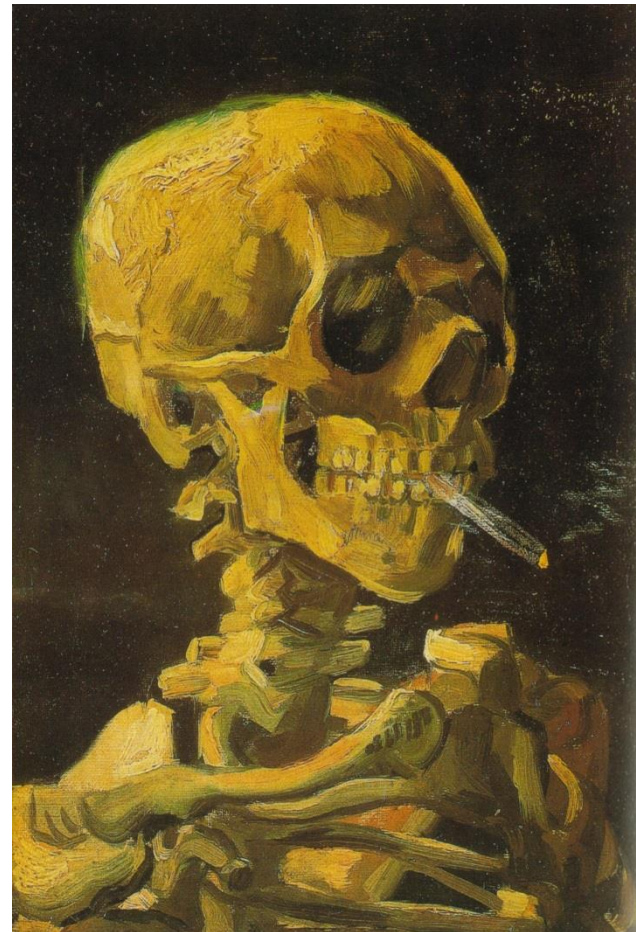


Kirurgisk behandling av lungecancer, samt kort om metastasekirurg

Steinar Solberg

Thoraxkirurgisk avdeling

Rikshospitalet, ous





Verdensrekord i lungekreftbehandling

side 2



Siste 20 år (hele gruppen – ca. 3000 nye lungekreftpasienter årlig):

- Tredobling av andel som får kurativ behandling → > 40 %
- Dobling av 5 års-overlevelse → > 20 %



**Fra nederlagsstemning og skuffelser
til aggressivitet og optimisme hos
lungeleger, onkologer, kirurger og i forskning.**

Lobotomy		Pills
Thoracoplasty		Pills
Gastrectomy		Pills
Carotis TEA		Stent
AAA-operation		Stentgraft
CABG / AVR		PCI / TAVI
Lung cancer surgery		Stereotactic radiotherapy

MDT - møter.

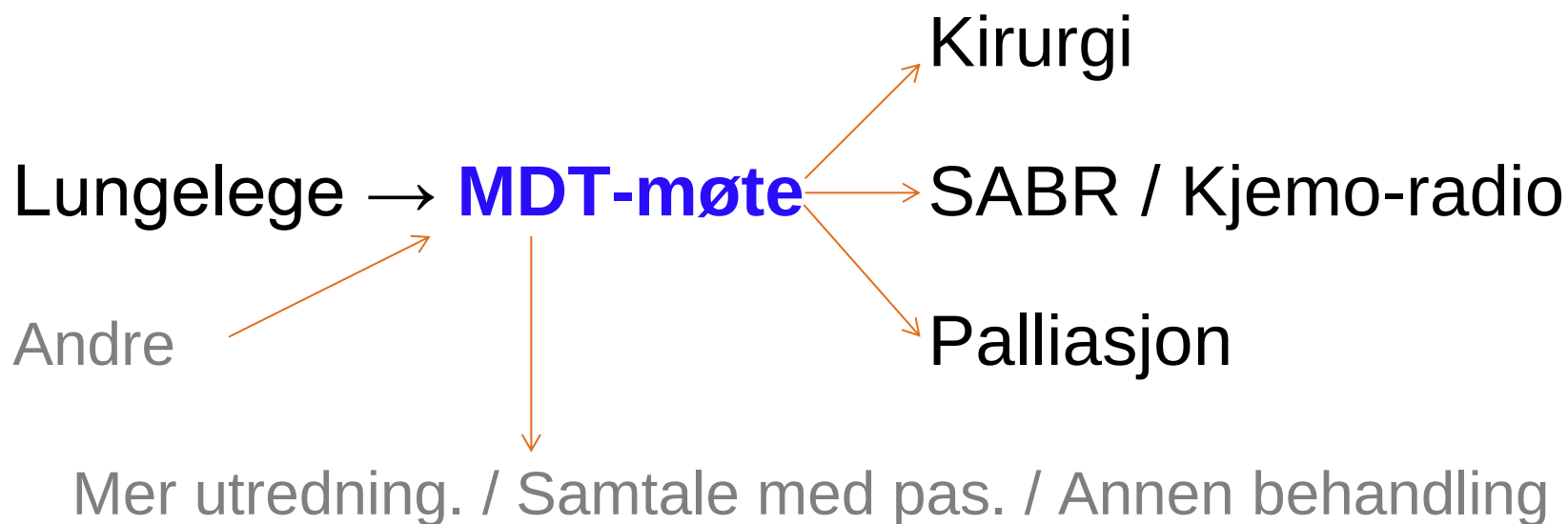
RH: > 20 år. Fra 2005 via telemedisin.



side 6

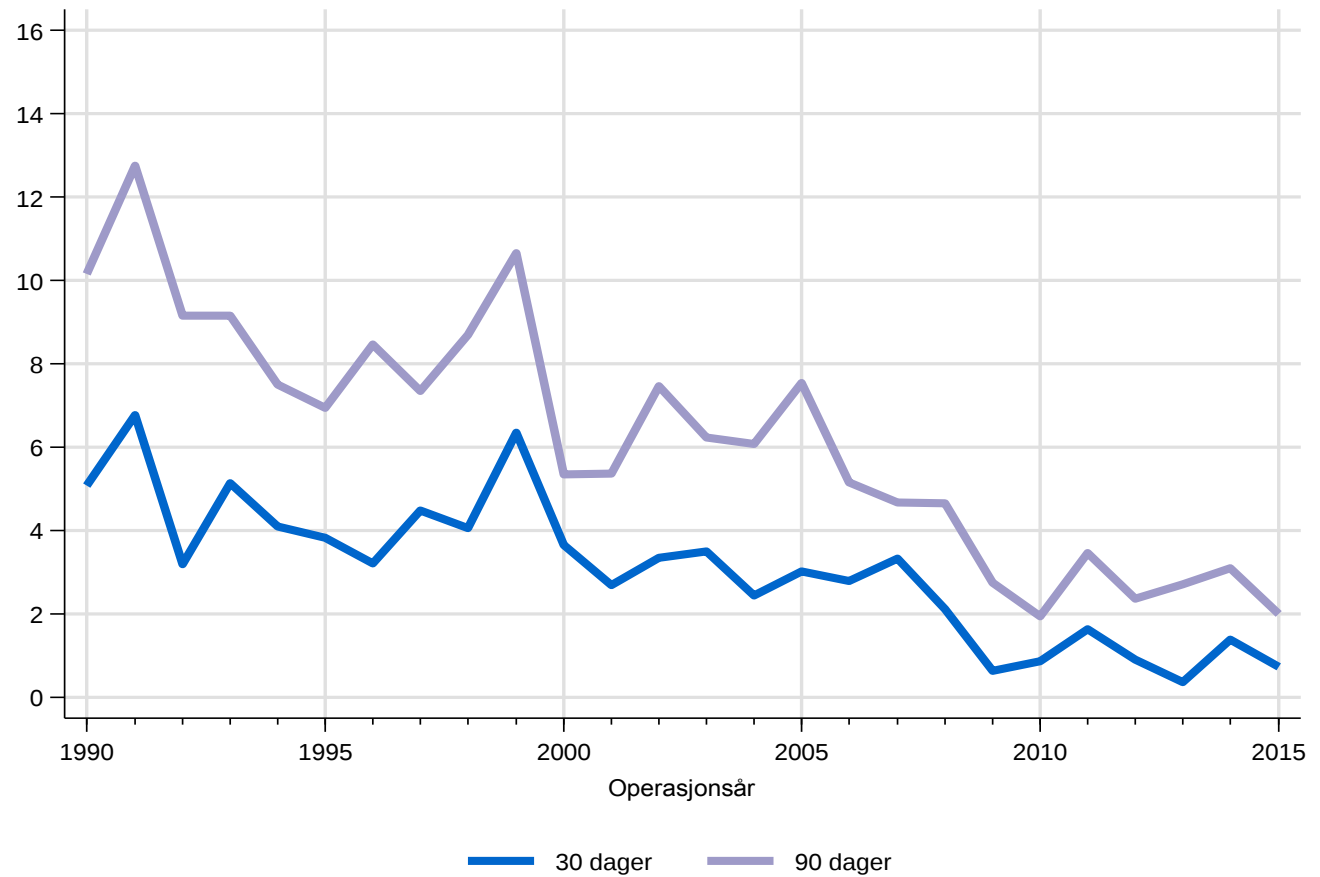
Lungelege, lungeonkolog, thoraxkirurg, thoraxradiolog, pasientkoordinator (anestesilege, patolog).

Alle pasienter hvor kurativ behandling kan være aktuell skal diskuteres på MDT-møte!



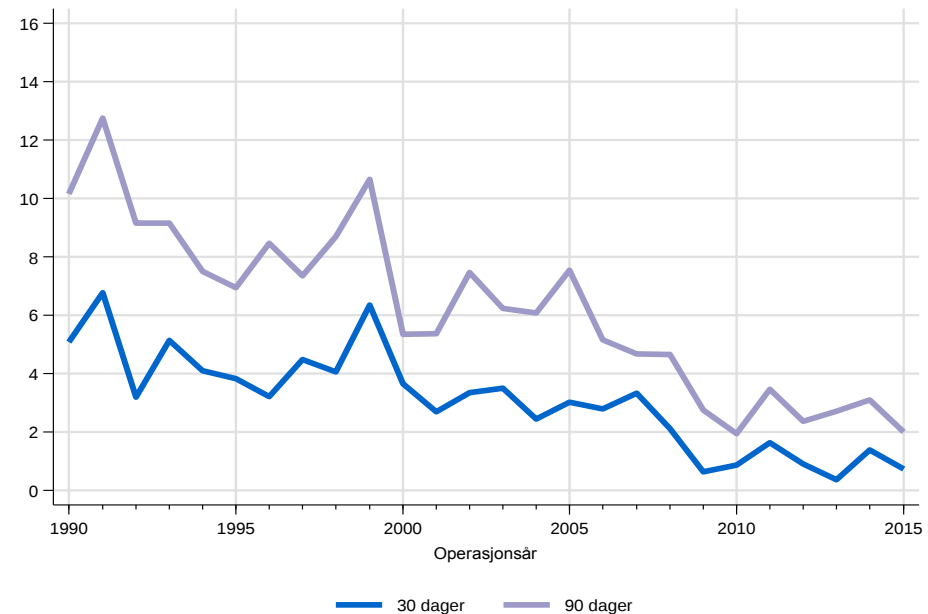
Hvor farlig er kirurgi?

Mortalitet



Hvor farlig er kirurgi?

Mortalitet



	30 days mortality	90 days Mortality
Norway	0,9 %	2,1 %
Denmark	2,1 %	4,6 %
France	3,8 %	
Japan	0,8 %	

Hvor farlig er kirurgi?

Morbiditet

«Good judgement comes from experience.

Experience comes from bad judgement»

Hvor farlig er kirurgi?

Postoperativt:

- **Luftlekkasje > 90 %**. Etter 4 dager ca 15 %
- **Smerter > 90 %** - kroniske smerter 2 – 4
- Blødning 1-2 %
- Chylothorax < 1 %
- Cardiovasc. kompl – Afli < 5 %
- Lungeødem / ARDS / resp. svikt < 1 %
- Empyem 2 – 3 %
- Nerveskader (vagus (recurrens), phrenicus, th.longus, intercostal nerver)
- Brystvegg – granulomer, lungebrokk
- Lobar torsjon

Patients' symptom experiences before and
after lung cancer surgery
- predictors of patients' symptom burden

Trine Oksholm

Doctoral thesis
Faculty of medicine, University of Oslo, Norway
2016



Akuttklinikken og Lungeavdelingen- Rikshospitalet, OUS

**Five months after
surgery for lung cancer:**

- **Shortness of breath 79 %.**
- **Lack of energy 71 %.**
- **Pain 55 %.**

Hvor farlig er kirurgi?

Systematic Review and Meta-Analysis

Medicine®

OPEN

Is surgery indicated for elderly patients with early stage nonsmall cell lung cancer, in the era of stereotactic body radiotherapy?

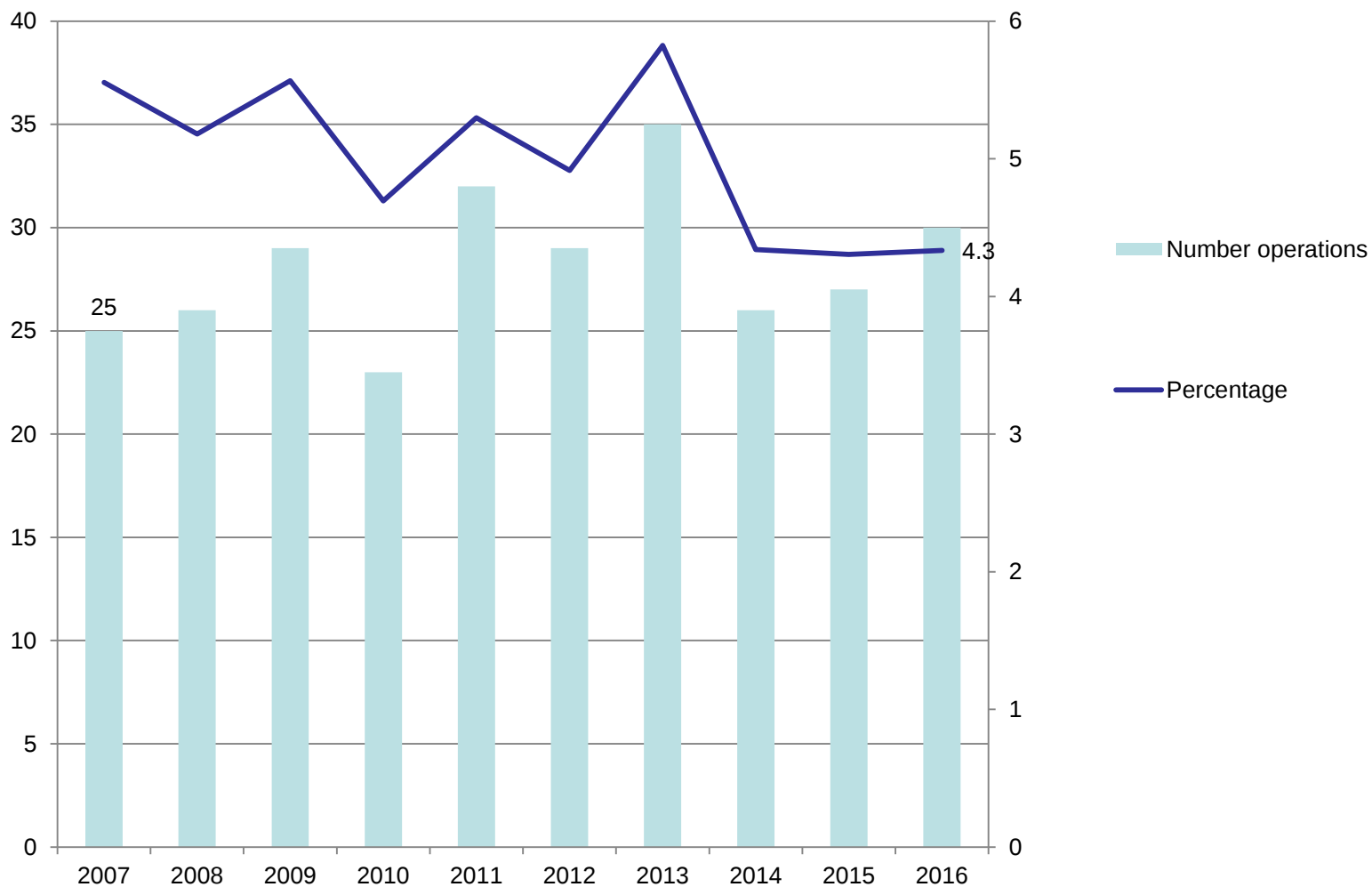
Nam P. Nguyen, MD^{a,*}, Juan Godinez, MD^b, Wei Shen, MD^c, Vincent Vinh-Hung, MD^d, Helena Gorobets, PhD^e, Juliette Thariat, MD^f, Fred Ampil, MD^g, Jacqueline Vock, MD^h, Ulf Karlsson, MD, PhDⁱ, Alexander Chi, MD^j, The International Geriatric Radiotherapy Group

Medicine (Baltimore) 2016 Oct: 95(43): e5212

Doi: 10.1097/MD.00000000000005212



The number (columns) and percentage (line) of patients operated for lung cancer being 80 years or older



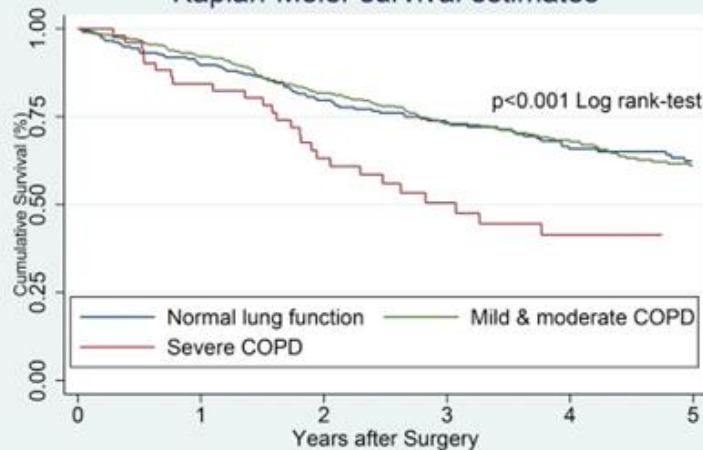
Survival After Surgical Resection for Lung Cancer in Patients With Chronic Obstructive Pulmonary Disease

Anders Bugge, MD, May Brit Lund, MD, PhD, Cathrine Brunborg, MS, Steinar Solberg, MD, PhD, and Johny Kongerud, MD, PhD

Department of Cardiothoracic Surgery, Oslo University Hospital—Rikshospitalet, Oslo; Faculty of Medicine, University of Oslo, Oslo; Department of Respiratory Medicine, Oslo University Hospital—Rikshospitalet, Oslo; and Oslo Centre for Biostatistics and Epidemiology, Oslo University Hospital, Oslo, Norway



Kaplan-Meier survival estimates



Number at risk						
Normal	233	209	161	124	90	68
Mild & mod.	404	372	279	210	158	105
Severe	51	43	28	18	12	9

Conclusions. With careful preoperative selection, surgical resection may safely be offered to lung cancer patients with severe COPD. However, these patients have decreased long-term overall survival. Similar survival between patients with normal lung function and mild to moderate COPD suggests that similar indications for lung cancer operations may be applied.

