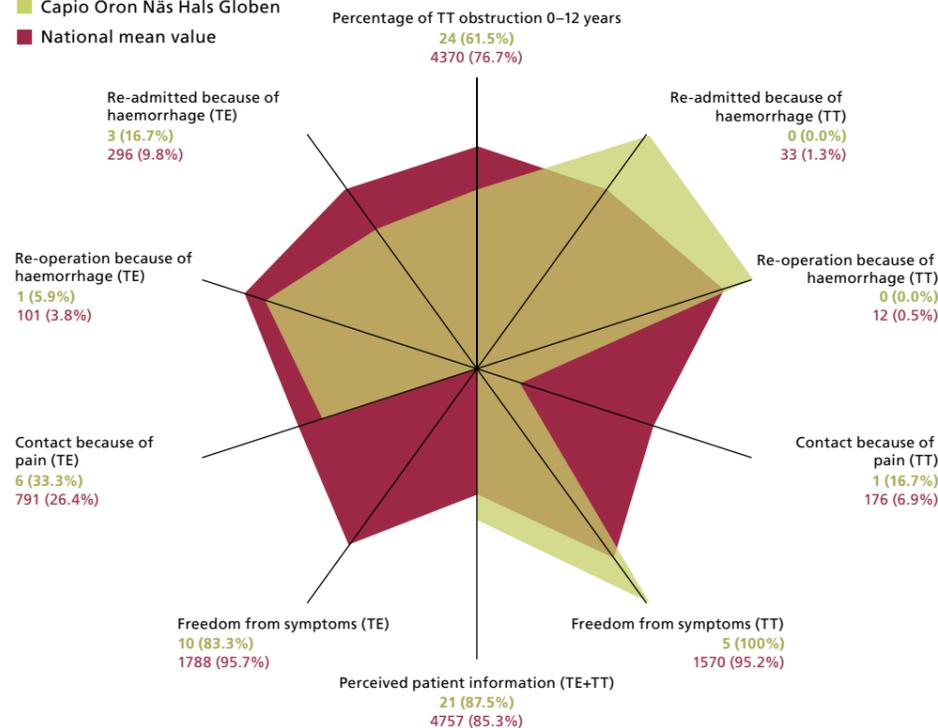


Number of TE+TT (TE/TT): 553 (354/199)

	Numbers (%)
Completeness	74.6% ☹️
Response rate 30 days TT+TE	343 (62.0%) 😊
Response rate 6 months TT+TE	141 (25.6%) 😞
E-mail addresses registered	352 (63.7%) 👍

Stockholms läns landsting, Capio Öron Näs Hals Globen

■ Capio Öron Näs Hals Globen
■ National mean value

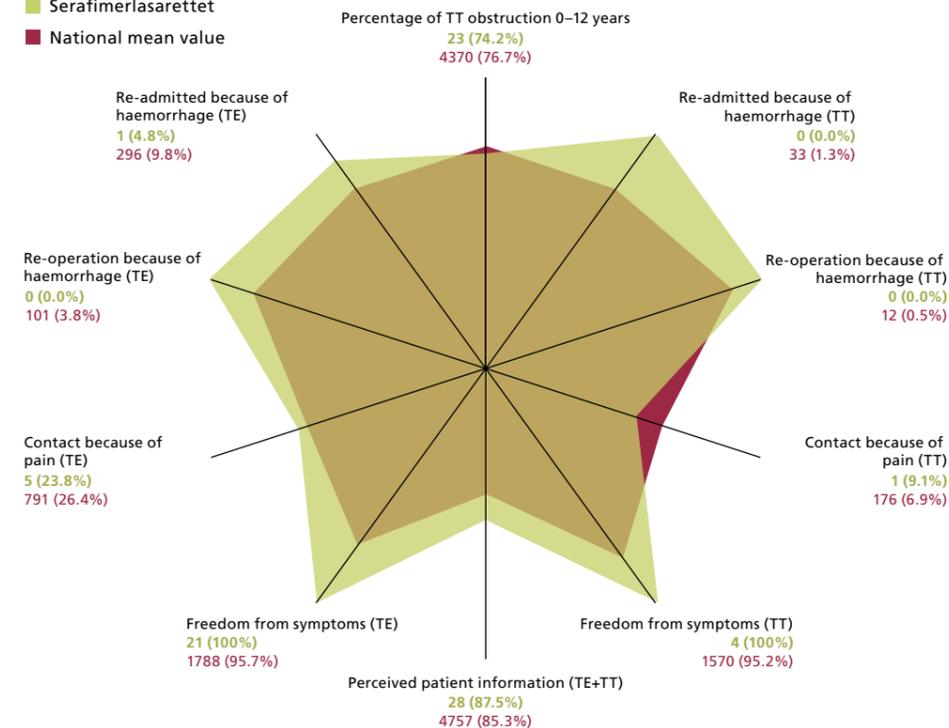


Number of TE+TT (TE/TT): 94 (70/24)

	Numbers (%)
Completeness	100% 😊
Response rate 30 days TT+TE	24 (25.4%) 😞
Response rate 6 months TT+TE	18 (18.7%) 😞
E-mail addresses registered	91 (96.6%) 👍

Stockholms läns landsting, Serafimerlasarettet

■ Serafimerlasarettet
■ National mean value

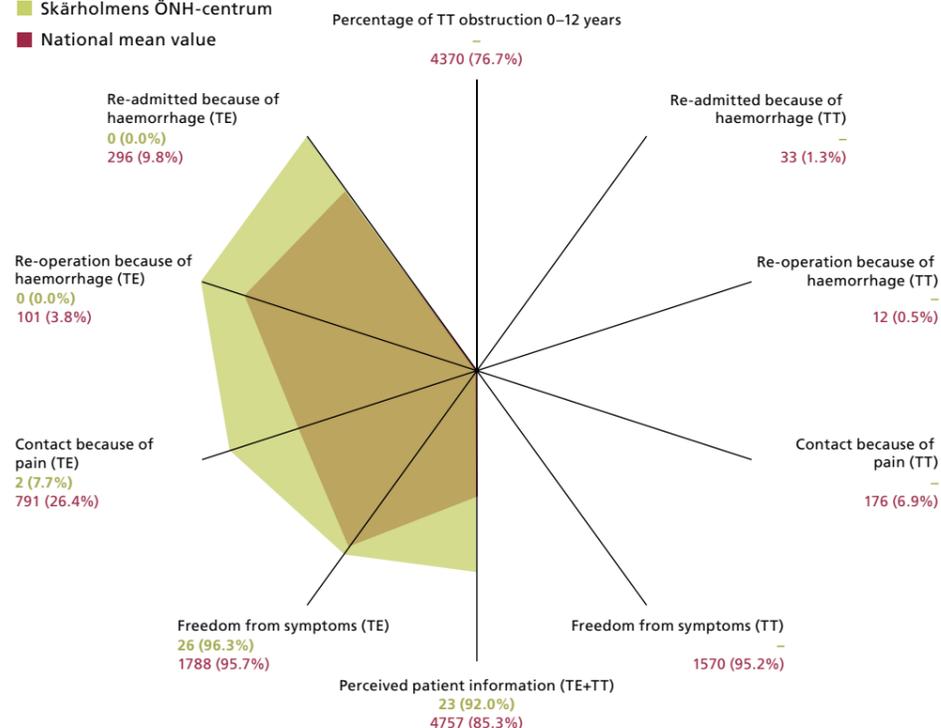


Number of TE+TT (TE/TT): 78 (51/27)

	Numbers (%)
Completeness	84.8% 😊
Response rate 30 days TT+TE	33 (42.1%) ☹️
Response rate 6 months TT+TE	23 (29.3%) 😞
E-mail addresses registered	77 (98.3%) 👍

Stockholms läns landsting, Skärholmens ÖNH-centrum

■ Skärholmens ÖNH-centrum
■ National mean value

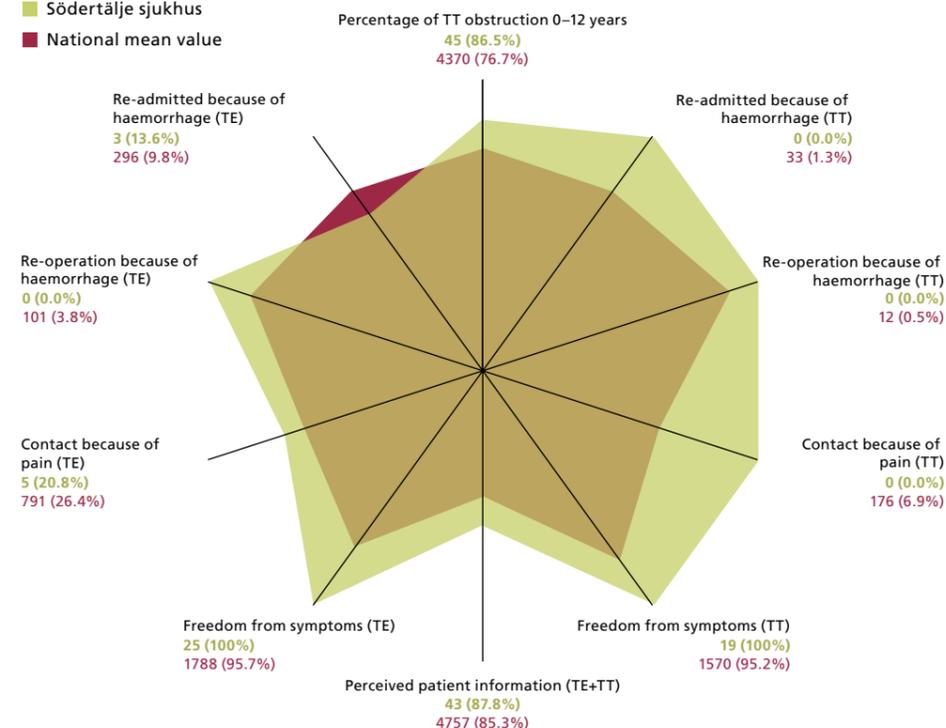


Number of TE+TT (TE/TT): 535 (535/-)

	Numbers (%)	
Completeness	95.0%	😊
Response rate 30 days TT+TE	26 (4.9%)	😞
Response rate 6 months TT+TE	27 (5.0%)	😞
E-mail addresses registered	457 (85.4%)	👍

Stockholms läns landsting, Södertälje sjukhus

■ Södertälje sjukhus
■ National mean value

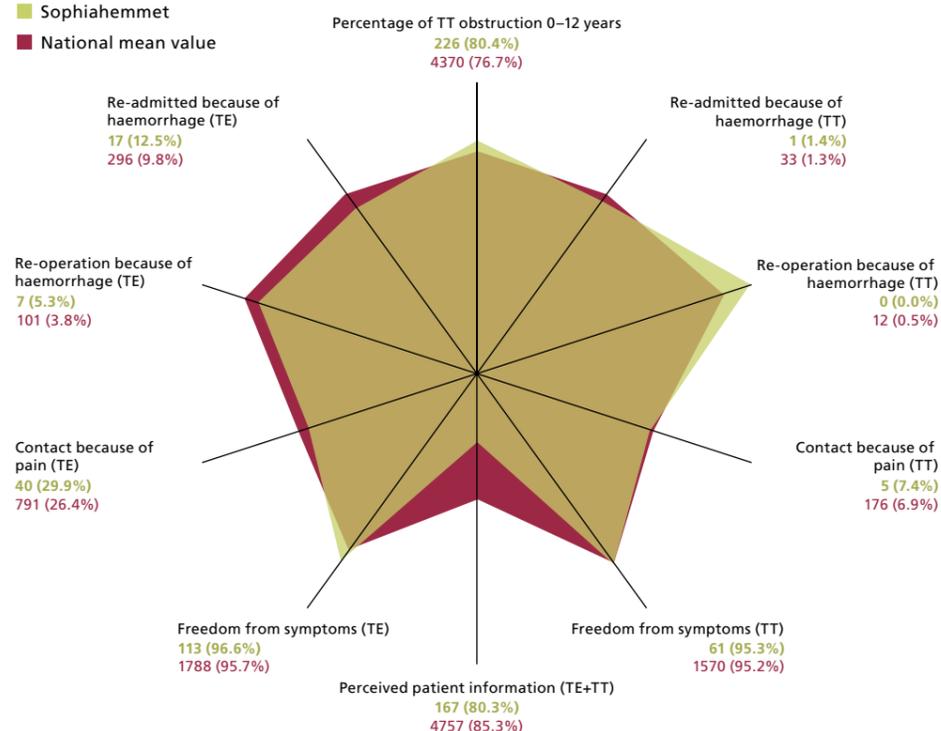


Number of TE+TT (TE/TT): 102 (54/48)

	Numbers (%)	
Completeness	82.9%	😊
Response rate 30 days TT+TE	50 (49.2%)	😞
Response rate 6 months TT+TE	44 (43.0%)	😞
E-mail addresses registered	21 (20.8%)	👎

Stockholms läns landsting, Sophiahemmet

■ Sophiahemmet
■ National mean value

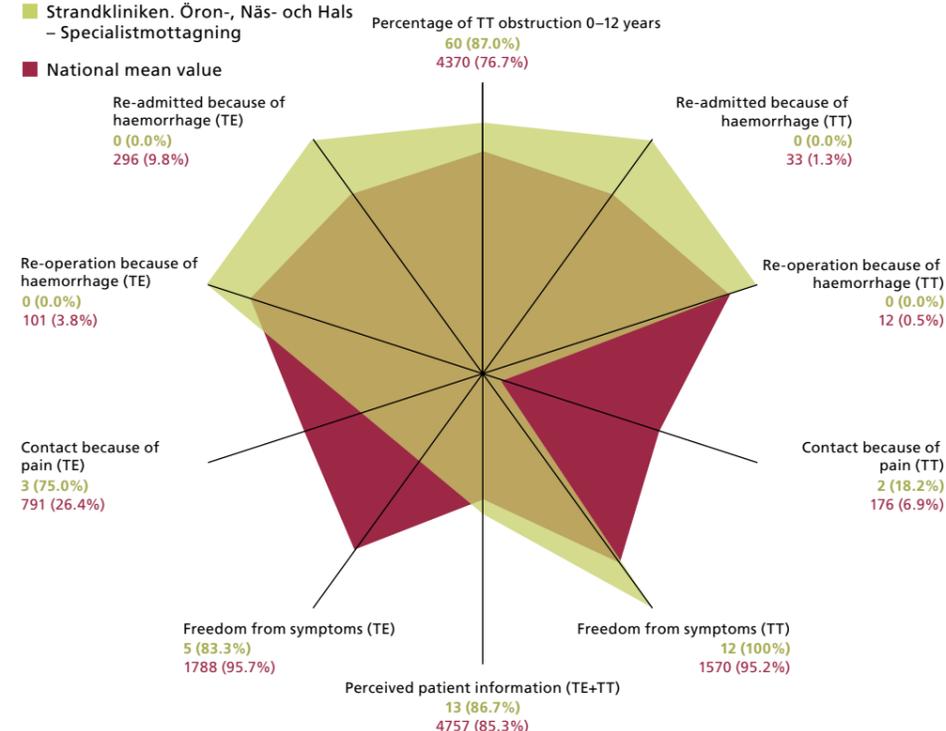


Number of TE+TT (TE/TT): 753 (524/229)

	Numbers (%)	
Completeness	93.0%	😊
Response rate 30 days TT+TE	214 (28.4%)	😞
Response rate 6 months TT+TE	192 (25.5%)	😞
E-mail addresses registered	734 (97.5%)	👍

Stockholms läns landsting, Strandkliniken, Öron-, Näs- och Hals – Specialistmottagning

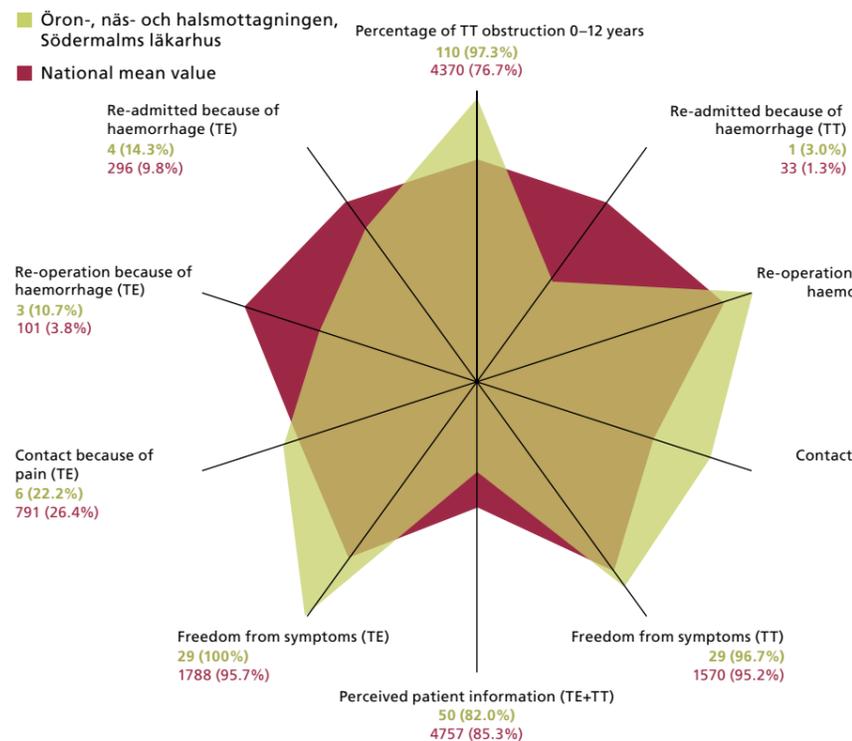
■ Strandkliniken, Öron-, Näs- och Hals – Specialistmottagning
■ National mean value



Number of TE+TT (TE/TT): 122 (53/69)

	Numbers (%)	
Completeness	74.4%	😞
Response rate 30 days TT+TE	15 (11.9%)	😞
Response rate 6 months TT+TE	19 (15.4%)	😞
E-mail addresses registered	50 (40.7%)	👎

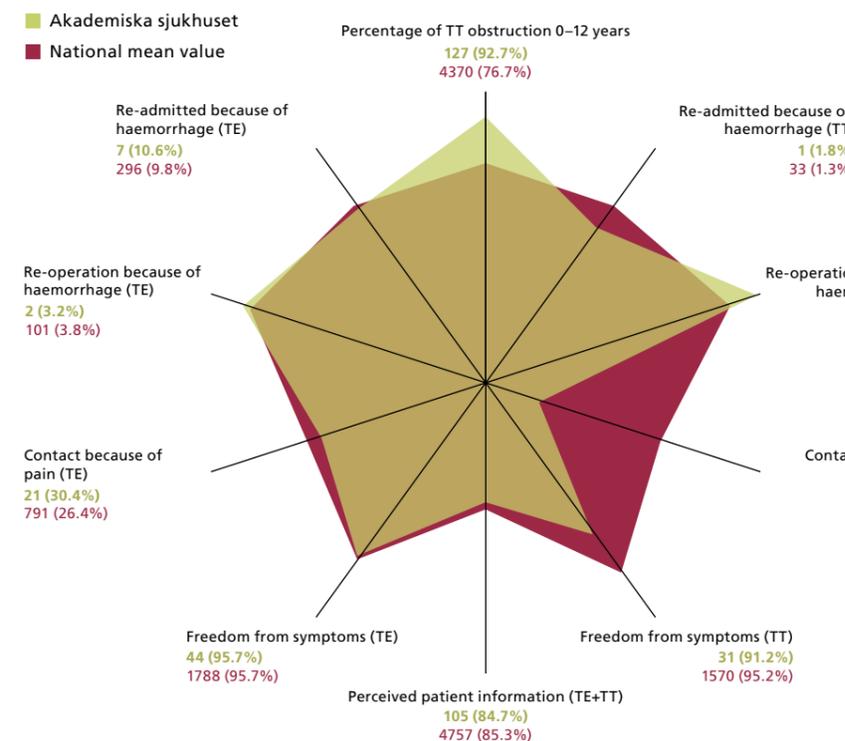
Stockholms läns landsting, Öron-, näs- och halsmottagningen, Södermalms läkarhus



Number of TE+TT (TE/TT): 227 (109/118)

