Overvåking av resistens og antibiokabruk ved intensivavdelinger – IVA-Strama/CareICU

Mikrobiologiska data från

- **IVA-Strama/CareICU**

http://www4.smittskyddsinstitutet.se/careicu/index.jsp

- **Svenskt Intensivvårdsregister-IVAStrama**

http://www-icuregswe.org

- **MYSTIC European-ICU-study**

Oslo Norm dagen 6e november 2008 13.45 – 14.30

Håkan Hanberger, Strama/Smittskyddsinstitutet
Hälsouniversitetet i Linköping

Dilemma in Critical Care

Early and adequate antibiotic improves outcome ….

driving force behind antibiotic resistance

All ICUs need

- Surveillance of
  - AB consumption,
  - AB resistance

  to be feed backed to the prescribers

- Early warning systems of emerging resistance and increasing ICU-acquired infections

CareICU - a web-based programme, developed by ICU-Strama, for the coordinated collection and feed back of information on

- **Antibiotic Policies**
- **Antibiotic Use**
- **Antibiotic Resistance**
- **Infection Control Practices**

in participating ICUs

CareICU: http://www4.smittskyddsinstitutet.se/careicu/index.jsp

CARE-ICU IPSE WP5

Started 2005 as a large pilot in 35 ICUs

- Croatia (4 ICUs)
- Czech republic (3 ICUs)
- Estonia (3 ICUs)
- Hungary (8 ICUs)
- Malta (3 ICUs)
- Romania (1 ICU)
- Sweden (10 ICUs)
- Turkey (3 ICUs)

CareICU: http://www4.smittskyddsinstitutet.se/careicu/index.jsp

First report from CareICU IPSE

Intensive Care Med
DOI 10.1007/s00134-008-1237-y

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Elizabeth A. Scicluna
Václav Vanis
Sten M. Walther

Surveillance of microbial resistance in European Intensive Care Units: a first report from the Care-ICU programme for improved infection control

Received: 27 February 2008
Accepted: 30 June 2008

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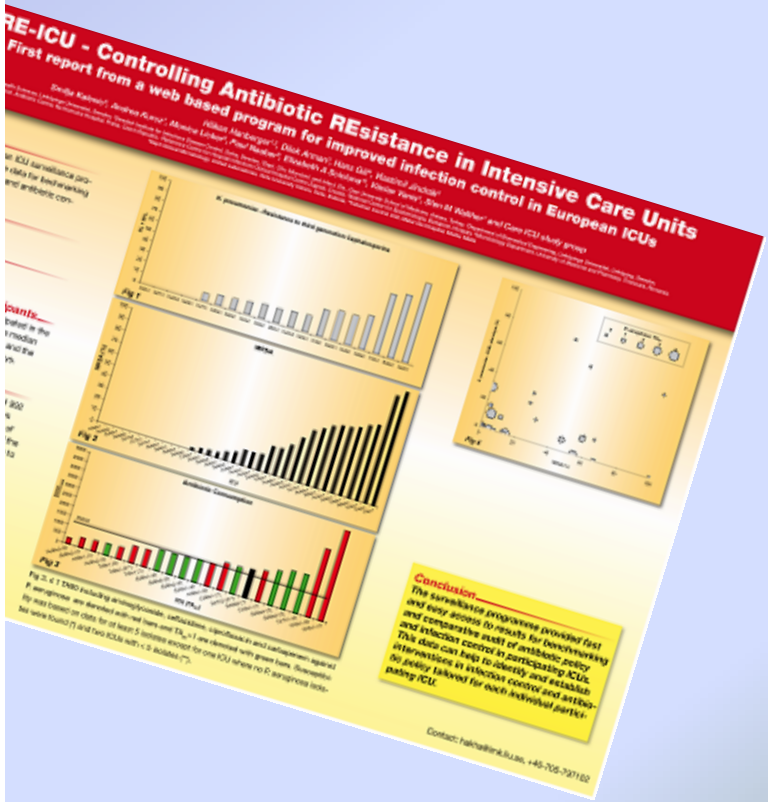
Tel.: +46-13-2220001367
Fax: +46-13-159441

Abstract *Purpose:* To report initial results from a European ICU surveillance programme focussing on antibiotic consumption, microbial resistance and infection control. *Methods:* Thirty-five ICUs participated during 2005. Microbial resistance, antibiotic consumption and infection control stewardship measures were entered locally into a web-application. Results were validated locally, aggregated by project leaders and fed back to support local audit and benchmarking. *Results:* Median (range) antibiotic consumption was 1,254 (range 348–4,992) DDD per 1,000 occupied bed days. The proportion of MRSA was median 11.6% (range 0–100), for ESBL phenotype of *E. coli* and *K. pneumoniae* 3.9% (0–80) and 14.3% (0–77.8) respectively, and for carbapenem-resistant *P. aeruginosa* 22.5% (0–100). Screening on admission for alert pathogens was commonly omitted, and there was a lack of single rooms for isolation. *Conclusions:* The surveillance programme demonstrated wide variation in antibiotic consumption, microbial resistance and infection control measures. The programme may, by providing rapid access to aggregated results, promote local and regional audit and benchmarking of antibiotic use and infection control practices.

Keywords Intensive care · Antibiotic consumption · Microbial resistance · Infection control



Surveillance of microbial resistance in European Intensive Care Units: a first report from the Care-ICU programme for improved infection control. Hanberger H, Arman D, Gill H, Jindrák V, Kalenic S, Kurcz A, Licker M, Naaber P, Scicluna EA, Vanis V, Walther SM. **Intensive Care Med. 2008 Aug 1**. [Epub ahead of print]

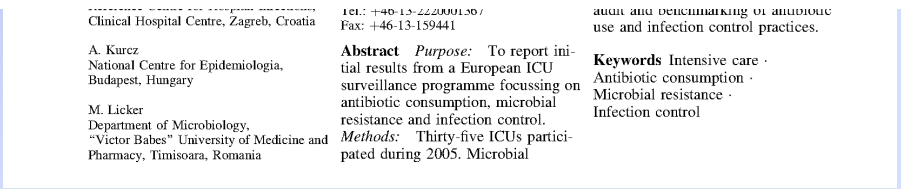
First report from CareICU IPSE

Summary

….. ***demonstrated wide variation in antibiotic consumption, microbial resistance and infection control measures.***

- **Antibiotic consumption** 1,254 (range 348–4,992)
  DDD per 1,000 occupied bed days.

- **MRSA**: 11.6% (range 0–100),
- **ESBL phenotype of *E. coli***: 3.9% (range 0–80)
- **ESBL phenotype of *K. pneumoniae*** 14.3% (range 0–77.8)
- **Carbapenemresistant *P. aeruginosa*** 22.5% (range 0–100)



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Budapest, Hungary

M. Licker
Department of Microbiology,
"Victor Babes" University of Medicine and
Pharmacy, Timisoara, Romania

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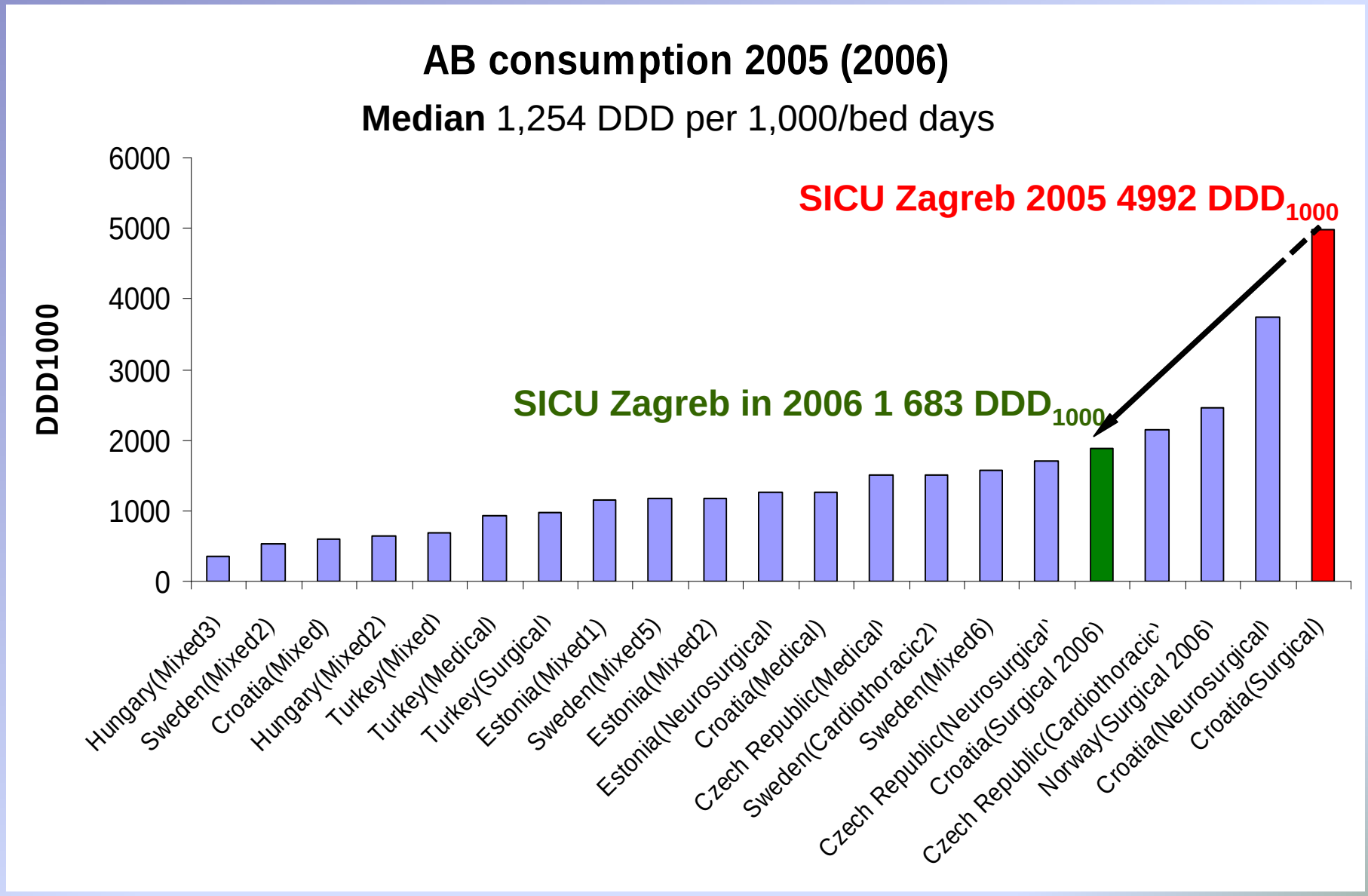
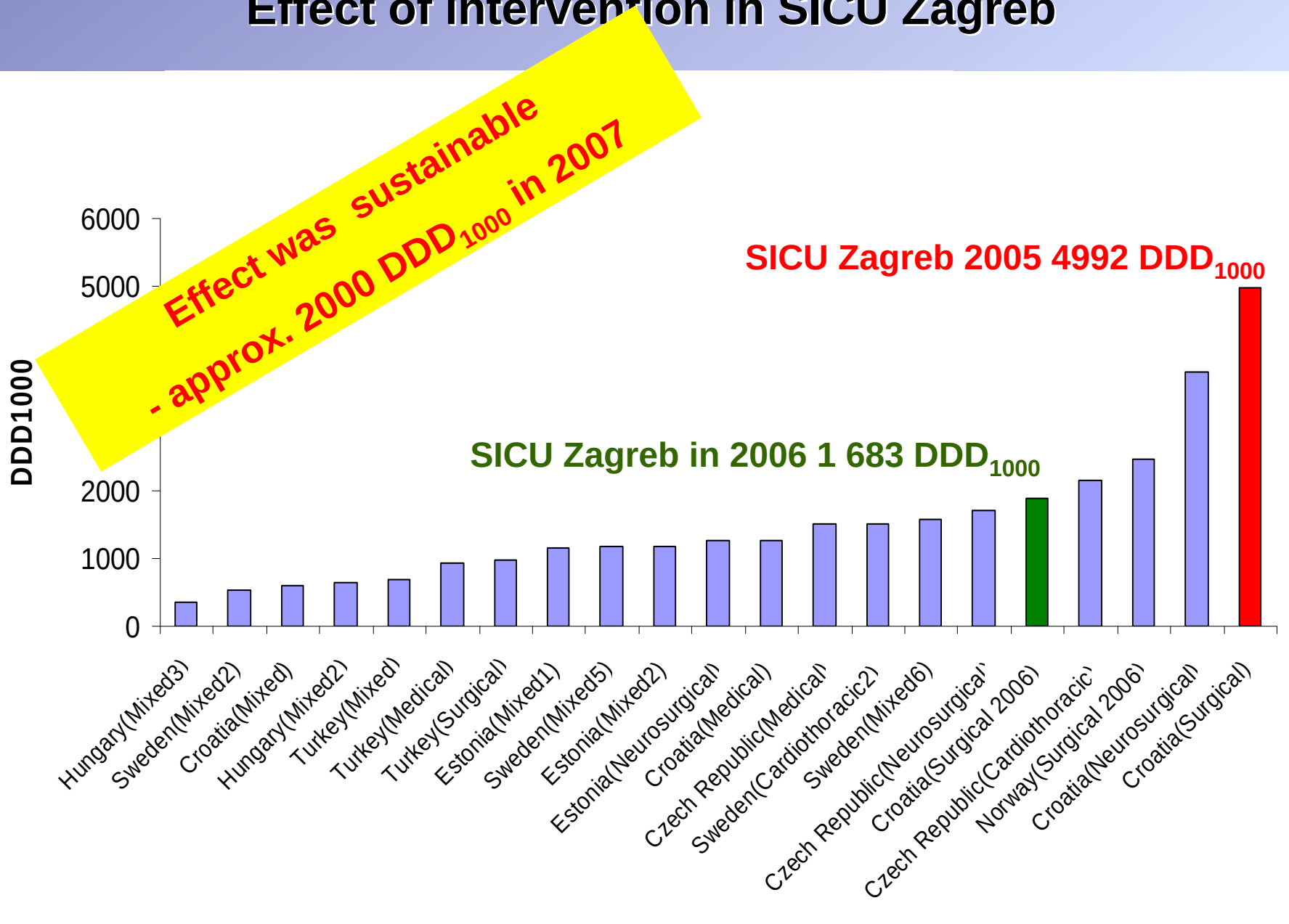
Effect of intervention in SICU Zagreb