(Ann Thorac Surg 2016;101:2125–31)

© 2016 by The Society of Thoracic Surgeons

Hvor farlig er kirurgi?

Tallet 2:

- To etasjer eller mer
- FEV1 2 liter eller mer
- NYHA-klasse 2 eller bedre

Hvilke lungekreftpasienter skal opereres?

- ut fra tumor- betraktninger

Hvilke lungekreftpasienter skal opereres?

ikke

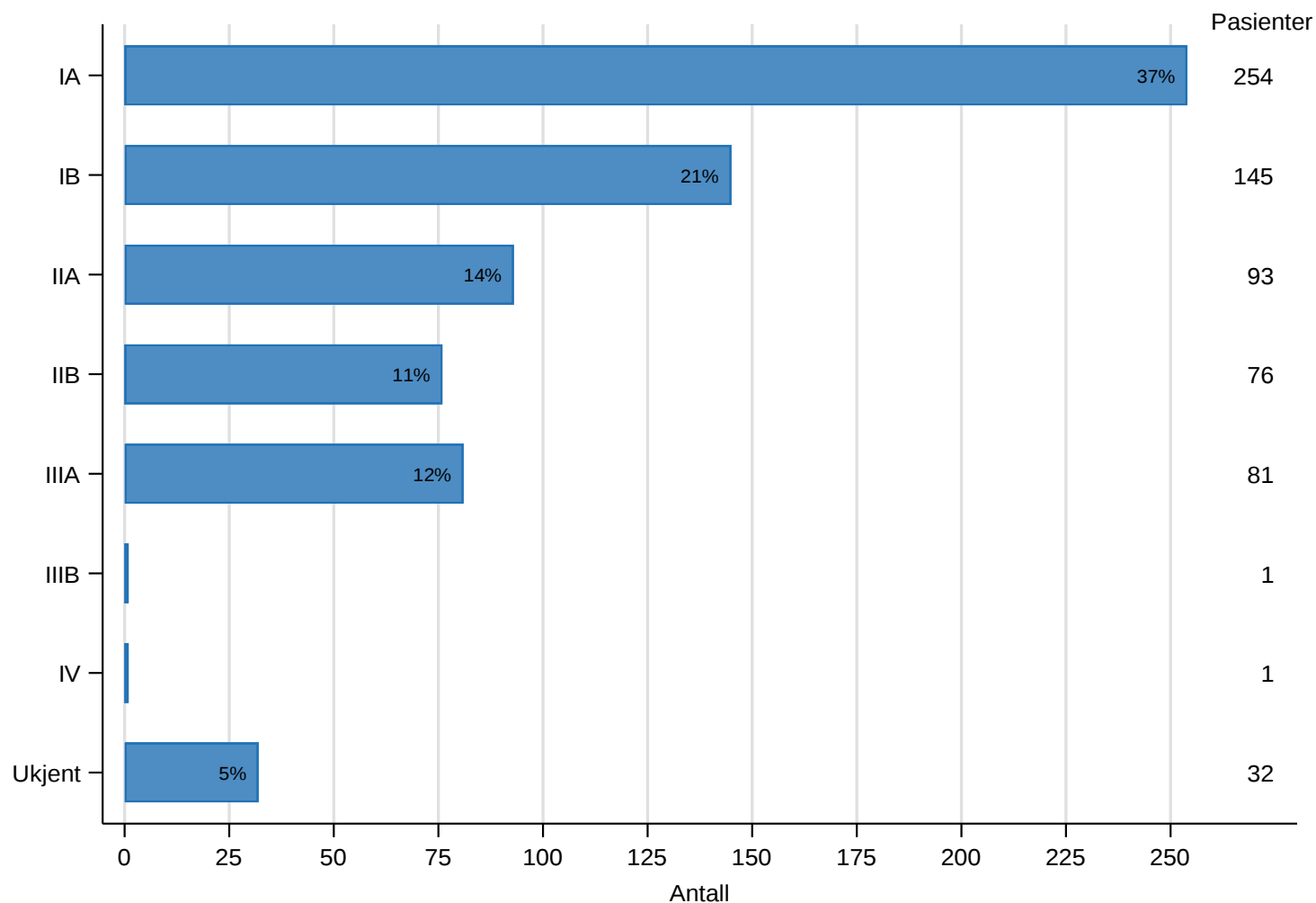
- M: Alt, utenom singel CNS- eller binyremetastase
- N: Mer enn singel cN2
- T: En del cT4

Stadium I småcellet lungecancer kan bli operert.



From the Cancer Registry of Norway, 2016

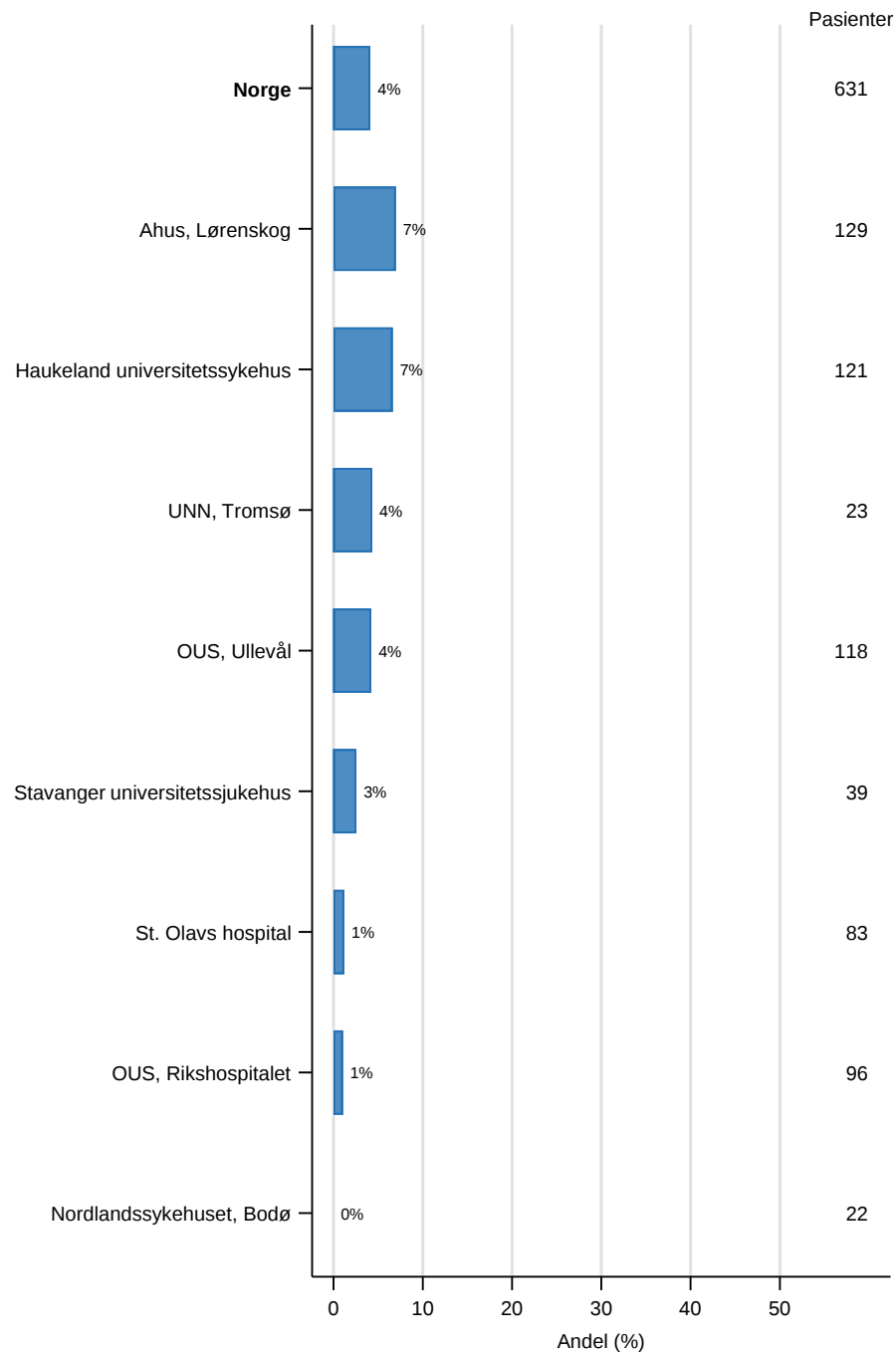
The stage distribution, based on pTNM
for the patients operated for lung cancer





From the Cancer Registry of Norway, 2016

The percentage of the patients operated, with cN2 – known spread of cancer to one or more regional lymph node(s) before surgery.



Hvor dyr er kirurgi?

Ca. kr. 200.000 per operasjon

650 operasjoner årlig

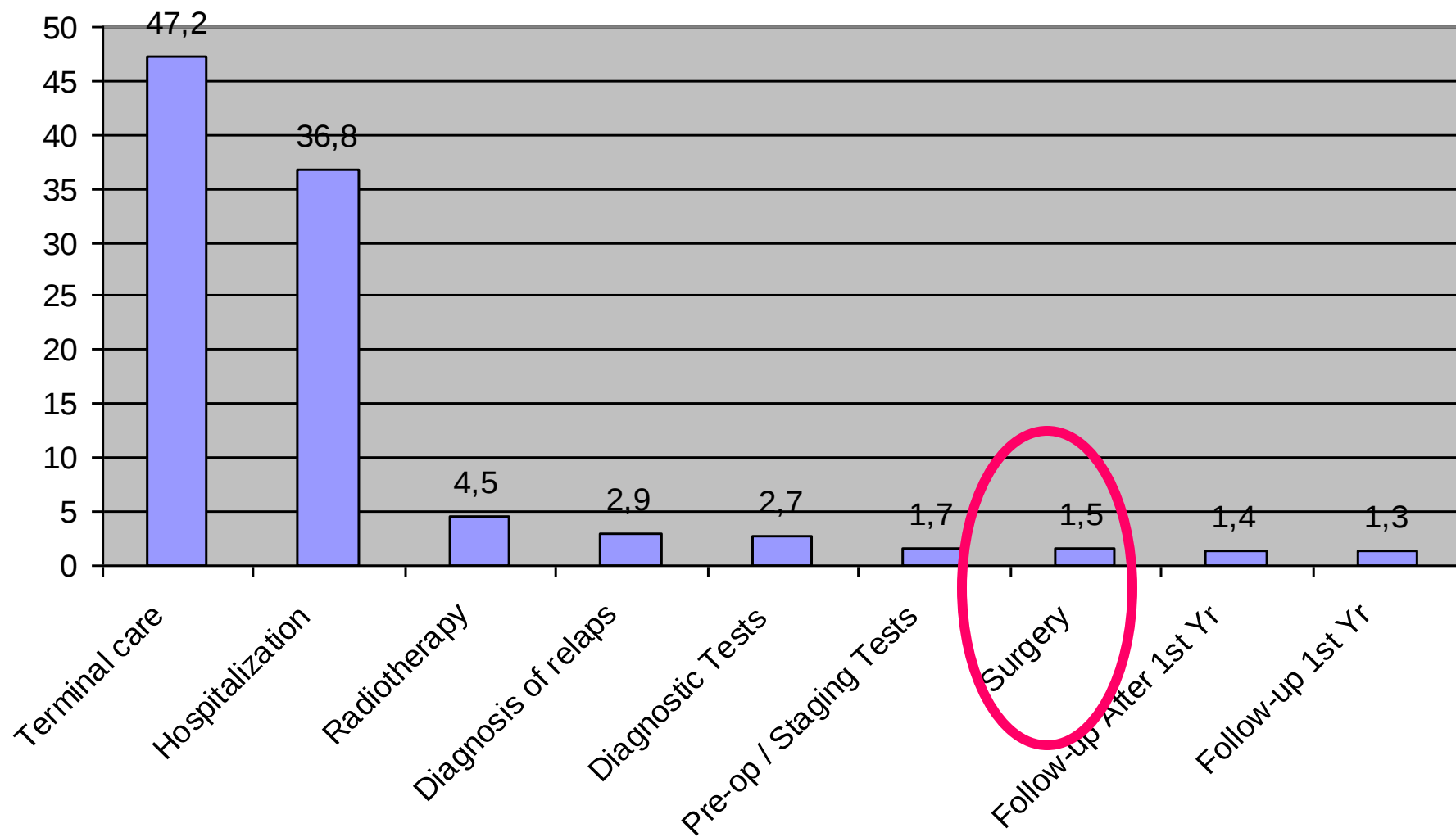
→ kr. 130 millioner per år

Stereotaksi er (sannsynligvis) billigere.

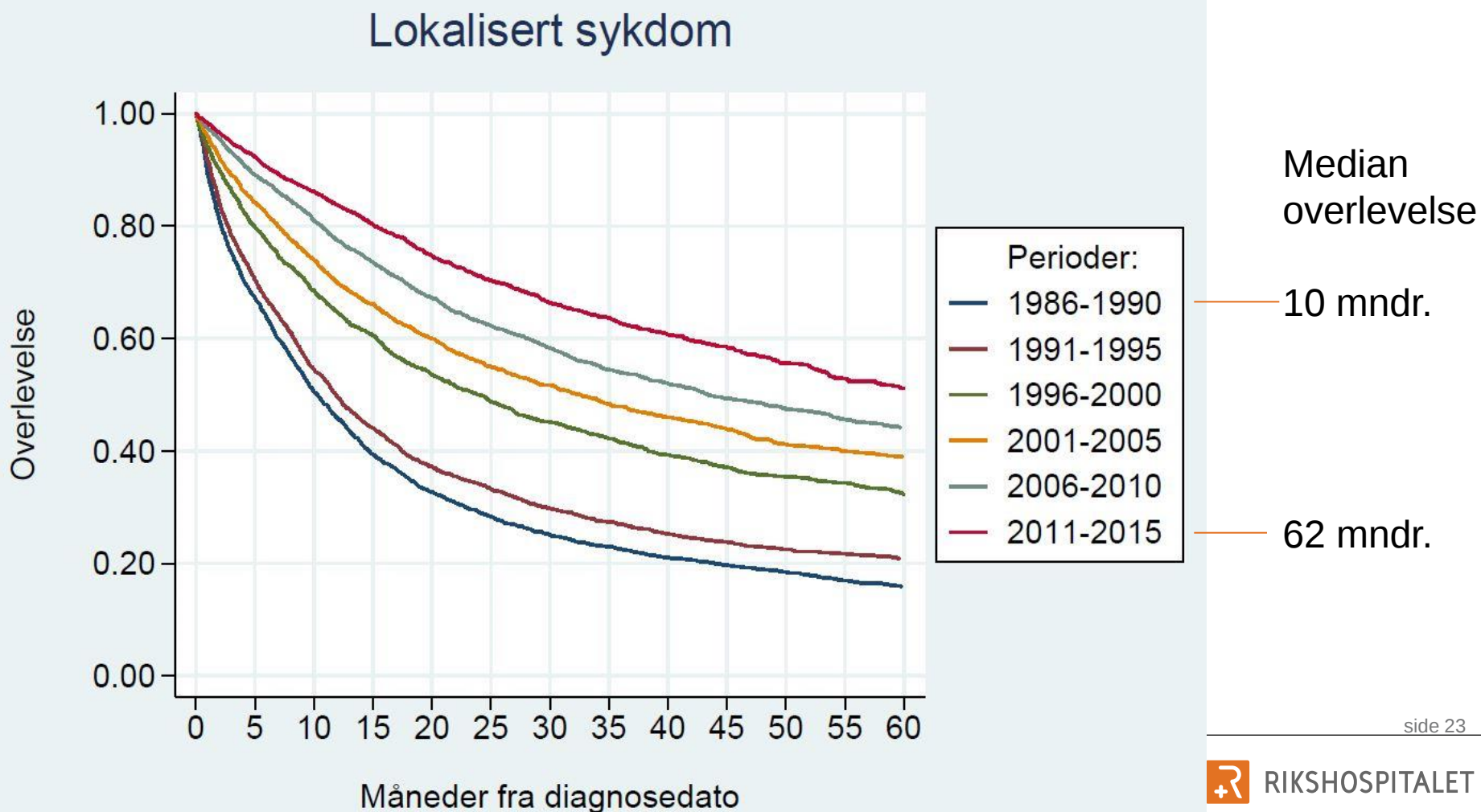
Immunterapi -> ca. kr. 250 millioner per år.