	Numbers (%)	
Completeness	90.1%	😊
Response rate 30 days TT+TE	61 (26.8%)	😞
Response rate 6 months TT+TE	59 (26.0%)	😞
E-mail addresses registered	226 (99.5%)	👍

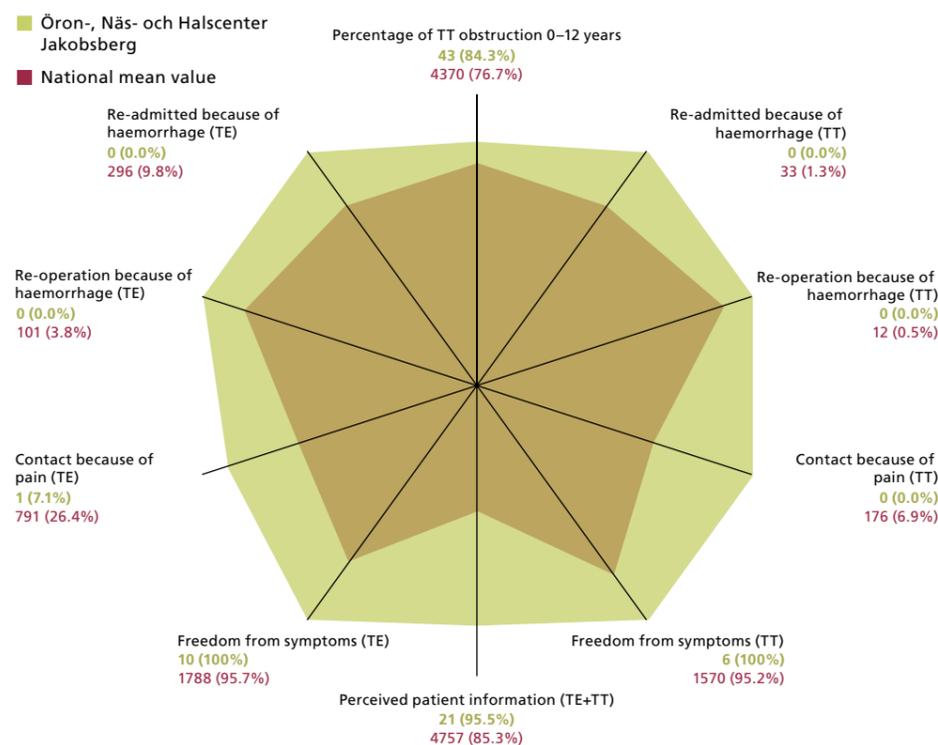
Uppsala-Örebro sjukvårdsregion, Akademiska sjukhuset



Number of TE+TT (TE/TT): 330 (181/149)

	Numbers (%)	
Completeness	82.4%	😊
Response rate 30 days TT+TE	127 (38.5%)	😞
Response rate 6 months TT+TE	81 (24.5%)	😞
E-mail addresses registered	202 (61.1%)	👍

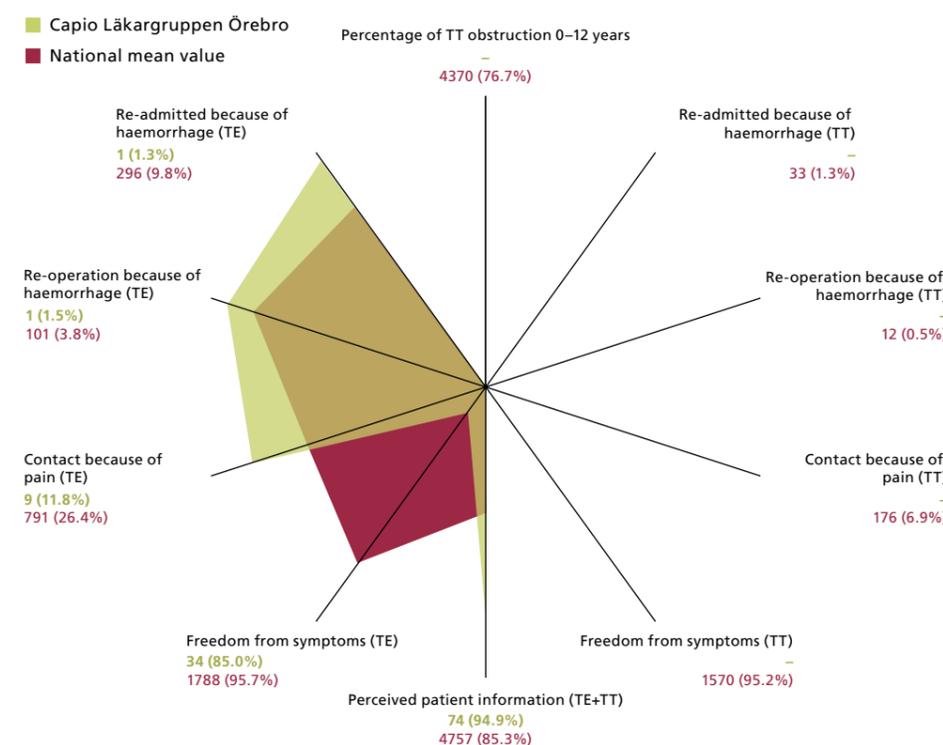
Stockholms läns landsting, Öron-, Näs- och Halscenter Jakobsberg



Number of TE+TT (TE/TT): 102 (57/45)

	Numbers (%)	
Completeness	87.9%	😊
Response rate 30 days TT+TE	22 (21.3%)	😞
Response rate 6 months TT+TE	16 (15.5%)	😞
E-mail addresses registered	101 (99.1%)	👍

Uppsala-Örebro sjukvårdsregion, Capio Läkargruppen Örebro

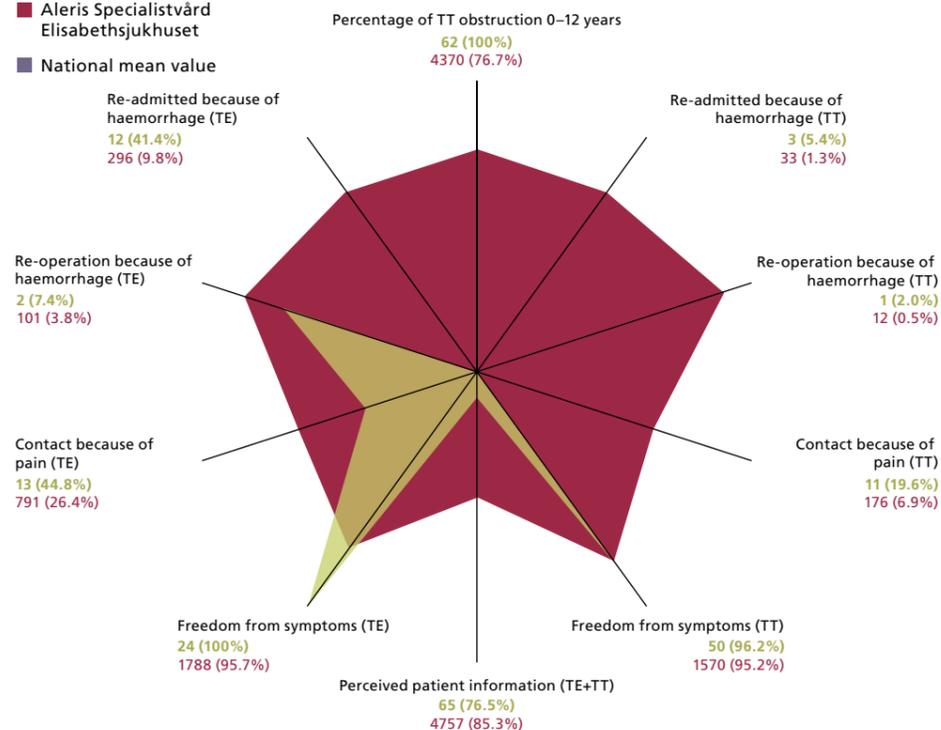


Number of TE+TT (TE/TT): 126 (126/-)

	Numbers (%)	
Completeness	95.4%	😊
Response rate 30 days TT+TE	78 (61.9%)	😊
Response rate 6 months TT+TE	40 (31.7%)	😞
E-mail addresses registered	117 (92.9%)	👍

Uppsala-Örebro sjukvårdsregion, Aleris Specialistvård Elisabethsjukhuset

■ Aleris Specialistvård Elisabethsjukhuset
■ National mean value

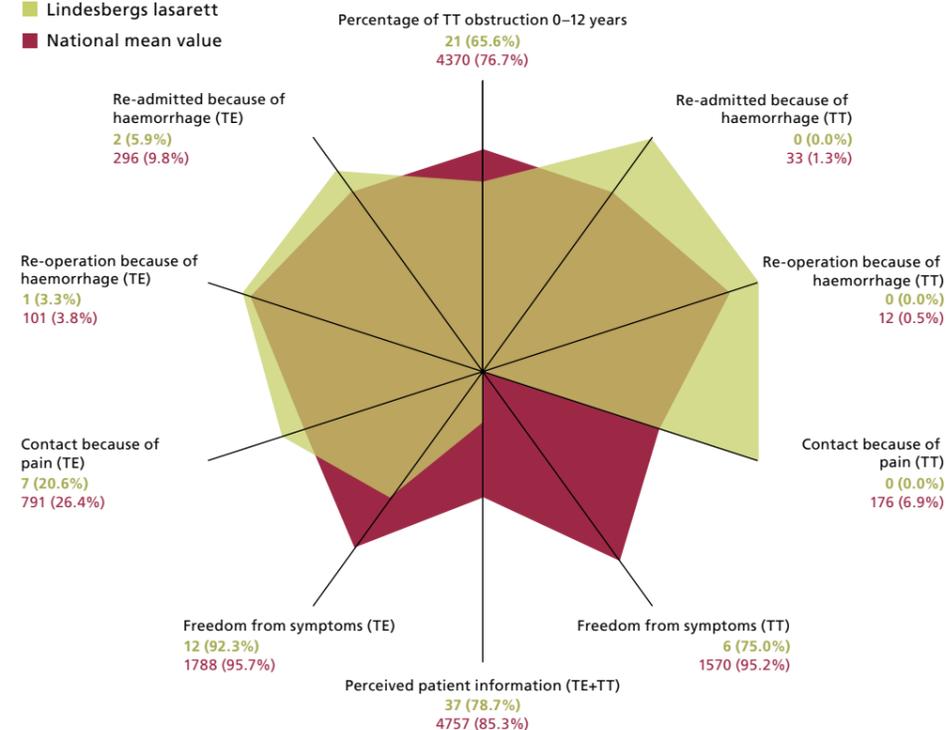


Number of TE+TT (TE/TT): 107 (38/69)

	Numbers (%)	
Completeness	98.2%	😊
Response rate 30 days TT+TE	97 (90.9%)	😊
Response rate 6 months TT+TE	93 (86.5%)	😊
E-mail addresses registered	0 (0.0%)	👎

Uppsala-Örebro sjukvårdsregion, Lindesbergs lasarett

■ Lindesbergs lasarett
■ National mean value

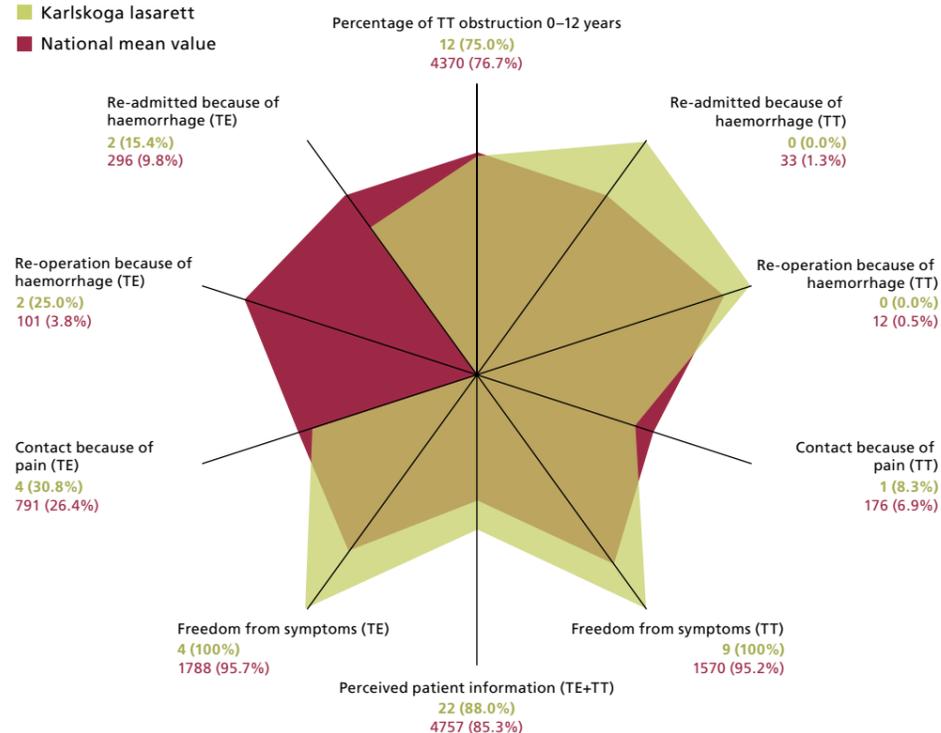


Number of TE+TT (TE/TT): 75 (54/21)

	Numbers (%)	
Completeness	82.4%	😊
Response rate 30 days TT+TE	47 (62.5%)	😊
Response rate 6 months TT+TE	23 (30.1%)	😞
E-mail addresses registered	43 (57.2%)	👎

Uppsala-Örebro sjukvårdsregion, Karlskoga lasarett

■ Karlskoga lasarett
■ National mean value

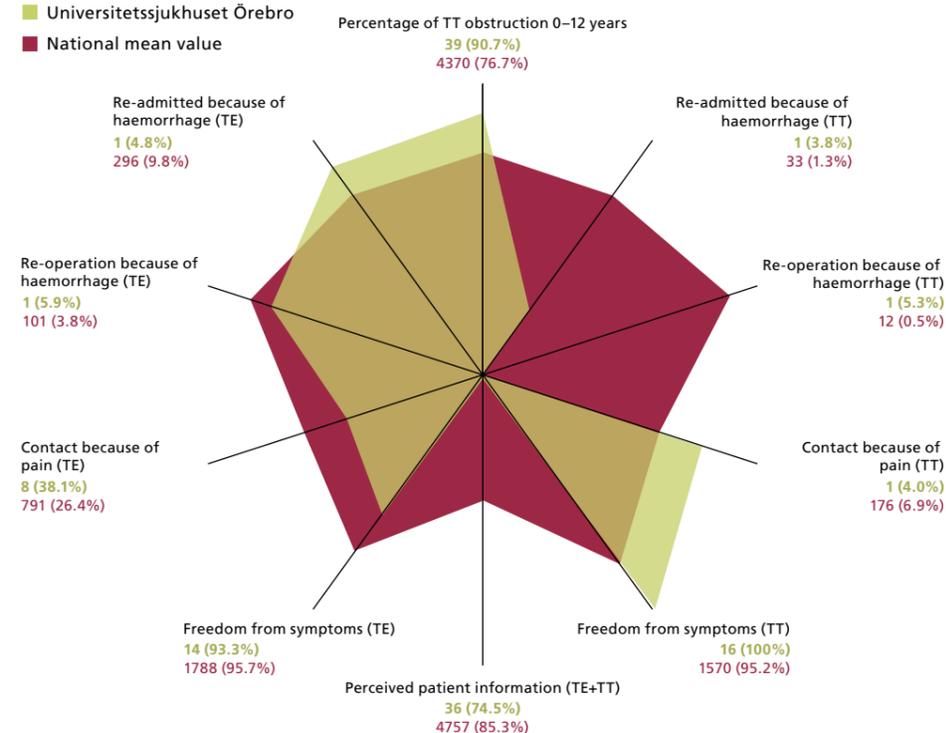


Number of TE+TT (TE/TT): 41 (23/18)

	Numbers (%)	
Completeness	80.4%	😊
Response rate 30 days TT+TE	25 (61.4%)	😊
Response rate 6 months TT+TE	14 (35.3%)	😞
E-mail addresses registered	13 (31.0%)	👎

Uppsala-Örebro sjukvårdsregion, Universitetssjukhuset Örebro

■ Universitetssjukhuset Örebro
■ National mean value

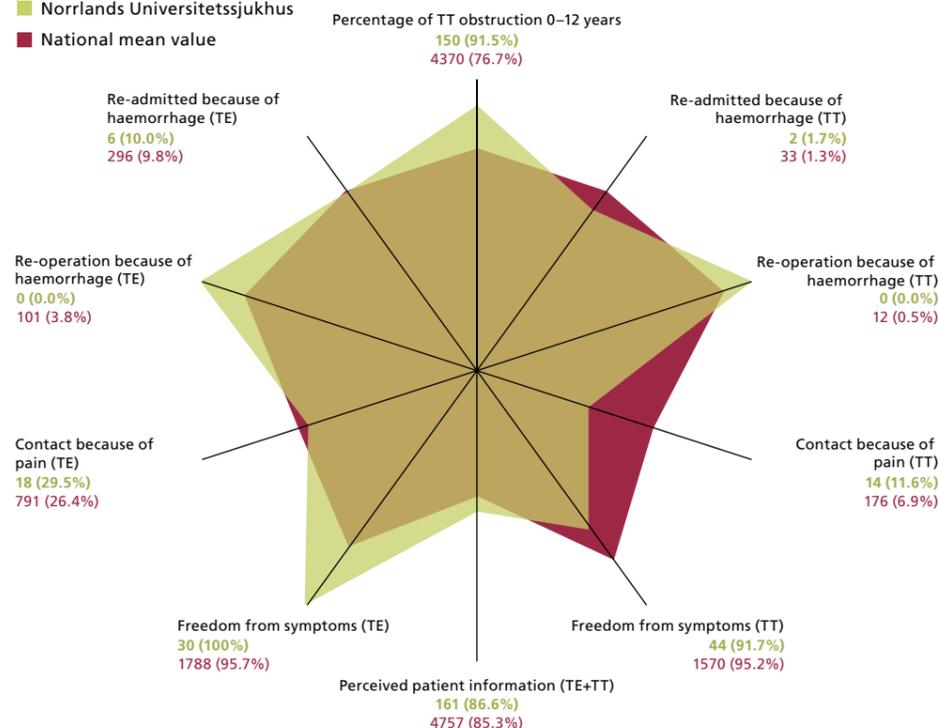


Number of TE+TT (TE/TT): 78 (36/42)

	Numbers (%)	
Completeness	83.7%	😊
Response rate 30 days TT+TE	50 (64.0%)	😊
Response rate 6 months TT+TE	31 (39.8%)	😞
E-mail addresses registered	35 (44.9%)	👎

Västerbottens läns landsting, Norrlands Universitetssjukhus

■ Norrlands Universitetssjukhus
■ National mean value

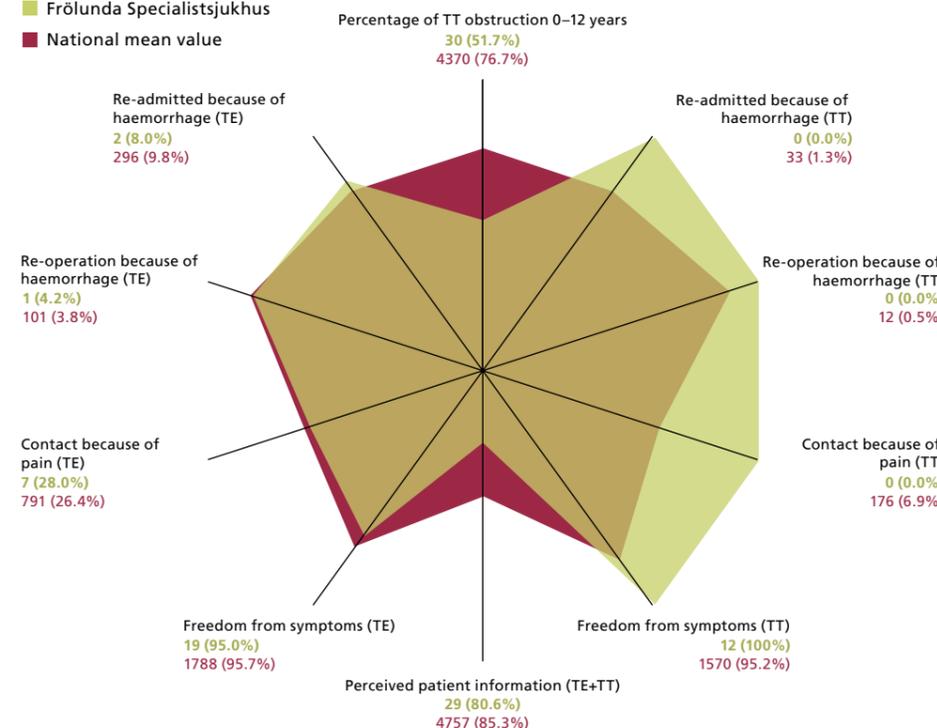


Number of TE+TT (TE/TT): 303 (101/202)