Source: Smilja Kalenic Centre Hosp Infect & Clin Hosp Zagreb, Croatia

CareICU: http://www4.smittskyddsinstitutet.se/careicu/index.jsp

Effect of intervention in SICU Zagreb



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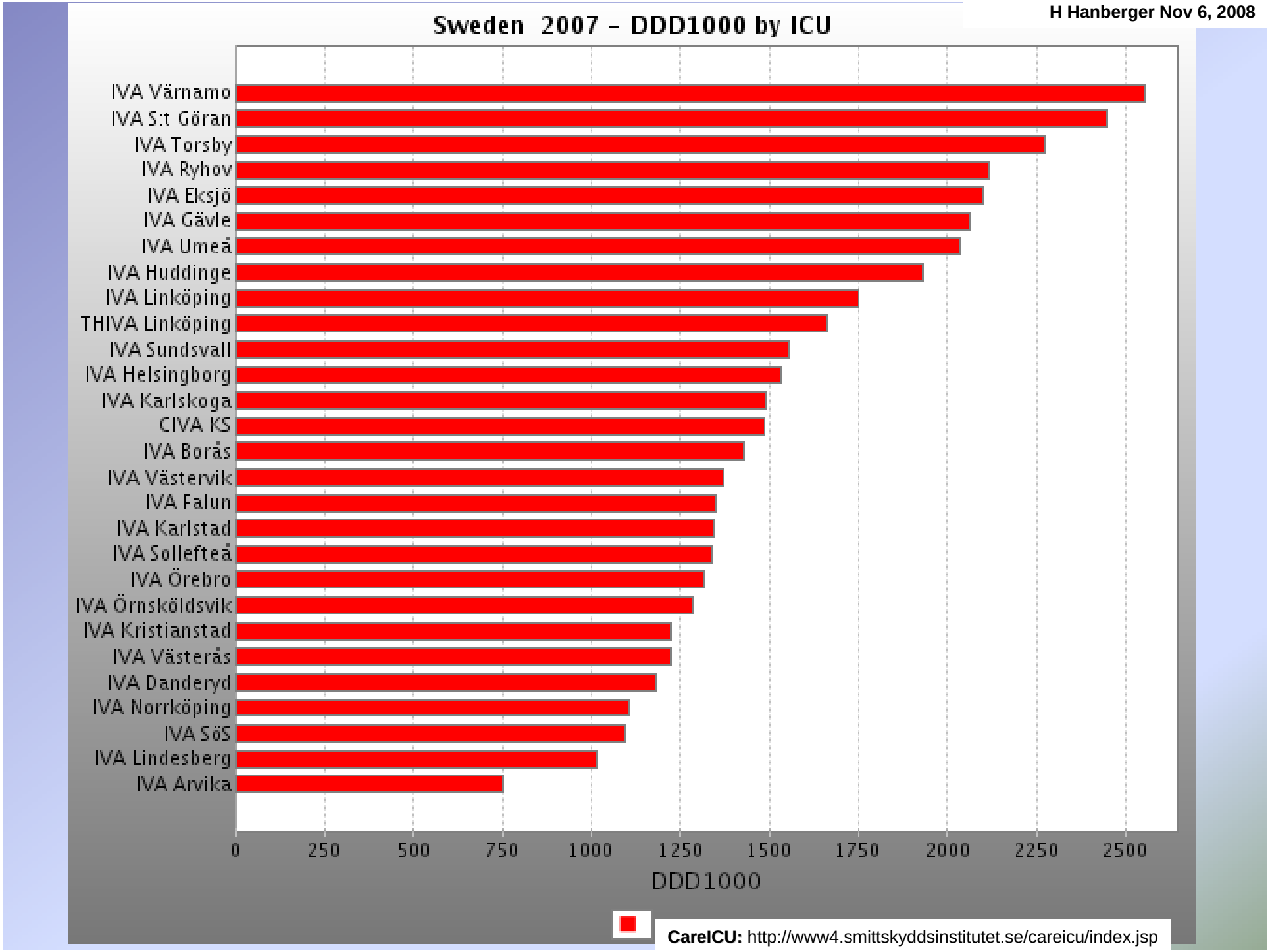
H Hanberger Nov 6, 2008



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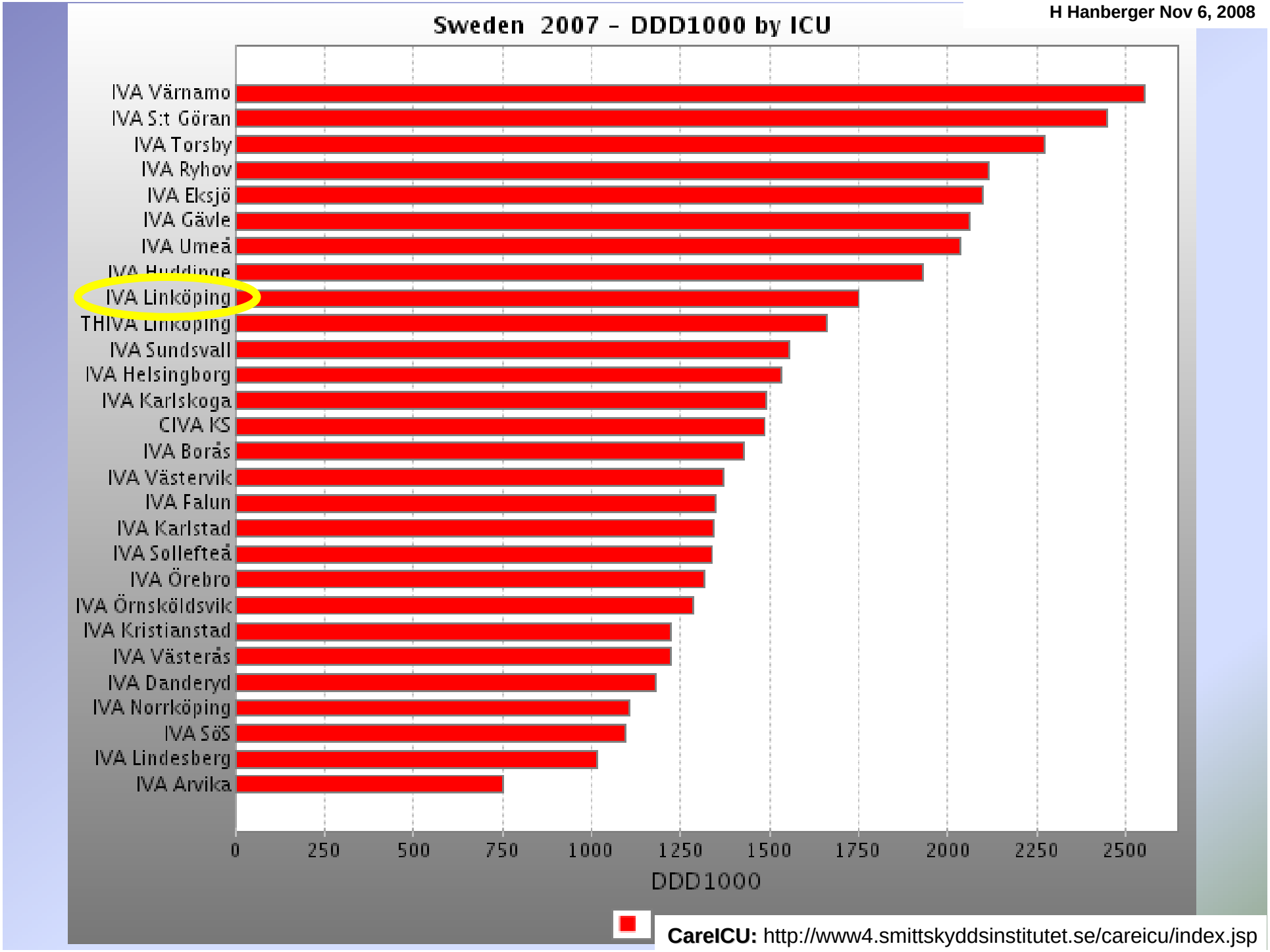

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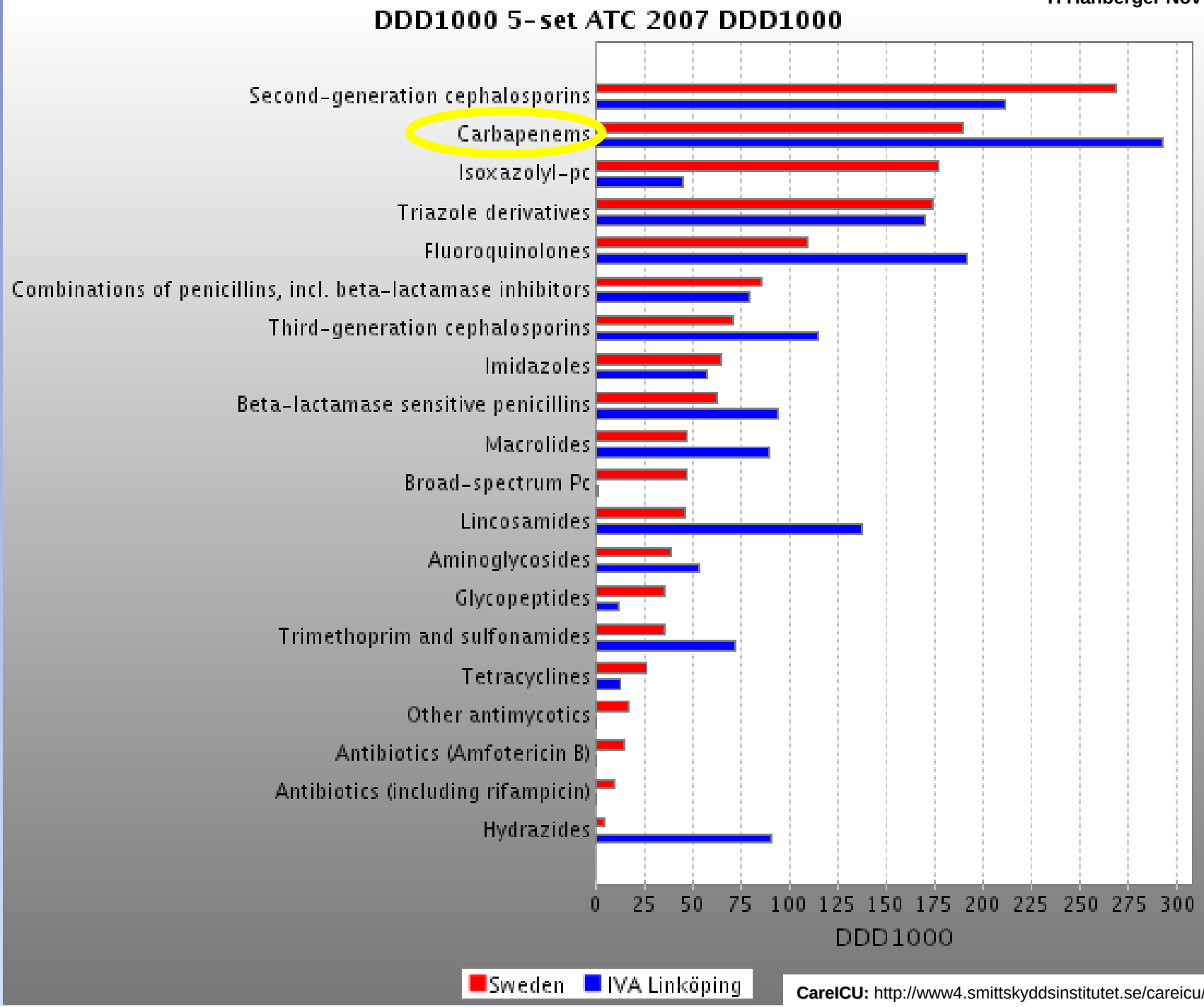
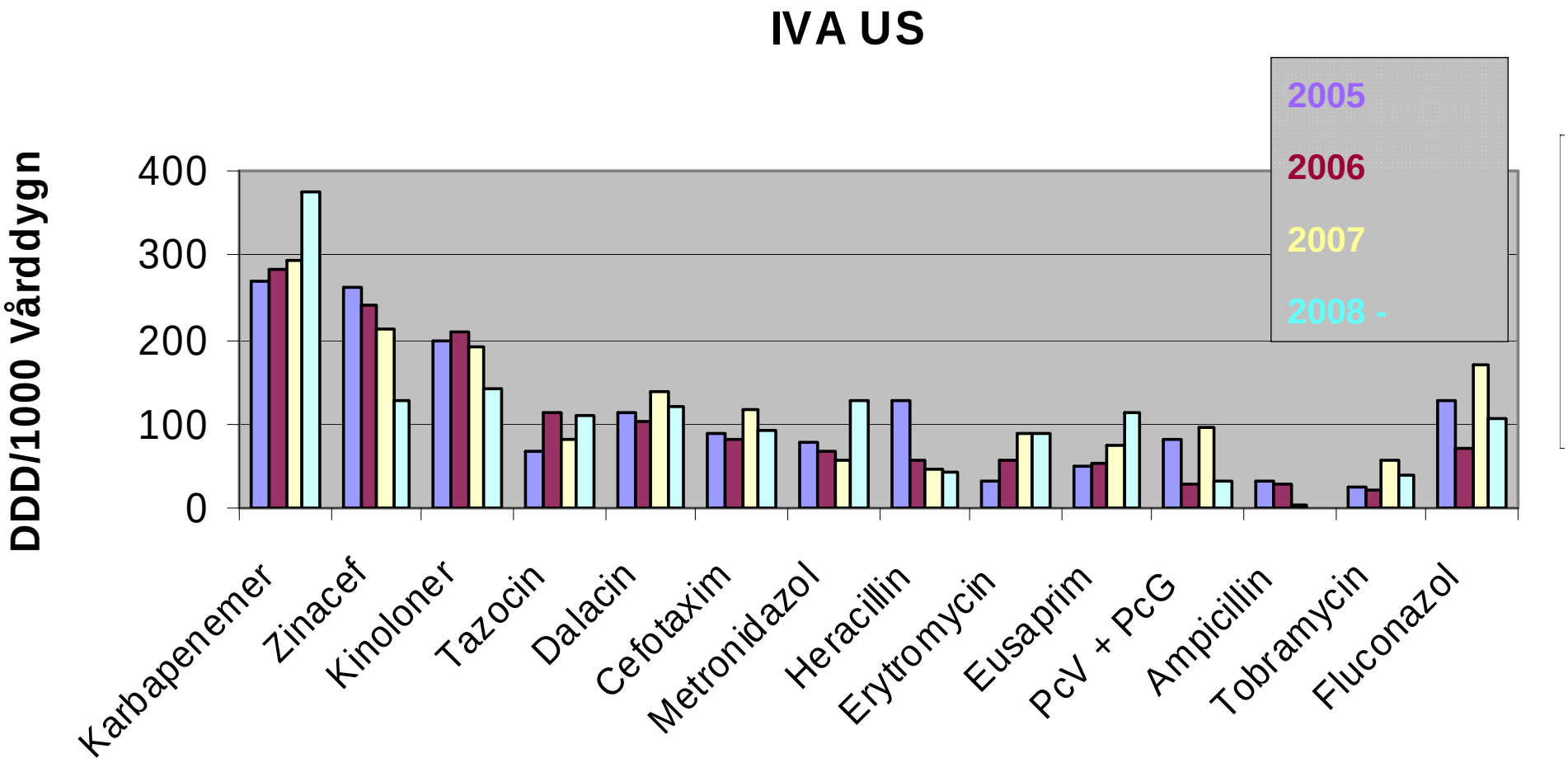