500 mill kr. mer til kreftmedisiner i 2017 enn i 2016.

Kostnadsfordeling (%) lungekreftpasienter (Canada)



Hvor nyttig er kirurgi?



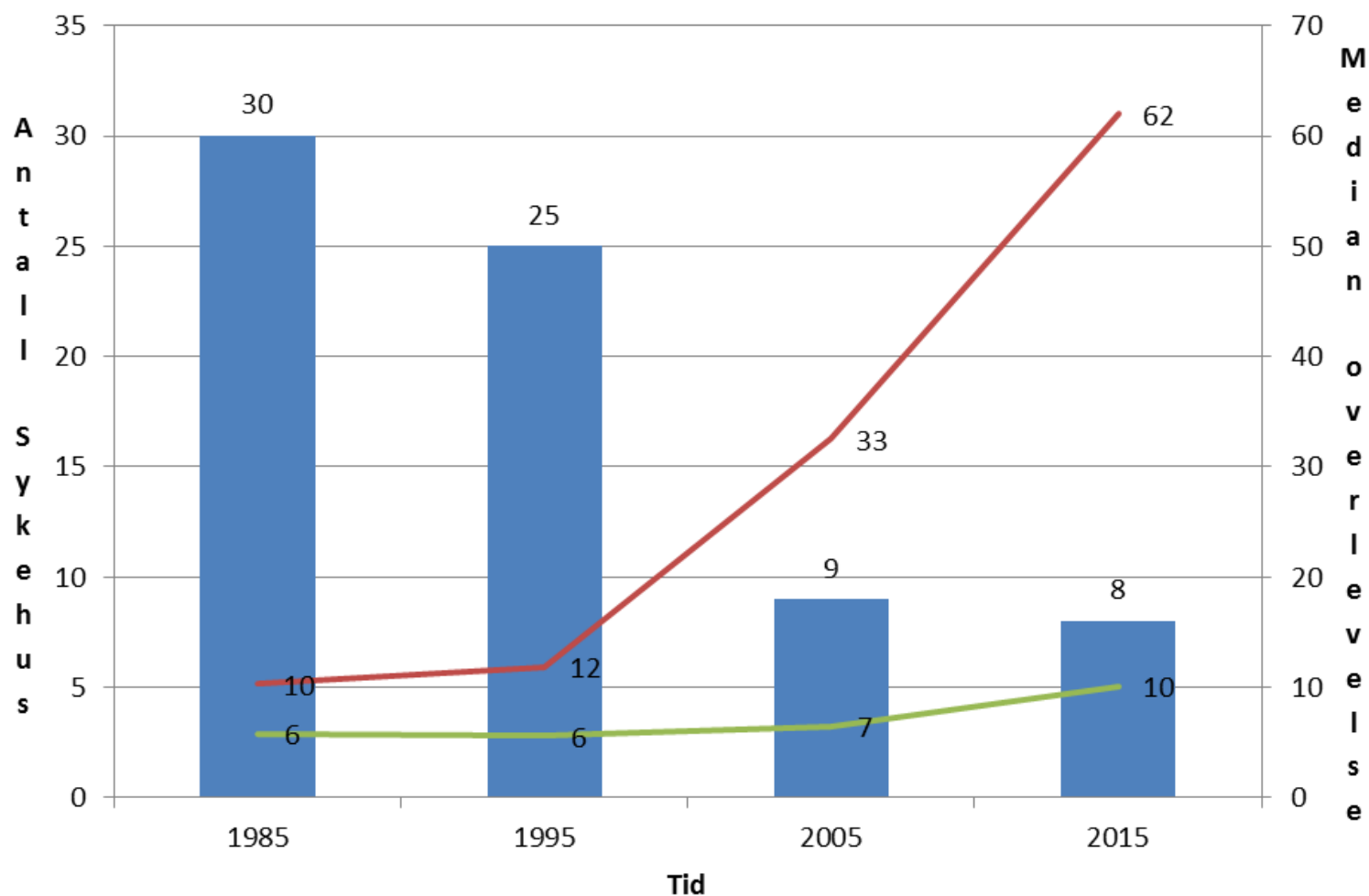
Hvor skal kirurgi for lungekreft gjøres?

Eller – skal det stilles krav, og i tilfelle hvilke skal stilles til sykehus som utreder og behandler lungekreft?

Volum-kvalitet:

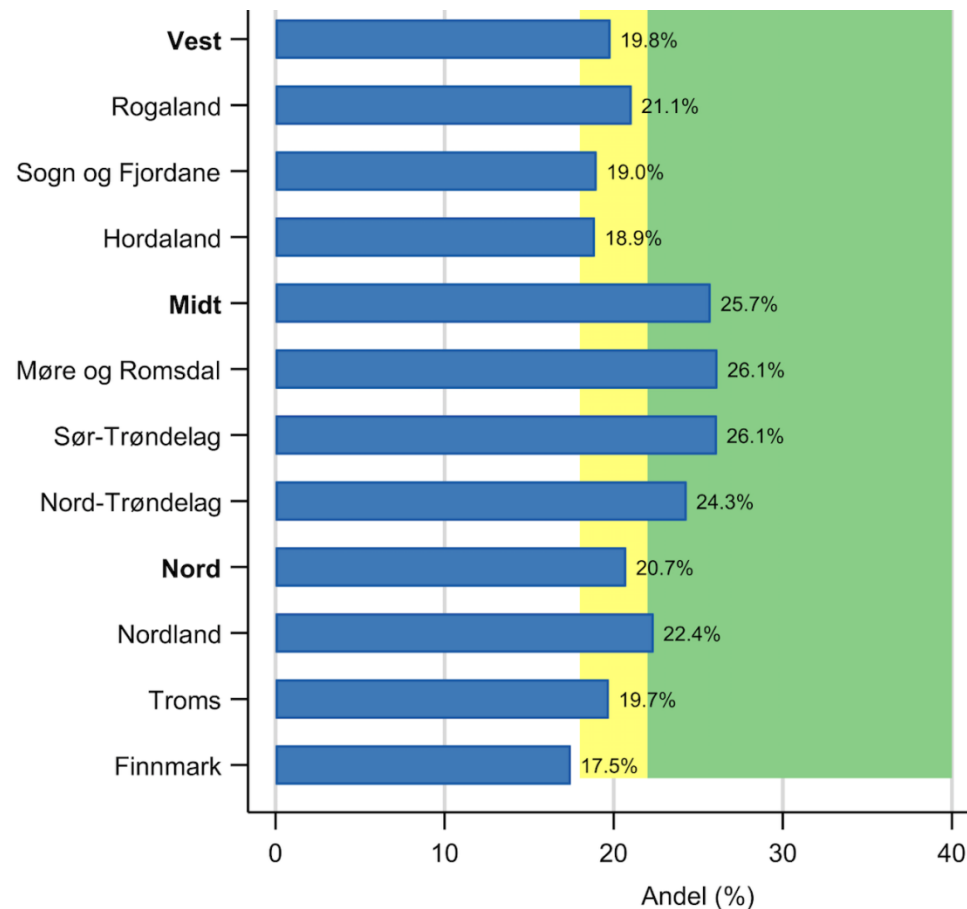
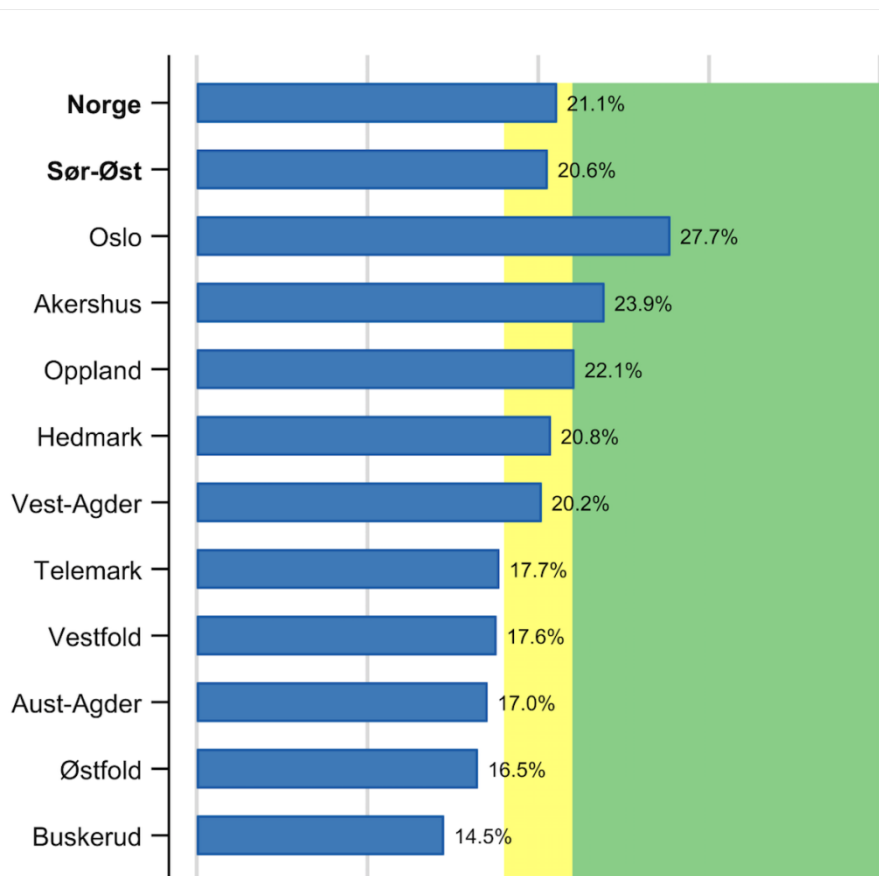
- Flere publikasjoner viser sammenheng mellom behandlingsvolum og kvalitet.
- Noen har ikke funnet slik sammenheng.
- Ingen har publisert funn som underbygger små enheter.

**Antall sykehus (søyler) som operer lungekreft.
Median overlevelse i måneder, alle med lungekreft (grønn linje)
og de med "begrenset sykdom" (rød linje)**

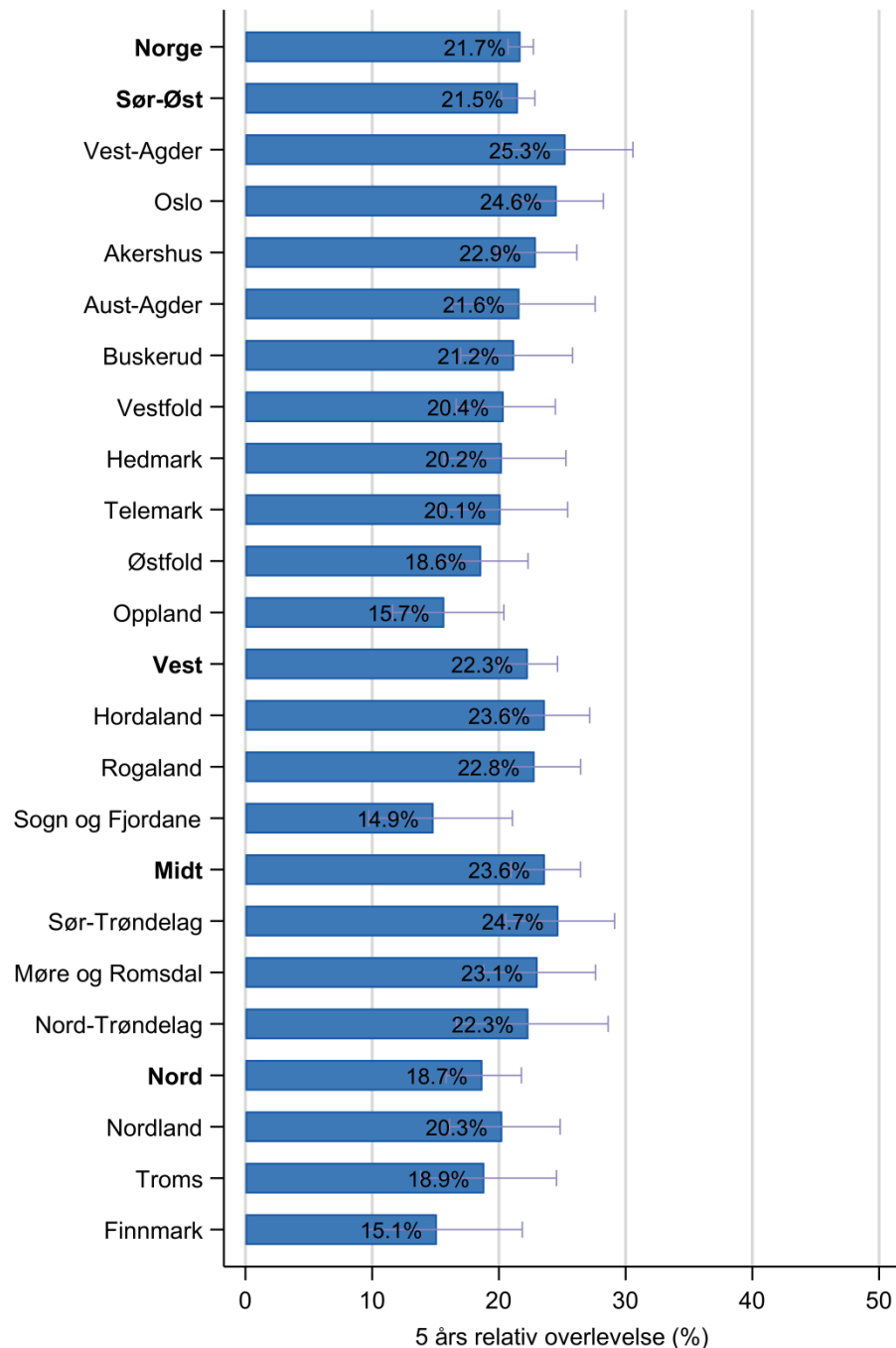


Andel som får kurativ behandling i Norge

Gjennomsnitt av kirurgiske inngrep 2013-15



5 års overlevelse fylkesvis 2013-15



	% kirurgi	% 5 års ovl.
Vest Agder	20,2	25,3
Aust Agder	17,0	21,6
Telemark	17,7	20,1
Vestfold	17,6	20,4
Buskerud	14,5	21,2
NORGE	21,1	21,7

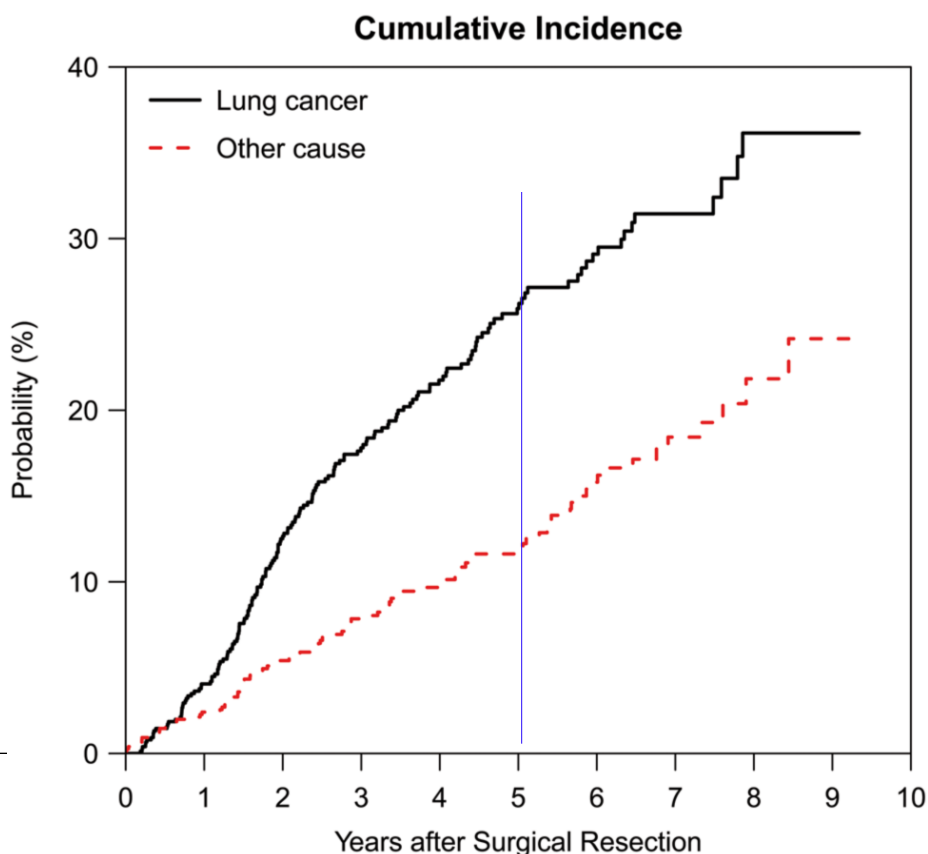
Er man «helbredet» for kreft 5 år
etter kirurgi for lungekreft?