	Numbers (%)	
Completeness	79.7%	☹️
Response rate 30 days TT+TE	192 (63.4%)	😊
Response rate 6 months TT+TE	87 (28.5%)	☹️
E-mail addresses registered	169 (55.9%)	👍

Västra Götalandsregionen, Frölunda Specialistsjukhus

■ Frölunda Specialistsjukhus
■ National mean value

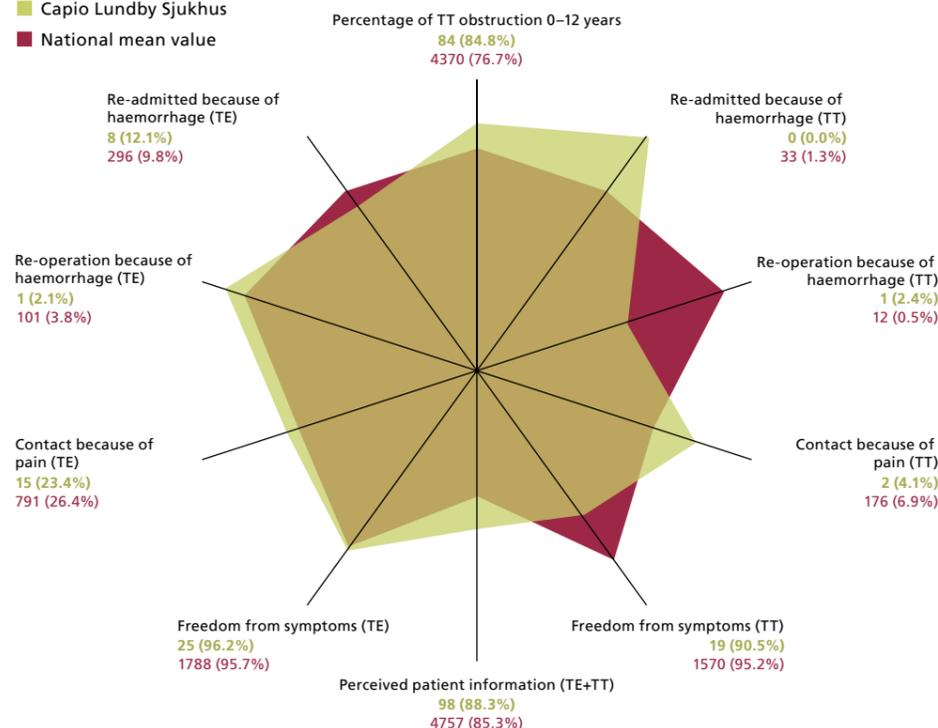


Number of TE+TT (TE/TT): 121 (89/32)

	Numbers (%)	
Completeness	94.5%	😊
Response rate 30 days TT+TE	37 (30.7%)	☹️
Response rate 6 months TT+TE	36 (29.5%)	☹️
E-mail addresses registered	114 (94.1%)	👍

Västra Götalandsregionen, Capho Lundby Sjukhus

■ Capho Lundby Sjukhus
■ National mean value

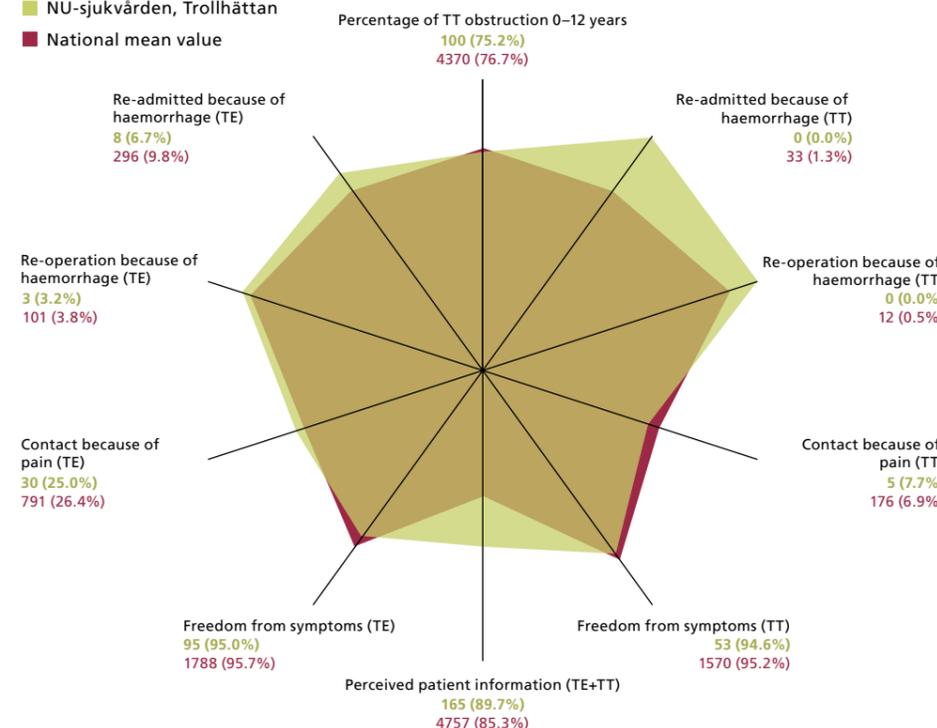


Number of TE+TT (TE/TT): 210 (119/91)

	Numbers (%)	
Completeness	95.0%	😊
Response rate 30 days TT+TE	116 (55.2%)	😊
Response rate 6 months TT+TE	48 (22.9%)	☹️
E-mail addresses registered	150 (71.6%)	👍

Västra Götalandsregionen, NU-sjukvården, Trollhättan

■ NU-sjukvården, Trollhättan
■ National mean value

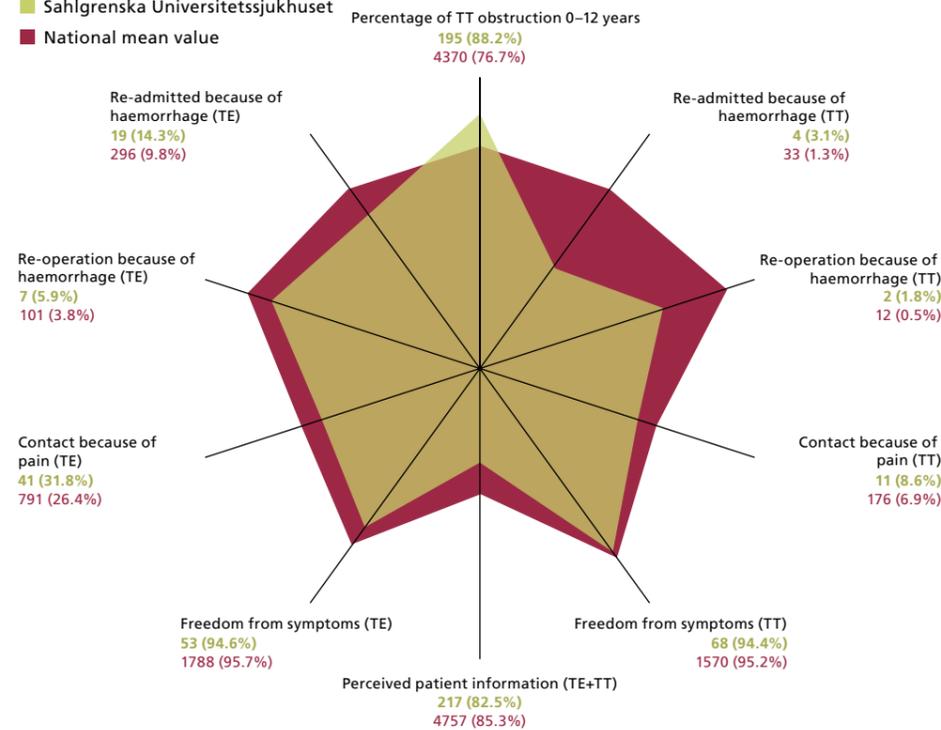


Number of TE+TT (TE/TT): 310 (198/112)

	Numbers (%)	
Completeness	93.1%	😊
Response rate 30 days TT+TE	186 (60.1%)	😊
Response rate 6 months TT+TE	159 (51.4%)	😊
E-mail addresses registered	121 (39.1%)	👍

Västra Götalandsregionen, Sahlgrenska Universitetssjukhuset

■ Sahlgrenska Universitetssjukhuset
■ National mean value

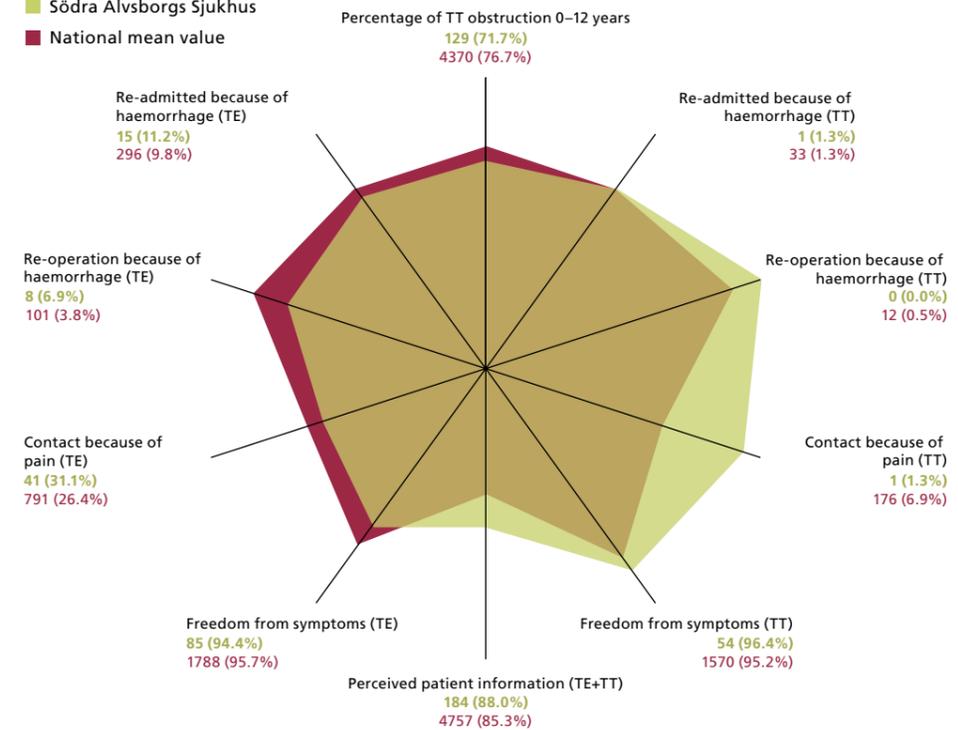


Number of TE+TT (TE/TT): 428 (227/201)

	Numbers (%)	
Completeness	76.4%	☹️
Response rate 30 days TT+TE	295 (68.9%)	😊
Response rate 6 months TT+TE	151 (35.2%)	☹️
E-mail addresses registered	337 (78.8%)	👍

Västra Götalandsregionen, Södra Älvsborgs Sjukhus

■ Södra Älvsborgs Sjukhus
■ National mean value

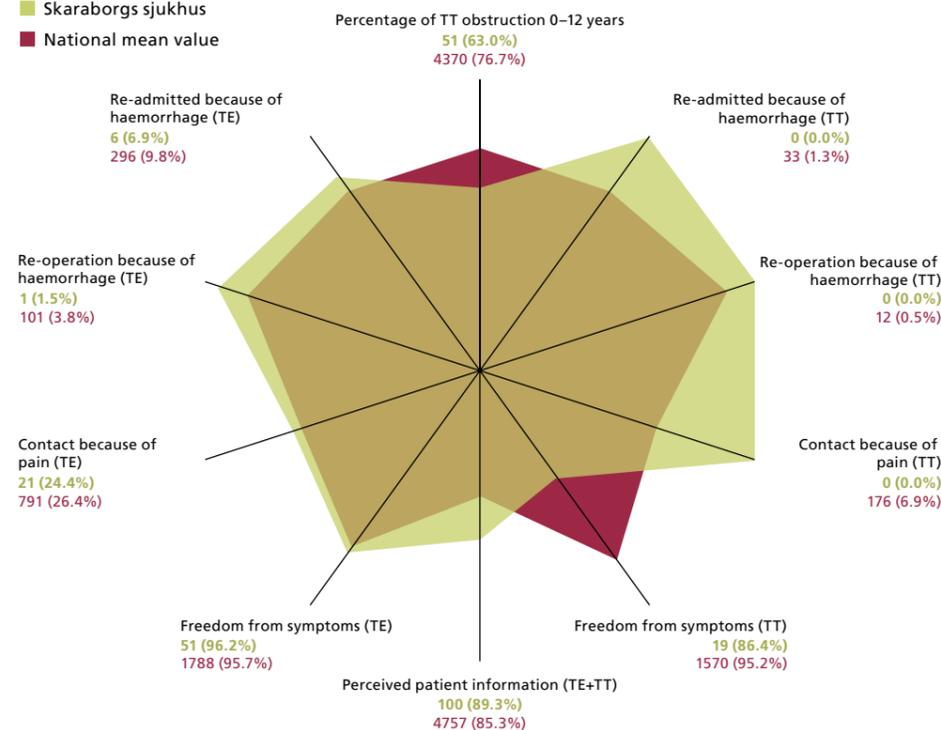


Number of TE+TT (TE/TT): 336 (206/130)

	Numbers (%)	
Completeness	94.4%	😊
Response rate 30 days TT+TE	214 (63.8%)	😊
Response rate 6 months TT+TE	150 (44.5%)	☹️
E-mail addresses registered	68 (20.4%)	👎

Västra Götalandsregionen, Skaraborgs sjukhus

■ Skaraborgs sjukhus
■ National mean value



Number of TE+TT (TE/TT): 219 (162/57)

	Numbers (%)	
Completeness	92.0%	😊
Response rate 30 days TT+TE	113 (51.4%)	😊
Response rate 6 months TT+TE	77 (35.2%)	☹️
E-mail addresses registered	97 (44.1%)	👎

Contact with health care

The questionnaires that are sent to patients/close relatives 30 days after surgery asking whether they needed to contact health care as an unplanned measure following surgery. This table lists the number of patients who answered the questionnaires. It shows the number and percentage of patients who needed to contact health care because of haemorrhage, pain and infection, together with the degree to which these patients received antibiotic prescriptions.

Table 2. Unplanned contact with health care following surgery.

County council	Hospital	Contact due to bleeding, infection or pain. Numbers (%)	Contact due to bleeding. Numbers (%)	Contact due to pain. Numbers (%)	Contact due to infection. Numbers (%)	Received antibiotic treatment. Numbers (%)
Total for Sweden		1508 (25)	462 (8)	967 (17)	531 (11)	478 (10)
Hallands läns landsting	Halmstad sjukhus	34 (24)	9 (6)	18 (13)	13 (10)	9 (7)
Jämtlands läns landsting	Östersunds sjukhus	22 (28)	5 (6)	18 (23)	6 (9)	6 (9)
Landstinget Blekinge	Blekingesjukhuset	23 (28)	8 (10)	13 (16)	7 (9)	4 (5)
Landstinget Dalarna	Falu Lasarett	91 (38)	28 (12)	59 (25)	32 (14)	31 (14)
Landstinget Gävleborg	Gävle sjukhus	29 (23)	8 (6)	18 (15)	10 (10)	7 (7)
	Hudiksvalls sjukhus	40 (29)	14 (10)	21 (16)	19 (17)	13 (11)
Landstinget Kronoberg	Ljungby lasarett	5 (15)	0	4 (15)	1 (4)	1 (4)
Landstinget Västernorrland	Länssjukhuset i Sundsvall	15 (29)	4 (8)	10 (20)	4 (9)	4 (9)
	Sollefteå sjukhus	1 (5)	0	0	1 (6)	1 (6)
	Örnsköldsviks sjukhus	6 (18)	1 (3)	4 (12)	1 (5)	2 (11)
Landstinget Västmanland	Västmanlands sjukhus, Västerås	84 (30)	36 (13)	53 (24)	16 (11)	17 (12)
Landstinget i Jönköpings län	Höglandssjukhuset Eksjö	12 (13)	6 (6)	7 (8)	2 (3)	2 (3)
	Länssjukhuset Ryhov Jönköping	46 (23)	12 (6)	31 (16)	17 (9)	12 (6)
	Värnamo sjukhus	4 (21)	0	1 (5)	3 (16)	1 (5)
Landstinget i Kalmar län	Länssjukhuset i Kalmar	23 (19)	6 (5)	15 (13)	10 (9)	6 (6)
	Västerviks sjukhus	18 (32)	3 (5)	15 (31)	6 (14)	6 (14)
Landstinget i Sörmland	Sörmland ÖNH	34 (24)	10 (7)	26 (30)	12 (14)	11 (13)
Landstinget i Värmland	Centralsjukhuset i Karlstad	27 (30)	15 (17)	20 (23)	9 (10)	11 (13)
Landstinget i Östergötland	Vrinnevisjukhuset i Norrköping	56 (21)	14 (5)	42 (16)	17 (7)	14 (6)
Norrbottnens läns landsting	Norrbottnens läns Landsting	53 (34)	18 (11)	35 (22)	16 (10)	17 (11)
Region Gotland	Visby lasarett	6 (22)	2 (7)	3 (12)	2 (10)	3 (14)
Region Skåne	Centralsjukhuset Kristianstad	62 (22)	17 (6)	36 (13)	21 (9)	26 (11)
	Helsingborgs lasarett	30 (15)	8 (4)	20 (13)	9 (8)	8 (8)
	Lasarettet Trelleborg	21 (14)	3 (2)	11 (8)	10 (8)	7 (6)
	Lasarettet i Landskrona	13 (19)	4 (6)	10 (14)	5 (7)	4 (6)
	Lasarettet i Ystad	61 (25)	18 (7)	34 (14)	20 (10)	18 (9)
	Skåne Universitetssjukhus, Malmö	0	0	0	-	-
	Ängelholms sjukhus	15 (16)	3 (3)	11 (15)	6 (8)	6 (8)

The table continues on the next page

Table 2. Unplanned contact with health care following surgery.