CareICU: http://www4.smittskyddsinstitutet.se/careicu/index.jsp

Antibiotic consumption general ICU Linköping University Hospital



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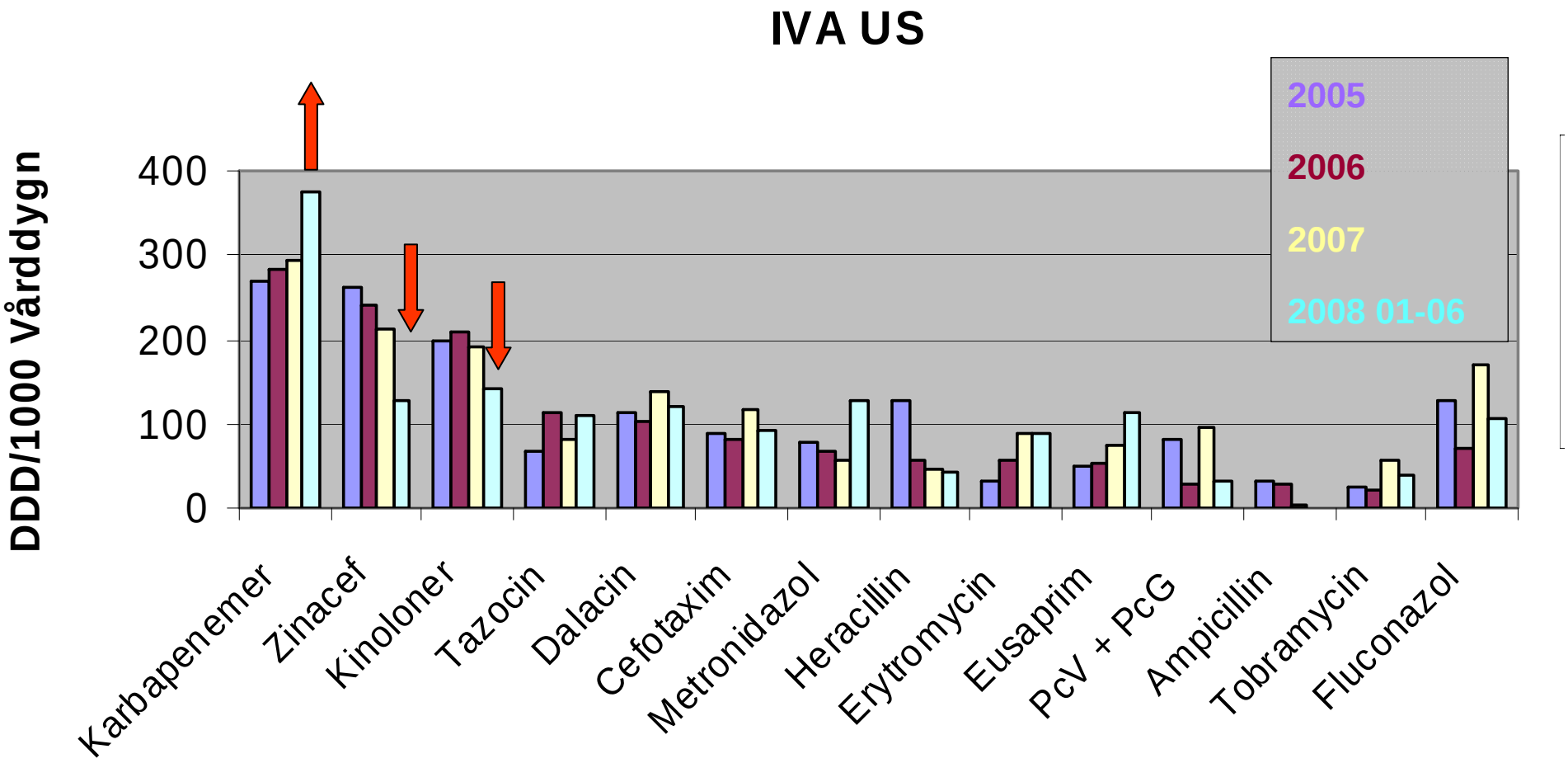
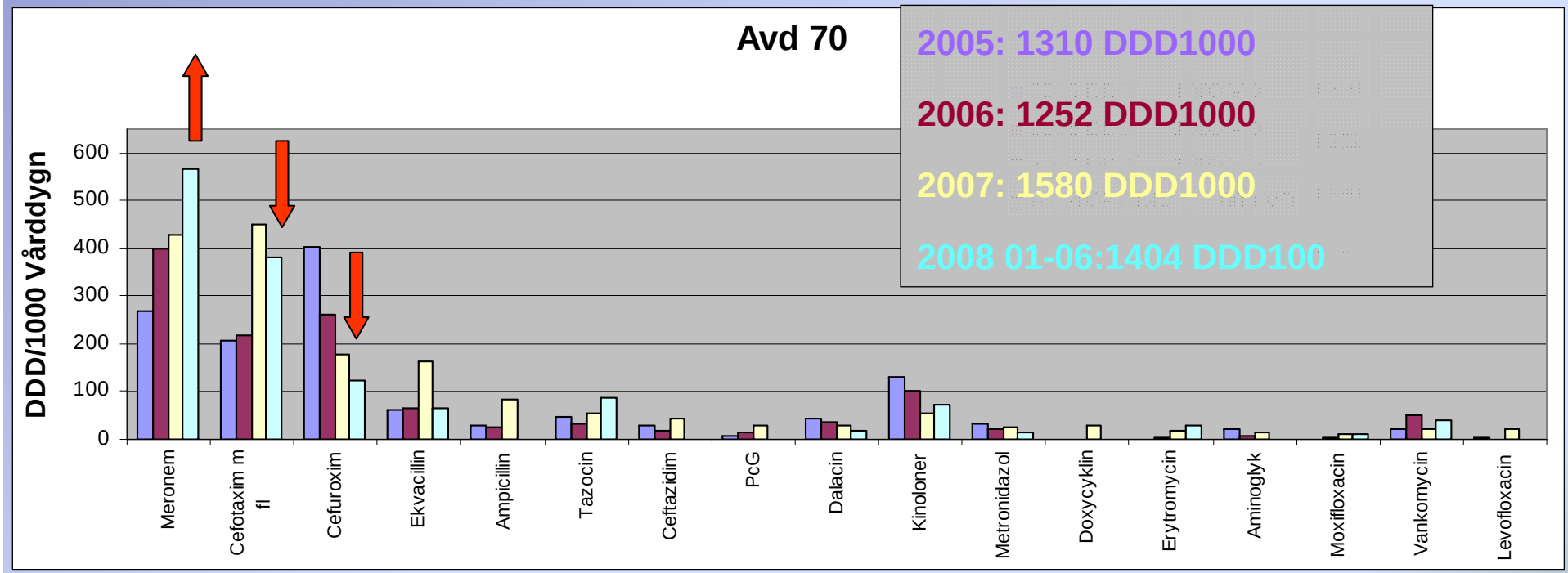
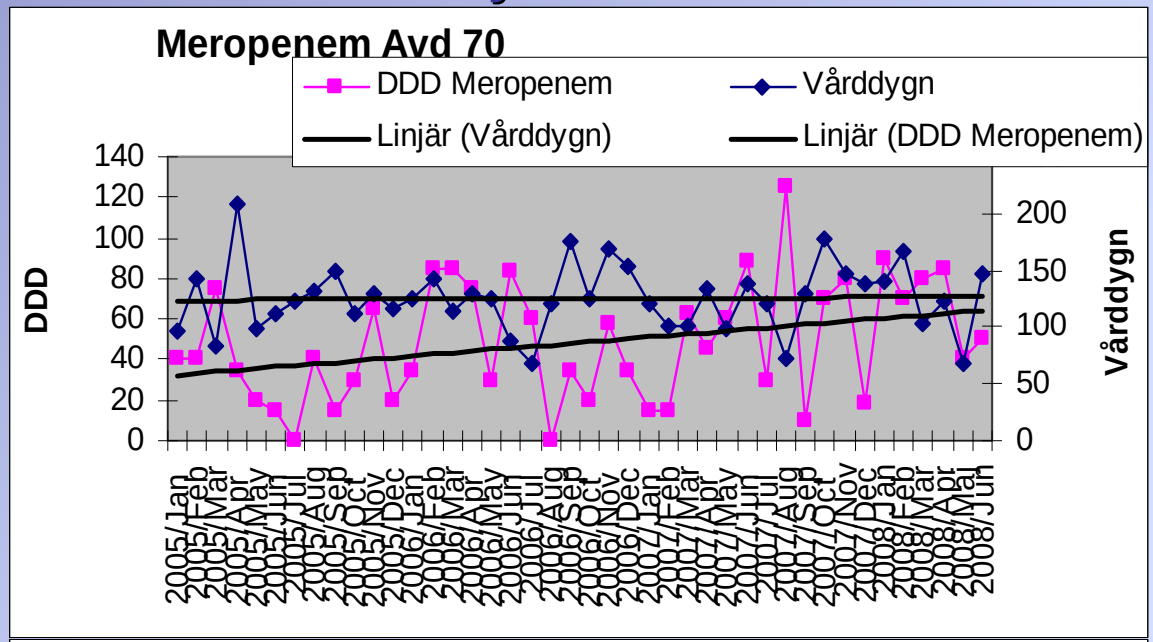
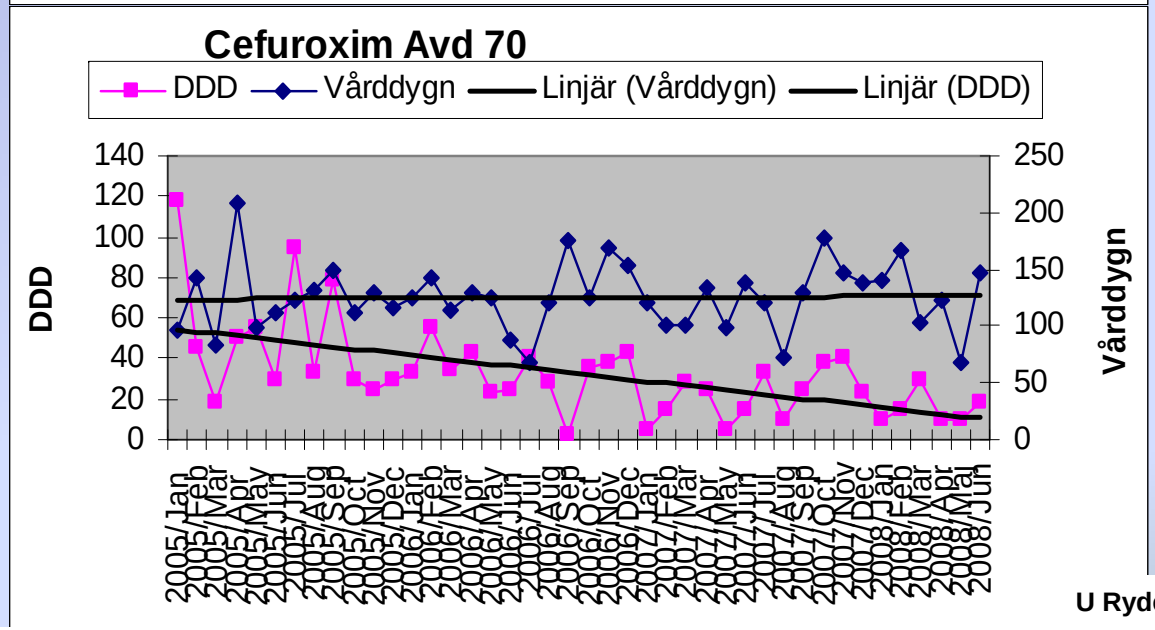


Antibiotic consumption Neurosurgical ICU Linköping University Hospital



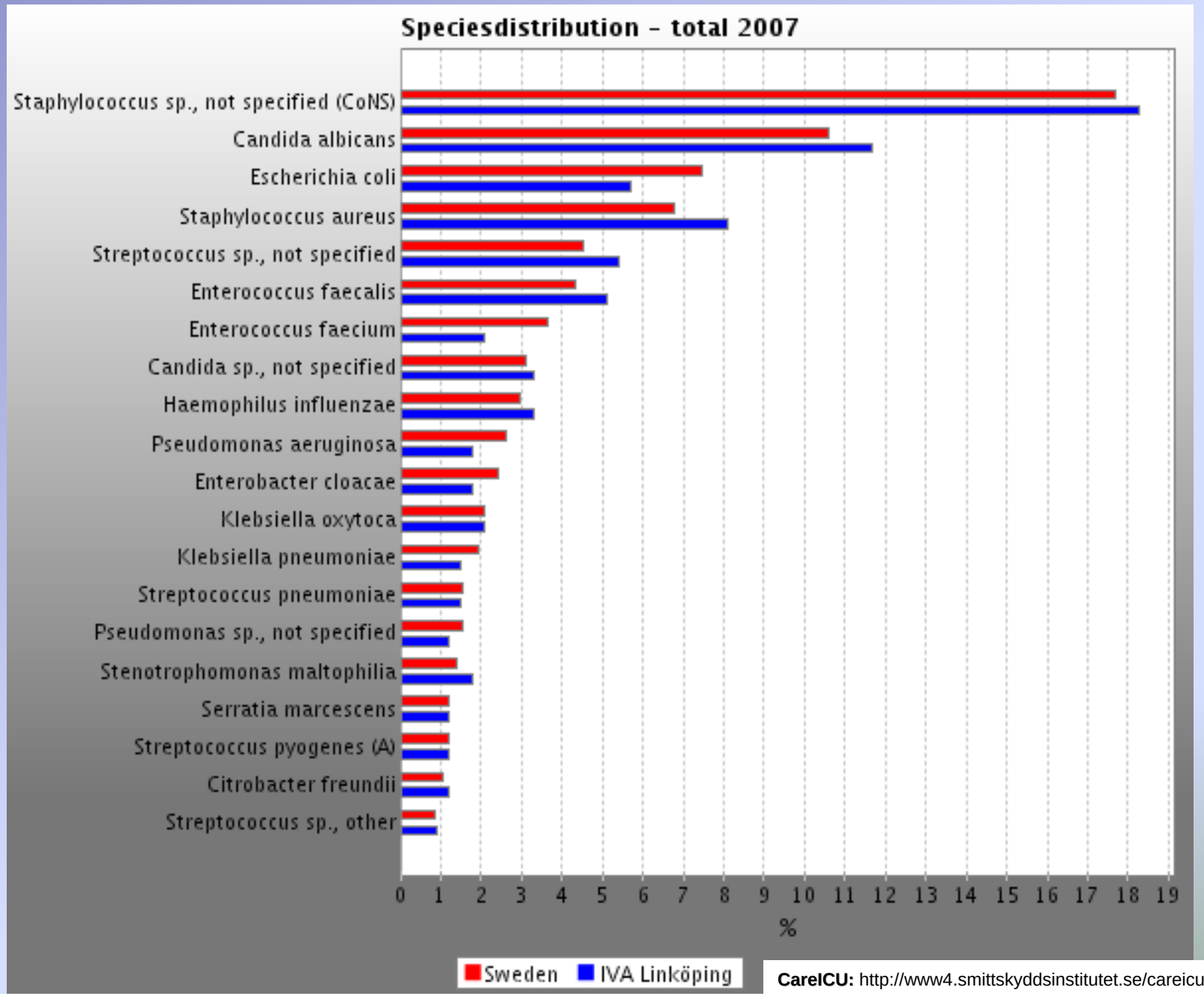
Antibiotic consumption Neurosurgical ICU Linköping
Time series analysis Jan 2005 - June 2008