NEI !

Cite this article as: Bugge AS, Lund MB, Valberg M, Brustugun OT, Solberg S, Kongerud J. Cause-specific death after surgical resection for early-stage non-small-cell lung cancer. Eur J Cardiothorac Surg 2018;53:221–7.

Cause-specific death after surgical resection for early-stage non-small-cell lung cancer

Anders Standal Bugge^{a,b,*}, May Brit Lund^{b,c}, Morten Valberg^d, Odd Terje Brustugun^e,
Steinar Solberg^{a,b} and Johnny Kongerud^{b,c}



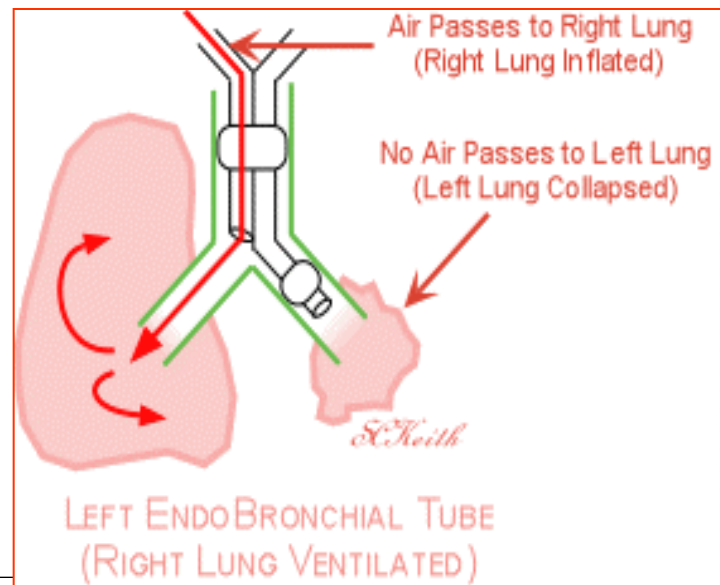
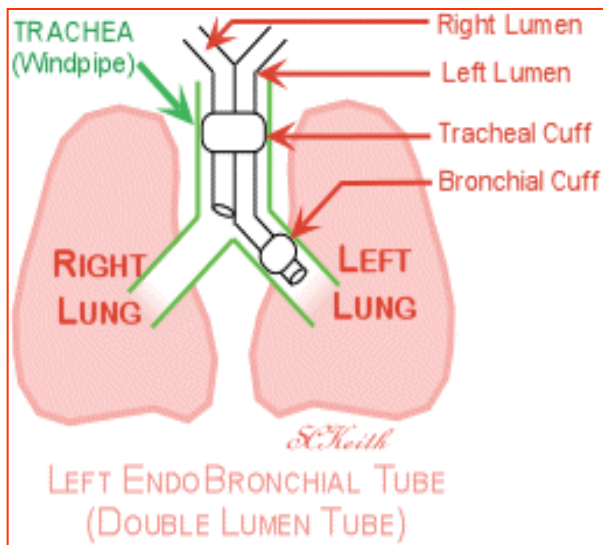
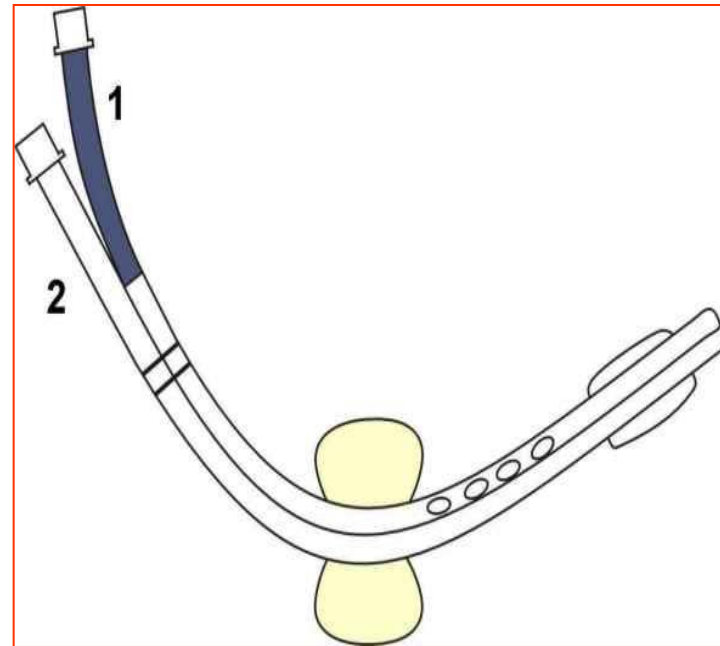
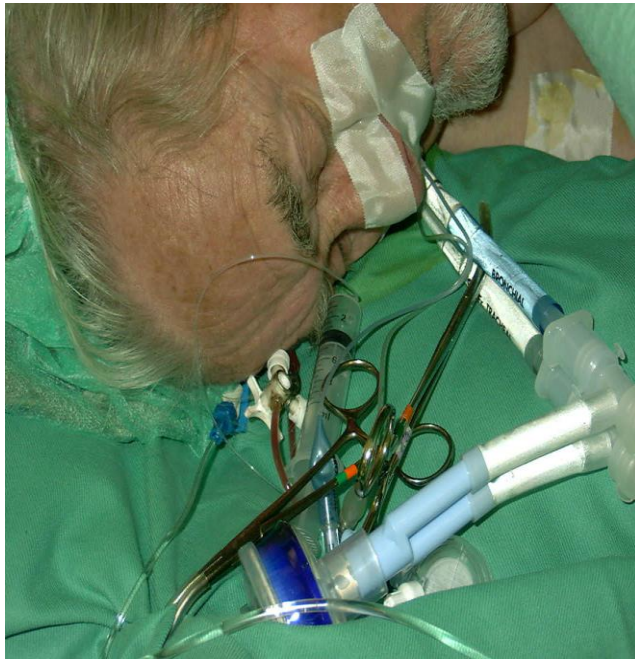
«The probability of having died of lung cancer continued to increase beyond 5 years after the operation. Surveillance of risk factors associated with an increased mortality rate should be considered in the postoperative follow-up examination after lung cancer resection.»

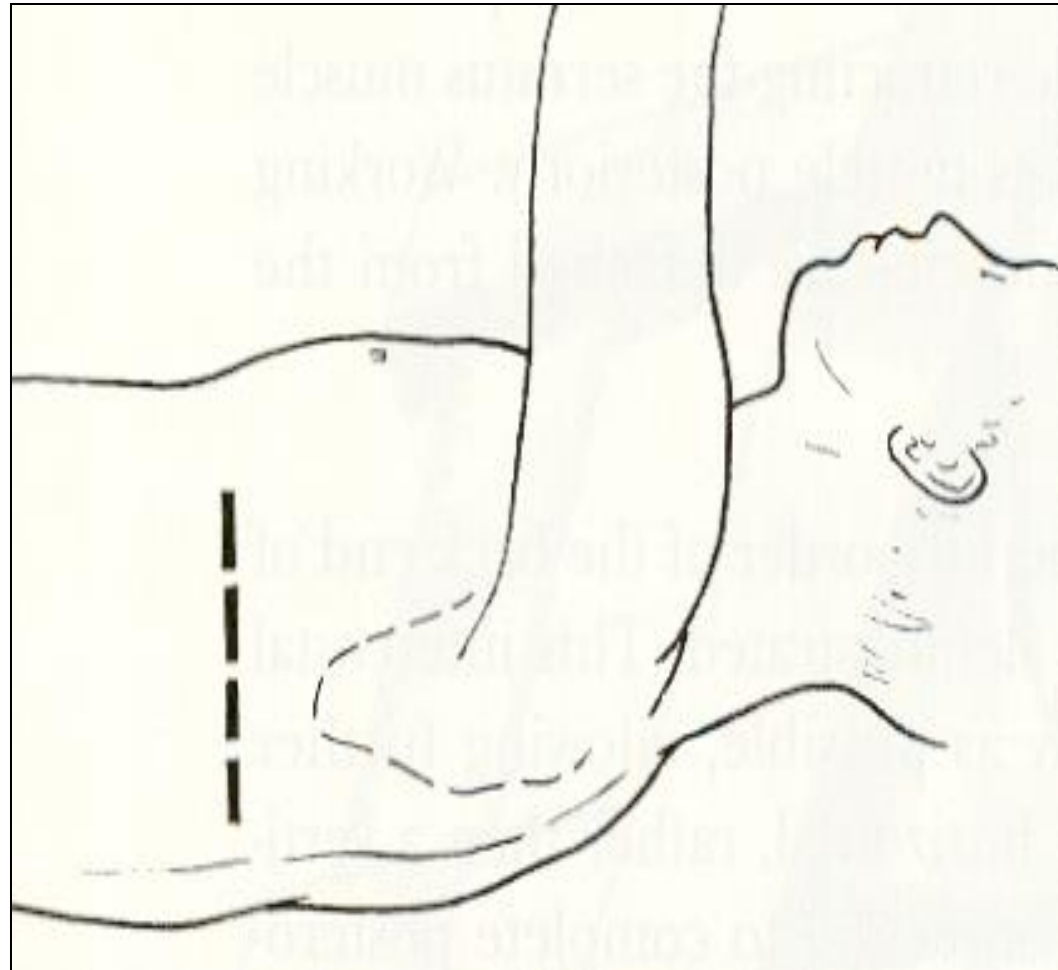
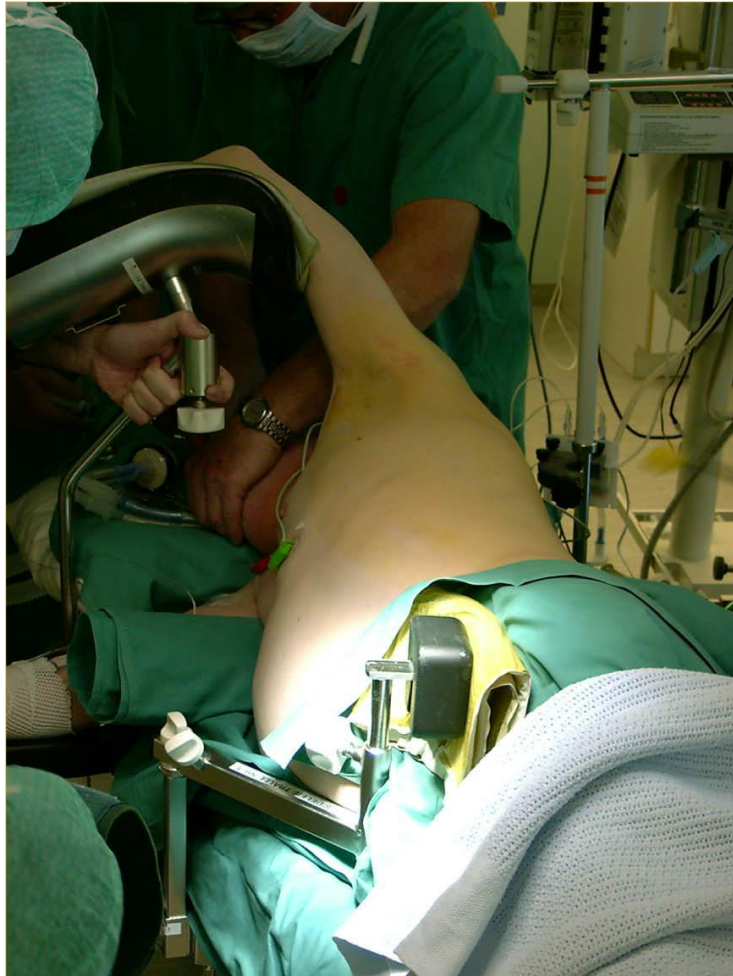
Lungekirurgi – tilganger / metoder

Thorakotomi: Lateral- / Sternotomi / Clam shell.

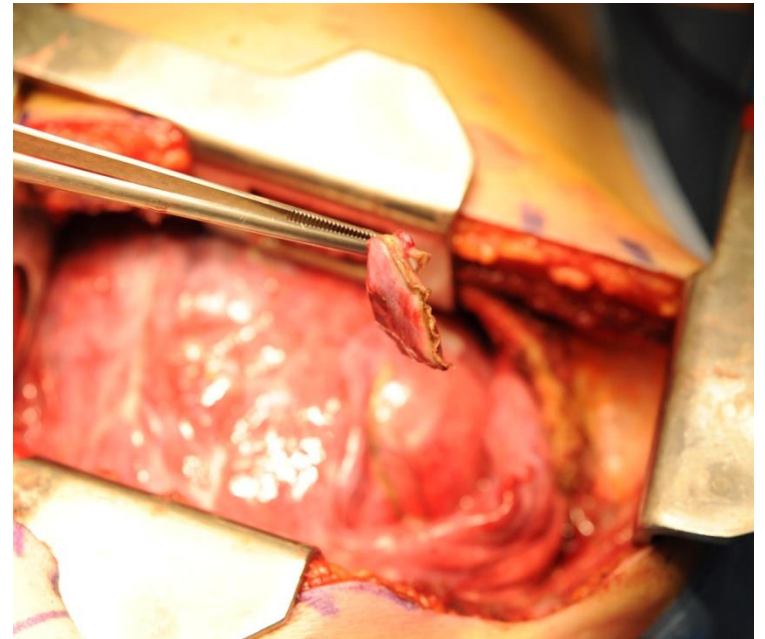
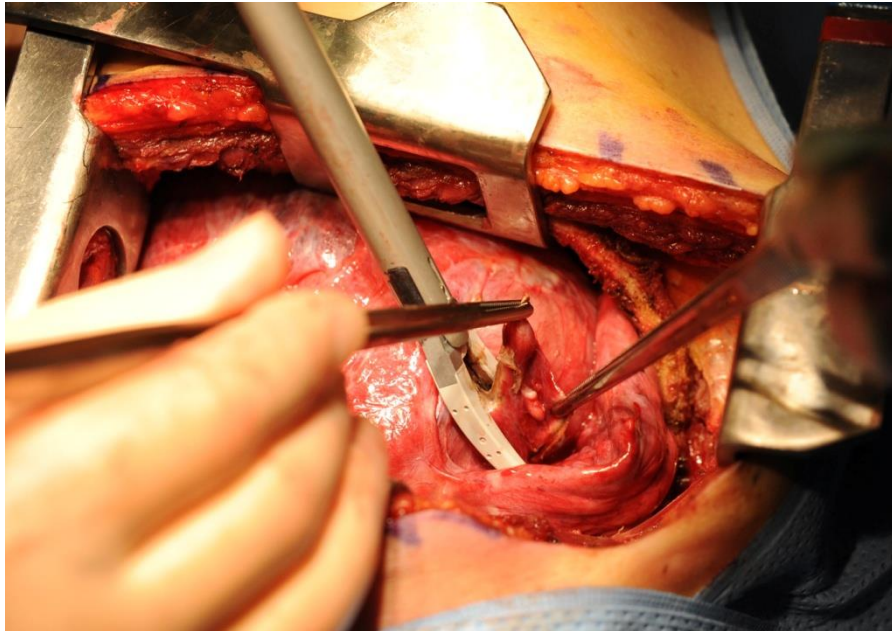
Thorakoskopi (VATS): Antall tilganger?

Robotassistert (RATS): Utvikles.