County council	Hospital	Contact due to bleeding, infection or pain. Numbers (%)	Contact due to bleeding. Numbers (%)	Contact due to pain. Numbers (%)	Contact due to infection. Numbers (%)	Received antibiotic treatment. Numbers (%)
Stockholms läns landsting	Aleris Handen	0	0	0	0	0
	Aleris Nacka	3 (19)	2 (13)	2 (13)	2 (14)	2 (14)
	Aleris Sabbatsberg	38 (35)	9 (8)	25 (24)	11 (10)	10 (9)
	Capio Öron Näs Hals Globen	11 (46)	5 (21)	7 (29)	7 (30)	8 (35)
	Karolinska Universitets-sjukhuset	68 (20)	17 (5)	37 (11)	32 (11)	27 (9)
	Serafimerlasarettet	11 (33)	3 (9)	6 (19)	5 (16)	6 (18)
	Skärholmens ÖNH-centrum	4 (15)	0	2 (8)	2 (8)	1 (4)
	Sophiahemmet	76 (36)	28 (13)	45 (22)	18 (9)	19 (9)
	Södertälje sjukhus	9 (18)	4 (8)	5 (11)	5 (13)	4 (10)
	Öron-, Näs- och Hals, Strandskliniken	5 (33)	1 (7)	5 (33)	1 (7)	1 (7)
	Öron-, Näs- och Halskliniken, Södermalms läkarhus	18 (30)	10 (16)	7 (12)	6 (10)	5 (8)
	Öron-, Näs-, och Halscenter, Jakobsberg	2 (9)	0	1 (5)	1 (5)	0
	Uppsala-Örebro sjukvårdsregion	Akademiska sjukhuset	41 (32)	10 (8)	30 (24)	13 (11)
Capio Läkargruppen, Örebro		13 (17)	3 (4)	9 (12)	2 (3)	0
Elisabethsjukhuset Aleris		37 (37)	16 (16)	24 (28)	16 (21)	17 (22)
Karlskoga lasarett		7 (28)	4 (16)	5 (20)	1 (5)	3 (15)
Lindesbergs lasarett		12 (26)	3 (6)	7 (15)	6 (15)	4 (10)
Universitetssjukhuset Örebro		13 (26)	2 (4)	9 (20)	9 (23)	7 (18)
Västerbottens läns landsting	Norrlands Universitetssjukhus	44 (23)	13 (7)	32 (18)	21 (14)	24 (15)
Västra Götalandsregionen	Capio Lundby Sjukhus	27 (23)	13 (11)	17 (15)	6 (7)	7 (8)
	Frölunda Specialistsjukhus	10 (28)	3 (8)	7 (19)	3 (8)	2 (6)
	NU-sjukvården, Trollhättan	55 (29)	10 (5)	35 (19)	21 (15)	20 (14)
	Sahlgrenska Universitets-sjukhuset	83 (28)	29 (10)	52 (20)	30 (13)	24 (10)
	Skaraborgs sjukhus	30 (26)	8 (7)	21 (19)	9 (11)	9 (11)
	Södra Älvsborgs Sjukhus	60 (28)	17 (8)	42 (20)	29 (15)	20 (11)

Other information

This table lists the percentage of day surgery for tonsil surgery at each clinic. The table also shows the percentage of tonsillotomies that were performed on children aged 1-12 with the indication of obstruction. The last column shows the number and percentage of patients who answered “yes” to the question “Did the information you received match your perception of surgery and the following period?”.

Table 3. This table lists the number and proportion of day surgery for tonsil surgery at each clinic. The table also shows the number and proportion of tonsillotomies performed in children 0-12 operated on due to obstruction. The last column shows the number and percentage of patients that perceived that the patient information was accurate.

County council	Hospital	Outpatient surgery, numbers (%)	Percentage of TT obstruction 0-12 years, numbers (%)	Perceived that patient information was accurate, numbers (%)
Total for Sweden		7205 (64.0)	4370 (76.7)	4757 (85.3)
Hallands läns landsting	Halmstad sjukhus	153 (44.3)	159 (85.0)	116 (81.7)
Jämtlands läns landsting	Östersunds sjukhus	115 (90.6)	63 (92.6)	63 (82.9)
Landstinget Blekinge	Blekingesjukhuset	89 (70.6)	49 (89.1)	69 (85.2)
Landstinget Dalarna	Falu Lasarett	254 (71.3)	117 (78.5)	199 (84.0)
Landstinget Gävleborg	Gävle sjukhus	98 (47.6)	94 (85.5)	104 (84.6)
	Hudiksvalls sjukhus	109 (64.1)	82 (96.5)	105 (82.0)
Landstinget Kronoberg	Ljungby lasarett	–	3 (27.3)	21 (77.8)
Landstinget Västernorrland	Länssjukhuset i Sundsvall	115 (69.7)	51 (85.0)	46 (93.9)
	Sollefteå sjukhus	39 (95.1)	34 (97.1)	16 (88.9)
	Örnsköldsviks sjukhus	34 (81.0)	28 (96.6)	30 (88.2)
Landstinget Västmanland	Västmanlands sjukhus, Västerås	272 (81.2)	108 (77.7)	192 (86.5)
Landstinget i Jönköpings län	Höglandsjukhuset Eksjö	24 (24.0)	47 (95.9)	88 (95.7)
	Länssjukhuset Ryhov, Jönköping	177 (49.6)	175 (85.8)	180 (89.1)
	Värnamo sjukhus	52 (100.0)	50 (100)	17 (94.4)
Landstinget i Kalmar län	Länssjukhuset i Kalmar	76 (45.2)	96 (94.1)	100 (86.2)
	Västerviks sjukhus	18 (27.3)	29 (82.9)	37 (75.5)
Landstinget i Sörmland	ÖNH-kliniken Sörmland	139 (92.1)	59 (81.9)	73 (83.9)
Landstinget i Värmland	Centralsjukhuset i Karlstad	228 (71.7)	121 (87.7)	73 (82.0)
Landstinget i Östergötland	Vrinnevisjukhuset i Norrköping	388 (100.0)	132 (69.5)	215 (83.7)
Norrbottnens läns landsting	Sunderby sjukhus, Gällivare sjukhus, Piteå Älvdals sjukhus	229 (69.8)	119 (90.8)	129 (81.6)
Region Gotland	Visby lasarett	–	10 (66.7)	20 (74.1)
Region Skåne	Centralsjukhuset Kristianstad	263 (61.6)	221 (91.3)	233 (84.1)
	Helsingborgs lasarett	74 (29.6)	124 (86.7)	127 (85.8)
	Lasarettet Trelleborg	240 (100.0)	94 (82.5)	126 (88.1)
	Lasarettet i Landskrona	117 (100.0)	69 (95.8)	62 (88.6)
	Lasarettet i Ystad	165 (39.7)	224 (86.8)	211 (86.5)
	Skåne Universitetssjukhus, Malmö	14 (100.0)	1 (14.3)	1 (100.0)
	Ängelholms sjukhus	129 (100.0)	73 (90.1)	70 (86.4)
Stockholms läns landsting	Aleris Handen	13 (100.0)	6 (75.0)	2 (100.0)
	Aleris Specialistvård Nacka	77 (100.0)	36 (80.0)	13 (86.7)
	Aleris Specialistvård Sabbatsberg	399 (100.0)	167 (91.3)	81 (75.0)
	Capio Öron Näs Hals Globen	94 (100.0)	24 (61.5)	21 (87.5)
	Karolinska Universitetssjukhuset	65 (11.8)	198 (45.9)	280 (88.6)
	Serafimerlasarettet	78 (100.0)	23 (74.2)	28 (87.5)
	Skärholmens ÖNH-centrum	532 (99.4)	–	23 (92.0)
	Sophiahemmet	650 (86.3)	226 (80.4)	167 (80.3)
	Södertälje sjukhus	102 (100.0)	45 (86.5)	43 (87.8)
	Strandkliniken, Öron Näs Hals – Specialistmottagning	122 (100.0)	60 (87.0)	13 (86.7)
	Öron-, Näs- och Halskliniken, Södermalms läkarhus	227 (100.0)	110 (97.3)	50 (82.0)
	Öron-, Näs- och Halscenter Jakobsberg	102 (100.0)	43 (84.3)	21 (95.5)

The table continues on the next page

Table 3. This table lists the number and proportion of day surgery for tonsil surgery at each clinic. The table also shows the number and proportion of tonsillotomies performed in children 0-12 operated on due to obstruction. The last column shows the number and percentage of patients that perceived that the patient information was accurate.

County council	Hospital	Outpatient surgery, numbers (%)	Percentage of TT obstruction 0-12 years, numbers (%)	Perceived that patient information was accurate, numbers (%)
Uppsala-Örebro sjukvårdsregion	Akademiska sjukhuset	202 (61.2)	127 (92.7)	105 (84.7)
	Capio Läkargruppen, Örebro	111 (88.1)	–	74 (94.9)
	Aleris Specialistvård Elisabethsjukhuset	71 (66.4)	62 (100.0)	65 (76.5)
	Karlskoga lasarett	41 (100.0)	12 (75.0)	22 (88.0)
	Lindesbergs lasarett	75 (100.0)	21 (65.6)	37 (78.7)
	Universitetssjukhuset Örebro	69 (88.5)	39 (90.7)	35 (74.5)
Västerbottens läns landsting	Norrlands Universitetssjukhus	122 (40.3)	150 (91.5)	161 (86.6)
Västra Götalandsregionen	Capio Lundby Sjukhus	85 (40.5)	84 (84.8)	98 (88.3)
	Frölunda Specialistsjukhus	–	30 (51.7)	29 (80.6)
	NU-sjukvården, Trollhättan	–	100 (75.2)	165 (89.7)
	Sahlgrenska Universitetssjukhuset	224 (52.3)	195 (88.2)	217 (82.5)
	Skaraborgs sjukhus	29 (13.2)	51 (63.0)	100 (89.3)
	Södra Älvsborgs Sjukhus	104 (31.0)	129 (71.7)	184 (88.0)



Response frequency and the percentage of e-mail addresses

All patients undergoing tonsil surgery are asked to answer a patient questionnaire 30 days and six months respectively after tonsil surgery. To ensure that the information from the two patient questionnaires is representative, it is necessary to have a high response frequency and this frequency is presented in the table. It is important to inform the patient that the health care in conjunction with tonsil surgery is followed up with questionnaires and that it is important that the patient answers them.

In the quality register, there is a function that enables patients to answer the questionnaires using a unique web link which is sent by e-mail. This saves the clinic a great deal of work when it comes to administering the paper questionnaires. The table lists the percentage of registered e-mail addresses at each clinic. Many clinics can increase the percentage of e-mail addresses that are registered and a review of the importance of filling in the e-mail address on the first form is recommended. Another way of obtaining e-mail addresses could be to ask for them in the health declaration/informed consent at the clinic.

Table 4. Response rate, for patient questionnaires at each clinic. The last column shows the percentage of patients e-mail addresses registered for each clinic.

County council	Hospital	Patient questionnaires		E-mail addresses registered Numbers (%)
		30 days Numbers (%)	6 months Numbers (%)	
Total for Sweden		5926 (52.7)	3708 (33)	6923 (61.5)
Hallands läns landsting	Halmstad sjukhus	143 (41.4)	125 (36.2)	182 (52.8)
Jämtlands läns landsting	Östersunds sjukhus	79 (62.2)	33 (26)	88 (69.3)
Landstinget Blekinge	Blekingesjukhuset	81 (64.3)	28 (22.2)	107 (84.9)
Landstinget Dalarna	Falu Lasarett	240 (67.4)	116 (32.6)	261 (73.3)
Landstinget Gävleborg	Gävle sjukhus	125 (60.7)	67 (32.5)	97 (47.1)
	Hudiksvalls sjukhus	140 (82.4)	122 (71.8)	105 (61.8)
Landstinget Kronoberg	Ljungby lasarett	34 (100)	34 (100)	9 (26.5)
Landstinget Västernorrland	Länssjukhuset i Sundsvall	52 (31.5)	52 (31.5)	152 (92.1)
	Sollefteå sjukhus	19 (46.3)	12 (29.3)	0
	Örnsköldsviks sjukhus	34 (81)	27 (64.3)	0
Landstinget Västmanland	Västmanlands sjukhus, Västerås	283 (84.5)	172 (51.3)	0
Landstinget i Jönköpings län	Höglandssjukhuset Eksjö	94 (94)	72 (72)	12 (12)
	Länssjukhuset Ryhov, Jönköping	203 (56.9)	147 (41.2)	194 (54.3)
	Värnamo sjukhus	19 (36.5)	11 (21.2)	46 (88.5)
Landstinget i Kalmar län	Länssjukhuset i Kalmar	119 (70.8)	112 (66.7)	84 (50)
	Västerviks sjukhus	56 (84.8)	40 (60.6)	5 (7.6)
Landstinget i Sörmland	ÖNH-kliniken Sörmland	139 (92.1)	83 (55)	0
Landstinget i Värmland	Centralsjukhuset i Karlstad	89 (28)	23 (7.2)	16 (5)
Landstinget i Östergötland	Vrinnevisjukhuset i Norrköping	262 (67.5)	113 (29.1)	326 (84)
Norrbottnens läns landsting	Norrbottnens läns landsting	158 (48.2)	70 (21.3)	222 (67.7)
Region Gotland	Visby lasarett	27 (61.4)	25 (56.8)	0
Region Skåne	Centralsjukhuset Kristianstad	288 (67.4)	141 (33)	266 (62.3)
	Helsingborgs lasarett	196 (78.4)	114 (45.6)	135 (54)
	Lasarettet Trelleborg	148 (61.7)	82 (34.2)	118 (49.2)
	Lasarettet i Landskrona	70 (59.8)	33 (28.2)	106 (90.6)
	Lasarettet i Ystad	245 (58.9)	158 (38.0)	255 (61.3)
	Skåne Universitetssjukhus, Malmö	1 (7.1)	2 (14.3)	1 (7.1)
	Ängelholms sjukhus	94 (72.9)	67 (51.9)	99 (76.7)
Stockholms läns landsting	Aleris Handen	2 (15.4)	0	9 (69.2)
	Aleris Specialistvård Nacka	16 (20.8)	19 (24.7)	57 (74)
	Aleris Specialistvård Sabbatsberg	108 (27.1)	96 (24.1)	389 (97.5)
	Capio Öron Näs Hals Globen	24 (25.5)	17 (18.1)	91 (96.8)
	Karolinska Universitetssjukhuset	342 (61.8)	138 (25)	350 (63.3)
	Serafimerlasarettet	33 (42.3)	25 (32.1)	77 (98.7)
	Skärholmens ÖNH-centrum	26 (4.9)	27 (5)	457 (85.4)
	Sophiahemmet	209 (27.8)	186 (24.7)	734 (97.5)
	Södertälje sjukhus	50 (49)	44 (43.1)	21 (20.6)
	Öron-, Näs- och Halskliniken, Södermalms läkarhus	61 (26.9)	59 (26)	226 (99.6)
	Öron-, Näs- och Hals, Strandkliniken	15 (12.3)	19 (15.6)	50 (41)
	Öron-, Näs- och Halscenter Jakobsberg	22 (21.6)	16 (15.7)	101 (99)
	Uppsala-Örebro sjukvårdsregion	Akademiska sjukhuset	127 (38.5)	81 (24.5)
Capio Läkargruppen, Örebro		78 (61.9)	40 (31.7)	117 (92.9)
Aleris Specialistvård Elisabethsjukhuset		99 (92.5)	95 (88.8)	0
Karlskoga lasarett		25 (61)	14 (34.1)	13 (31.7)
Lindesbergs lasarett		47 (62.7)	21 (28)	42 (56)
Universitetssjukhuset Örebro		50 (64.1)	31 (39.7)	35 (44.9)
Västerbottens läns landsting		Norrlands Universitetssjukhus	191 (63)	84 (27.7)
Västra Götalandsregionen	Capio Lundby Sjukhus	116 (55.2)	48 (22.9)	151 (71.9)
	Frölunda Specialistsjukhus	36 (29.8)	33 (27.3)	113 (93.4)
	NU-sjukvården, Trollhättan	187 (60.3)	160 (51.6)	121 (39)
	Sahlgrenska Universitetssjukhuset	294 (68.7)	149 (34.8)	338 (79)
	Skaraborgs sjukhus	115 (52.5)	75 (34.2)	101 (46.1)
	Södra Älvsborgs Sjukhus	215 (64)	150 (44.6)	74 (22)

Indications

There are two main groups of indications for tonsil surgery, infection/inflammation and obstruction/snoring/hypertrophic tonsils.

The table presents indication statistics for each clinic from the quality register. The variation between the clinics is substantial, in terms of both the percentage of obstruction indications and within the infection/inflammation indication group.

Knowledge of the distribution of indications at an individual clinic is important when analysing the complication and result data. For example, a high percentage of infection indications is probably associated with a high percentage of tonsillectomies in the adult population, with an expected higher complication frequency.

The spread of indications could be a true description of the real-life situation caused, for example, by demographic differences or local traditions. This is probably the case when it comes to the variation in the percentage of obstruction.

Another explanation is shortcomings in the ICD-10 coding system. Chronic tonsillitis is coded as J350. This code is also used for recurring tonsillitis, as there is no separate code for this diagnosis.

A registration in the quality register based on diagnosis codes alone therefore leads to an excessively high frequency for the diagnosis of chronic tonsillitis. We therefore recommend that a physician who decides on tonsil surgery should also document the indication, as the indications of chronic tonsillitis and recurring tonsillitis are separate in quality registration.

We recommend that all clinics should review their routines for the way surgery indications are registered in the Swedish Tonsil Surgery Register. The following definitions should be used.

Airway obstruction/snoring/hypertrophic tonsils: breathing disturbances during sleep caused by the tonsils

Recurrent tonsillitis: at least three episodes of acute tonsillitis during the past 12 months

Peritonsillitis: an incipient peritonsillar abscess or a peritonsillar abscess with pus which undergoes acute surgery or if the indication is previous peritonsillitis

Chronic tonsillitis: long-term inflammation in the tonsils (at least three months) to a degree that impacts daily activities

Systemic complications of tonsillitis: systemic illness that is exacerbated by a bout of tonsillitis, such as psoriasis

Table 5. Indication for tonsil surgery 2013.