Artfördelning

Distribution of species general ICU Linköping



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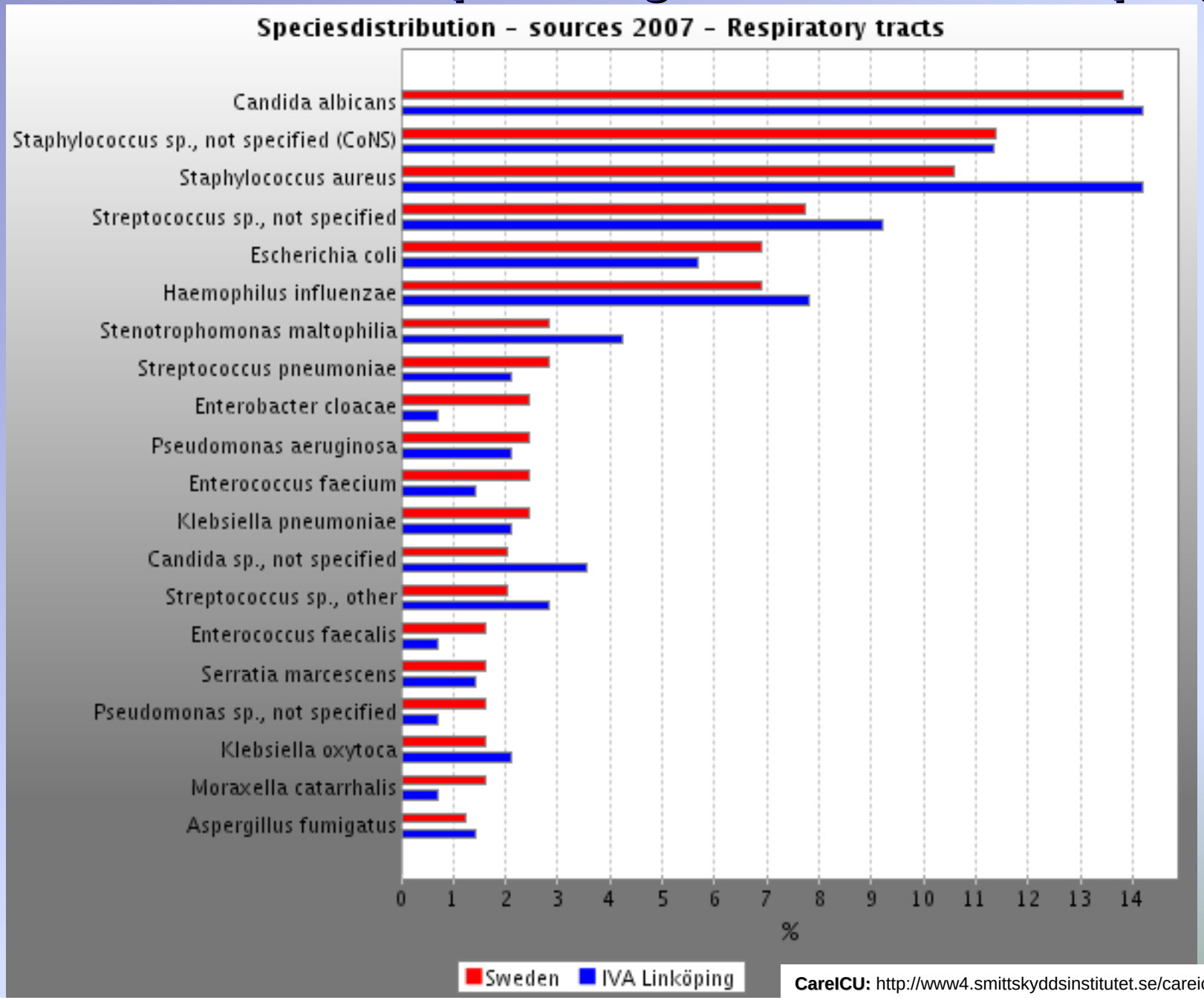
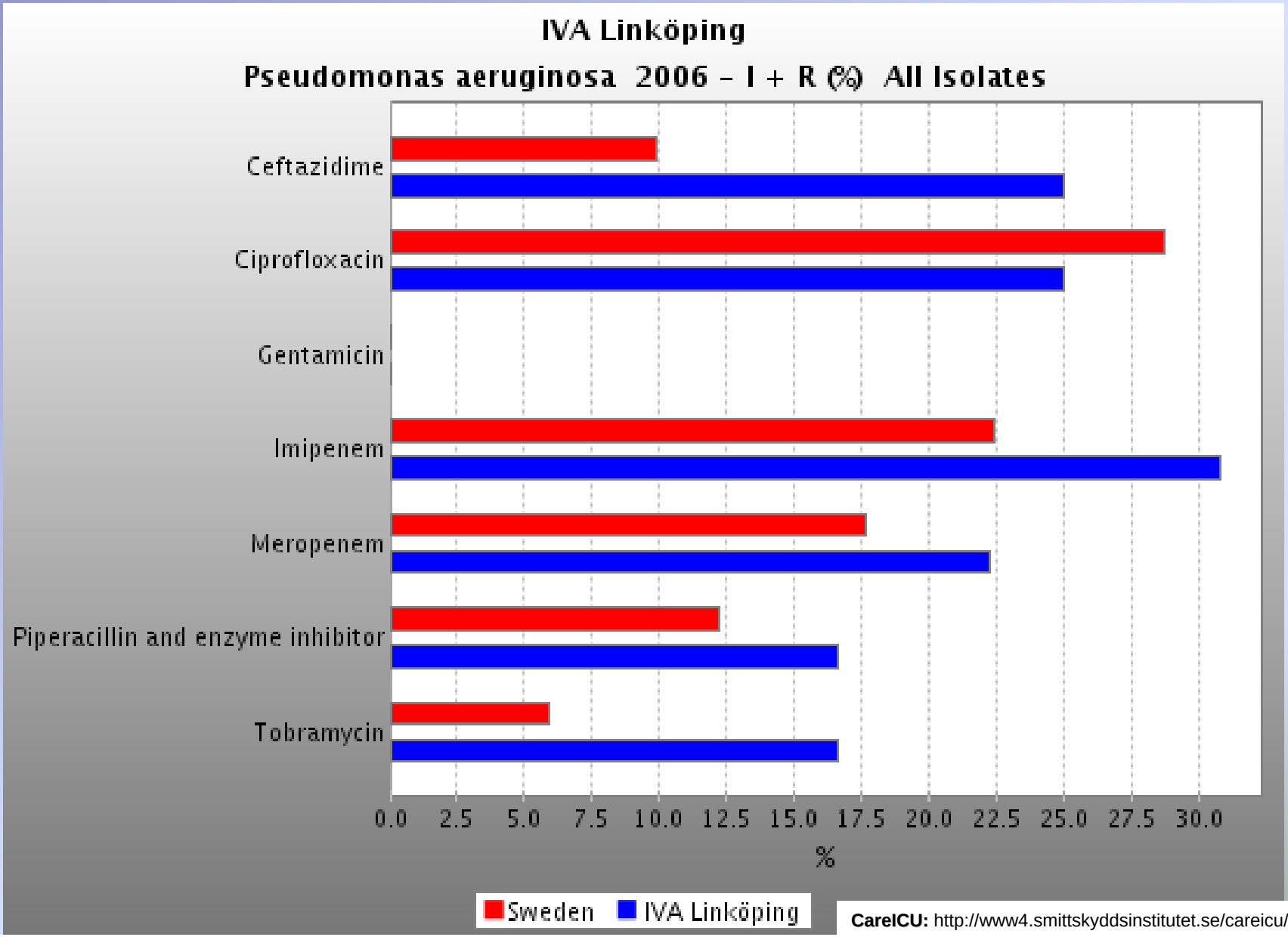
Distribution of species general ICU Linköping



CareICU: http://www4.smittskyddsinstitutet.se/careicu/index.jsp

P. aeruginosa general ICU Linköping



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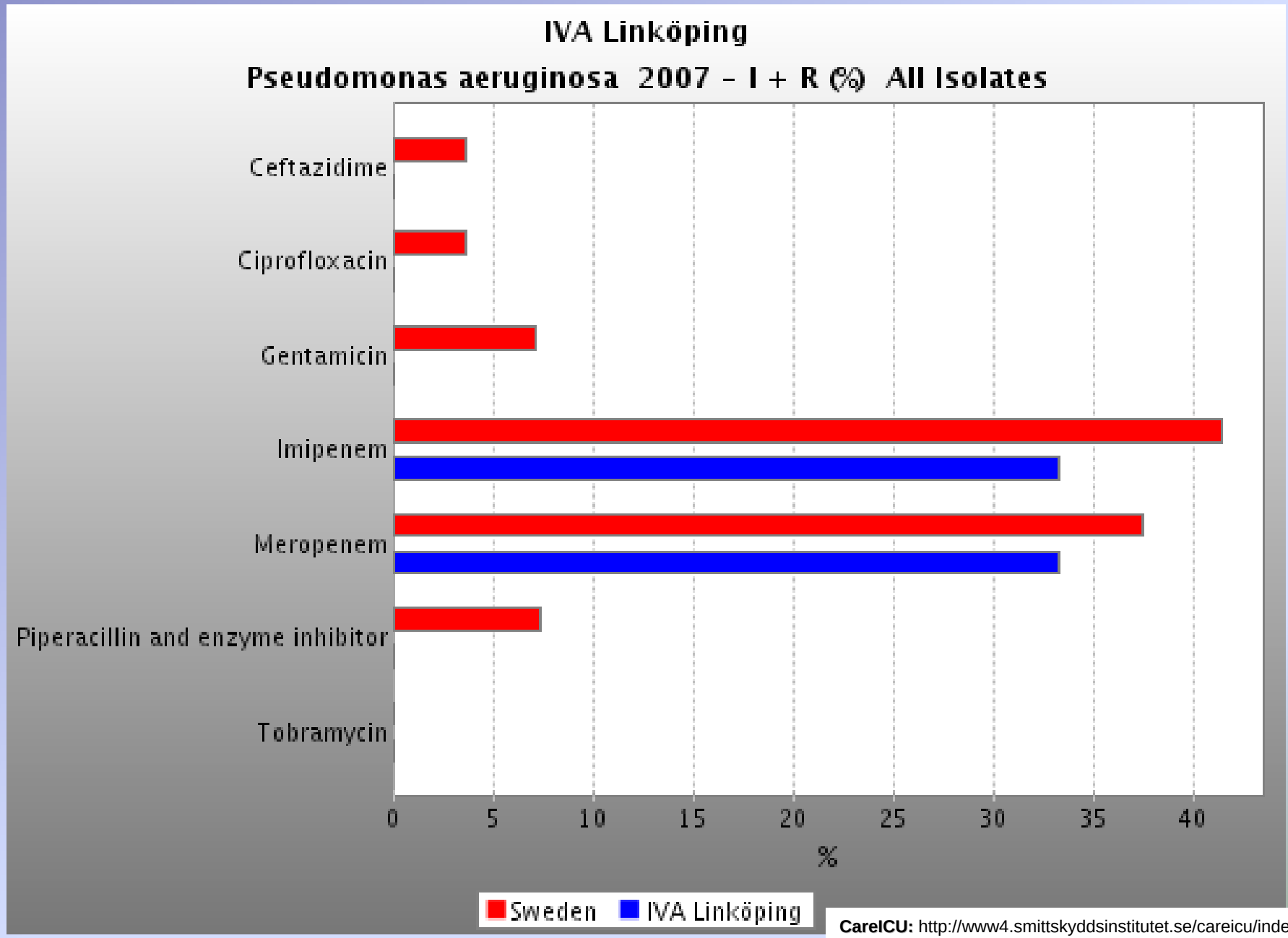
P. aeruginosa general ICU Linköping