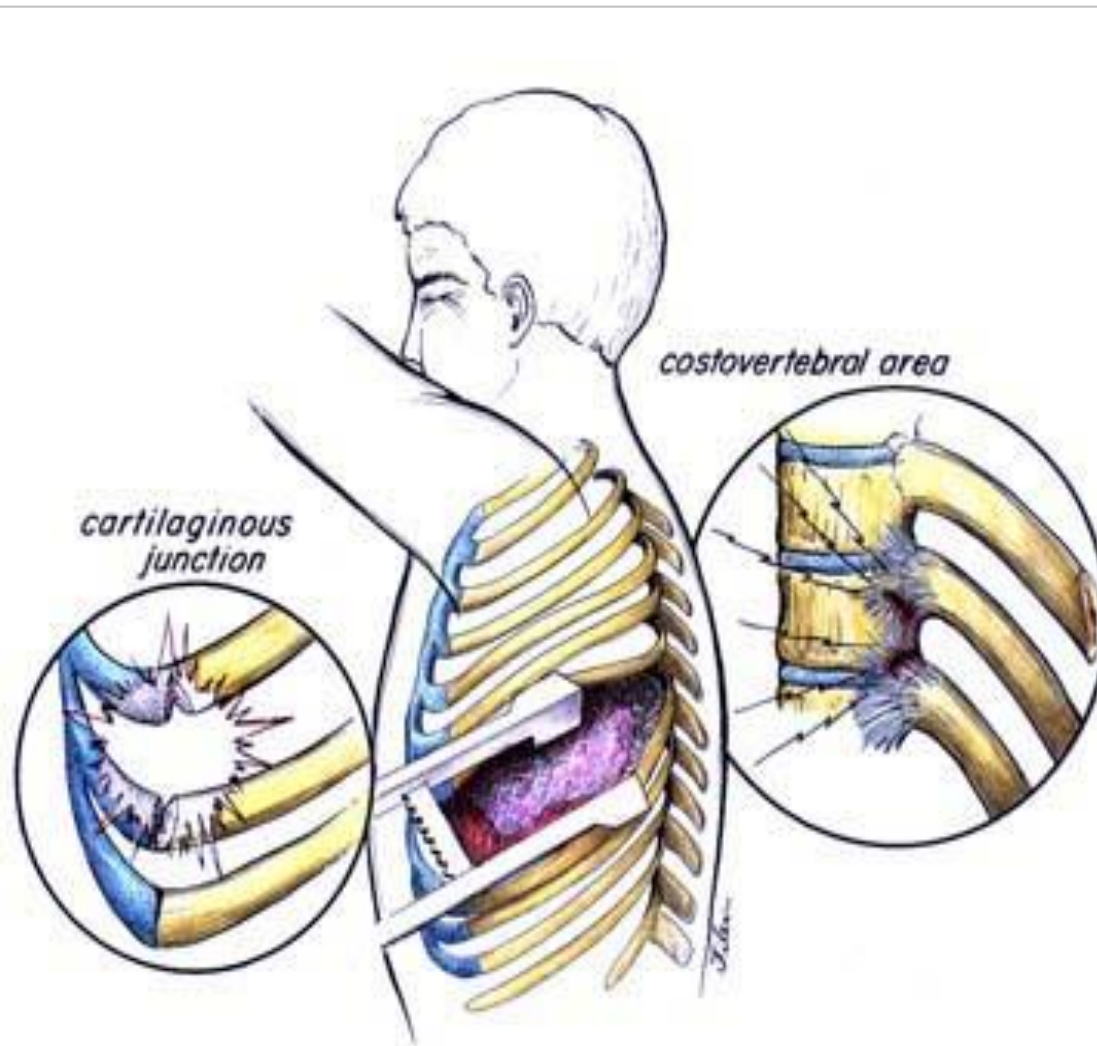




Thorakotomi



Smerter



> 50 % av alle operasjoner for lungekreft skal gjøres med thorakoskopi ("kikkehullskirurgi").

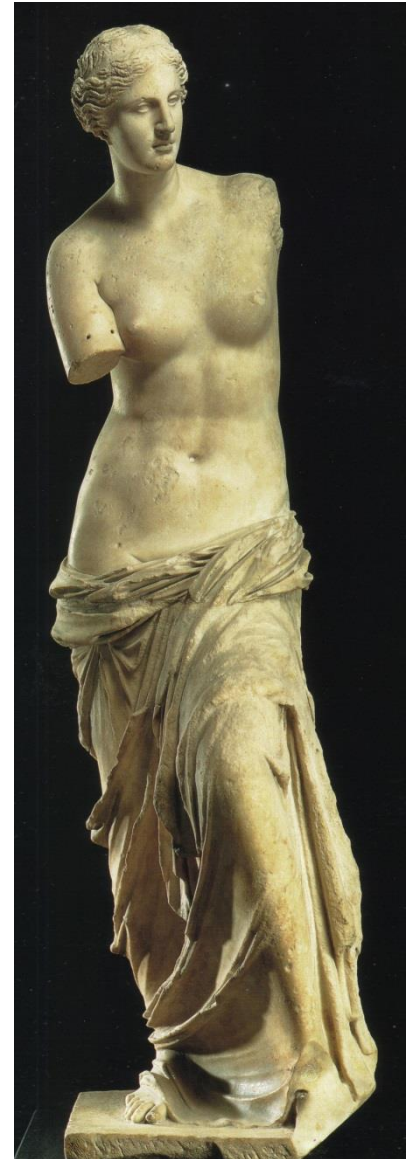


Hva er thorakoskopi ?

(Mini)thorakotomi med videoassistanse?

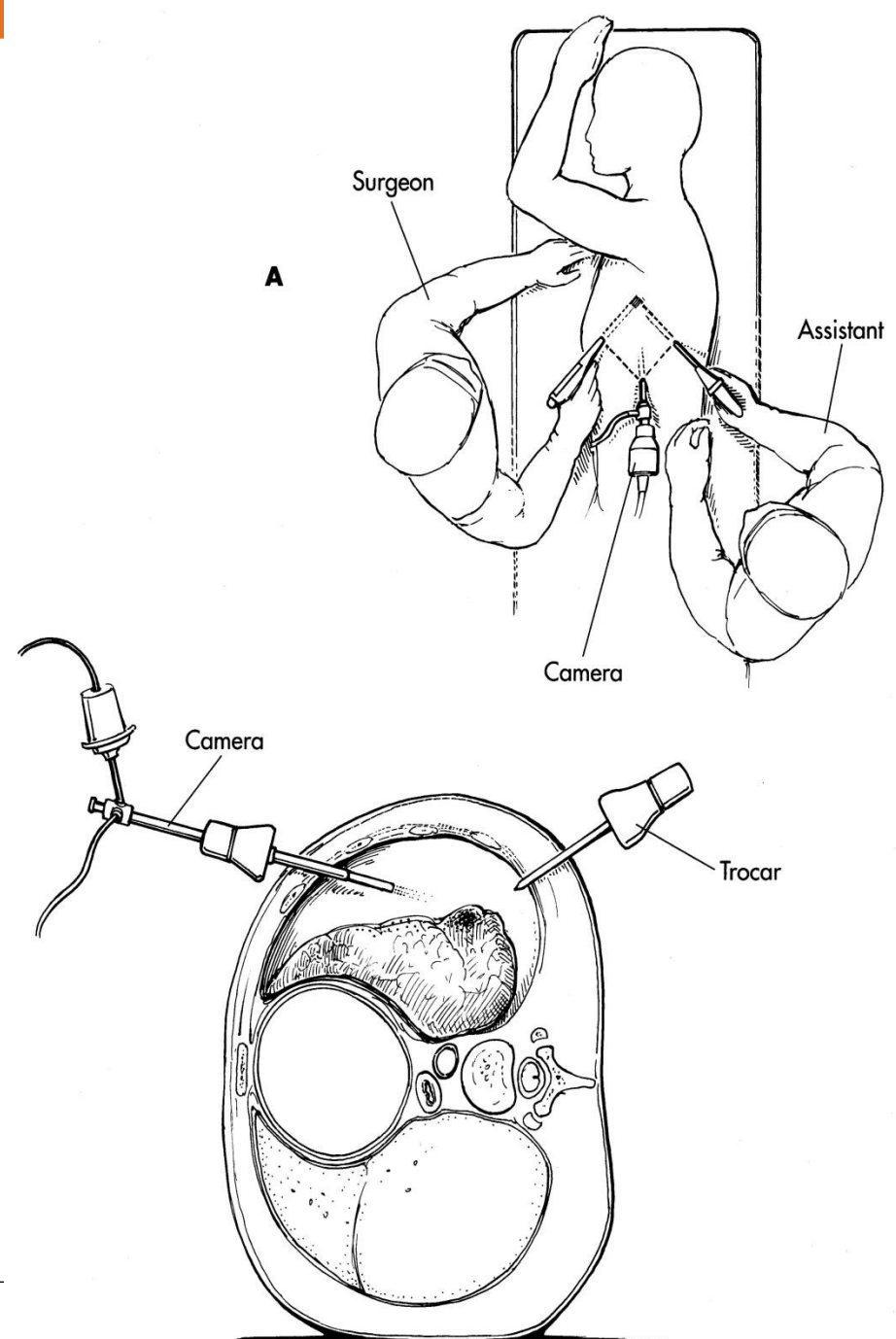
Sperre ut ribbene?

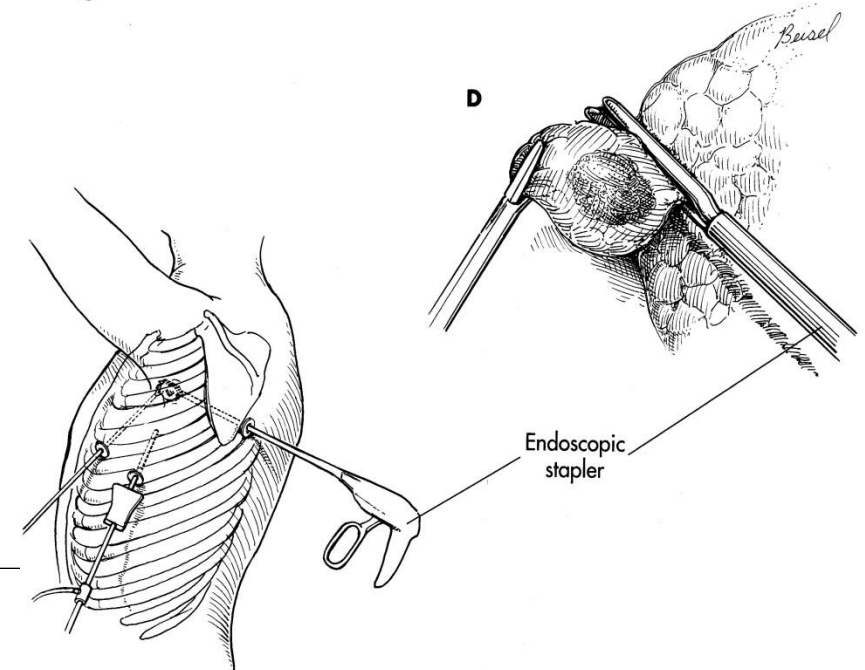
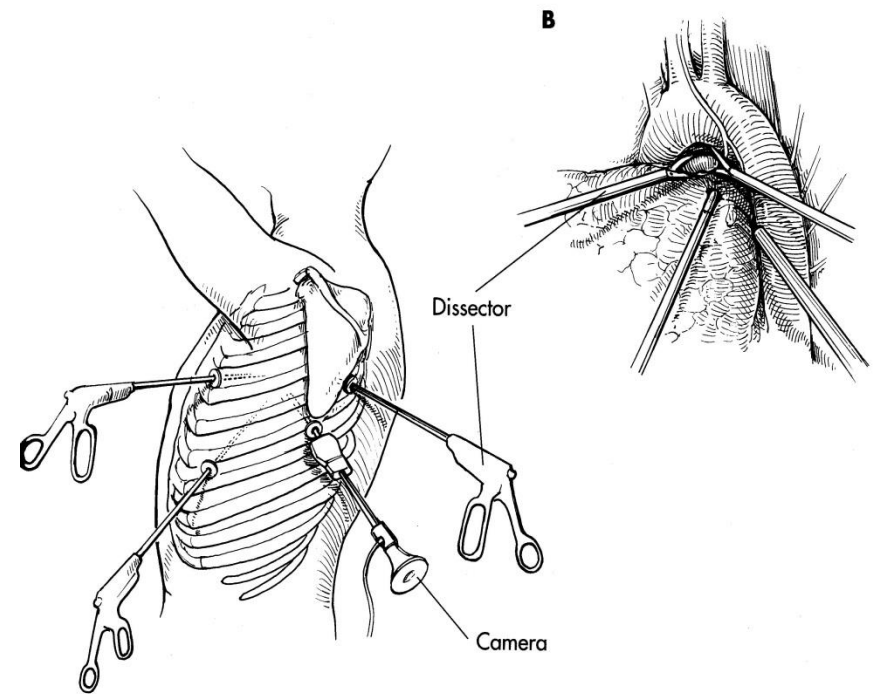
Dele muskler ut over interkostalmuskler?



Thorakoskopi:

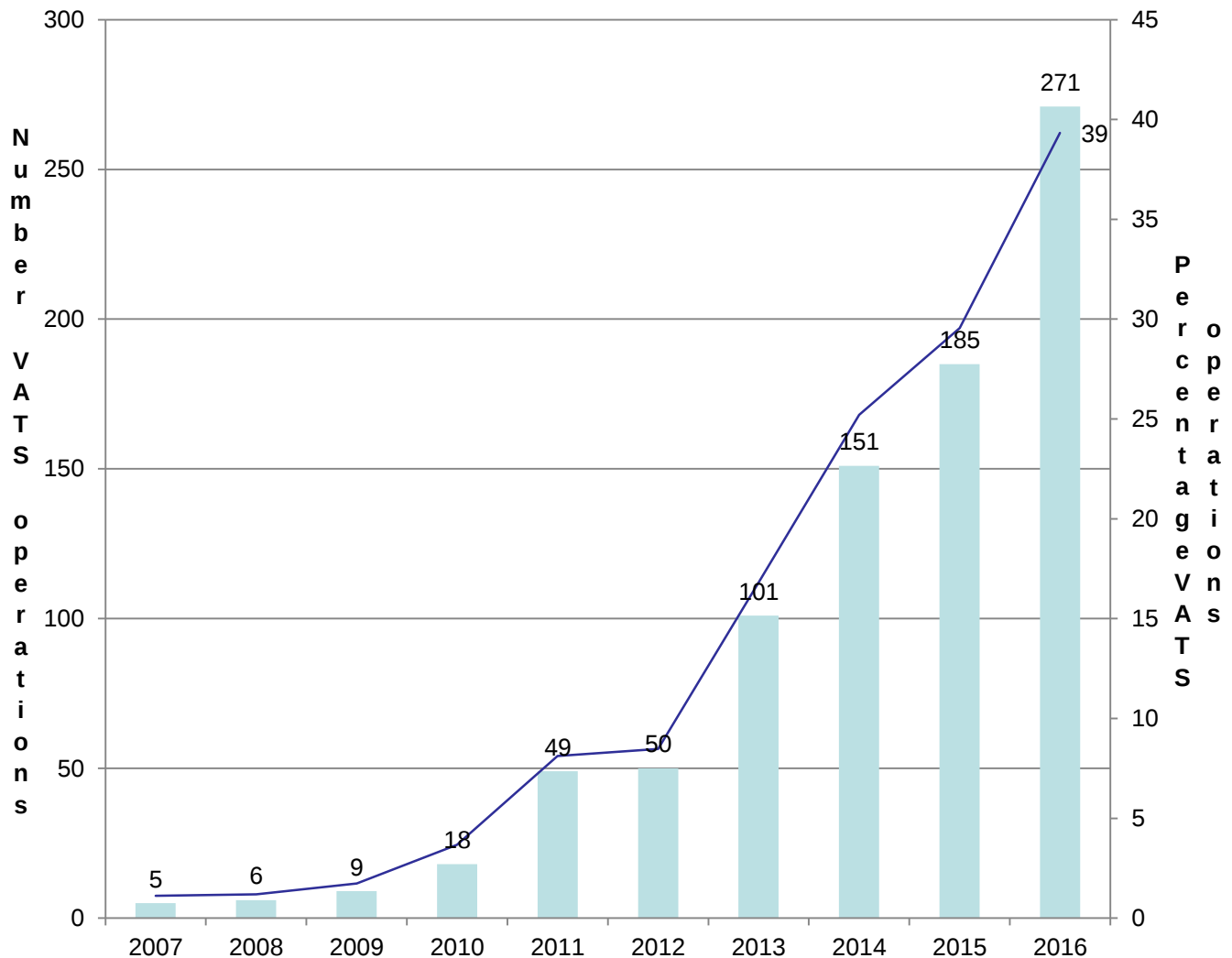
- Diagnostisk
 - Visuell oversikt
 - Biopsi
- Terapeutiske prosedyrer