County council	Hospital	Obstruction Numbers (%)	Recurrent tonsillitis Numbers (%)	Peritonsillitis Numbers (%)	Chronic tonsillitis Numbers (%)
Total for Sweden		6 743 (59.9)	2 367 (21.0)	509 (4.5)	1 384 (12.3)
Hallands läns landsting	Halmstad sjukhus	214 (62.0)	18 (5.2)	5 (1.4)	101 (29.3)
Jämtlands läns landsting	Östersunds sjukhus	80 (63.0)	30 (23.6)	4 (3.1)	12 (9.4)
Landstinget Blekinge	Blekingesjukhuset	65 (51.6)	24 (19.0)	11 (8.7)	21 (16.7)
Landstinget Dalarna	Falu Lasarett	190 (53.4)	84 (23.6)	14 (3.9)	57 (16.0)
Landstinget Gävleborg	Gävle sjukhus	129 (62.6)	55 (26.7)	5 (2.4)	12 (5.8)
	Hudiksvalls sjukhus	103 (60.6)	39 (22.9)	5 (2.9)	18 (10.6)
Landstinget Kronoberg	Ljungby lasarett	16 (47.1)	15 (44.1)	2 (5.9)	1 (2.9)
Landstinget Västernorrland	Länssjukhuset i Sundsvall	75 (45.5)	39 (23.6)	17 (10.3)	26 (15.8)
	Sollefteå sjukhus	39 (95.1)	2 (4.9)	0	0
	Örnsköldsviks sjukhus	33 (78.6)	2 (4.8)	1 (2.4)	6 (14.3)
Landstinget Västmanland	Västmanlands sjukhus, Västerås	185 (55.2)	80 (23.9)	16 (4.8)	39 (11.6)
Landstinget i Jönköpings län	Höglandssjukhuset Eksjö	61 (61.0)	29 (29.0)	2 (2.0)	7 (7.0)
	Länssjukhuset Ryhov, Jönköping	244 (68.3)	53 (14.8)	15 (4.2)	31 (8.7)
	Värnamo sjukhus	50 (96.2)	1 (1.9)	0	1 (1.9)
Landstinget i Kalmar län	Länssjukhuset i Kalmar	120 (71.4)	12 (7.1)	6 (3.6)	27 (16.1)
	Västerviks sjukhus	49 (74.2)	12 (18.2)	2 (3.0)	1 (1.5)
Landstinget i Sörmland	Sörmland ÖNH	93 (61.6)	34 (22.5)	5 (3.3)	16 (10.6)
Landstinget i Värmland	Centralsjukhuset i Karlstad	171 (53.8)	70 (22.0)	28 (8.8)	43 (13.5)
Landstinget i Östergötland	Vrinnevisjukhuset i Norrköping	221 (57.0)	74 (19.1)	9 (2.3)	71 (18.3)
Norrbottens läns landsting	Norrbottens läns Landsting	164 (50.0)	85 (25.9)	28 (8.5)	40 (12.2)
Region Gotland	Visby lasarett	20 (45.5)	12 (27.3)	4 (9.1)	5 (11.4)
Region Skåne	Centralsjukhuset Kristianstad	283 (66.3)	94 (22.0)	30 (7.0)	12 (2.8)
	Helsingborgs lasarett	162 (64.8)	54 (21.6)	21 (8.4)	10 (4.0)
	Lasarettet Trelleborg	132 (55.0)	56 (23.3)	0	52 (21.7)
	Lasarettet i Landskrona	85 (72.6)	16 (13.7)	0	14 (12.0)
	Lasarettet i Ystad	287 (69.0)	85 (20.4)	22 (5.3)	19 (4.6)
	Skåne Universitetssjukhus, Malmö	7 (50.0)	6 (42.9)	0	0
	Ängelholms sjukhus	93 (72.1)	23 (17.8)	0	11 (8.5)
Stockholms läns landsting	Aleris Handen	9 (69.2)	3 (23.1)	0	1 (7.7)
	Aleris Nacka	49 (63.6)	15 (19.5)	1 (1.3)	11 (14.3)
	Aleris Sabbatsberg	209 (52.4)	142 (35.6)	10 (2.5)	37 (9.3)
	Capio Öron Näs Hals Globen	40 (42.6)	36 (38.3)	8 (8.5)	9 (9.6)
	Karolinska Universitetssjukhuset	463 (83.7)	57 (10.3)	17 (3.1)	7 (1.3)
	Serafimerlasarettet	41 (52.6)	24 (30.8)	2 (2.6)	11 (14.1)
	Skärholmens ÖNH-centrum	321 (60.0)	5 (0.9)	5 (0.9)	203 (37.9)
	Sophiahemmet	341 (45.3)	319 (42.4)	34 (4.5)	55 (7.3)
	Södertälje sjukhus	58 (56.9)	36 (35.3)	1 (1.0)	6 (5.9)
	Öron-, Näs- och Halskliniken, Södermalms läkarhus	122 (53.7)	60 (26.4)	25 (11.0)	20 (8.8)
	Öron-, Näs- och Hals, Strandkliniken	76 (62.3)	28 (23.0)	1 (0.8)	6 (4.9)
	Öron-, Näs- och Halscenter Jakobsberg	61 (59.8)	31 (30.4)	0	10 (9.8)
Uppsala-Örebro sjukvårdsregion	Akademiska sjukhuset	178 (53.9)	69 (20.9)	21 (6.4)	37 (11.2)
	Capio Läkargruppen, Örebro	81 (64.3)	8 (6.3)	4 (3.2)	27 (21.4)
	Elisabethsjukhuset Aleris	72 (67.3)	27 (25.2)	1 (0.9)	7 (6.5)
	Karlskoga lasarett	21 (51.2)	12 (29.3)	2 (4.9)	4 (9.8)
	Lindesbergs lasarett	38 (50.7)	11 (14.7)	6 (8.0)	16 (21.3)
	Universitetssjukhuset Örebro	51 (65.4)	9 (11.5)	6 (7.7)	8 (10.3)
Västerbottens läns landsting	Norrlands Universitetssjukhus	230 (75.9)	29 (9.6)	11 (3.6)	24 (7.9)
Västra Götalandsregionen	Capio Lundby Sjukhus	114 (54.3)	88 (41.9)	3 (1.4)	5 (2.4)
	Frölunda Specialistsjukhus	64 (52.9)	37 (30.6)	0	19 (15.7)
	NU-sjukvården, Trollhättan	170 (54.8)	50 (16.1)	29 (9.4)	53 (17.1)
	Sahlgrenska Universitetssjukhuset	247 (57.7)	100 (23.4)	29 (6.8)	44 (10.3)
	Skaraborgs sjukhus	118 (53.9)	31 (14.2)	14 (6.4)	48 (21.9)
	Södra Älvsborgs Sjukhus	198 (58.9)	36 (10.7)	27 (8.0)	63 (18.8)

NO ONE PERFORMS SURGERY LIKE US



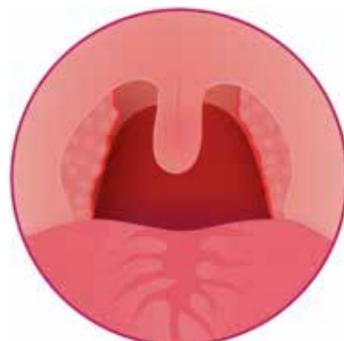
The NTSRS describes the entire process in tonsil surgery. Is there anything that can be improved at your unit?



Enlarged tonsils



Tonsillectomy



Tonsillotomy

Postoperative haemorrhage

Postoperative haemorrhage is the most serious complication following tonsil surgery, since it can lead to re-admission, sometimes to re-operation and, in rare cases, contribute to death.

This chapter presents information on early haemorrhage, i.e. haemorrhage during the hospitalisation period that leads to active measures by the physician, and late haemorrhage, i.e. haemorrhage following discharge to the patient's home.

Information on early haemorrhage comes from the second questionnaire in the register and is reported by the hospital/professional.

Information on re-admission because of haemorrhage comes from the patient. At clinics performing a small number of operations, or with a low response frequency, these results can be very uncertain. Information on the frequency of late haemorrhage must therefore always be interpreted, while simultaneously analysing surgery volume and response frequency.

To obtain more reliable information on re-admission because of haemorrhage following tonsil surgery, the data in the quality register have been matched, at individual level, against the Patient Register (PAR), Swedish National Board of Health and Welfare. To perform this matching, all the care interventions registered in the PAR within 30 days after tonsil surgery, with a diagnosis and/or surgery number that matches post-tonsil surgery haemorrhage, are used.

This analysis has been conducted by the National Board of Health and Welfare's register service and the compilation in the table shows the number and percentage of patients who were re-admitted according to the quality register or the PAR and how well the information matches in the individual registers.

- Number of re-admissions because of haemorrhage registered in the NTSRS
- Number of re-admissions because of haemorrhage registered in the PAR
- Number of patients who are only listed in the NTSRS
- Number of patients who are only listed in the PAR
- Number and percentage of patients who are listed in either the PAR or the NTSRS

This matching was conducted on 24 October 2013 with PAR3 using data from the quality register from 18 August 2014 against data from 2013. The table shows all the units which reported to the PAR or the NTSRS.

We have previously reported data from the PAR and the quality register separately. With the design we are using this year, we hope that we are presenting more correct values for the "re-admitted because of haemorrhage" quality indicator.

Figure 1. This figure shows the longitudinal haemorrhage frequency for each surgical method. The information has been taken from the quality register for tonsil surgery.

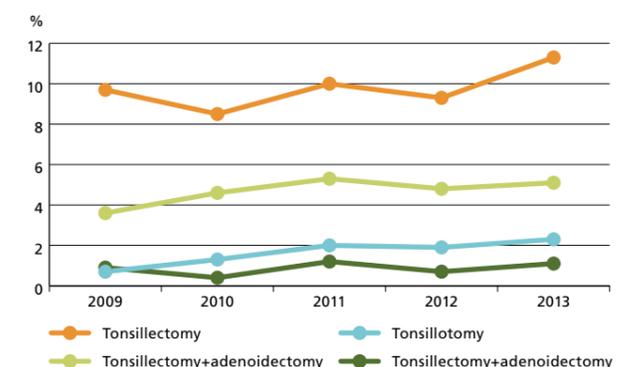


Table 6. Postoperative haemorrhage occurring during admission for tonsil surgery (primary or early haemorrhage). Primary haemorrhage is defined as action (medical or return to theatre) taken by physician and is recorded by the professional in the NTSRS.

County council	Hospital	Number of operations	Postoperative haemorrhage requiring action from a physician Numbers (%)
Total for Sweden		11251	211 (1.9)
Hallands läns landsting	Halmstad sjukhus	345	0
Jämtlands läns landsting	Östersunds sjukhus	127	2 (1.6)
Landstinget Blekinge	Blekingesjukhuset	126	6 (4.8)
Landstinget Dalarna	Falu Lasarett	356	11 (3.1)
Landstinget Gävleborg	Hudiksvalls sjukhus	170	1 (0.6)
	Gävle sjukhus	206	7 (3.4)
Landstinget i Jönköpings län	Länssjukhuset Ryhov, Jönköping	357	4 (1.1)
	Högländssjukhuset Eksjö	100	2 (2.0)
	Värnamo sjukhus	52	0
Landstinget i Kalmar län	Länssjukhuset i Kalmar	168	7 (4.2)
	Västerviks sjukhus	66	0
Landstinget i Sörmland	Sörmland ÖNH	151	2 (1.3)
Landstinget i Värmland	Centralsjukhuset i Karlstad	318	6 (1.9)
Landstinget i Östergötland	Vrinnevisjukhuset i Norrköping	388	8 (2.1)
Landstinget Kronoberg	Ljungby lasarett	34	1 (2.9)
Landstinget Västernorrland	Länssjukhuset i Sundsvall	165	6 (3.6)
	Örnsköldsviks sjukhus	42	2 (4.8)
	Sollefteå sjukhus	41	0
Landstinget Västmanland	Västmanlands sjukhus, Västerås	335	1 (0.3)
Norrbottnens läns landsting	Norrbottnens läns Landsting	328	8 (2.4)
Region Gotland	Visby lasarett	44	5 (11.4)
Region Skåne	Lasarettet i Landskrona	117	1 (0.9)
	Helsingborgs lasarett	250	11 (4.4)
	Centralsjukhuset Kristianstad	427	3 (0.7)
	Skåne Universitetssjukhus, Malmö	14	11 (78.6)
	Lasarettet Trelleborg	240	1 (0.4)
	Lasarettet i Ystad	416	7 (1.7)
	Ängelholms sjukhus	129	2 (1.6)
Stockholms läns landsting	Karolinska Universitetssjukhuset	553	13 (2.4)
	Södertälje sjukhus	102	3 (2.9)
	Skärholmens ÖNH-centrum	535	7 (1.3)
	Aleris Sabbatsberg	399	7 (1.8)
	Sophiahemmet	753	4 (0.5)
	Öron-, Näs- och Halskliniken, Södermalms läkarhus	227	11 (4.8)
	Capio Öron Näs Hals Globen	94	2 (2.1)
	Aleris Nacka	77	1 (1.3)
	Serafimerlasarettet	78	0
	Öron-, Näs- och Halscenter Jakobsberg	102	0
	Öron-, Näs- och Hals, Strandkliniken	122	2 (1.6)
	Aleris Handen	13	0

The table continues on the next page

Table 6. Postoperative haemorrhage occurring during admission for tonsil surgery (primary or early haemorrhage). Primary haemorrhage is defined as action (medical or return to theatre) taken by physician and is recorded by the professional in the NTSRS.

County council	Hospital	Number of operations	Postoperative haemorrhage requiring action from a physician Numbers (%)
Uppsala-Örebro sjukvårdsregion	Akademiska sjukhuset	330	5 (1.5)
	Capio Läkargruppen, Örebro	126	0
	Elisabethsjukhuset Aleris	107	0
	Karlskoga lasarett	41	1 (2.4)
	Lindesbergs lasarett	75	0
	Universitetssjukhuset Örebro	78	0
Västerbottens läns landsting	Norrlands Universitetssjukhus	303	6 (2.0)
Västra Götalandsregionen	Södra Älvsborgs Sjukhus	336	2 (0.6)
	Sahlgrenska Universitetssjukhuset	428	10 (2.3)
	Capio Lundby Sjukhus	210	1 (0.5)
	Skaraborgs sjukhus	219	15 (6.8)
	NU-sjukvården, Trollhättan	310	2 (0.7)
	Frölunda Specialistsjukhus	121	4 (3.3)

Table 7. Re-admission to hospital due to haemorrhage. The analysis is a match of data between the Patient Register and the NTSRS. See text on page 47 for detailed explanation.

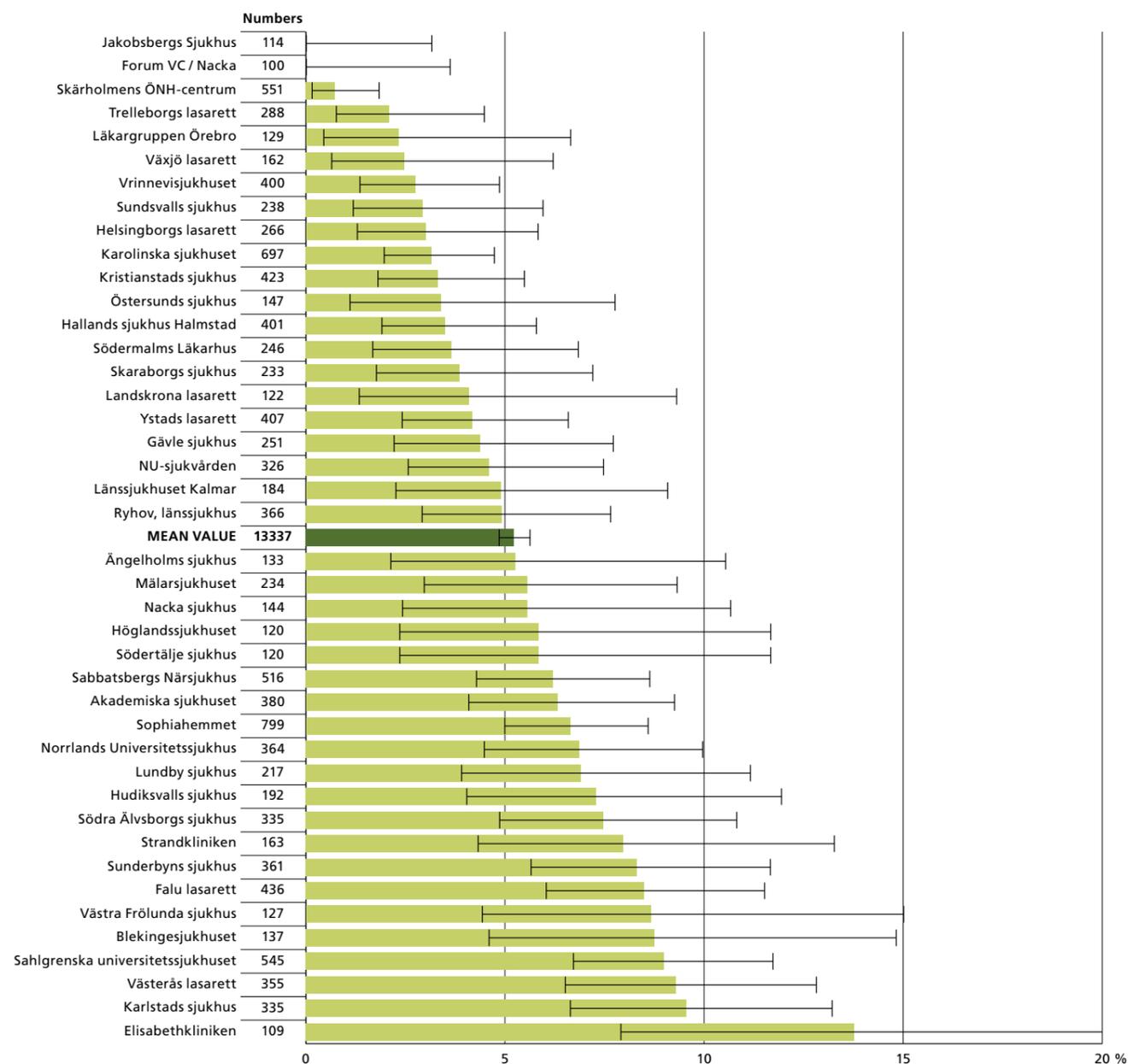
County council	Hospital	Number of surgeries PAR+NTSRS	Re-admission haemorrhage NTSRS	Re-admission haemorrhage PAR and NTSRS	Re-admission haemorrhage PAR	Re-admission haemorrhage PAR+NTSRS	Total re-admission haemorrhage within 30 days (%)
Total for Sweden		13337	-	-	-	-	5.2
Stockholm	Capio Öron Näs Hals Globen	94	-	3	7	10	10.6
	Forum VC / Nacka	100	-	-	-	-	0.0
	Handens sjukhus	25	-	-	1	1	4.0
	Högdalens ÖNH-centrum	82	-	-	1	1	1.2
	Öron-, Näs- och Halscenter Jakobsberg	114	-	-	-	-	0.0
	Karolinska Universitetssjukhuset	697	-	10	12	22	3.2
	Aleris Specialistvård Nacka	144	-	1	7	8	5.6
	Aleris Specialistvård Sabbatsberg	516	-	5	27	32	6.2
	Serafimerlasarettet	89	-	1	5	6	6.7
	Skärholmens ÖNH-centrum	551	-	-	4	4	0.7
	Sollentuna Sjukhus	55	-	-	-	-	0.0
	Sophiahemmet	799	1	17	35	53	6.6
	Strandkliniken, Öron-, Näs och Hals Specialistmottagning	163	-	-	13	13	8.0
	Södermalms Läkarhus	246	-	5	4	9	3.7
	Södertälje sjukhus	120	-	3	4	7	5.8
	Täby Närsjukhus	39	-	-	-	-	0.0
	Uppsala	Akademiska sjukhuset	380	-	7	17	24
Elisabethkliniken		109	2	13	-	15	13.8
Södermanland	Mälarsjukhuset	234	2	4	7	13	5.6
	Nyköpings lasarett	19	-	-	1	1	5.3
Östergötland	Universitetssjukhuset i Linköping	38	-	-	-	-	0.0
	Vrinnevisjukhuset	400	2	6	3	11	2.8
Jönköping	Högländssjukhuset	120	2	2	3	7	5.8
	Ryhov, länssjukhus	366	2	6	10	18	4.9
	Värnamo sjukhus	54	-	-	-	-	0.0
Kronoberg	Ljungby lasarett	38	-	-	-	-	0.0
	Växjö lasarett	162	-	-	4	4	2.5
Kalmar	Länssjukhuset Kalmar	184	1	4	4	9	4.9
	Västerviks sjukhus	66	-	2	1	3	4.5
Gotland	Visby lasarett	45	-	2	2	4	8.9
Blekinge	Blekingesjukhuset	137	1	6	5	12	8.8
Skåne	Helsingborgs lasarett	266	1	3	4	8	3.0
	Kristianstads sjukhus	423	1	8	5	14	3.3
	Landskrona lasarett	122	-	4	1	5	4.1
	Skånes Universitetssjukhus	98	-	-	4	4	4.1
	Trelleborgs lasarett	288	-	2	4	6	2.1
	Ystads lasarett	407	1	13	3	17	4.2
	Ängelholms sjukhus	133	-	2	5	7	5.3

The table continues on the next page

Table 7. Re-admission to hospital due to haemorrhage. The analysis is a match of data between the Patient Register and the NTSRS. See text on page 47 for detailed explanation.

County council	Hospital	Number of surgeries PAR+NTSRS	Re-admission haemorrhage NTSRS	Re-admission haemorrhage PAR and NTSRS	Re-admission haemorrhage PAR	Re-admission haemorrhage PAR+NTSRS	Total re-admission haemorrhage within 30 days (%)
Halland	Hallands sjukhus Halmstad	401	-	2	12	14	3.5
	Kungsbacka sjukhus	1	-	-	-	-	0.0
Västra Götaland	Carlanderska	25	-	-	1	1	4.0
	Lundby sjukhus	217	-	8	7	15	6.9
	NU-sjukvården	326	-	8	7	15	4.6
	Sahlgrenska universitetssjukhuset	545	3	19	27	49	9.0
	Skaraborgs sjukhus	233	-	6	3	9	3.9
	Södra Älvsborgs sjukhus	335	2	14	9	25	7.5
	Västra Frölunda sjukhus	127	-	2	9	11	8.7
Värmland	Karlstads sjukhus	335	1	12	19	32	9.6
Örebro	Karlskoga lasarett	50	-	2	1	3	6.0
	Lindesbergs lasarett	80	-	2	2	4	5.0
	Läkargruppen Örebro	129	-	1	2	3	2.3
	Universitetssjukhuset Örebro	90	-	1	2	3	3.3
Västmanland	Västerås lasarett	355	2	21	10	33	9.3
Dalarna	Falu lasarett	436	6	19	12	37	8.5
	Mora lasarett	1	-	-	-	-	0.0
Gävleborg	Gävle sjukhus	251	2	3	6	11	4.4
	Hudiksvalls sjukhus	192	2	7	5	14	7.3
Västernorrland	Sollefteå sjukhus	43	-	-	-	-	0.0
	Sundsvalls sjukhus	238	-	4	3	7	2.9
	Örnsköldsviks sjukhus	48	-	1	-	1	2.1
Jämtland	Östersunds sjukhus	147	-	3	2	5	3.4
Västerbotten	Norrlands Universitetssjukhus	364	2	6	17	25	6.9
	Skellefteå lasarett	19	-	-	-	-	0.0
Norrbotten	Gällivare lasarett	4	-	-	-	-	0.0
	Piteå Älvdals sjukhus	3	-	-	-	-	0.0
	Sunderbyns sjukhus	361	3	10	17	30	8.3

Figure 2. The bar show the frequency of re-admitted patients due to haemorrhage and the analysis is performed on matched data from the Patient Register and NTSRS. The results are presented with 95% confidence intervals and only units operating on more than 100 patients during 2013 are represented.