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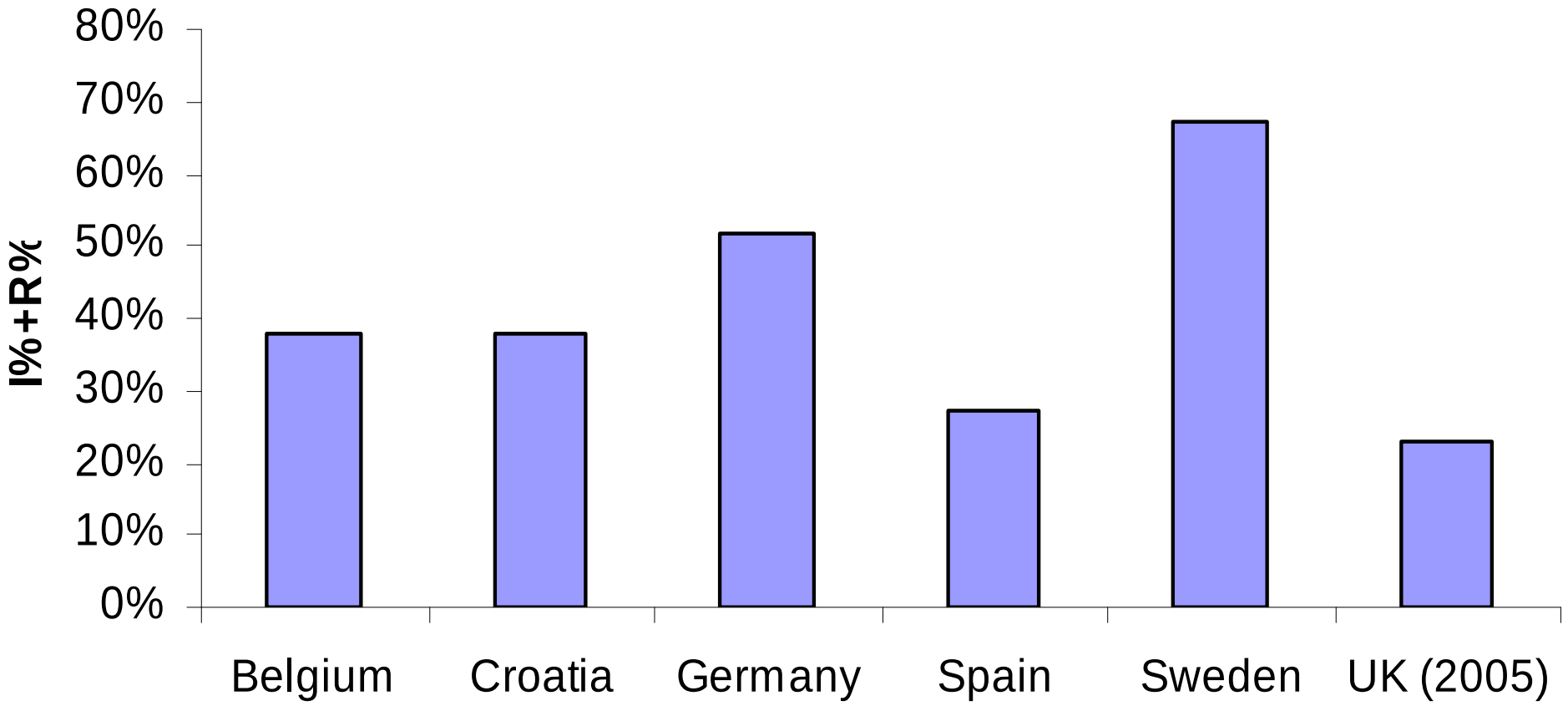
Imipenemresistance among *P. aeruginosa* in ICUs in 7 countries 2007



Prel. MYSTIC data Håkan Hanberger, Hans Gill, Lennart E Nilsson, Phil Turner

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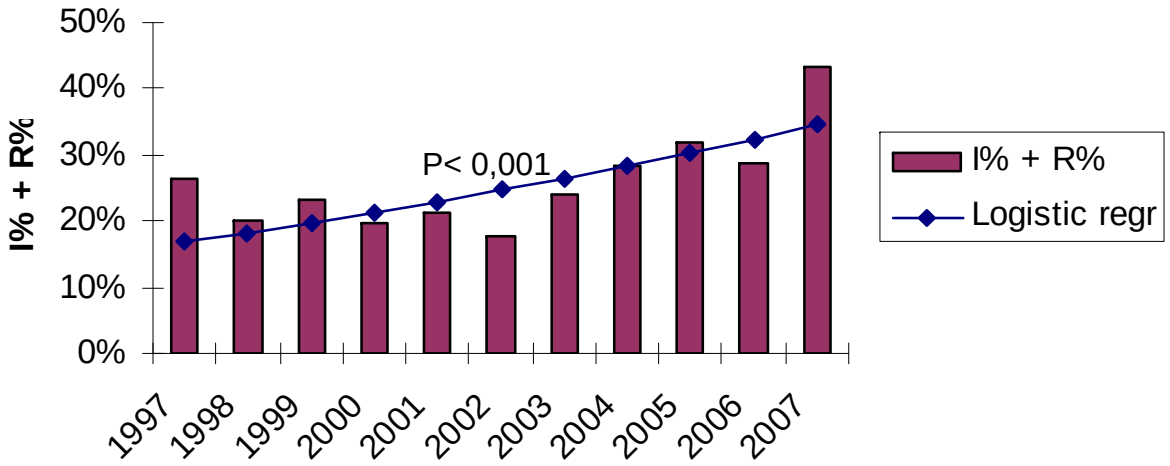

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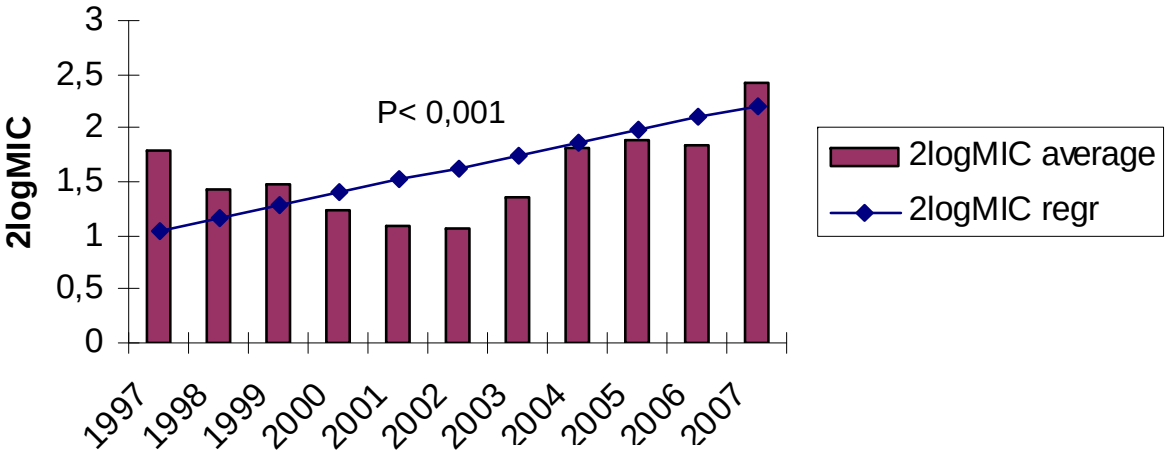
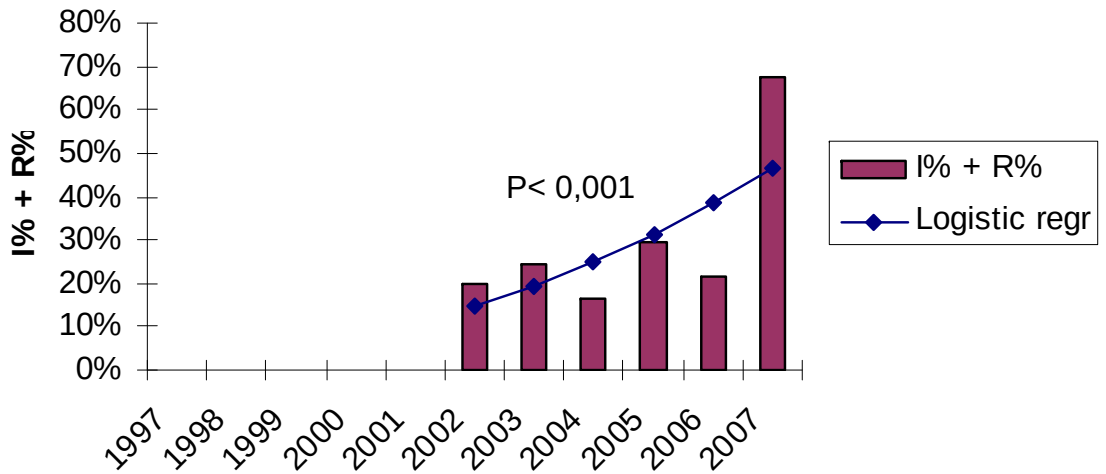


Prel. MYSTIC data Håkan Hanberger, Hans Gill, Lennart E Nilsson, Phil Turner

Imipenemresistance among *P. aeruginosa* in Swedish ICUs



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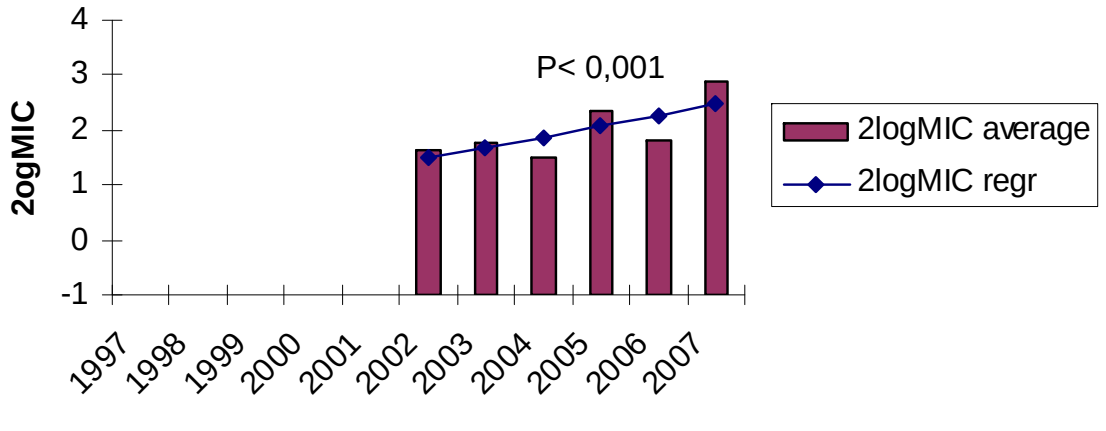

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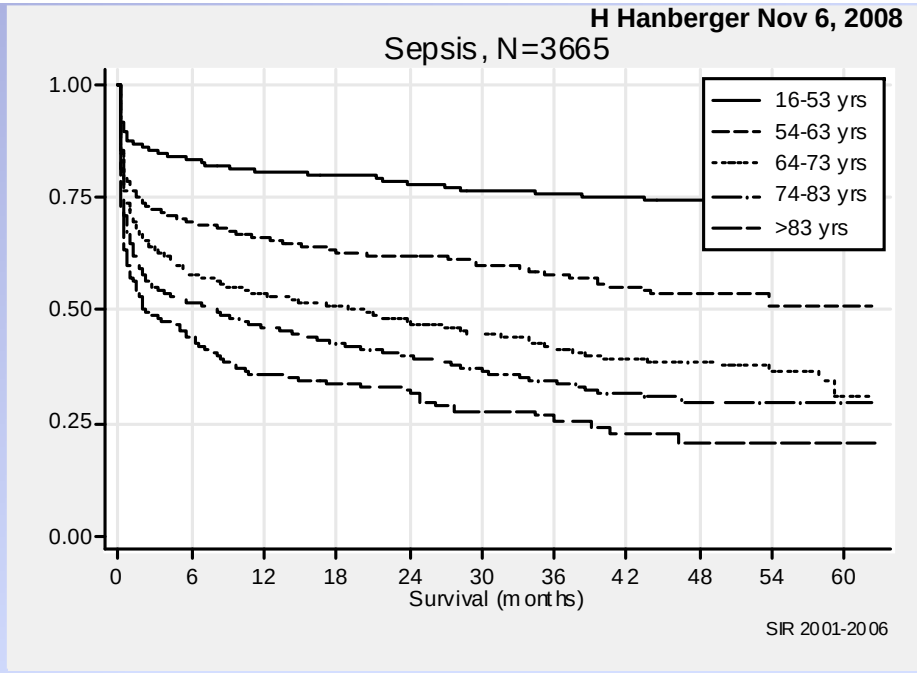


SIR (Svenskt Intensivvårdsregister) - IVA-Strama

- **Unik forskningsdatabas efter fusionen av IVA-Strama och SIR 2005.**

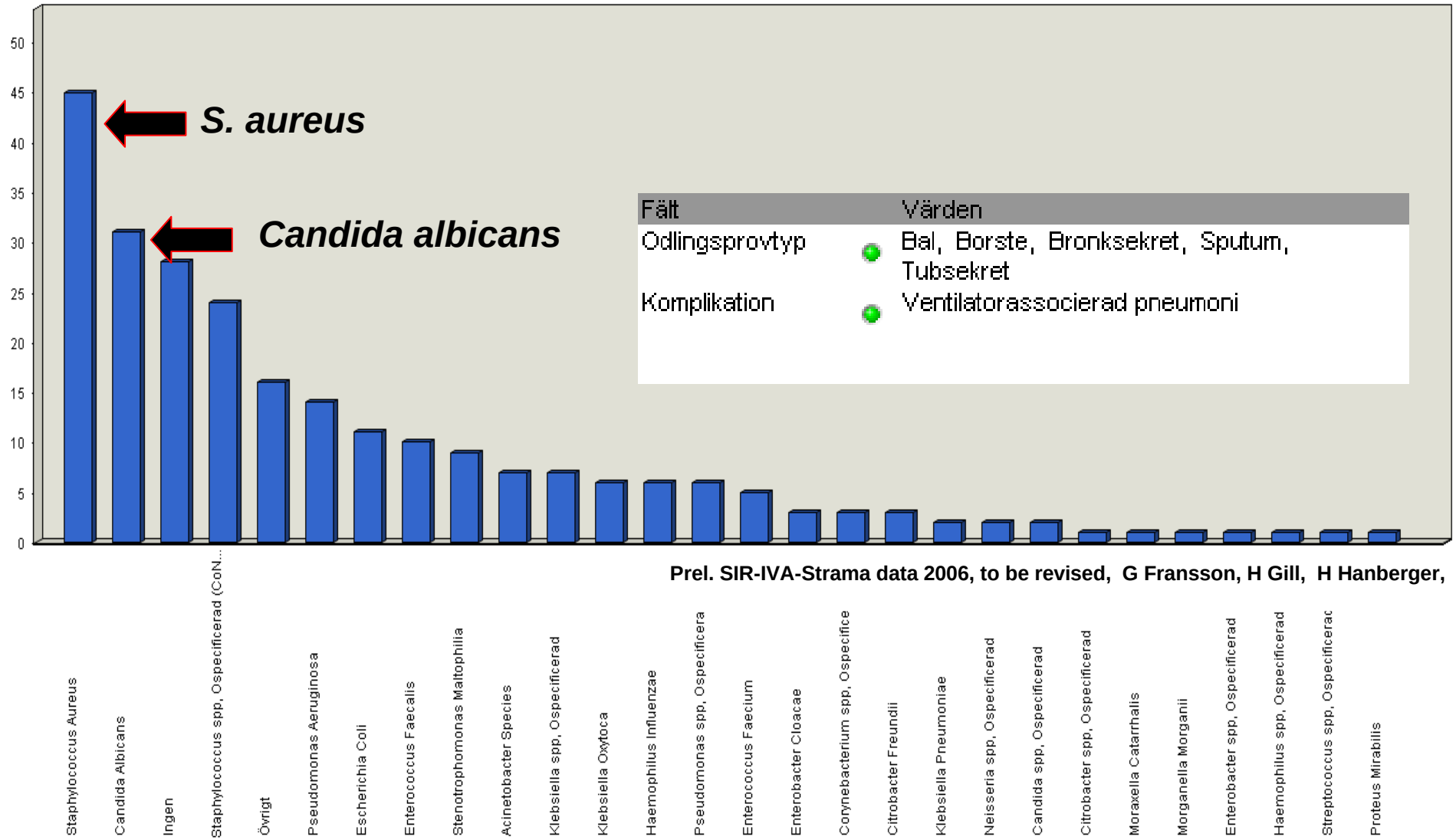
- **Infektionskomplikationer på IVA som reg i SIR kan i framtiden korreleras till:**