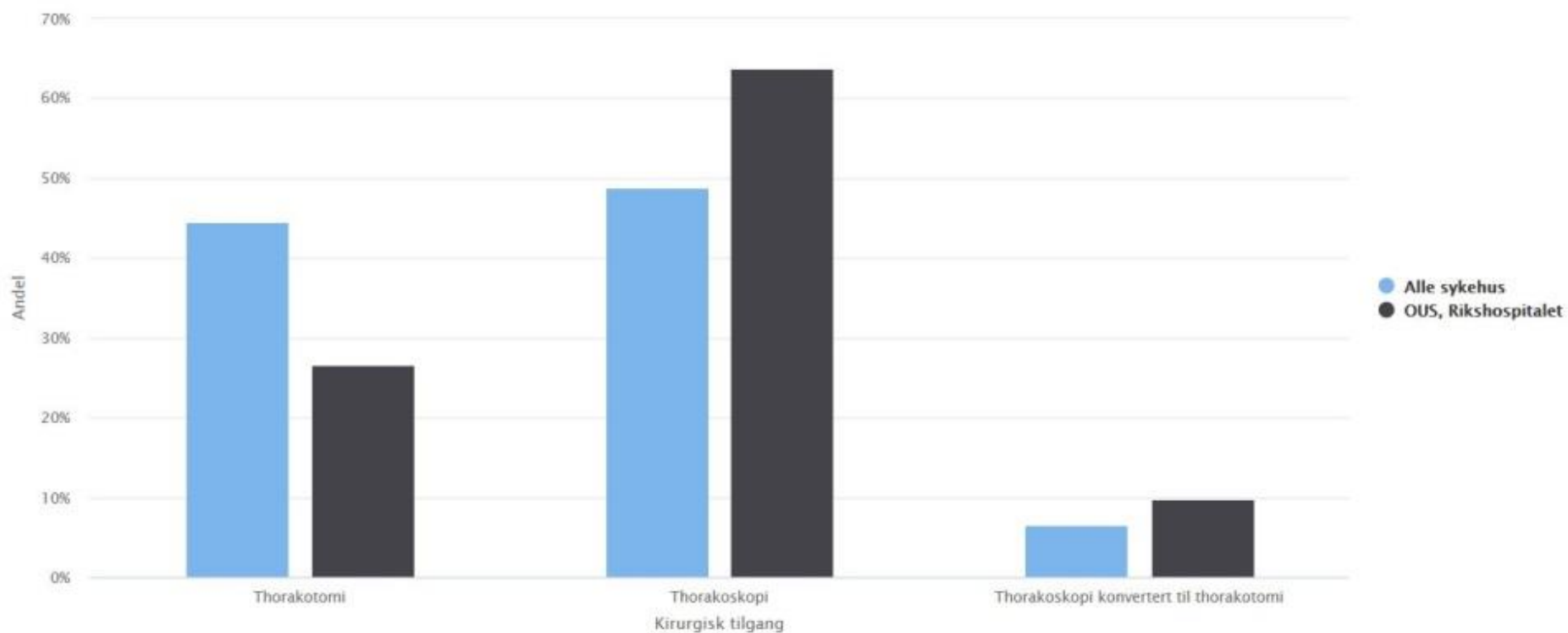
The number (columns) and percentage (line) of operations for lung cancer performed by VATS / thoracoscopic lobectomies



Figur

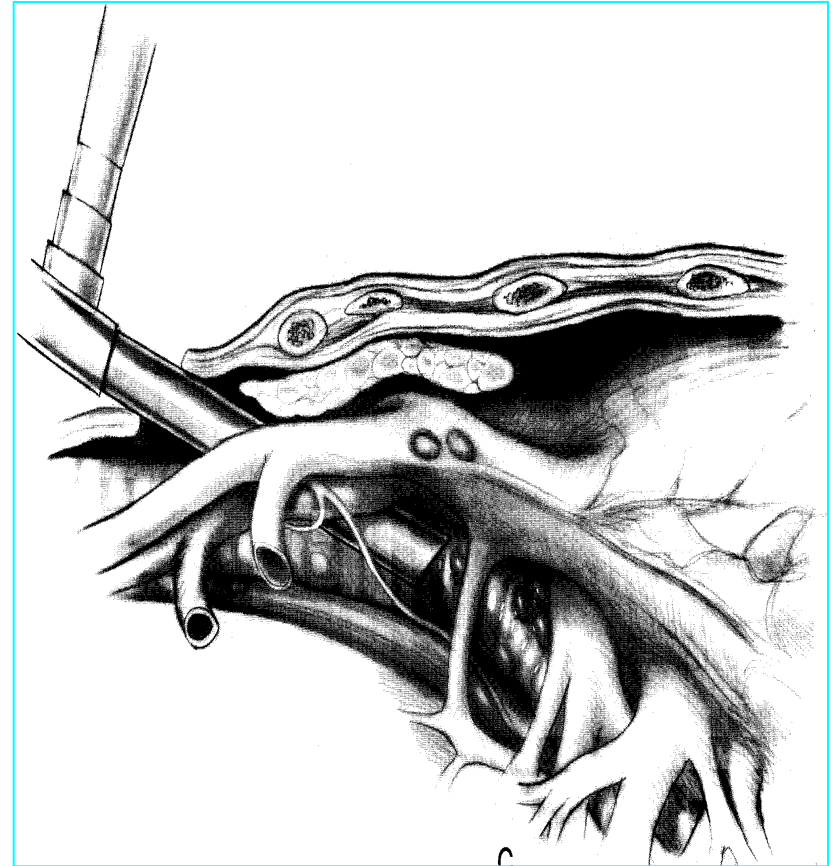
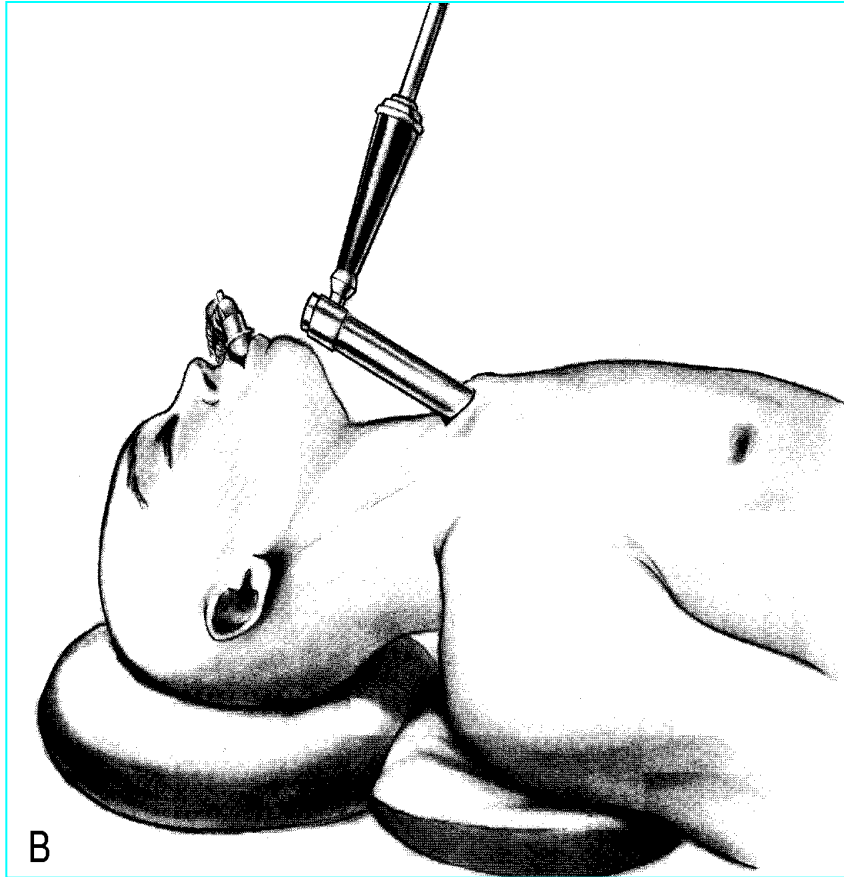
Data

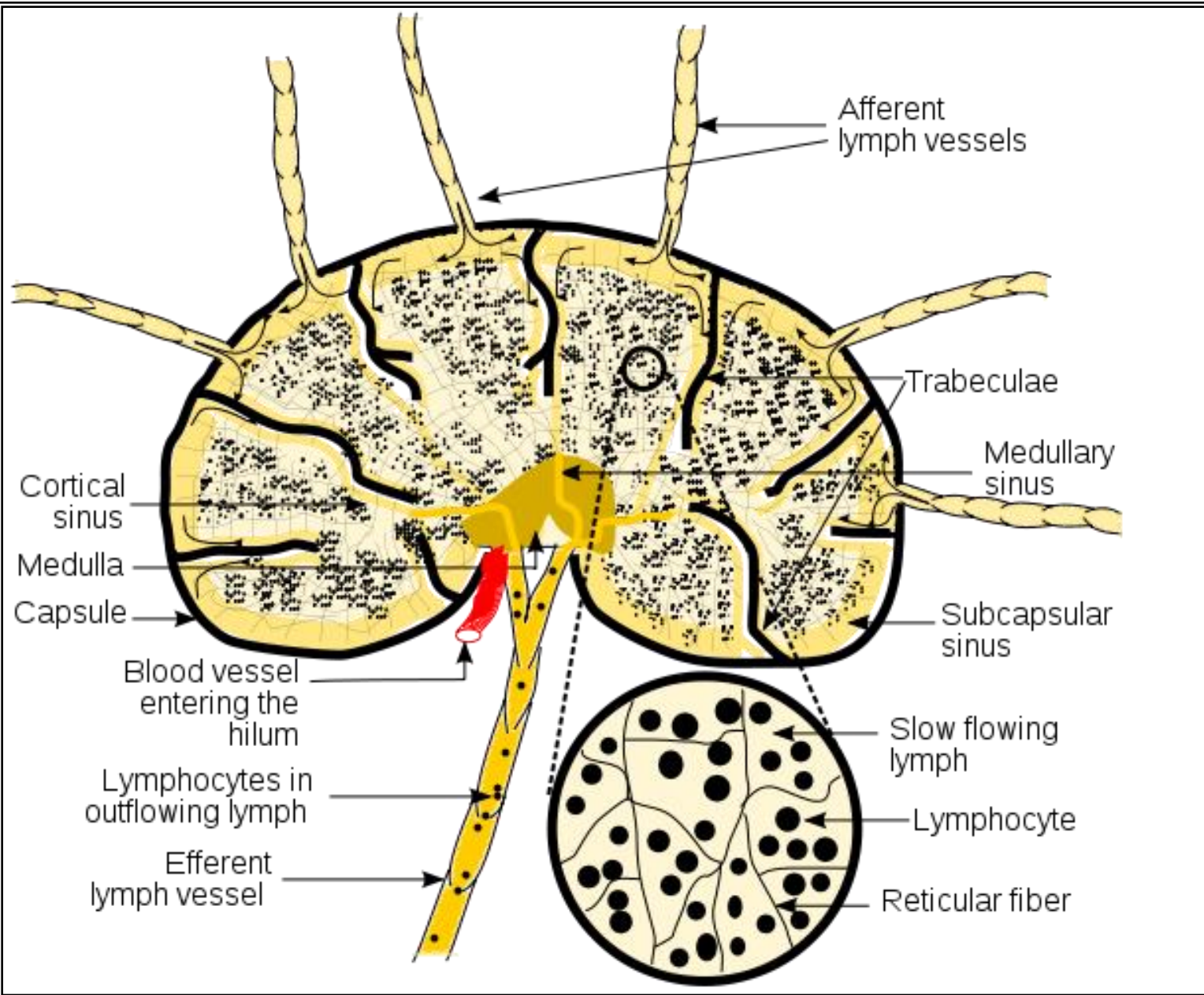
Kirurgisk tilgang: 2017



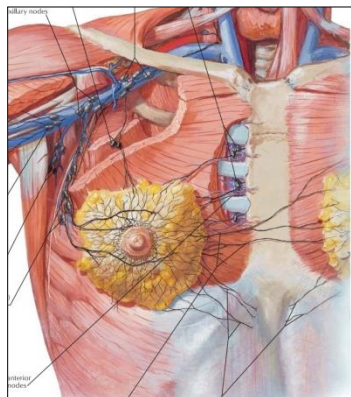
Kreftregisteret : KREMT-reports

Mediastinoskopi

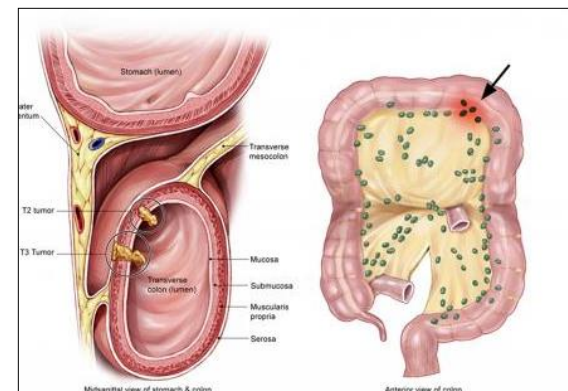
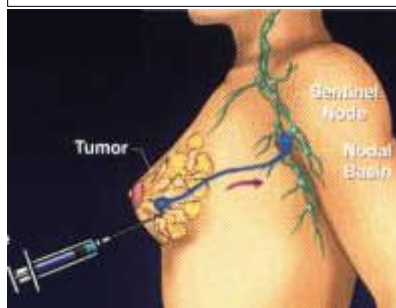




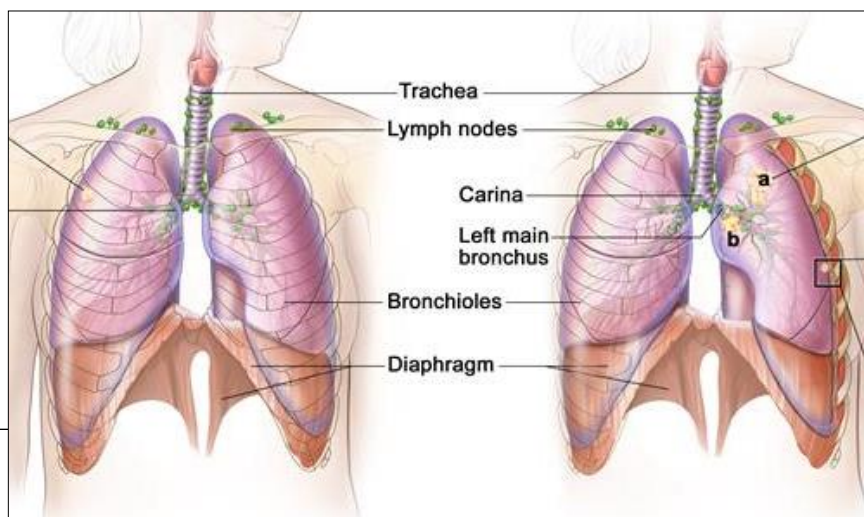
Lymfeknutedisseksjon ved kreft.



Ved brystkreft har man forlatt "stor Halsted" - > "sentinel node".



Ved endetarmskreft har omfattende lymfeknute fjerning "Heald-prosedyre" - > bedret overlevelse.



Ved lungekreft er det fortsatt uavklart hvor omfattende lymfeknuter skal fjernes ved operasjon.

Kirurgi for lungekreft - robot



side 44

Cite this article as: Yang S, Guo W, Chen X, Wu H, Li H. Early outcomes of robotic versus uniportal video-assisted thoracic surgery for lung cancer: a propensity score-matched study. Eur J Cardiothorac Surg 2018;53:348–52.

Early outcomes of robotic versus uniportal video-assisted thoracic surgery for lung cancer: a propensity score-matched study

Su Yang, Wei Guo, Xingshi Chen, Han Wu and Hecheng Li*

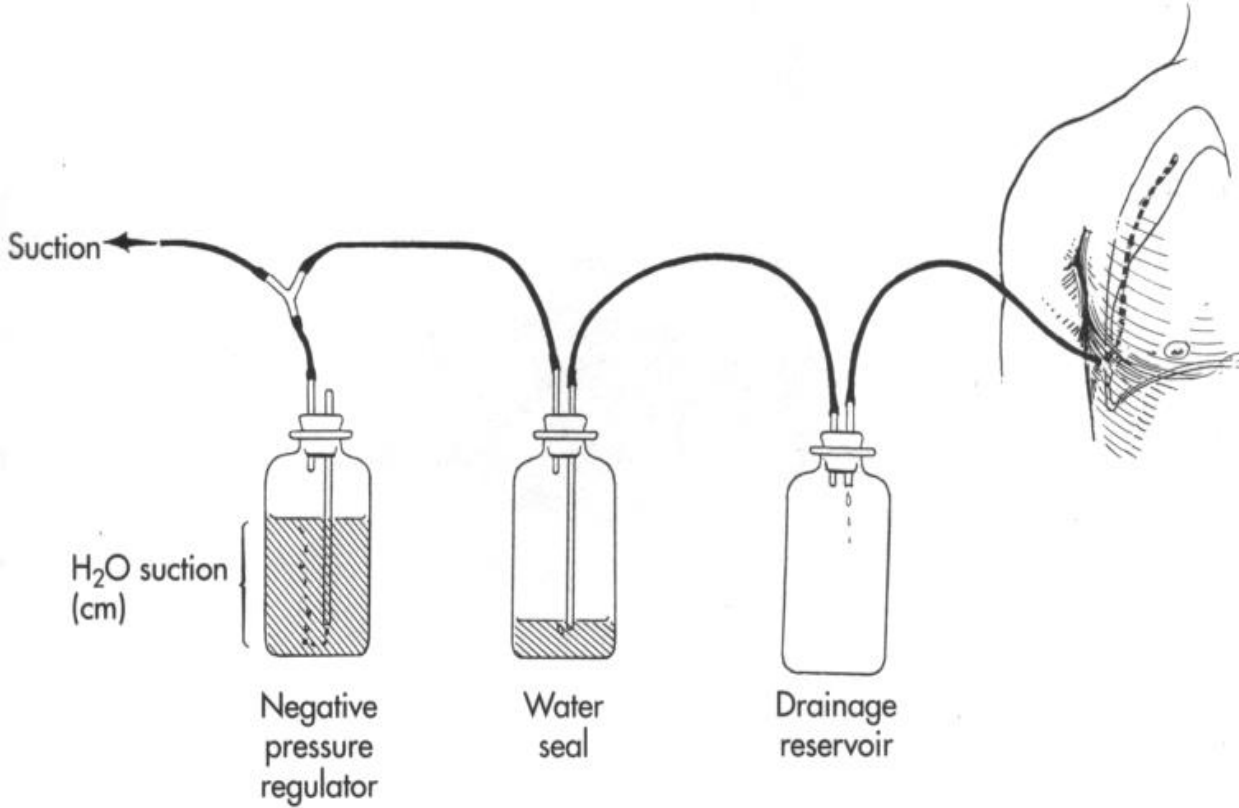
Department of Thoracic Surgery, Ruijin Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, China

* Corresponding author. Department of Thoracic Surgery, Ruijin Hospital, Shanghai Jiaotong University School of Medicine, 197 Ruijin 2nd Road, Shanghai 200025, China. Tel: +86-21-64370045; e-mail: lihecheng2000@hotmail.com (H. Li).