© Jeanette Engqvist, www.allumedic.se

Different kinds of tonsil surgery

In conjunction with tonsil surgery, two basically different types of surgery can be performed, tonsillectomy or tonsillotomy. Tonsillectomy involves the total removal of the tonsils. Tonsillotomy involves the partial removal of the tonsils, leaving a bed of tonsillar tissue.

Surgical codes used (according to the Nordic Medico-Statistical Committees) Classification of Surgical Procedures

- **EMB10** for only tonsillectomy
- **EMB20** for tonsillectomy with simultaneous adenoidectomy/abrasion
- **EMB15** for only tonsillotomy
- **EMB15+EMB30** for tonsillotomy with simultaneous adenoidectomy/abrasion

Surgical techniques

In Sweden, a number of different surgical techniques are used in tonsil surgery. The following surgical techniques can be registered in the quality register.

Cold steel – the dissection is performed with “cold” instruments, such as a scalpel, scissors or an elevator.

Radio frequency – in all radio-frequency techniques, the radio-frequency energy is used to achieve a cutting, dissecting, volume-reducing or coagulating effect.

A review of the register data reveals that four different radio-frequency instruments are used:

- Arthrocare-Coblation®
- Ellman-Surgitron®
- Sutter-Curis®
- Olympus-Celon

Diathermy scissors – surgery is performed with scissors which can simultaneously supply bipolar diathermy over the blades of the scissors. In this way, the instrument is able to divide and coagulate tissue simultaneously.

Ultracision – Harmonic Scalpel®. Surgery is performed with an instrument that divides and coagulates tissue simultaneously. The technique is based on ultrasonic vibration.

Laser – surgery is performed with a laser beam, most frequently a carbon-dioxide laser, which divides and coagulates tissue simultaneously.

Miscellaneous – to obtain knowledge of the other techniques that are used, there is a Miscellaneous field. The information in this field will form the basis of future reviews of this quality register. It has, for example, emerged that, at some clinics, the tonsils are dissected and removed using bipolar diathermy and this should therefore be registered here.

Haemostasis techniques

In Sweden, a number of different techniques for achieving haemostasis are used in tonsil surgery. The following haemostasis techniques can be registered in the quality register.

Infiltration anaesthesia with adrenaline – the haemostasis effect is achieved through the vascular-constricting effect of the adrenaline.

Unipolar (monopolar) diathermy – the haemostasis effect is achieved through the heat coagulation of blood vessels. The current is conducted through the patient's tissues to a neutral plate (earth).

Bipolar diathermy – the haemostasis effect is achieved through the heat coagulation of blood vessels. Bipolar instruments (scissors, forceps and so on) have two poles and the current is conducted from one pole to the other. Current does not pass through the patient's other tissues.

Laser – the haemostasis effect is achieved by applying high, local heat.

Ligature – this involves using a knotted ligature of the “tonsillar stalk” which can typically occur in the lower pole of the tonsils. The idea is to block a group of blood vessels with a ligature. It may also involve tying a knot around bleeding vessels.

Suture ligature – this means staunching the blood – in other words, performing a deep suture with a needle in the soft tissue to stop bleeding.

The alternatives “none” and “other” can also be used.

Table 8. Tonsil surgery methods.

County council	Hospital	Tonsillotomy EMB10 Numbers (%)	Tonsillotomy EMB15 Numbers (%)	Tonsillectomy + adenoidectomy EMB20 Numbers (%)	Tonsillectomy + adenoidectomy EMB15+EMB30 Numbers (%)
Total for Sweden		4850 (43.1)	773 (6.9)	1636 (14.5)	3992 (35.5)
Hallands läns landsting	Halmstad sjukhus	153 (44.3)	20 (5.8)	29 (8.4)	143 (41.4)
Jämtlands läns landsting	Östersunds sjukhus	50 (39.4)	12 (9.4)	8 (6.3)	57 (44.9)
Landstinget Blekinge	Blekingesjukhuset	55 (43.7)	14 (11.1)	16 (12.7)	41 (32.5)
Landstinget Dalarna	Falu Lasarett	168 (47.2)	25 (7.0)	57 (16.0)	106 (29.8)
Landstinget Gävleborg	Gävle sjukhus	86 (41.7)	21 (10.2)	14 (6.8)	85 (41.3)
	Hudiksvalls sjukhus	52 (30.6)	24 (14.1)	17 (10.0)	77 (45.3)
Landstinget Kronoberg	Ljungby lasarett	23 (67.6)	2 (5.9)	8 (23.5)	1 (2.9)
Landstinget Västernorrland	Länssjukhuset i Sundsvall	88 (53.3)	7 (4.2)	19 (11.5)	51 (30.9)
	Sollefteå sjukhus	2 (4.9)	4 (9.8)	1 (2.4)	34 (82.9)
	Örnsköldsviks sjukhus	8 (19.0)	12 (28.6)	1 (2.4)	21 (50.0)
Landstinget Västmanland	Västmanlands sjukhus, Västerås	171 (51.0)	26 (7.8)	47 (14.0)	91 (27.2)
Landstinget i Jönköpings län	Höglandssjukhuset Eksjö	41 (41.0)	9 (9.0)	6 (6.0)	44 (44.0)
	Länssjukhuset Ryhov, Jönköping	139 (38.9)	25 (7.0)	36 (10.1)	157 (44.0)
	Värnamo sjukhus	0	4 (7.7)	0	48 (92.3)
Landstinget i Kalmar län	Länssjukhuset i Kalmar	63 (37.5)	17 (10.1)	8 (4.8)	80 (47.6)
	Västerviks sjukhus	28 (42.4)	1 (1.5)	7 (10.6)	30 (45.5)
Landstinget i Sörmland	Sörmland ÖNH	71 (47.0)	9 (6.0)	20 (13.2)	51 (33.8)
Landstinget i Värmland	Centralsjukhuset i Karlstad	172 (54.1)	30 (9.4)	16 (5.0)	100 (31.4)
Landstinget i Östergötland	Vrinnevisjukhuset i Norrköping	203 (52.3)	16 (4.1)	47 (12.1)	122 (31.4)
Norrbottens läns landsting	Norrbotten läns Landsting	162 (49.4)	14 (4.3)	31 (9.5)	121 (36.9)
Region Gotland	Visby lasarett	26 (59.1)	2 (4.5)	6 (13.6)	10 (22.7)
Region Skåne	Centralsjukhuset Kristianstad	140 (32.8)	35 (8.2)	37 (8.7)	215 (50.4)
	Helsingborgs lasarett	68 (27.2)	16 (6.4)	44 (17.6)	122 (48.8)
	Lasarettet Trelleborg	104 (43.3)	25 (10.4)	34 (14.2)	77 (32.1)
	Lasarettet i Landskrona	20 (17.1)	30 (25.6)	7 (6.0)	60 (51.3)
	Lasarettet i Ystad	120 (28.8)	15 (3.6)	56 (13.5)	225 (54.1)
	Skåne Universitetssjukhus, Malmö	7 (50.0)	1 (7.1)	6 (42.9)	0
	Ängelholms sjukhus	42 (32.6)	20 (15.5)	5 (3.9)	62 (48.1)
	Stockholms läns landsting	Aleris Handen	6 (46.2)	0	1 (7.7)
	Aleris Nacka	28 (36.4)	9 (11.7)	13 (16.9)	27 (35.1)
	Aleris Sabbatsberg	193 (48.4)	13 (3.3)	33 (8.3)	160 (40.1)
	Capio Öron Näs Hals Globen	46 (48.9)	0	24 (25.5)	24 (25.5)
	Karolinska Universitetssjukhuset	138 (25.0)	12 (2.2)	216 (39.1)	187 (33.8)
	Serafimerlasarettet	48 (61.5)	2 (2.6)	3 (3.8)	25 (32.1)
	Skärholmens ÖNH-centrum	242 (45.2)	0	293 (54.8)	0
	Sophiahemmet	433 (57.5)	19 (2.5)	91 (12.1)	210 (27.9)
	Södertälje sjukhus	45 (44.1)	8 (7.8)	9 (8.8)	40 (39.2)
	Öron-, Näs- och Halskliniken, Södermalms läkarhus	97 (42.7)	14 (6.2)	12 (5.3)	104 (45.8)
	Öron-, Näs- och Hals, Strandkliniken	39 (32.0)	16 (13.1)	14 (11.5)	53 (43.4)
	Öron-, Näs- och Halscenter Jakobsberg	40 (39.2)	7 (6.9)	17 (16.7)	38 (37.3)
Uppsala-Örebro sjukvårdsregion	Akademiska sjukhuset	164 (49.7)	22 (6.7)	17 (5.2)	127 (38.5)
	Capio Läkargruppen, Örebro	64 (50.8)	0	62 (49.2)	0
	Elisabethsjukhuset Aleris	37 (34.6)	14 (13.1)	1 (0.9)	55 (51.4)
	Karlskoga lasarett	20 (48.8)	11 (26.8)	3 (7.3)	7 (17.1)
	Lindesbergs lasarett	46 (61.3)	5 (6.7)	8 (10.7)	16 (21.3)
	Universitetssjukhuset Örebro	31 (39.7)	10 (12.8)	5 (6.4)	32 (41.0)
Västerbottens läns landsting	Norrlands Universitetssjukhus	84 (27.7)	63 (20.8)	17 (5.6)	139 (45.9)
Västra Götalandsregionen	Capio Lundby Sjukhus	97 (46.2)	8 (3.8)	22 (10.5)	83 (39.5)
	Frölunda Specialistsjukhus	67 (55.4)	7 (5.8)	22 (18.2)	25 (20.7)
	NU-sjukvården, Trollhättan	152 (49.0)	27 (8.7)	46 (14.8)	85 (27.4)
	Sahlgrenska Universitetssjukhuset	184 (43.0)	22 (5.1)	43 (10.0)	179 (41.8)
	Skaraborgs sjukhus	131 (59.8)	11 (5.0)	31 (14.2)	46 (21.0)
	Södra Älvsborgs Sjukhus	156 (46.4)	37 (11.0)	50 (14.9)	93 (27.7)

Table 9. Surgical techniques used for removal of tonsillar tissue in 2013.

County council	Hospital	Cold steel Numbers (%)	Diathermy scissors Numbers (%)	Ultracision Numbers (%)	Radio-frequency Numbers (%)	Laser Numbers (%)	Other Numbers (%)
Total for Sweden		4565 (40.6)	1828 (16.2)	208 (1.8)	4796 (42.6)	9 (0.1)	5 (0.0)
Hallands läns landsting	Halmstad sjukhus	182 (52.8)	0	0	163 (47.2)	0	0
Jämtlands läns landsting	Östersunds sjukhus	52 (40.9)	3 (2.4)	0	72 (56.7)	0	0
Landstinget Blekinge	Blekingesjukhuset	74 (58.7)	0	0	56 (44.4)	0	0
Landstinget Dalarna	Falu Lasarett	230 (64.6)	0	0	129 (36.2)	0	0
Landstinget Gävleborg	Gävle sjukhus	105 (51.0)	1 (0.5)	0	108 (52.4)	0	0
	Hudiksvalls sjukhus	41 (24.1)	10 (5.9)	0	125 (73.5)	0	0
Landstinget Kronoberg	Ljungby lasarett	31 (91.2)	0	0	3 (8.8)	0	0
Landstinget Västernorrland	Länssjukhuset i Sundsvall	106 (64.2)	0	0	59 (35.8)	0	0
	Sollefteå sjukhus	35 (85.4)	0	0	39 (95.1)	0	0
	Örnsköldsviks sjukhus	5 (11.9)	0	0	38 (90.5)	0	0
Landstinget Västmanland	Västmanlands sjukhus, Västerås	6 (1.8)	135 (40.3)	195 (58.2)	0	0	0
Landstinget i Jönköpings län	Höglandssjukhuset Eksjö	10 (10.0)	0	0	90 (90.0)	0	0
	Länssjukhuset Ryhov, Jönköping	180 (50.4)	0	0	178 (49.9)	0	0
	Värnamo sjukhus	0	0	0	52 (100)	0	0
Landstinget i Kalmar län	Länssjukhuset i Kalmar	73 (43.5)	1 (0.6)	0	95 (56.5)	0	0
	Västerviks sjukhus	39 (59.1)	0	0	31 (47.0)	0	0
Landstinget i Sörmland	Sörmland ÖNH	59 (39.1)	0	2 (1.3)	94 (62.3)	0	1 (0.7)
Landstinget i Värmland	Centralsjukhuset i Karlstad	185 (58.2)	11 (3.5)	0	130 (40.9)	0	0
Landstinget i Östergötland	Vrinnevisjukhuset i Norrköping	224 (57.7)	0	1 (0.3)	163 (42.0)	0	0
Norrbottnens läns landsting	Norrbottnens läns Landsting	19 (5.8)	101 (30.8)	0	209 (63.7)	0	3 (0.9)
Region Gotland	Visby lasarett	18 (40.9)	14 (31.8)	1 (2.3)	11 (25.0)	0	0
Region Skåne	Centralsjukhuset Kristianstad	158 (37.0)	1 (0.2)	4 (0.9)	266 (62.3)	0	0
	Helsingborgs lasarett	115 (46.0)	0	0	135 (54.0)	0	0
	Lasarettet Trelleborg	136 (56.7)	5 (2.1)	0	101 (42.1)	0	0
	Lasarettet i Landskrona	6 (5.1)	0	0	112 (95.7)	0	0
	Lasarettet i Ystad	177 (42.5)	5 (1.2)	0	235 (56.5)	0	0
	Skåne Universitetssjukhus, Malmö	11 (78.6)	0	0	3 (21.4)	0	0
	Ängelholms sjukhus	48 (37.2)	1 (0.8)	0	83 (64.3)	0	0

The table continues on the next page

Table 9. Surgical techniques used for removal of tonsillar tissue in 2013.

County council	Hospital	Cold steel Numbers (%)	Diathermy scissors Numbers (%)	Ultracision Numbers (%)	Radio-frequency Numbers (%)	Laser Numbers (%)	Other Numbers (%)	
Stockholms läns landsting	Aleris Handen	0	7 (53.8)	0	6 (46.2)	0	0	
	Aleris Nacka	5 (6.5)	33 (42.9)	0	39 (50.6)	0	0	
	Aleris Sabbatsberg	5 (1.3)	212 (53.1)	2 (0.5)	181 (45.4)	0	0	
	Capio Öron Näs Hals Globen	0	94 (100)	0	0	0	0	
	Karolinska Universitetssjukhuset	326 (59.0)	31 (5.6)	2 (0.4)	197 (35.6)	1 (0.2)	0	
	Serafimerlasarettet	51 (65.4)	0	0	27 (34.6)	0	0	
	Skärholmens ÖNH-centrum	534 (99.8)	1 (0.2)	0	0	0	0	
	Sophiahemmet	1 (0.1)	746 (99.1)	0	7 (0.9)	0	0	
	Södertälje sjukhus	1 (1.0)	52 (51.0)	0	50 (49.0)	1 (1.0)	0	
	Öron-, Näs- och Hals, Strandkliniken	0	122 (100)	0	0	0	0	
	Öron-, Näs- och Halskliniken, Södermalms läkarhus	0	0	0	227 (100)	0	0	
	Öron-, Näs- och Halscenter Jakobsberg	53 (52.0)	0	0	49 (48.0)	0	0	
	Uppsala-Örebro sjukvårdsregion	Akademiska sjukhuset	54 (16.4)	142 (43.0)	0	151 (45.8)	1 (0.3)	0
		Capio Läkargruppen, Örebro	126 (100)	0	0	0	0	0
Elisabethsjukhuset Aleris		0	38 (35.5)	0	69 (64.5)	0	0	
Karlskoga lasarett		23 (56.1)	5 (12.2)	0	15 (36.6)	0	0	
Lindesbergs lasarett		56 (74.7)	0	0	21 (28.0)	0	0	
Universitetssjukhuset Örebro		39 (50.0)	0	0	41 (52.6)	0	0	
Västerbottens läns landsting	Norrlands Universitetssjukhus	67 (22.1)	0	0	240 (79.2)	0	0	
Västra Götalandsregionen	Capio Lundby Sjukhus	84 (40.0)	0	0	126 (60.0)	0	0	
	Frölunda Specialistsjukhus	37 (30.6)	0	0	84 (69.4)	0	0	
	NU-sjukvården, Trollhättan	216 (69.7)	0	0	105 (33.9)	0	0	
	Sahlgrenska Universitetssjukhuset	221 (51.6)	19 (4.4)	1 (0.2)	198 (46.3)	6 (1.4)	0	
	Skaraborgs sjukhus	163 (74.4)	2 (0.9)	0	54 (24.7)	0	0	
	Södra Älvsborgs Sjukhus	178 (53.0)	36 (10.7)	0	129 (38.4)	0	1 (0.3)	

Table 10. Techniques used for haemostasis after removal of tonsillar tissue.