- mikrobiologiska data,
- mortalitet, morbiditet,
- antibiotikabehandling

http://www.icuregswe.org/Main/english_100.html

EXEMPEL-data från SIR-IVAStrama

Isolat från luftvägar vid Ventilatorassocierad pneumoni (VAP)



Prel. SIR-IVA-Strama data 2006, to be revised, G Fransson, H Gill, H Hanberger,

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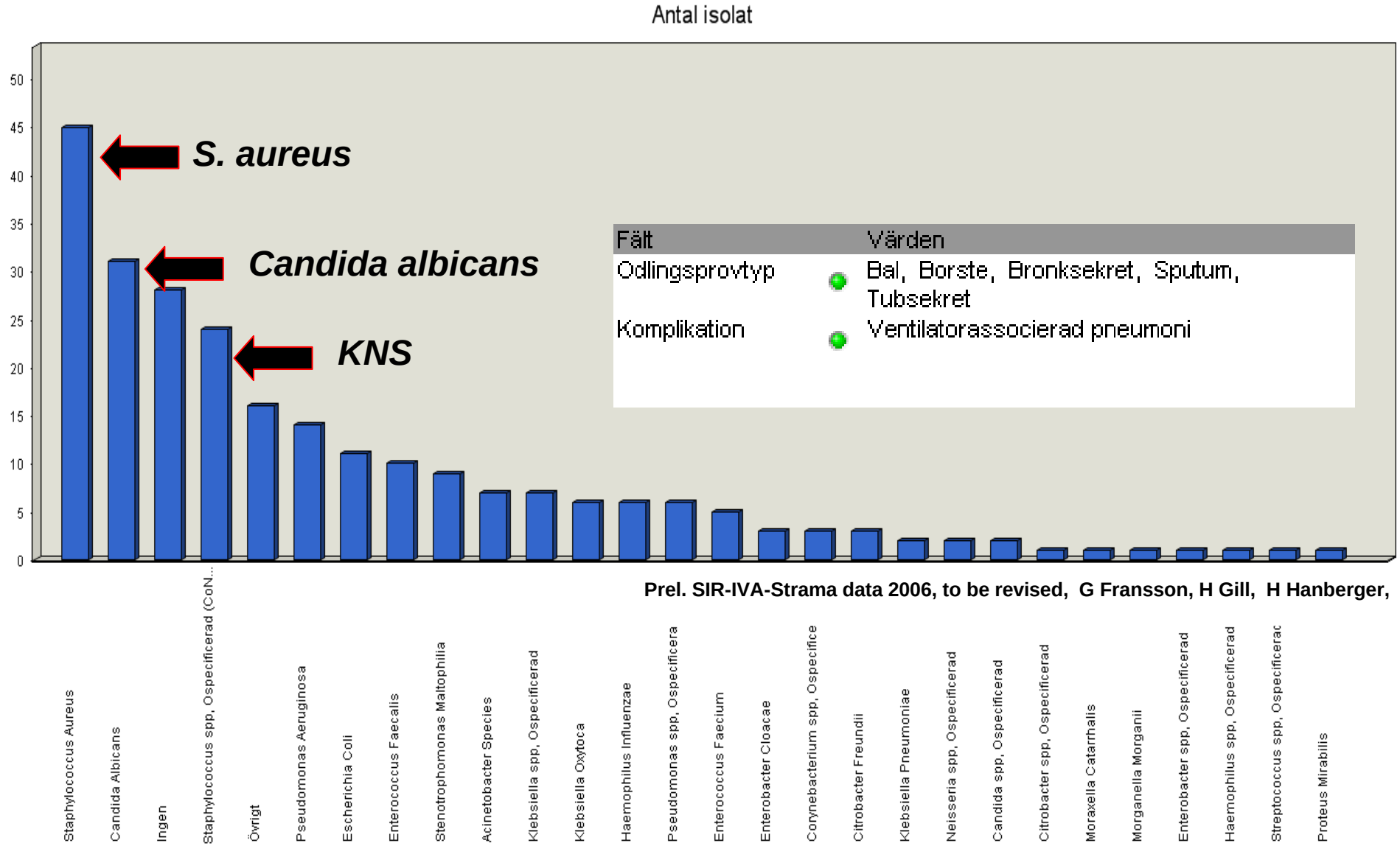

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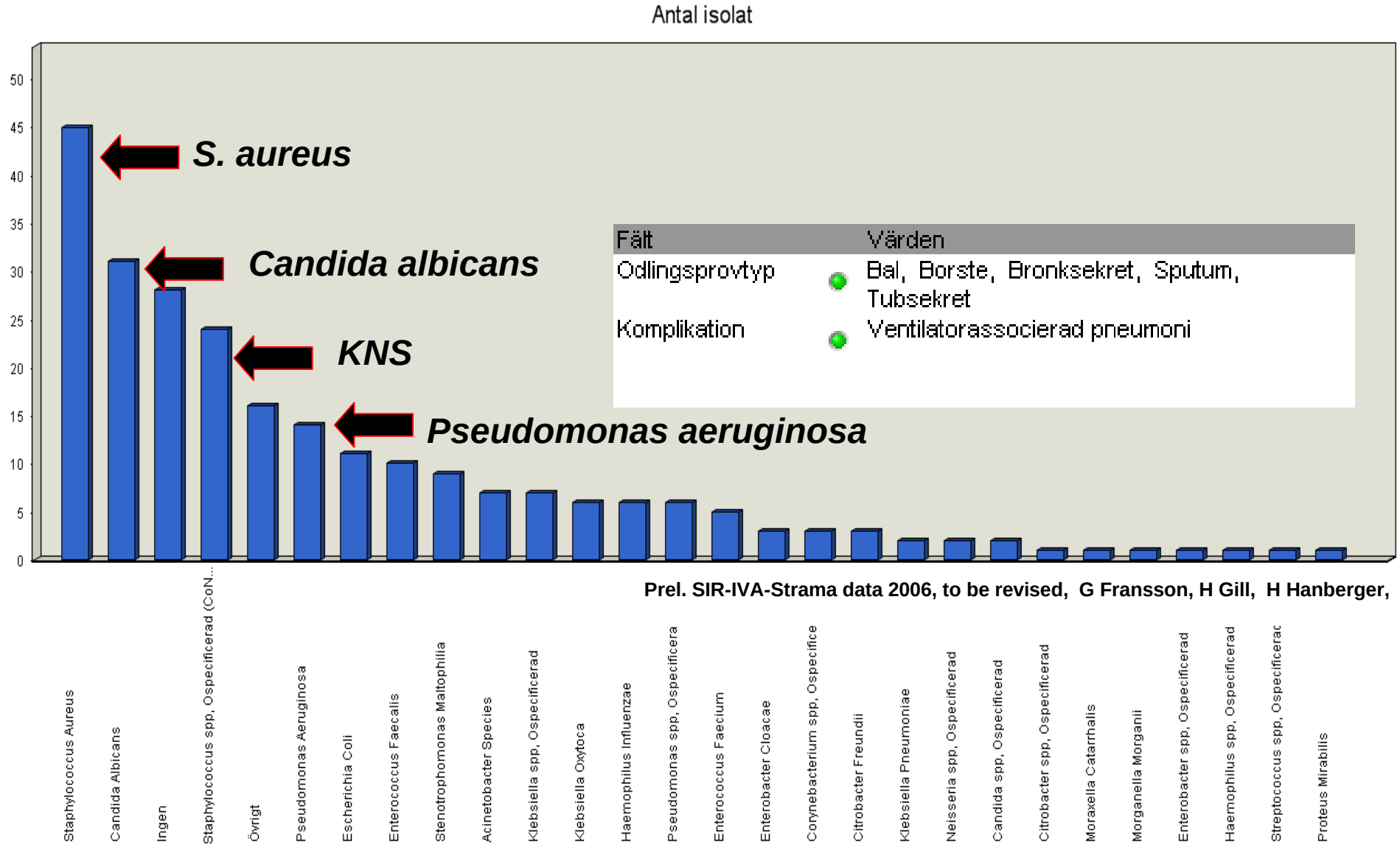

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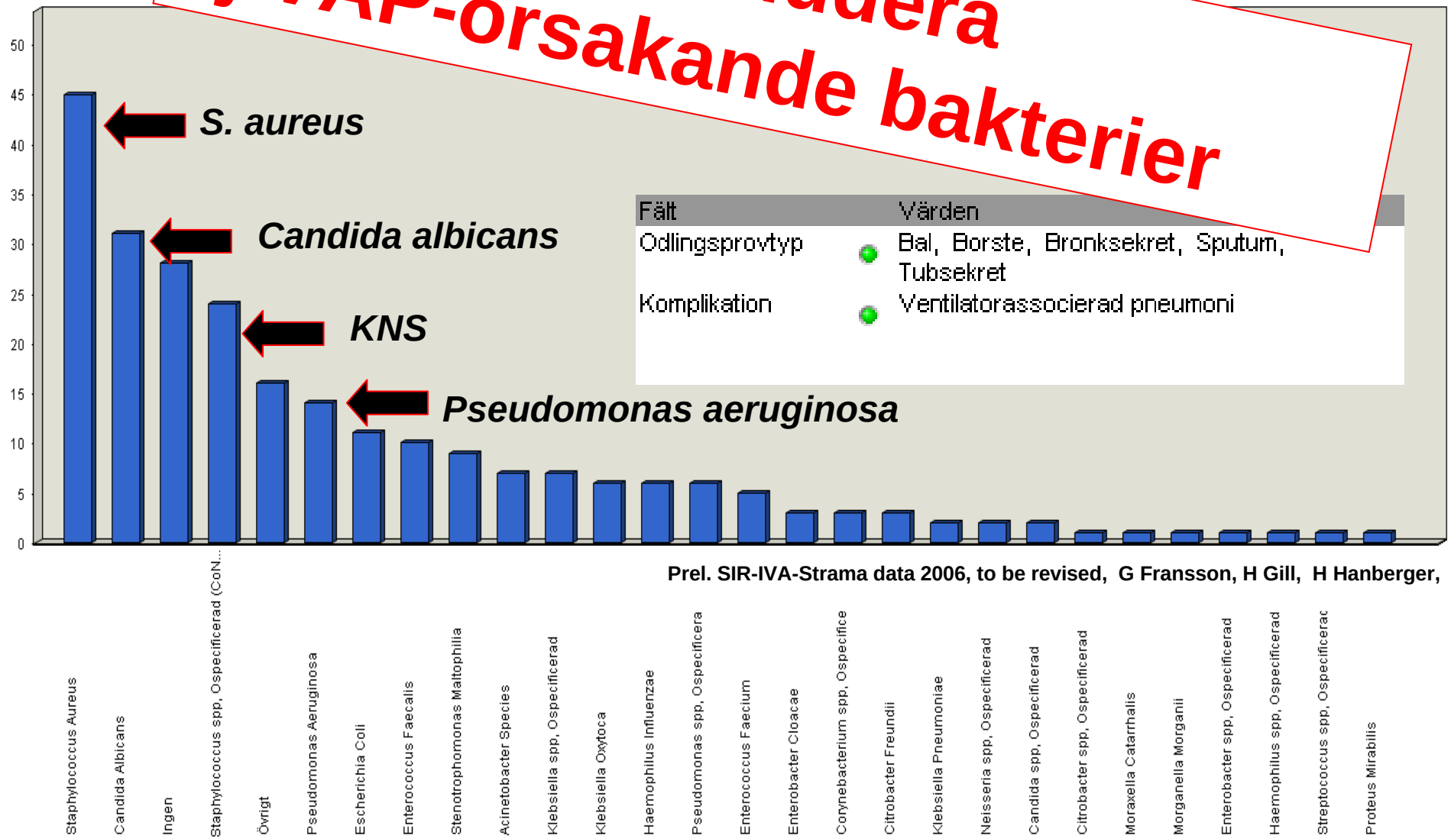
Isolat från luftvägar vid V ierad pneumoni (VAP)