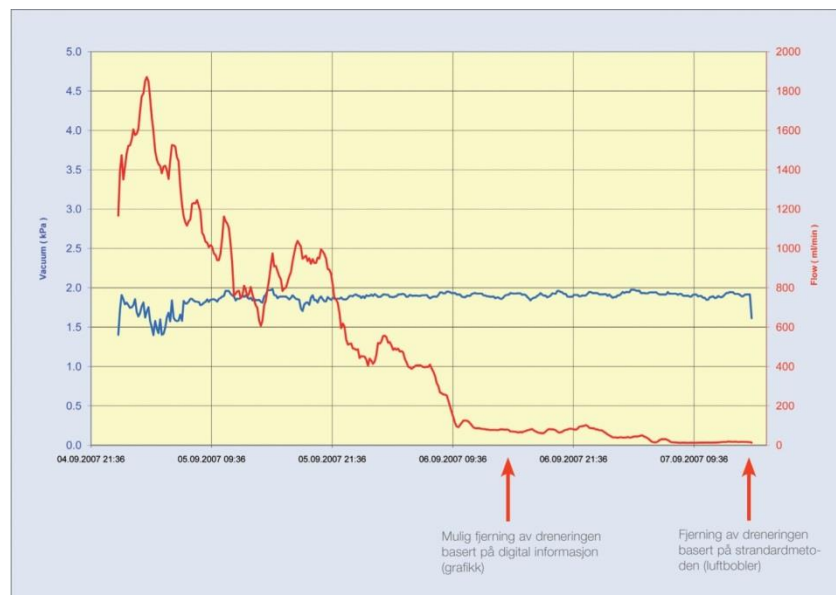
Received 21 February 2017; received in revised form 22 July 2017; accepted 30 July 2017

CONCLUSIONS:

Judging from the short-term outcomes, both RATS and UVATS are safe and feasible for non-small lung cancer treatment. In particular, RATS is better able to reduce bleeding and complete lymphadenectomy than UVATS.