County council	Hospital	Infiltration anesthesia Numbers (%)	Unipolar diathermy Numbers (%)	Bipolar diathermy Numbers (%)	Laser Numbers (%)	Ligature Numbers (%)	Suture ligature Numbers (%)	Radio- frequency Numbers (%)	Nothing Numbers (%)	Other Numbers (%)
Total for Sweden		1665 (14.8)	216 (1.9)	7147 (63.6)	3 (0.0)	184 (1.6)	148 (1.3)	6 (0.1)	2508 (22.3)	1087 (9.7)
Hallands läns landsting	Halmstad sjukhus	3 (0.9)	0	182 (52.8)	0	0	0	0	157 (45.5)	8 (2.3)
Jämtlands läns landsting	Östersunds sjukhus	1 (0.8)	3 (2.4)	54 (42.5)	0	0	0	0	65 (51.2)	6 (4.7)
Landstinget Blekinge	Blekingesjukhuset	0	8 (6.3)	99 (78.6)	0	1 (0.8)	0	0	1 (0.8)	19 (15.1)
Landstinget Dalarna	Falu Lasarett	8 (2.2)	12 (3.4)	280 (78.7)	1 (0.3)	0	0	0	51 (14.3)	16 (4.5)
Landstinget Gävleborg	Gävle sjukhus	72 (35.0)	2 (1.0)	95 (46.1)	0	1 (0.5)	0	0	44 (21.4)	31 (15.0)
	Hudiksvalls sjukhus	0	0	64 (37.6)	0	11 (6.5)	1 (0.6)	0	3 (1.8)	106 (62.4)
Landstinget Kronoberg	Ljungby lasarett	5 (14.7)	6 (17.6)	3 (8.8)	0	0	0	0	23 (67.6)	0
Landstinget Väster-norrland	Länssjukhuset i Sundsvall	4 (2.4)	5 (3.0)	147 (89.1)	0	0	0	0	12 (7.3)	1 (0.6)
	Sollefteå sjukhus	41 (100)	0	37 (90.2)	0	1 (2.4)	0	0	0	0
	Örnsköldsviks sjukhus	2 (4.8)	0	19 (45.2)	0	0	0	1 (2.4)	13 (31.0)	10 (23.8)
Landstinget Västmanland	Västmanlands sjukhus, Västerås	0	0	214 (63.9)	0	0	0	0	91 (27.2)	30 (9.0)
Landstinget i Jönköpings län	Höglandssjukhuset Eksjö	0	0	19 (19.2)	0	1 (1.0)	0	3 (3.0)	0	77 (77.8)
	Länssjukhuset Ryhov, Jönköping	17 (4.8)	2 (0.6)	275 (77.0)	0	3 (0.8)	3 (0.8)	0	74 (20.7)	2 (0.6)
	Värnamo sjukhus	0	0	47 (90.4)	0	0	0	0	5 (9.6)	0
Landstinget i Kalmar län	Länssjukhuset i Kalmar	14 (8.3)	0	100 (59.5)	0	0	0	0	53 (31.5)	2 (1.2)
	Västerviks sjukhus	2 (3.0)	7 (10.6)	39 (59.1)	0	0	0	0	4 (6.1)	23 (34.8)
Landstinget i Sörmland	Sörmland ÖNH	3 (2.0)	1 (0.7)	73 (48.3)	0	1 (0.7)	1 (0.7)	0	62 (41.1)	17 (11.3)
Landstinget i Värmland	Centralsjukhuset i Karlstad	146 (46.3)	0	277 (87.9)	0	10 (3.2)	15 (4.8)	0	19 (6.0)	1 (0.3)
Landstinget i Östergötland	Vrinnevisjukhuset i Norrköping	34 (8.8)	0	227 (58.5)	0	0	1 (0.3)	0	135 (34.8)	21 (5.4)
Norrbottnens läns landsting	Norrbottnens läns landsting	0	0	291 (88.7)	0	0	0	0	7 (2.1)	32 (9.8)
Region Gotland	Visby lasarett	6 (13.6)	2 (4.5)	38 (86.4)	0	0	0	0	0	0
Region Skåne	Centralsjukhuset Kristianstad	0	11 (2.6)	227 (53.3)	0	5 (1.2)	0	0	159 (37.3)	37 (8.7)
	Helsingborgs lasarett	11 (4.4)	2 (0.8)	188 (75.2)	0	0	0	0	48 (19.2)	40 (16.0)
	Lasarettet Trelleborg	61 (25.4)	1 (0.4)	166 (69.2)	0	4 (1.7)	0	0	41 (17.1)	10 (4.2)
	Lasarettet i Landskrona	1 (0.9)	3 (2.6)	115 (98.3)	0	0	0	0	0	0
	Lasarettet i Ystad	41 (9.9)	7 (1.7)	134 (32.2)	0	44 (10.6)	121 (29.1)	2 (0.5)	59 (14.2)	119 (28.6)
	Skåne Universitets-sjukhus, Malmö	11 (78.6)	0	12 (85.7)	0	0	0	0	1 (7.1)	0
	Ängelholms sjukhus	13 (10.1)	2 (1.6)	104 (80.6)	0	0	0	0	21 (16.3)	2 (1.6)

The table continues on the next page

Table 10. Techniques used for haemostasis after removal of tonsillar tissue.

County council	Hospital	Infiltration anesthesia Numbers (%)	Unipolar diathermy Numbers (%)	Bipolar diathermy Numbers (%)	Laser Numbers (%)	Ligature Numbers (%)	Suture ligature Numbers (%)	Radio- frequency Numbers (%)	Nothing Numbers (%)	Other Numbers (%)
Stockholms läns landsting	Aleris Handen	0	0	6 (46.2)	0	0	0	0	7 (53.8)	0
	Aleris Nacka	0	7 (9.1)	36 (46.8)	0	0	0	0	30 (39.0)	4 (5.2)
	Aleris Sabbatsberg	0	11 (2.8)	115 (28.8)	0	0	0	0	145 (36.3)	129 (32.3)
	Capio Öron Näs Hals Globen	0	53 (56.4)	21 (22.3)	0	0	0	0	20 (21.3)	0
	Karolinska Universitetssjukhuset	11 (2.0)	35 (6.3)	323 (58.4)	0	8 (1.4)	0	0	149 (26.9)	56 (10.1)
	Serafimerlasarettet	51 (65.4)	2 (2.6)	71 (91.0)	0	1 (1.3)	0	0	0	0
	Skärholmens ÖNH-centrum	0	0	51 (9.5)	0	81 (15.1)	0	0	415 (77.6)	5 (0.9)
	Sophiahemmet	0	8 (1.1)	743 (98.7)	0	0	0	0	5 (0.7)	4 (0.5)
	Södertälje sjukhus	0	2 (2.0)	40 (39.2)	0	0	0	0	60 (58.8)	0
	Öron-, Näs- och Hals, Strandkliniken	0	0	121 (99.2)	1 (0.8)	0	0	0	0	0
	Öron-, Näs- och Hals-kliniken, Södermalms läkarhus	0	0	2 (0.9)	0	0	0	0	99 (43.6)	126 (55.5)
	Öron-, Näs- och Hals-center Jakobsberg	0	1 (1.0)	24 (23.5)	0	0	0	0	77 (75.5)	0
	Uppsala-Örebro sjukvårdsregion	Akademiska sjukhuset	181 (55.0)	2 (0.6)	300 (91.2)	0	4 (1.2)	5 (1.5)	0	5 (1.5)
Capio Läkargruppen, Örebro		0	0	95 (75.4)	1 (0.8)	7 (5.6)	0	0	20 (15.9)	3 (2.4)
Elisabethsjukhuset Aleris		107 (100)	0	103 (96.3)	0	0	0	0	0	0
Karlskoga lasarett		1 (2.4)	0	41 (100)	0	0	0	0	0	0
Lindesbergs lasarett		1 (1.3)	0	73 (97.3)	0	0	1 (1.3)	0	1 (1.3)	0
Universitetssjukhuset Örebro		1 (1.3)	0	69 (88.5)	0	0	0	0	4 (5.1)	5 (6.4)
Västerbottnens läns landsting	Norrlands Universitetssjukhus	0	0	162 (53.5)	0	0	0	0	80 (26.4)	63 (20.8)
Västra Götaland-regionen	Capio Lundby Sjukhus	36 (17.1)	9 (4.3)	110 (52.4)	0	0	0	0	73 (34.8)	2 (1.0)
	Frölunda Specialist-sjukhus	30 (24.8)	0	38 (31.4)	0	0	0	0	46 (38.0)	35 (28.9)
	NU-sjukvården, Trollhättan	243 (78.9)	6 (1.9)	283 (91.9)	0	0	0	0	0	1 (0.3)
	Sahlgrenska Universitetssjukhuset	298 (69.6)	2 (0.5)	378 (88.3)	0	0	0	0	14 (3.3)	5 (1.2)
	Skaraborgs sjukhus	7 (3.2)	0	134 (61.2)	0	0	0	0	79 (36.1)	7 (3.2)
	Södra Älvsborgs Sjukhus	202 (60.1)	4 (1.2)	282 (83.9)	0	1 (0.3)	0	0	31 (9.2)	7 (2.1)

Benefit of tonsil surgery

The quality register measures the patient's assessment of the benefit of surgery. This is obtained by asking the patient to answer a questionnaire six months after surgery and assess the degree of freedom from symptoms, see the questionnaires on page 60.

The patient's perception of freedom from symptoms can be based on a range of factors, apart from the actual surgery, which are not measured in the quality register. It is reasonable to suppose that there is a link between the degree of freedom from symptoms and the problems the patient experienced prior to surgery, but the results can also be impacted by the application of the indications for tonsil surgery, any complications after surgery and the information the patient was given before and after surgery.

The benefit of tonsil surgery has been reported every year in the ENT quality register's annual reports. In the past few years, the percentage of patients answering "My symptoms are gone" or "My symptoms are almost gone" has remained stable at around 96%. The differences between clinics have been small (91–100%), with no statistically or clinical significant differences.

This year, we have chosen to present "The benefit of tonsil surgery" divided between indications at national level. The indications of recurrent tonsillitis and chronic tonsillitis have been combined. When it comes to respiratory obstruction/snoring/tonsillar hypertrophy, tonsillotomy and tonsillectomy are reported separately. Not unexpectedly, the patients who have undergone surgery for peritonsillitis report very large freedom from symptoms. The degree of freedom from symptoms is also very large for other infection-related indications. The lowest percentage of patients with freedom from symptoms can be found in the group undergoing surgery for "Other symptoms". Small differences in freedom from symptoms can be seen in the obstruction group, depending on whether tonsillectomy or tonsillotomy was performed.

At clinic level, the data have been gathered together for the entire tonsil surgery group, as the low response frequency does not permit the presentation of subgroups. We recommend that all clinics should compare their figures with the national average. A percentage of satisfied patients that is smaller than the national average should result in a more in-depth local analysis.

Figure 3. Proportion of symptom relief related to indication for tonsil surgery.

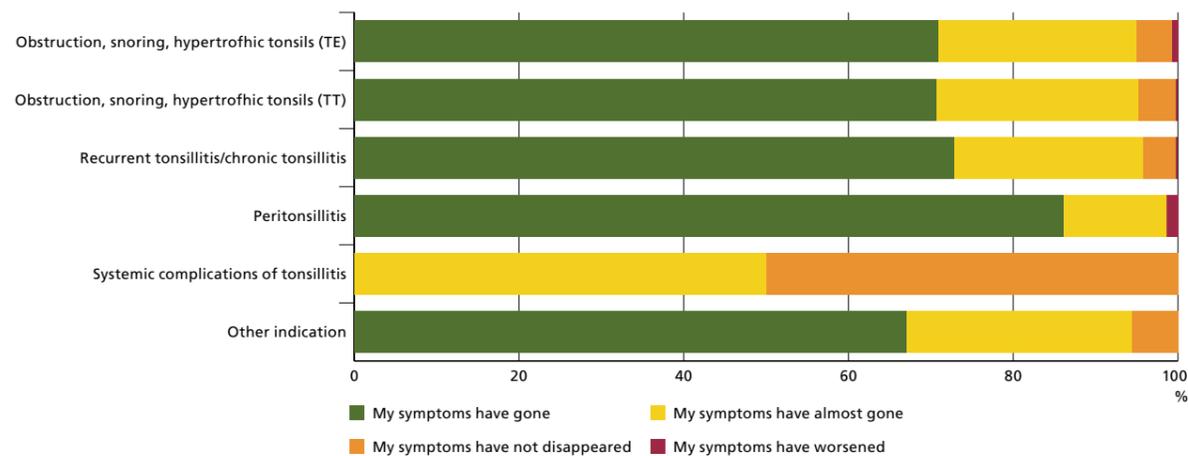
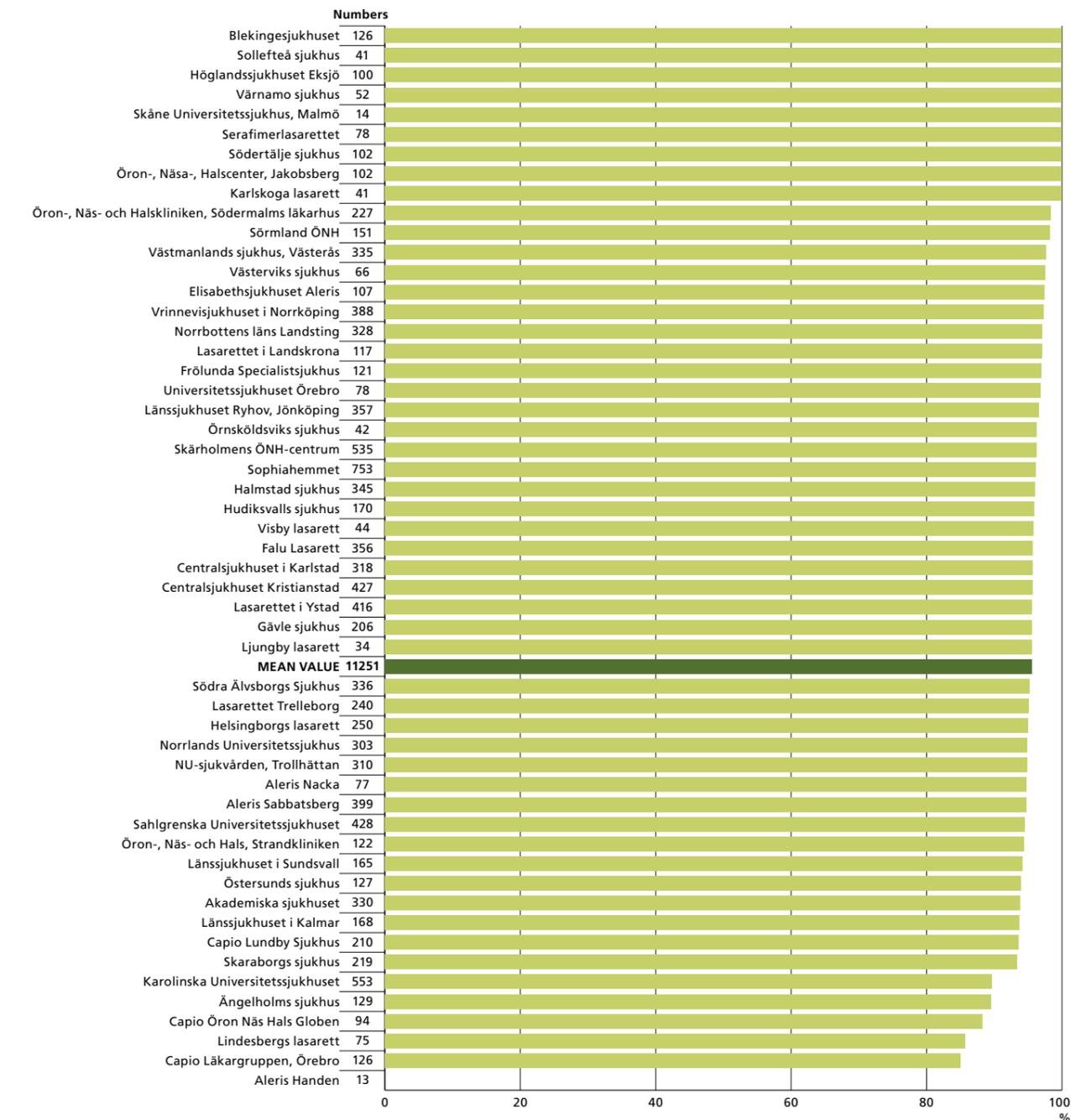


Figure 4. Proportion of patients reporting "My symptoms are gone" or "My symptoms have almost gone" six months after tonsil surgery. The results are from surgeries performed in 2013.



Questionnaires in the Swedish Tonsil Surgery Register

Data for the quality register are collected using four questionnaires. The first two are completed by the medical profession. They contain information on indications, information regarding daycare/hospitalisation, surgical method (such as tonsillectomy) and surgical technique (such as cold steel) and technique used for haemostasis.

Patients are asked to complete two questionnaires. The first is despatched 30 days postoperatively and it identifies any haemorrhage, pain and infection. This questionnaire also asks whether the information the patient was given matched his/her experience. The second questionnaire is despatched six months after surgery and identifies the degree of freedom from symptoms. These patient questionnaires should be despatched in the form of a web link via e-mail to reduce administration. It is therefore important that patients are asked to enter their e-mail addresses on the first questionnaire.

TONSIL SURGERY PRE-OP SURGERY FORM To be completed by the surgeon

Patient name: Date of birth:
 E-mail:
 Date:

Main Indication (only one selection)

- Airway obstruction / snoring / hypertrophic tonsils
- Recurrent tonsillitis
- Quinsy
- Chronic tonsillitis
- Complication to tonsillitis
- Other:

Secondary Indikation (only one selection)

- Airway obstruction / snoring / hypertrophic tonsils
- Recurrent tonsillitis
- Quinsy
- Chronic tonsillitis
- Complication to tonsillitis
- Other:

Doctor's Name:

TONSIL SURGERY POST SURGERY FORM To be completed by the surgeon

Patient Name: Date of Birth:
 Date:

Date of Surgery:
 Surgical unit Day Surgery Day surgery converted to admission, reason:
 Overnight surgery
 Overnight surgery with extended admission, reason:

Type of Surgery Primary Surgery Revision surgery
 Tonsillectomy only
 Tonsillectomy and adenoidectomy
 Tonsillotomy only
 Tonsillotomy and adenoidectomy

Surgical Technique
 Cold steel
 Radiofrequency
 Diathermy scissor
 Ultracision
 Laser
 Other:

Technique for Haemostasis
 (in addition to compression)
 Injection with LA and adrenalin
 Unipolar diathermy
 Bipolar diathermy
 Laser
 Tie
 Suture tie
 Radiofrequency
 None
 Other:

Primary haemorrhage of tonsil beds requiring intervention (transfusion, surgery, pharmacotherapy) Without complication

Doctor's Name:

PATIENT QUESTIONNAIRE Answered by patient or caregiver 30 days postoperatively

Tonsil surgery was performed on you or your child about 30 days ago. In order to improve the quality of the health services it is important to know if any complications have occurred after the surgery. We appreciate your answer also when everything has been uncomplicated. If you are a caregiver we would like you to try to answer the questions as you believe your child would have answered.

Patient name: Date of birth:
 E-mail: Date:

You who fill in the questionnaire is the operated caregiver / other

Have you contacted health services because of bleeding from the throat? Yes No
 If yes – how many days after the operation?

Have you been admitted to hospital due to bleeding from the throat? Yes No
 If yes – what hospital were you admitted to?

Was there any infection within 30 days of the operations? Yes No
 If yes – what kind of infection?

Did you contact health services due to the infection? Yes No
 Did you receive antibiotics due to the infection? Yes No

Have you contacted health services due to pain after the operation? Yes No

How many days after the operation did you take pain killers?

How many days after the operation did you start eating regular food?

Has the information you received preoperatively been in accordance with your experiences of the operation and postoperative period? Yes No
 If no – what was not correct?

Have you used the web site www.tonsilloperation.se? Yes No

PATIENT QUESTIONNAIRE Answered by patient or caregiver 6 months postoperatively

Tonsil surgery was performed on you or your child about 6 months ago. In order to improve the quality of the health services it is important to receive information on how your or your child's symptoms have changed after the surgery. If you are a caregiver we would like you to try to answer the questions as you believe your child would have answered.

Patient name: Date of birth:
 Date:

You who fill in the questionnaire is the operated caregiver / other

Check the square that best corresponds to your or your child's situation:

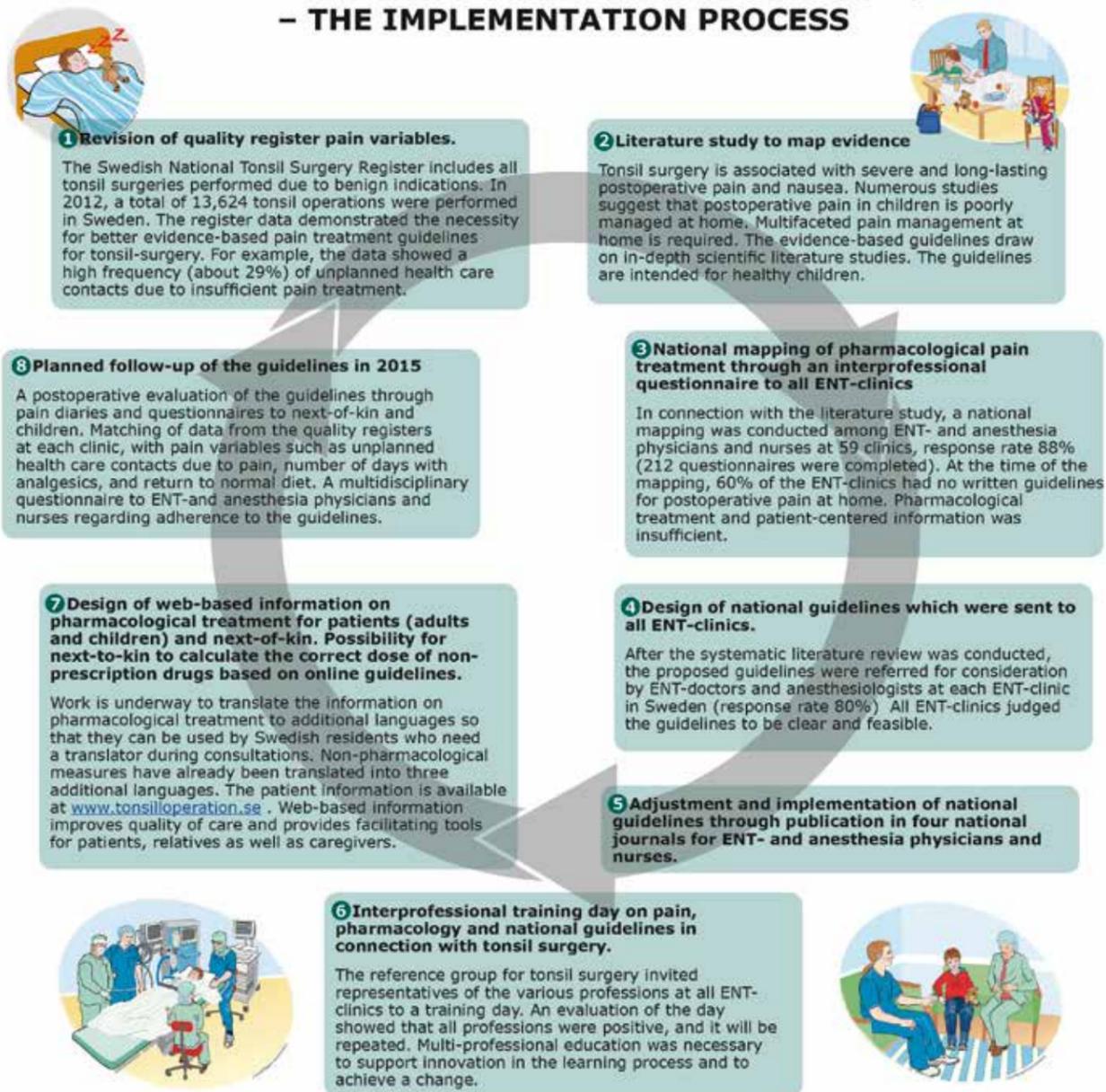
- The symptoms are gone
- The symptoms are almost gone
- The symptoms remain
- The symptoms have increased

Have any new symptoms appeared? Yes No

If yes, what symptoms?