Validering, exkludera ej VAP-orsakande bakterier



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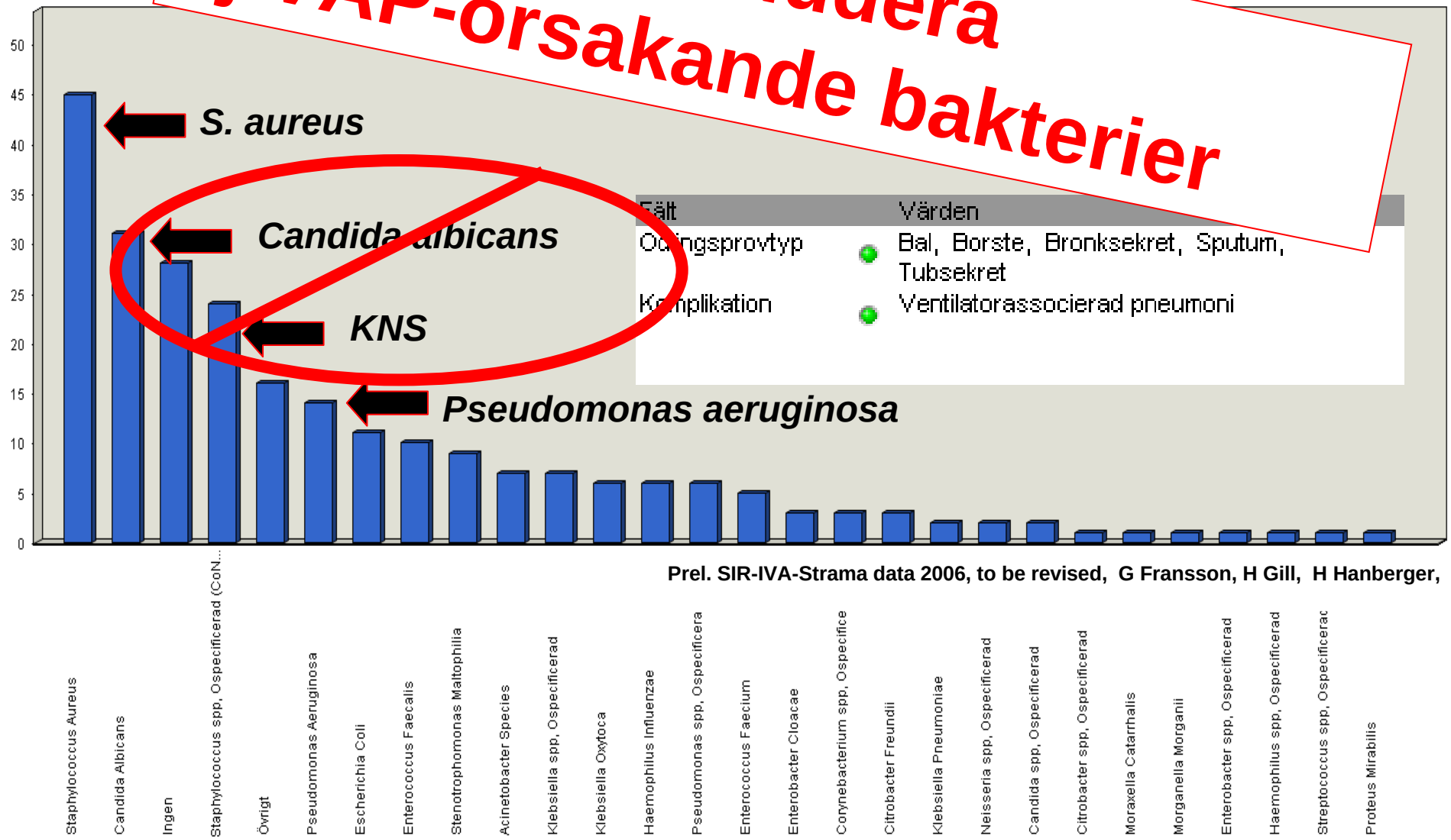
Validering, exkludera ej VAP-orsakande bakterier



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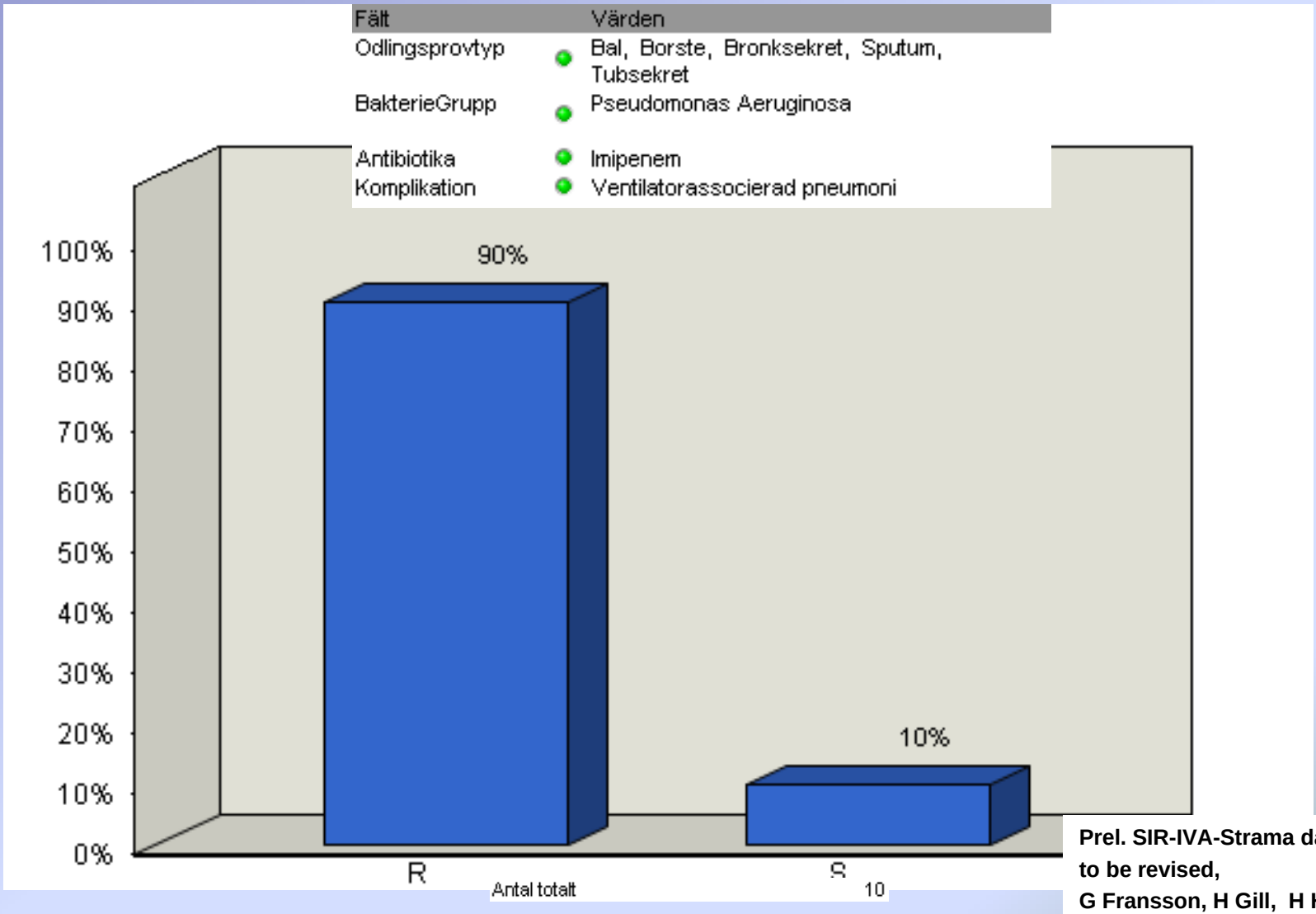
Imipenemkänslighet hos *P. aeruginosa* isolerade från luftvägar vid VAP



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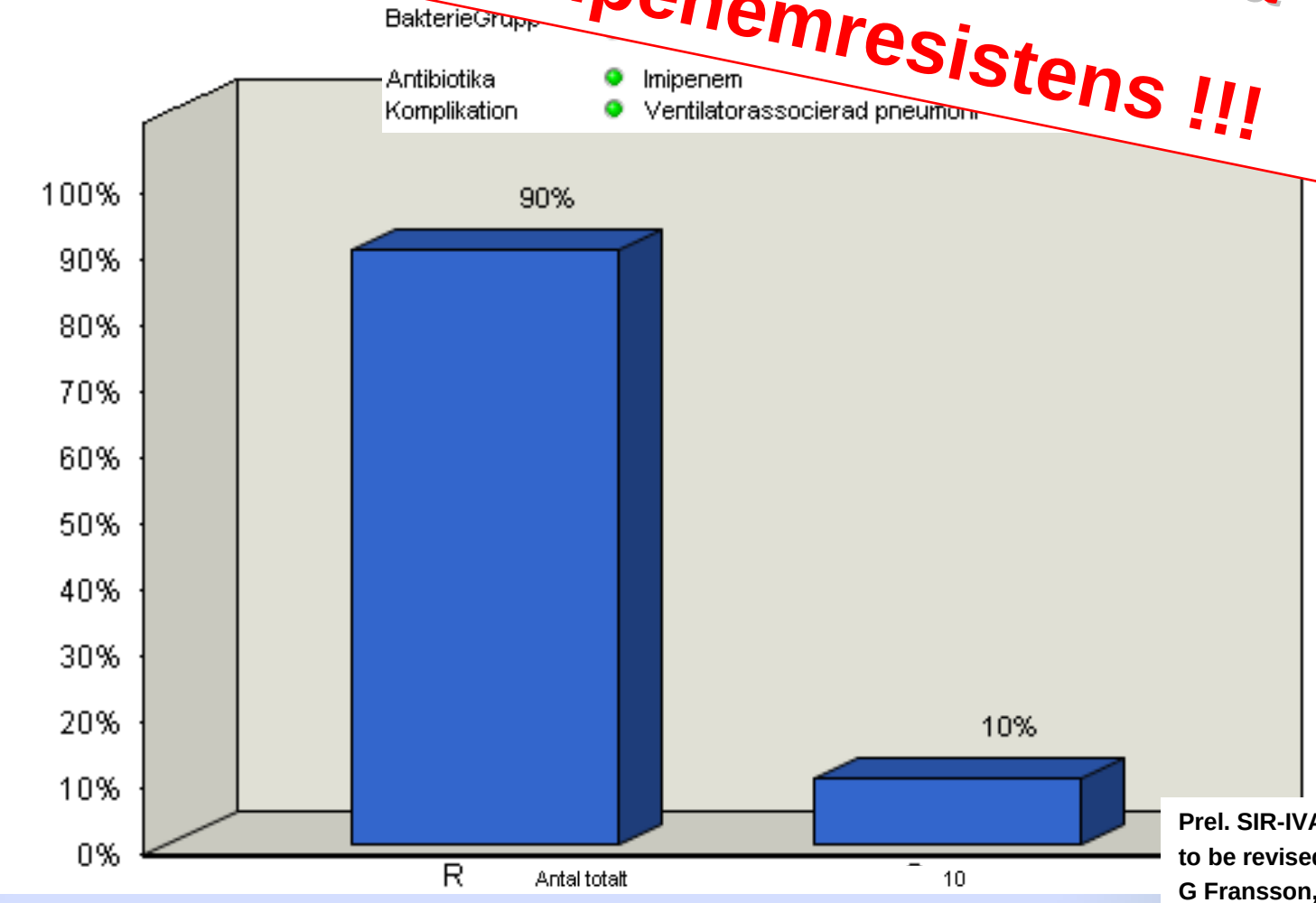
Imipenemkänslighet hos *P. aeruginosa* från luftvägar vid VAP

Pseudomonas aeruginosa

90% imipenemresistens !!!



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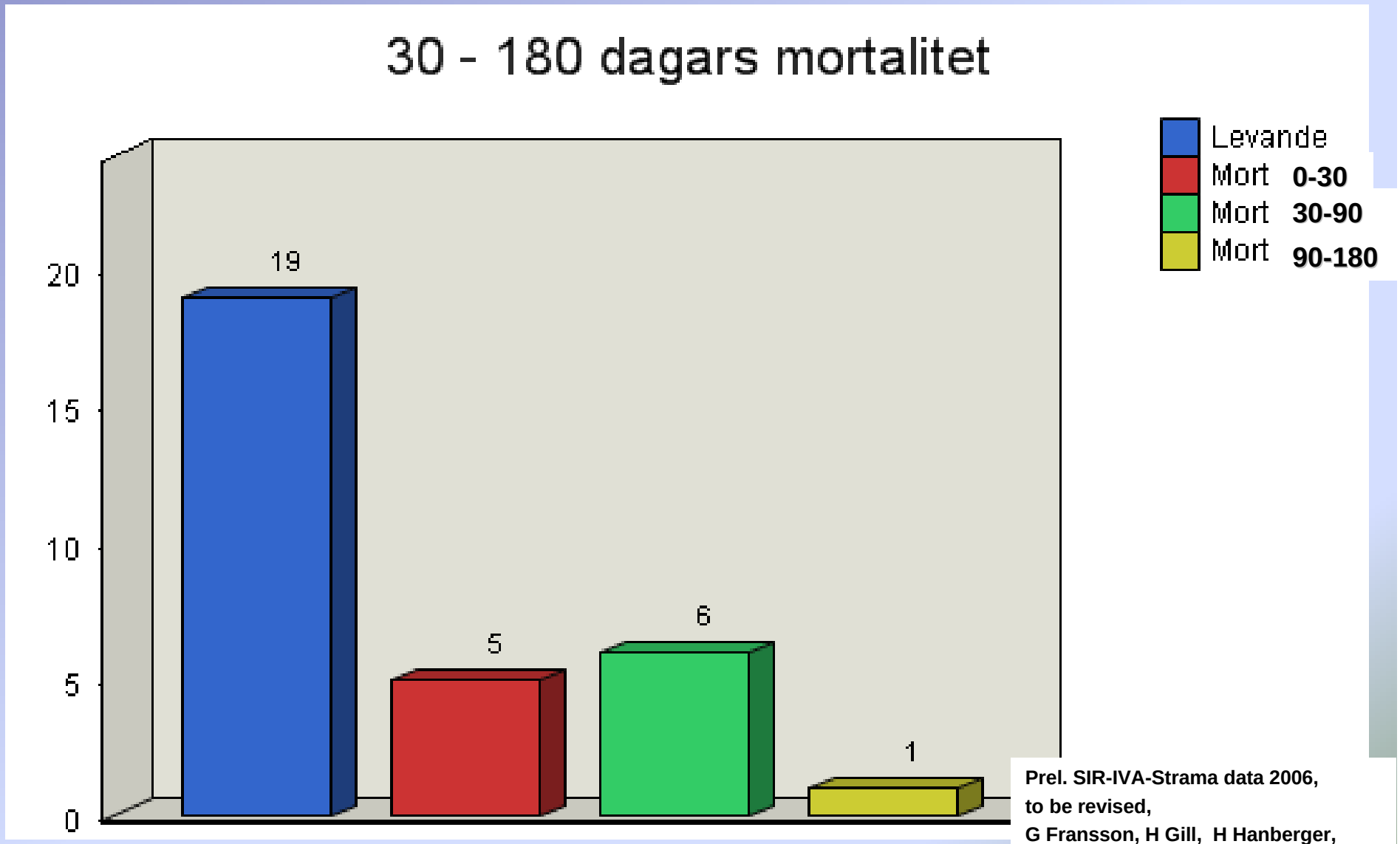
Observerad mortalitet efter VAP