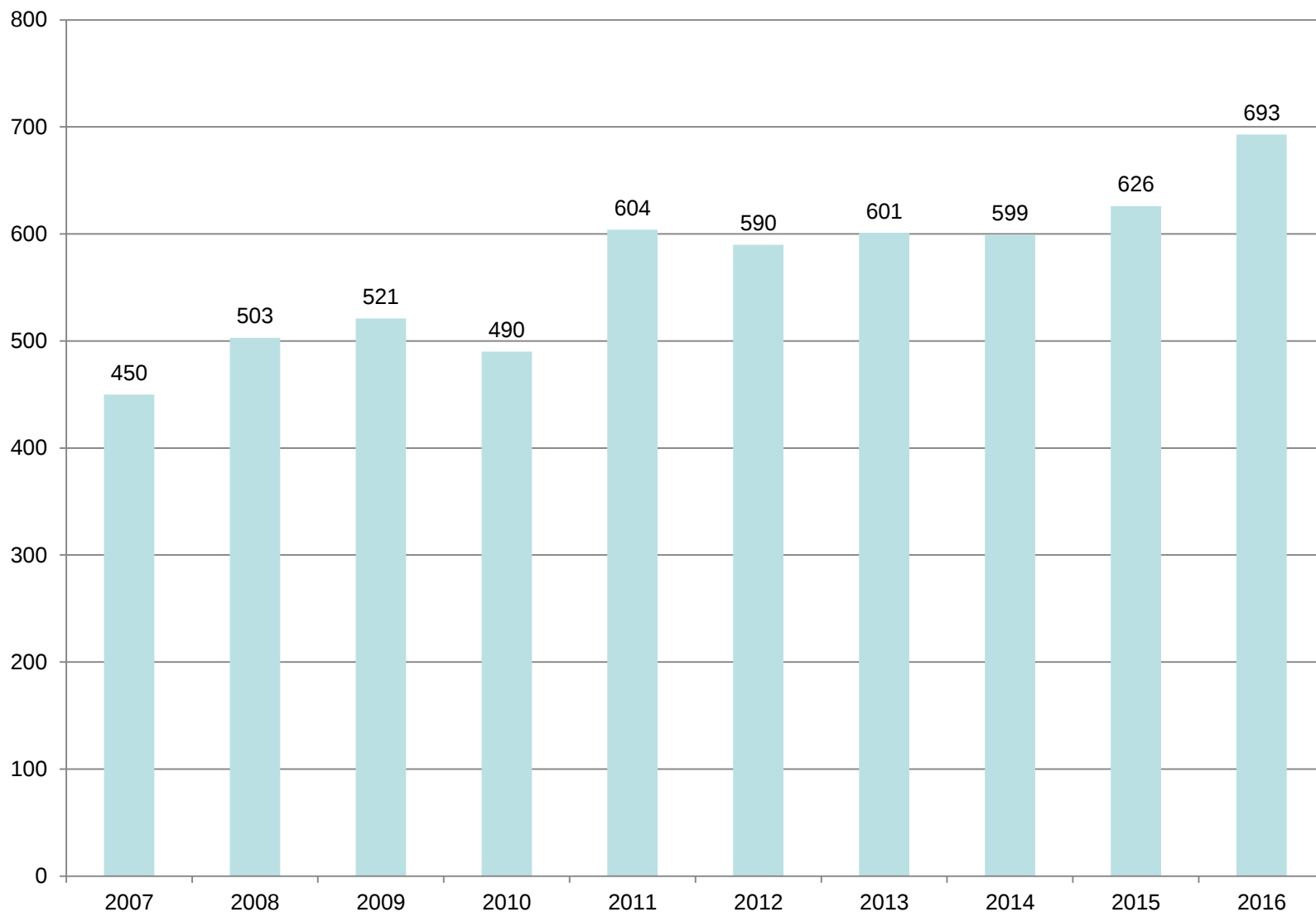


Digitale thoraxdren



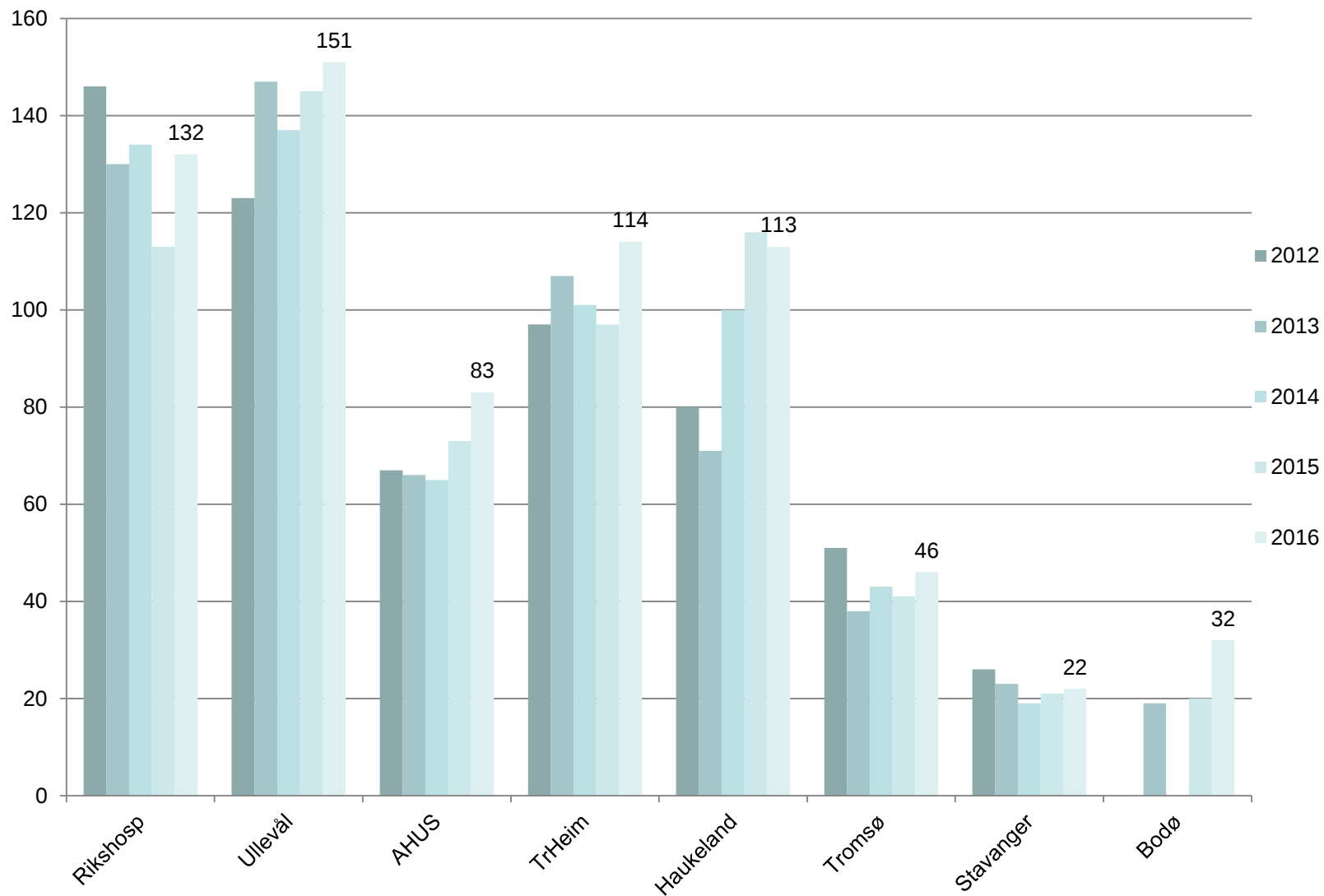


Operations for lung cancer



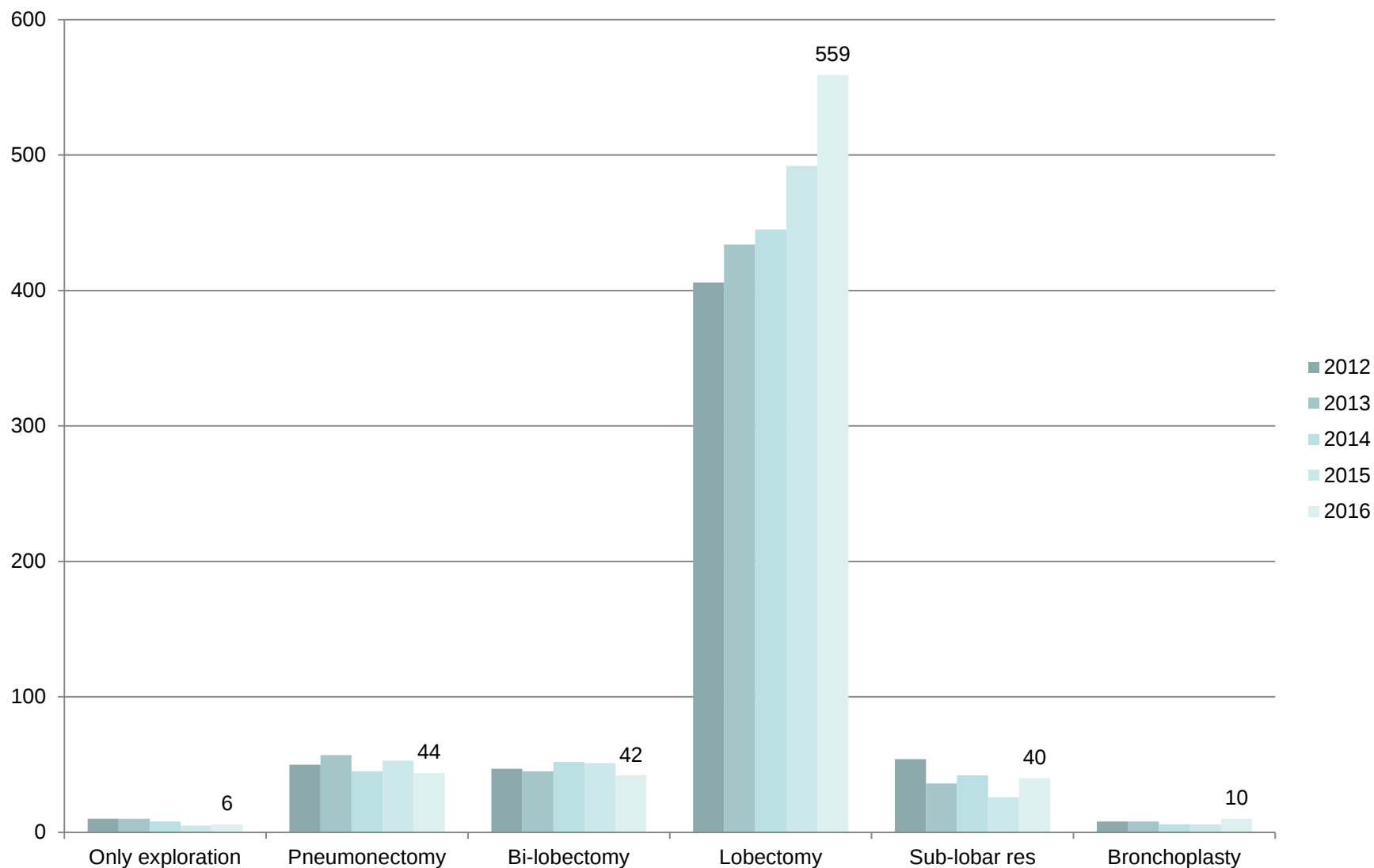


Number of operations for lung cancer per hospital per year



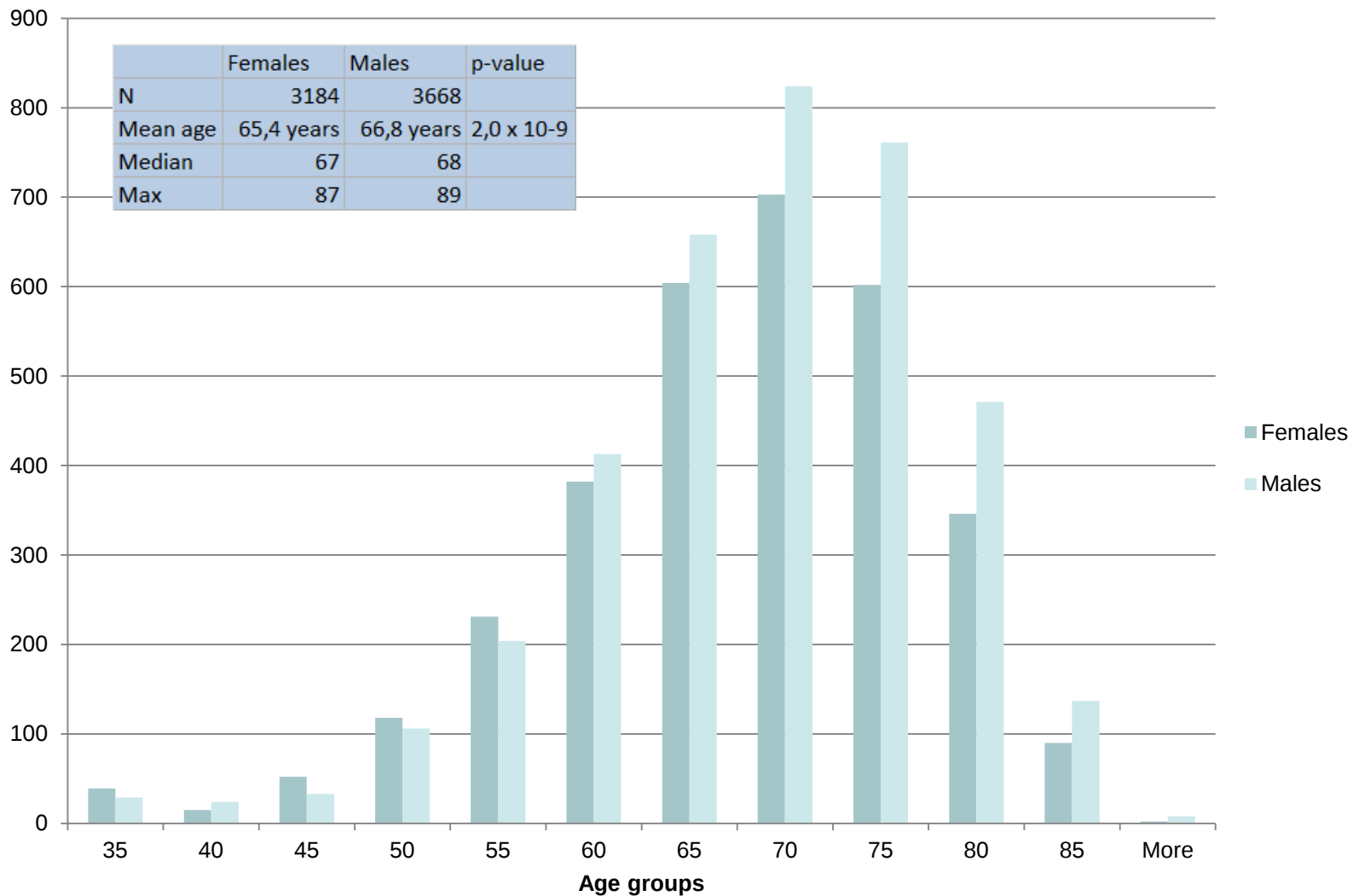


Prosedures performed in operations for lung cancer



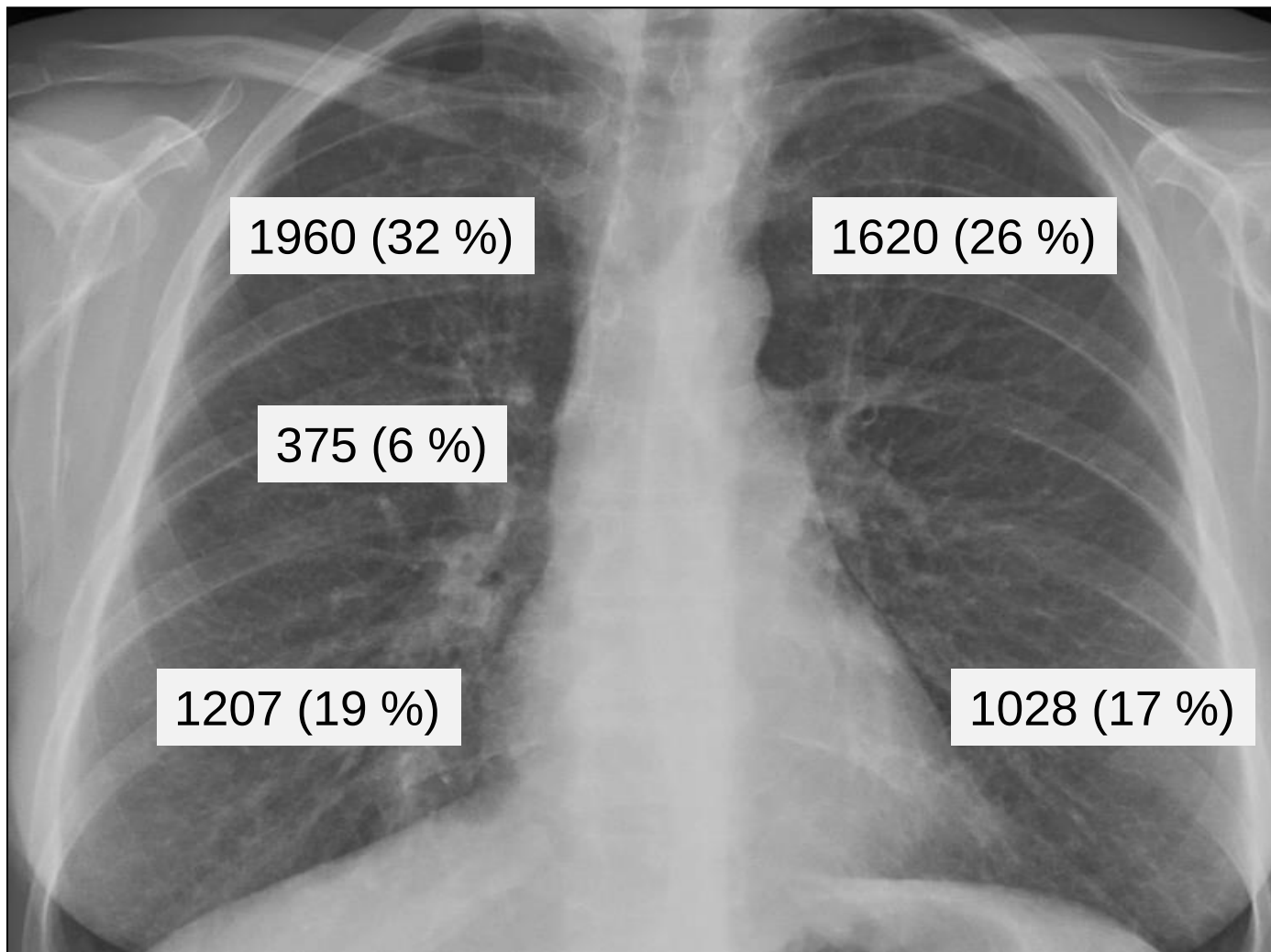


The age distribution in 6852 patients operated for lung cancer 2003 - 2016





Location of tumor in 6190 operations for lung cancer 2003-2016



3542 (57 %)

2648 (43 %) IKSHOSPITALET

LUNGEMETASTASER

Realitet

Kirurgisk behandling
Indikasjoner ???

0 %

100 %

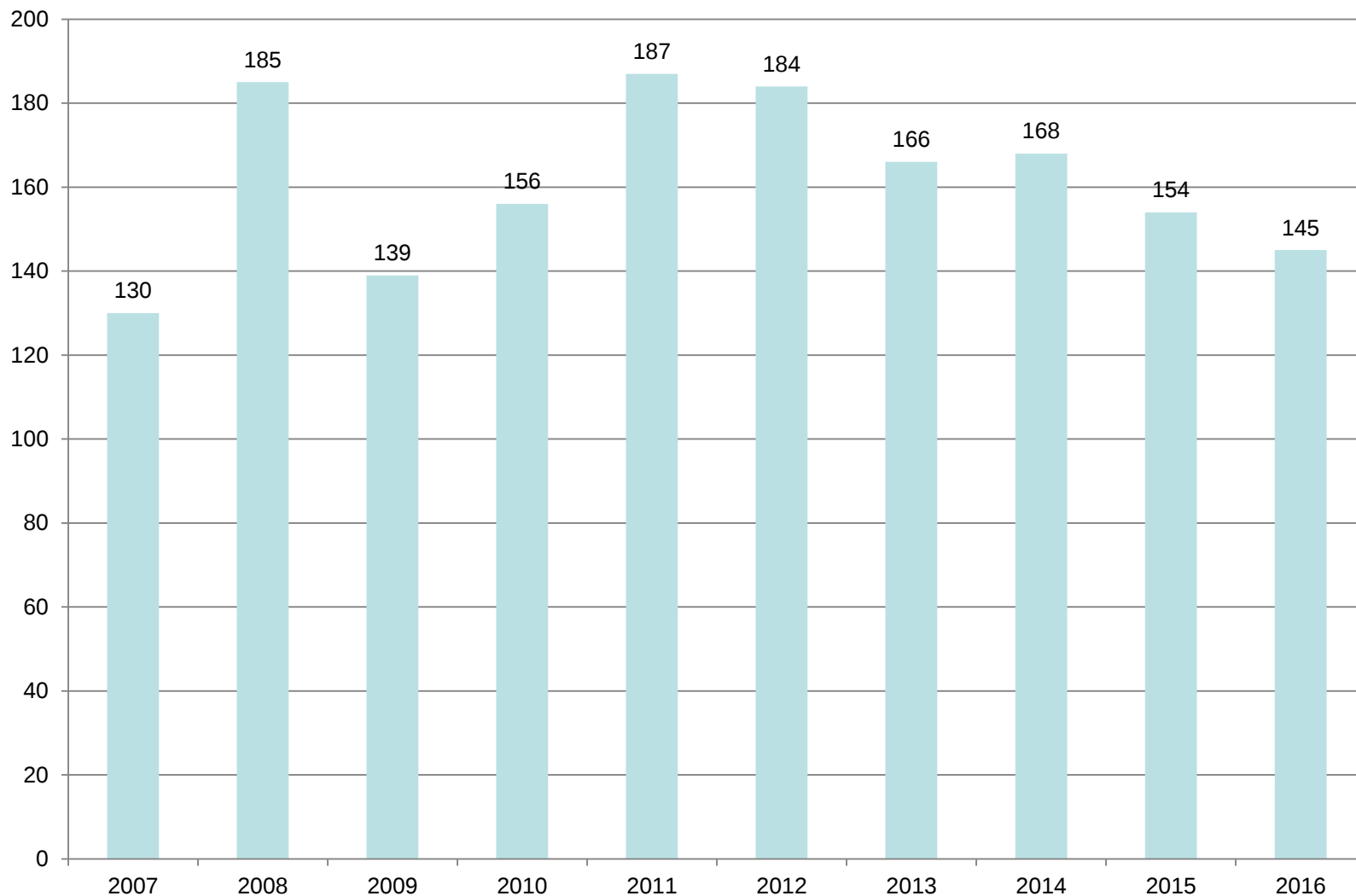
Klar
kontra-
indikasjon

Gråsone

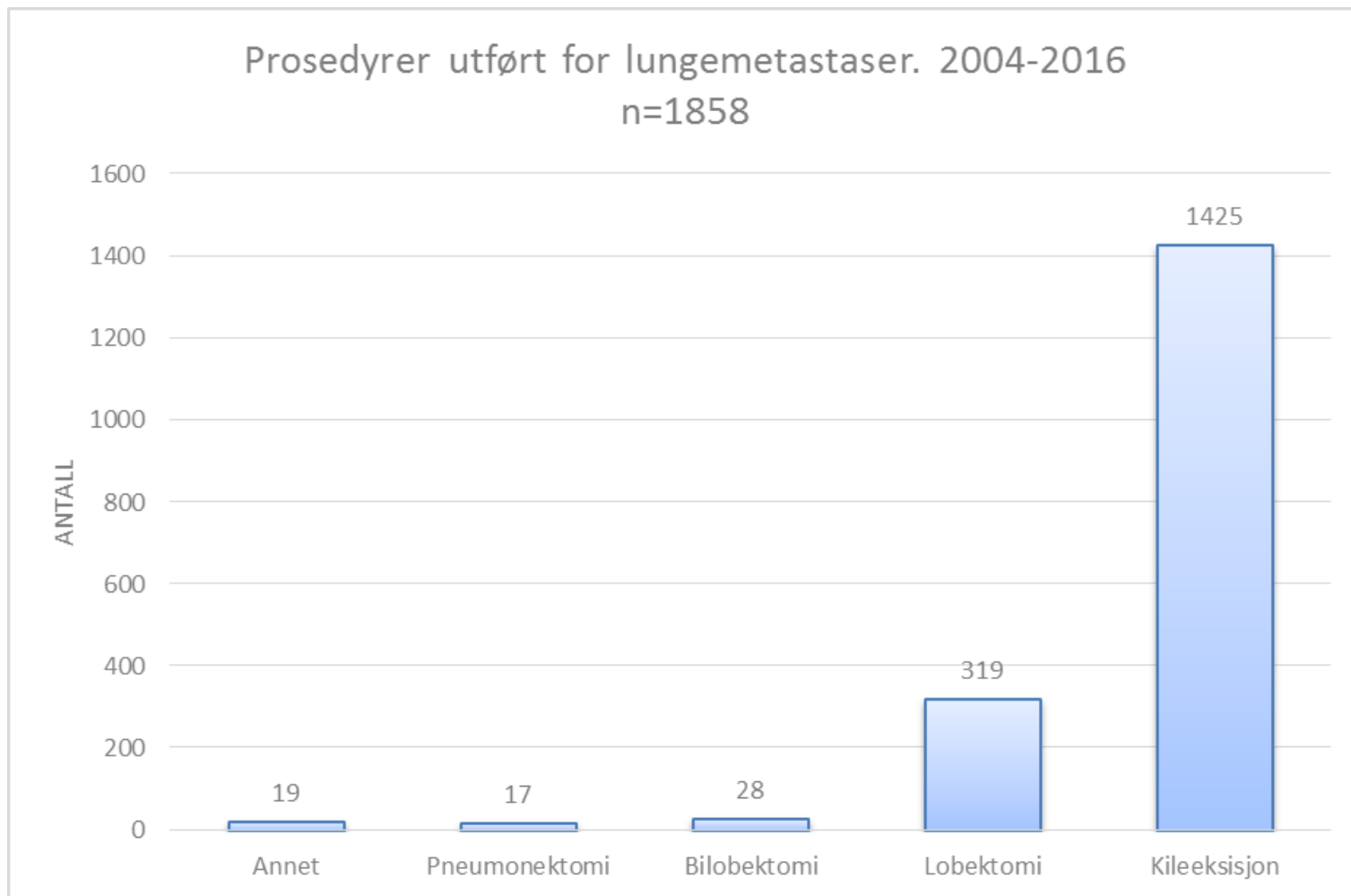
Klar
indikasjon



Number of operations for lung metastases performed annually



Prosedyrer ved lungemetastasekirurgi

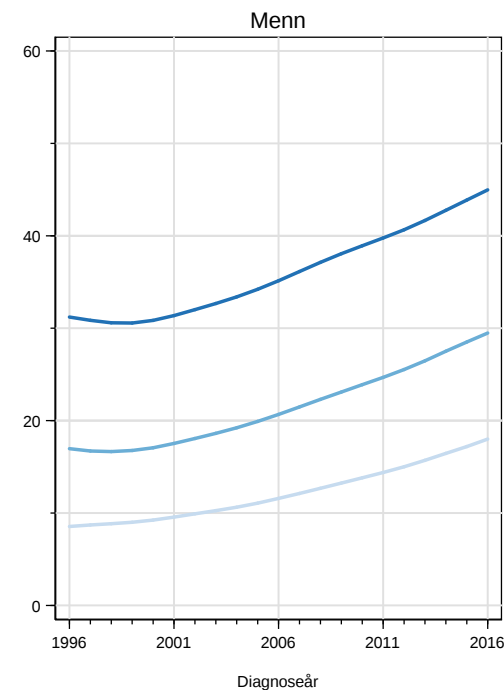
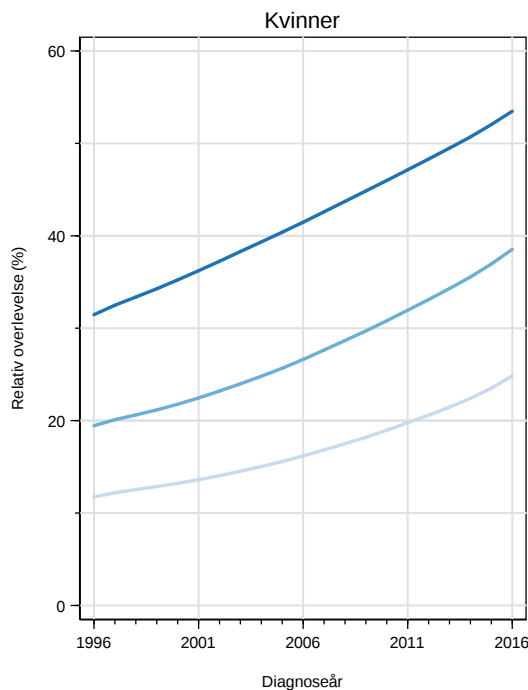




KREFT
registeret
INSTITUTT FOR POPULASJONSBASERT KREFTTILBENNING

Nasjonalt kvalitetsregister for
lungekreft

Årsrapport 2016
med resultater og forbedringstiltak



— 1 år — 2 år — 5 år

Improved survival after 1, 2 and 5 years
in the whole group of lung cancer patients.

The Cancer Registry of Norway

<http://www.kreftregisteret.no/>

Konklusjoner:

- Andelen som får kurativ behandling øker.
- Kirurgi er den viktigste kurative beh. for lungekreft
- Resultatene er veldig gode.
 - Mer lymfeknutedisseksjon!
- Stereotaksi – et viktig tilskudd.
- Andel thorakoskopiske operasjoner. Robot.
- Singel metastase til hjerne / binyre.
- Erkjent N2-sykdom.
- Lymfeknutedisseksjon.



DET ER VERKELSESLOFT OVER LANDET





TAKK