Comments:

NATIONAL GUIDELINES FOR PHARMACOLOGICAL TREATMENT IN CHILDREN AFTER TONSIL-SURGERY – THE IMPLEMENTATION PROCESS



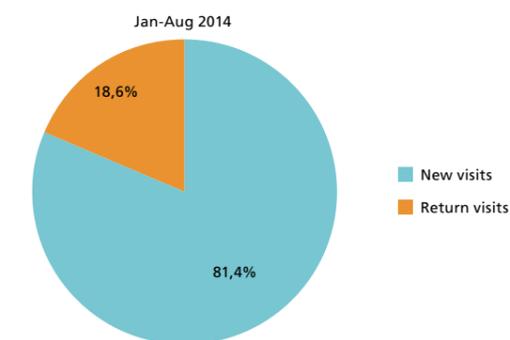
www.tonsilloperation.se

www.tonsilloperation was launched in May 2012 with information for patients undergoing tonsil surgery. The information on this website has been collated following a systematic review of information material from all ENT clinics, literature studies and interviews with children undergoing tonsil surgery (and their parents). On this website, there is information aimed at children, including a story with a narrator and illustrations, as well as information for caregivers and adult patients. The texts on the website were translated into English, Spanish and Arabic at the beginning of 2014. The stories have also been translated into English.

At the beginning of 2014, the website was developed to include information for patients relating to postoperative pain relief. This is a unique tool, as it is possible to use the website to obtain individualised dosage tables (see below).

Use of the www.tonsilloperation.se website has continued to increase from around 500 visitors/month in the autumn of 2012 to 8,000 visitors/month in August 2014 (Figure 5). On average, the website has been visited 300 times a day in 2014. Until August 2014, it had been visited 50,000 times, of which 41,000 were “new visits” (Figure 6). About half the visitors are outside Sweden. The website was translated into several languages to increase its availability to patients who do not speak Swedish. As a result, this website is now used all over the world and Saudi Arabia is the country with most users besides Sweden.

Figure 6. Percentage of new visits and return visits

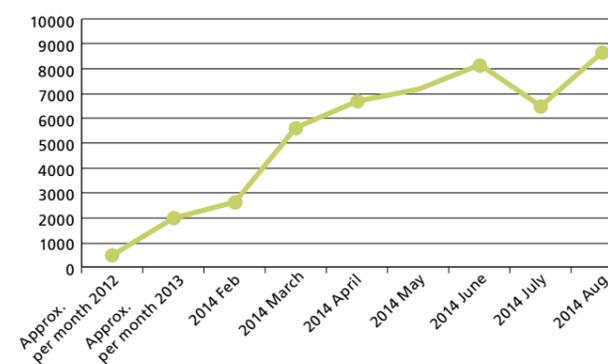


Eighty-one per cent found the website via Google, 16% went to the website directly and some 2% were linked via 1177 (the national healthcare's trusted medical information on the internet). In the vast majority of cases (90%), the information used was aimed at children and caregivers, while the remaining visitors used information aimed at adults.

We can see that a large percentage of the patients undergoing tonsil surgery use the website. In the 30-day questionnaire, in 2013, 35% said that they had “consulted www.tonsilloperation.se”. For the period Jan-Aug 2014, the corresponding figure was 44%.

The website has been adapted for use on smartphones and tablets. An analysis of the type of unit that has been used to visit the website reveals that 57% have used smartphones, 33% computers and 9% tablets (2014).

Figure 5. Number of visits to www.tonsilloperation.se in 2012–2014



The website also gives advice on pharmacological pain relief for children. A caregiver can read about pain relief, pain assessment and pain assessment scales that can be used at home. The recommended treatment with OTC drugs (COX inhibitors and paracetamol) is described, together with possible restrictions and side-effects. On the website, a caregiver can calculate dosages according to a child's weight. The recommended treatment period and reduction of the drug dosage are made clear. The website also informs readers to contact the health-care service in the event of major difficulty consuming fluid. All the information and the dosage schedule can be downloaded as a PDF file for printing. The PDF file is designed in such a way that caregivers can see a dosage table (Figure 7) based on the choices they have made.

The reference group recommends that there should be a link to www.tonsilloperation.se on ENT clinic information sheets.

Figure 7. Example of part of the dosage schedule caregivers can obtain from tonsilloperation.se when calculating OTC drugs according to guidelines on the basis of the choices they have made

Example of dosage schedule: The caregiver has indicated that the child is healthy, has no allergy, underwent surgery on 9 September, weighs 20 kg and that COX inhibitors, ibuprofen (alternative choice diclofenac) and a preparation of paracetamol (mixture) and COX inhibitors (suppositories) were chosen.

Drug	Days 1–3	Days 4–8
If the date of surgery was changed, please complete again!	9 September 2014-11 September 2014	12 September 2014-16 September 2014
Ibuprofen	1 tablet 4 times a day	1 tablet 4 times a day
	Suppositories 125 mg	Suppositories 125 mg
Paracetamol	20 ml 4 times a day	15 ml 4 gånger per dag
	Mixture 24 mg/ml	Mixture 24 mg/ml

IMPORTANT

- The recommended doses in the table are higher than the amounts on the drug packaging. These doses should **ONLY** be given if **YOUR CHILD IS ABLE TO DRINK LARGE QUANTITIES**.
- Contact the health-care service if your child has major problems consuming fluid and is experiencing pain in spite of the regular intake of the recommended medication.
- Contact the health-care service **IMMEDIATELY** in the event of any haemorrhage in the throat.

Visiting clinics

Following our excellent experience from 2012, the reference group for tonsil surgery, represented by Joacim Stalfors and Lotta Hessén Söderman, made a number of visits to clinics in 2013 and during the spring of 2014.

The aim of these visits was to make personal contact with clinic directors and physicians and secretaries responsible for the register, to answer questions, validate data by taking random samples from registrations and compare them with data from medical notes. In conjunction with these visits, we also offered lectures, which we sometimes held for the physicians and sometimes for all the staff. In Jönköping and Halmstad, we took part in a complete quality day. We were also able to attend operations and see how the physicians used their techniques. Prior to each clinic visit, we helped to produce the data for the clinic in question and, at a number of clinics, extremely positive results from improvement programmes have been presented.

The clinics we visited in 2013 and during the spring of 2014 were:

Falun
 Karlskrona
 Västerås
 Kalmar
 Sahlgrenska
 Örebro
 Karlstad
 Jönköping
 Sophiahemmet
 Skärholmen
 Ängelholm
 Trelleborg
 Kristianstad + Ystad via videoconference
 Helsingborg

In overall terms, we were given an excellent reception and top-class care and we hope to be able to continue these visits. We shall soon have visited all the high-volume clinics and we eventually plan to offer return visits, if an improvement programme has been run and help is needed with feedback, for example. We should like to take this opportunity to offer you the chance to contact the reference group via joacim@stalfors.se if you are interested in a visit!



Dr Anna-Lena Roos is performing tonsillectomy with radiofrequency at Sahlgrenska University Hospital.

Reference group for tonsil surgery

The reference group for tonsil surgery has been tasked by the Swedish association for otorhinolaryngology and head and throat surgery to manage, develop and provide feedback on the Swedish Tonsil Surgery Register. The register is funded by the Swedish Association of Local Authorities and Regions.

The members of the reference group are:

Register Director **Joacim Stalfors**, senior consultant, MD, associate professor, ENT Clinic, Sahlgrenska University Hospital, Gothenburg (joacim.stalfors@vgregion.se)

Elisabeth Ericsson, RSN, university lecturer, associate professor, Institute of Health Science and Medicine, Örebro University

Claes Hemlin, senior consultant, MD, Ph.D, Sollentuna sjukhus, Stockholm

Anne-Charlotte Hessén Söderman, senior consultant, MD, Ph.D, Aleris specialist care, Sabbatsberg Hospital, Stockholm

Erik Odhagen, senior consultant, MD, Ph.D student, ENT Clinic, Sahlgrenska University Hospital, Gothenburg

Ola Sunnergren, senior consultant, MD, Ph.D, ENT Clinic, Ryhov County Hospital, Jönköping



Left to right: Lotta Hessén Söderman, Ola Sunnergren, Joacim Stalfors, Elisabeth Ericsson, Claes Hemlin and Erik Odhagen

Publications

Articles in peer-reviewed journals

1. Mortality after tonsil surgery, a population study, covering 8 years and 82 527 operations in Sweden. Östvoll E, Hemlin C, Ericsson E, Hultcrantz E, Odhagen E, Sunnergren O, Stalfors J. Accepted for publication in *European Archives of Oto-Rhino-Laryngology and Head & Neck* 23 Sept 2014.
2. Radiofrequency tonsillotomy in Sweden 2009-2012. Sunnergren O, Hemlin C, Ericsson E, Hessén Söderman AC, Hultcrantz E, Odhagen E, Stalfors J. *Eur Arch Otorhinolaryngol.* 2014;271:1823-1827.
3. Paradigm shift in Sweden from tonsillectomy to tonsillotomy for children with upper airway obstructive symptoms due to tonsillar hypertrophy. Hultcrantz E, Ericsson E, Hemlin C, Hessén Söderman AC, Roos K, Sunnergren O, Stalfors J. *Eur Arch Otorhinolaryngol.* 2013;270:2531-2536.
4. Factors influencing the indication for tonsillectomy: a historical overview and current concepts. Hultcrantz E, Ericsson E. *ORL J Otorhinolaryngol Relat Spec.* 2013;75:3:184-191.
5. Tonsil surgery efficiently relieves symptoms: analysis of 54 696 patients in the National Tonsil Surgery Register in Sweden. Stalfors J, Ericsson E, Hemlin C, Hultcrantz E, Månsson I, Roos K, Hessén Söderman AC. *Acta Oto-Laryngologica* 2012;132:533-539.
6. Reduced risk of primary postoperative hemorrhage after tonsil surgery in Sweden: results from the National Tonsil Surgery Register in Sweden covering more than 10 years and 54,696 operations Hessén Söderman AC, Ericsson E, Hemlin C, Hultcrantz E, Månsson I, Roos K, Stalfors J. *The Laryngoscope* 2011;121:2322-2326.

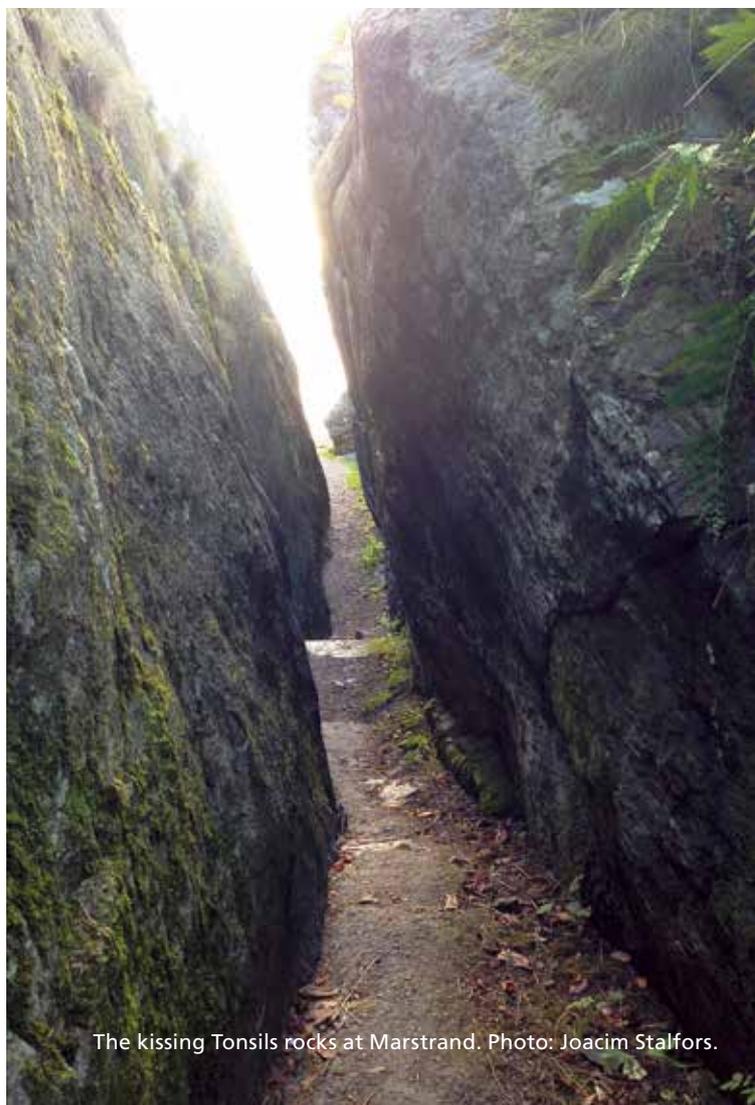
Articles in Swedish or international specialist press

1. Nationella riktlinjer för farmakologisk behandling av smärta och illamående i samband med tonsillotomi och tonsillektomi på barn och ungdomar (<18år). Ericsson E, Lundeberg S, Brattwall M, Stalfors J, Hemlin C, Hessén Söderman AC, Sunnergren O, Hultcrantz E, Odhagen E. *Smärta* 2014;1:20-21.
2. Nationell kartläggning av farmakologiska rutiner och information i samband med tonsilloperation. Andersson E, Kroon A, Ericsson E. *Smärta* 2014;1:18-19.
3. Processen med utformning av nationella farmakologiska riktlinjer i samband med tonsilloperation. Ericsson E. *Smärta* 2014;1: 19.
4. Farmakologisk behandling av smärta och illamående i samband med tonsilloperation på barn och ungdomar (<18 år). Brattwall M, Lundeberg S, Ericsson E. (Läkartidningen accepterad, planerad publicering höst 2014).
5. Farmakologisk behandling av smärta och illamående i samband med tonsillotomi och tonsillektomi på barn och ungdomar (<18år). Ericsson E, Brattwall M, Lundeberg S. *Svensk ÖNH-Tidskrift* 2013;3:18-23.
6. Nationella riktlinjer för farmakologisk behandling av smärta och illamående i samband med tonsillotomi och tonsillektomi på barn och ungdomar (<18år). Ericsson E, Lundeberg S, Brattwall M, Stalfors J, Hemlin C, Hessén Söderman AC, Sunnergren O, Hultcrantz E, Odhagen E. *Ventilen* 2013;4:18-19.
7. Processen med utformning av nationella farmakologiska riktlinjer i samband med tonsilloperation. Ericsson E. *Ventilen* 2013;4:17.
8. Nationell kartläggning av farmakologiska rutiner och information i samband med tonsilloperation. Andersson E, Kroon A, Ericsson E. *Ventilen* 2013;4:16-17.
9. Processen med utformning av nationella farmakologiska riktlinjer i samband med tonsilloperation. Ericsson E. *SFAI-tidningen* 2013;19:252-253.

10. Farmakologisk behandling av smärta och illamående I samband med tonsillotomi och tonsillektomi på barn och ungdomar (<18år). Ericsson E, Brattwall M, Lundeberg S. SFAI- tidningen 2013;19:248-251.
11. Patientsäkerhetsarbete med data från Nationell kvalitetsregister för tonsilloperation. Stalfors J, Ericsson E, Hemlin C, Hessén Söderman AC, Hultcrantz E, Odhagen E, Roos K, Sunnergren O. Svensk ÖNH-tidskrift 2012;19:16-17.
12. Varför registrera i nationellt kvalitetsregister för tonsilloperation? Stalfors J, Roos K, Hemlin C, Ericsson E, Hultcrantz E, Hessén Söderman AC. Svensk ÖNH-tidskrift 2011;18:26-27.
13. Svenskt tonsilloperationsregister. -Vad kan 11 års registrering lära oss om OSAS hos barn? Stalfors J. Svensk ÖNH-tidskrift 2009;16:26-27.
14. Teknik vid tonsillkirurgi hos barn med SAS. Hessén Söderman AC. Svensk ÖNH-tidskrift 2009;16:24-25.
15. Nationella Medicinska Indikationer för tonsilloperation. Hemlin C. Svensk ÖNH-tidskrift 2009;16:22-23.
16. Tonsillektomi med coblation kan vara förenat med ökad frekvens postoperativ blödning. Stalfors J. Svensk ÖNH-tidskrift 2008;15:23.
17. "From TE to TO: The Scandinavian Experience". Hultcrantz E, Stalfors J. WMW-Skriptum 2008;10:18-20.
18. Patienters erfarenheter av komplikationer och oplanerat återbesök efter tonsillektomi. En studie med kvalitativ ansats för att belysa frågor väckta i det nationella kvalitetsregistret. Månsson I, Segesten K, Wassberg E-M. Svensk ÖNH-tidskrift 2006;13:22-23

Swedish official reports

1. Nationellt kvalitetsregister Öron-, Näs- och Halsjukvård, Årsrapport 2012. Hemlin C m.fl. ISSN 2001-6883
2. Nationellt kvalitetsregister för tonsilloperation, Årsrapport 2011. Stalfors J, Ericsson E, C. Hemlin, Hessén Söderman AC, Hultcrantz E, Odhagen E, Padoan S, Sunnergren O. ISSN 2001-4457
3. Tonsillotomi på barn och ungdomar. Nationella Medicinska Indikationer, 2011. Ericsson E, Hultcrantz E, Hemlin C, Eggertsen R, Lundeberg Hammarström I, Marcusson A, Proczkowska-Björklund M, Stjernquist-Desatnik A, Zettergren-Wijk L, Moa G, Törnqvist H. Rapport Sveriges Kommuner och Landsting. www.entqualitysweden.se (publikation tonsilloperation)
4. Nationella Medicinska Indikationer, Tonsilloperation, Rapport från expertgruppen för tonsilloperation inom Svensk förening för Otorhinolaryngologi, Huvud- och Halskirurgi. Månsson I m.fl. 2009, <http://www.tonsilloperation.se>.





Centre of Registers Västra Götaland
413 45 Gothenburg, Sweden
www.entqualitysweden.se

Centre of Registers Västra Götaland
Centre for National Quality Registers

Centre of Registers Västra Götaland provides a variety of services for the management and development of national quality registers and supports affiliated researchers. It is one of several Swedish register centres. It enables new registers to benefit from the experience accumulated by older ones and offers advanced expertise in the areas of statistics and information technology. The centre's development managers take charge of publishing its annual reports and coordinate support for the activities of the various registers.
www.registercentrum.se