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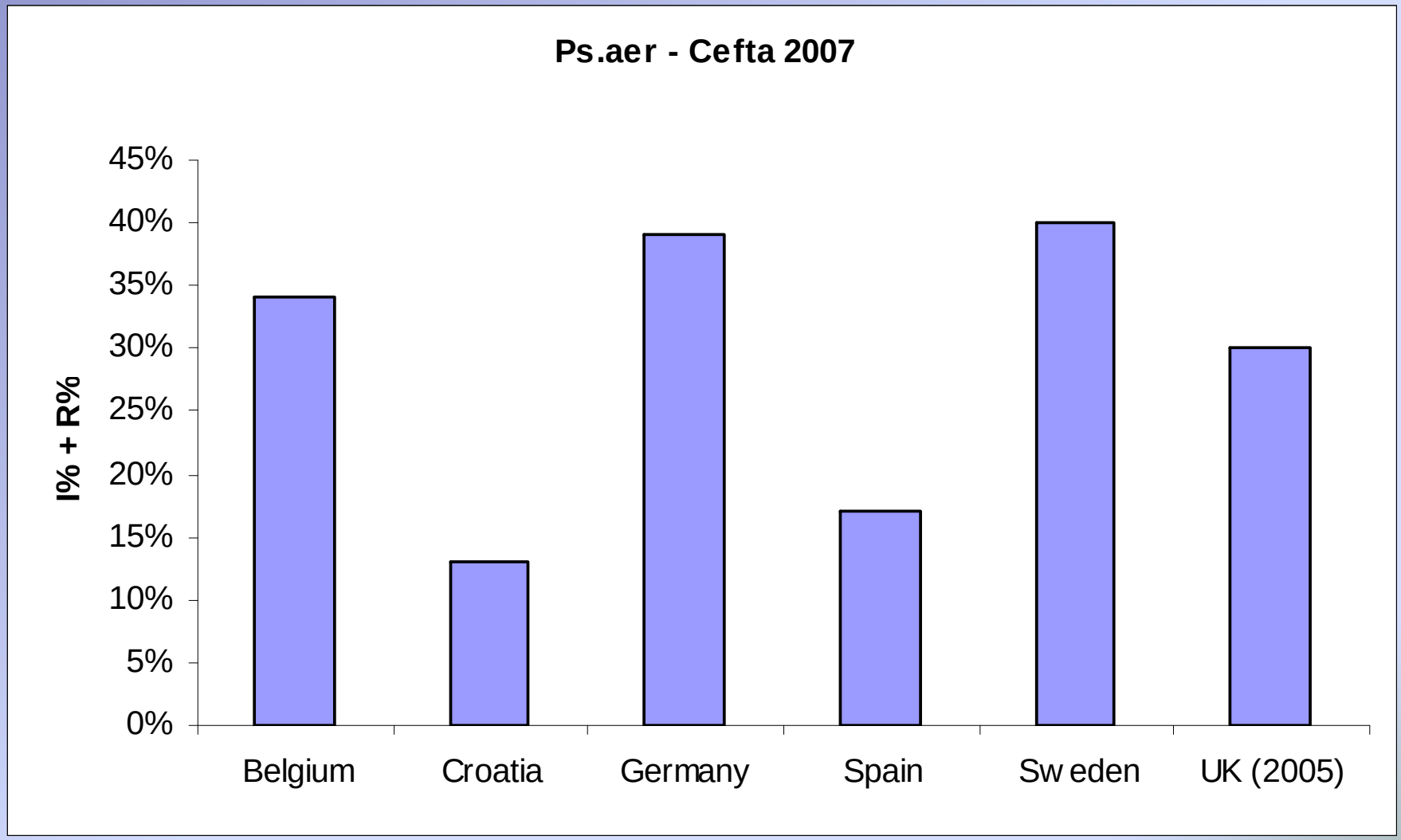
IVA-Strama-CareICU 2007

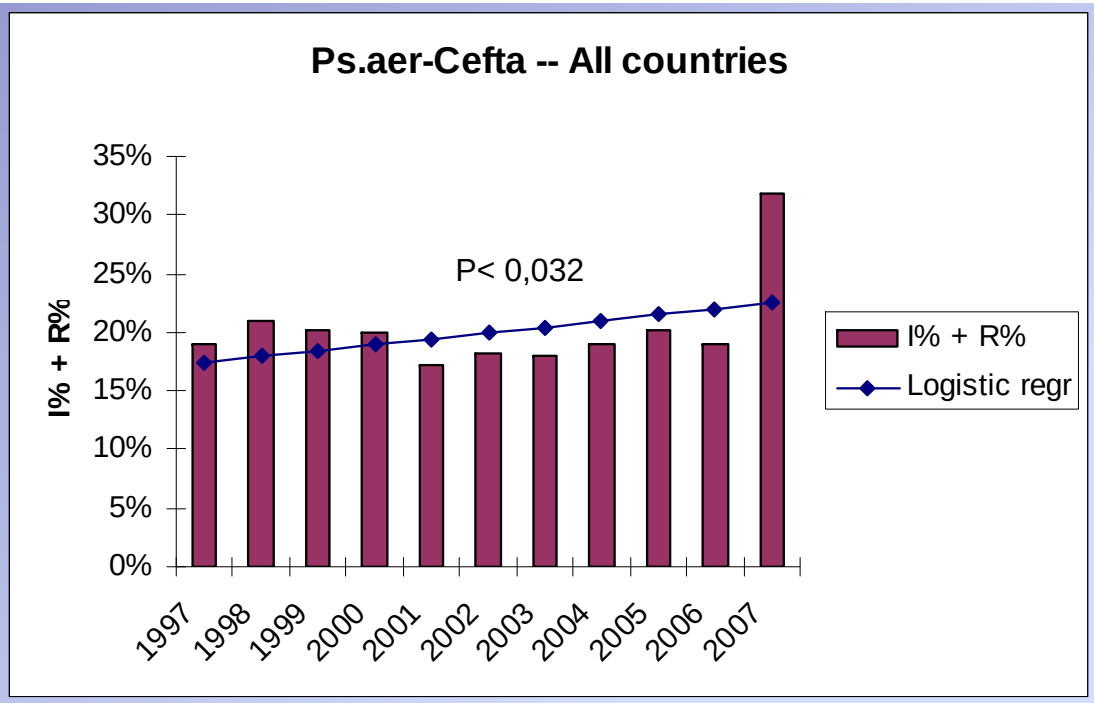
Imipenemresistenta *P. aeruginosa*

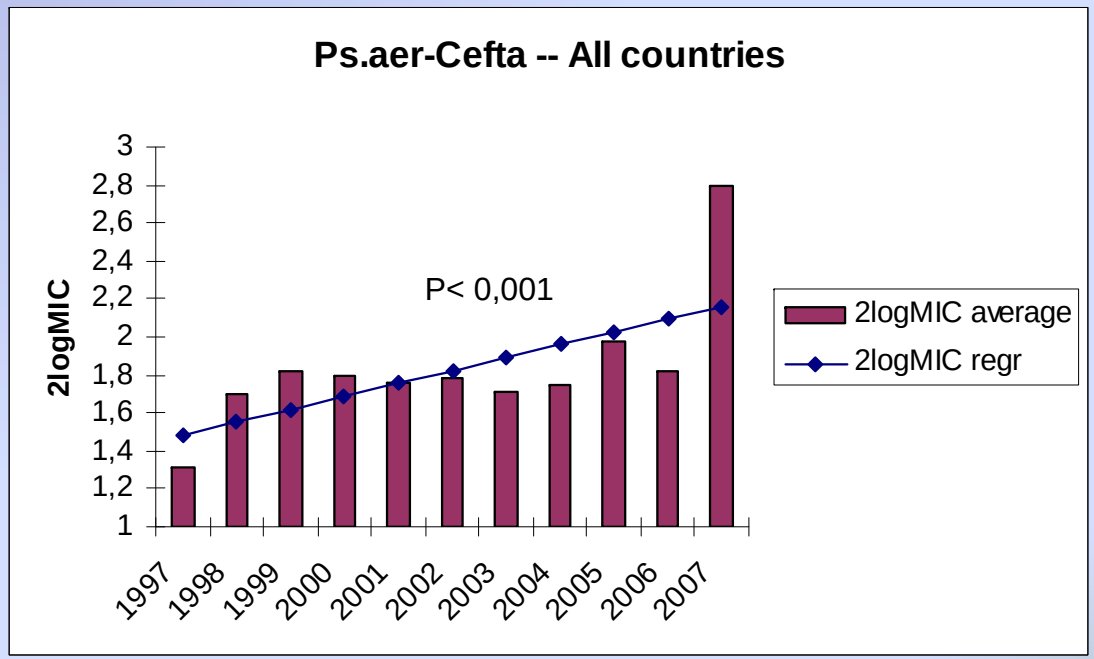
CareICU: http://www4.smittskyddsinstitutet.se/careicu/index.jsp

IVAStrama-CareICU Hans Gill,



Prel. MYSTIC data Håkan Hanberger, Hans Gill, Lennart E Nilsson, Phil Turner





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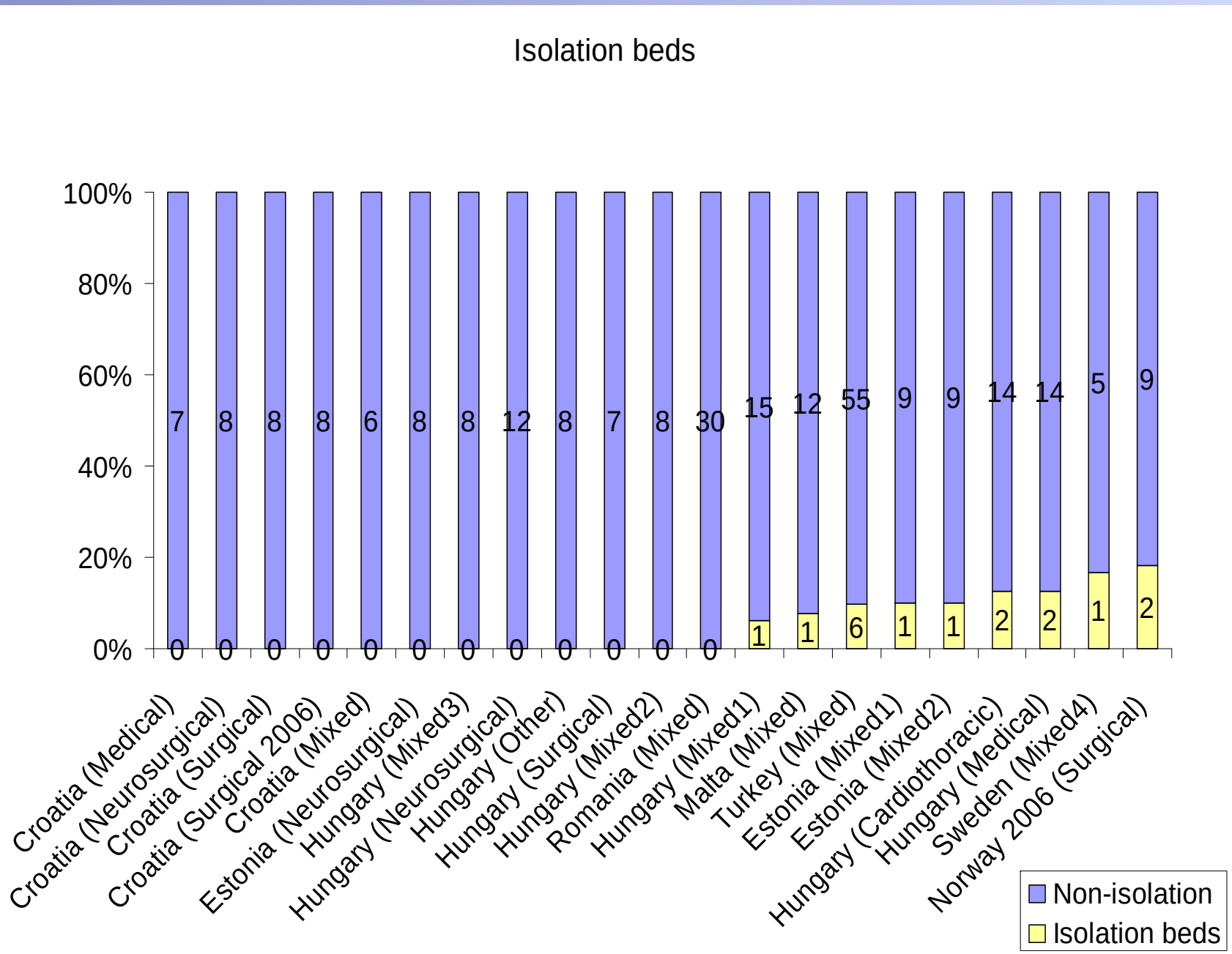

Isolation beds
100%
80%
60%
40%
20%
0%
7
8
8
8
6
8
8
12
8
7
8
30
15
12
55
9
9
14
14
5
9
0
0
0
0
0
0
0
0
0
0
0
0
1
1
6
1
1
2
2
1
2
Croatia (Medical)
Croatia (Neurosurgical)
Croatia (Surgical)
Croatia (Surgical 2006)
Croatia (Mixed)
Estonia (Neurosurgical)
Hungary (Mixed3)
Hungary (Neurosurgical)
Hungary (Other)
Hungary (Surgical)
Hungary (Mixed2)
Romania (Mixed)
Hungary (Mixed1)
Malta (Mixed)
Turkey (Mixed)
Estonia (Mixed1)
Estonia (Mixed2)
Hungary (Cardiothoracic)
Hungary (Medical)
Sweden (Mixed4)
Norway 2006 (Surgical)
Non-isolation
Isolation beds

Acknowledgements

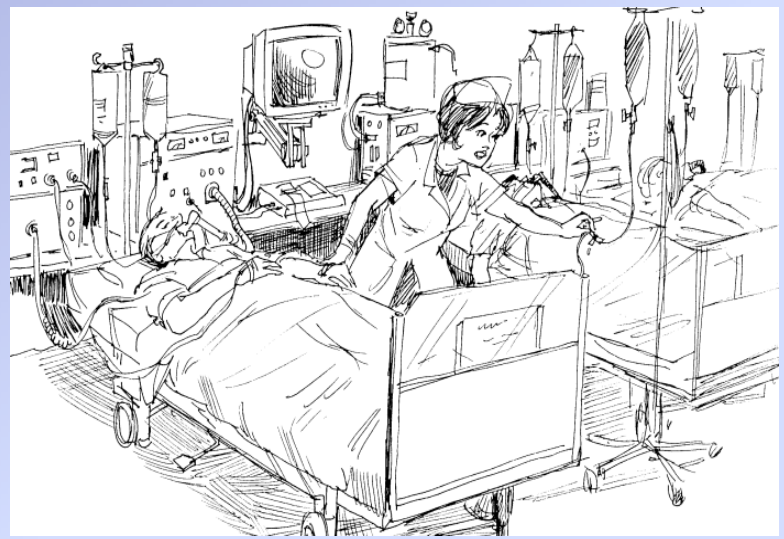
MYSTIC: Phil Turner ESGAP

CareICU

Administrators

Dilek Arman Hans Gill Vlastimil Jindrák
Smilja Kalenic Andrea Kurcz
Monica Licker Paul Naaber
Elizabeth A Scicluna Václav Vanis
Sten M Walther, Elisabeth Meyer,

Design: M Palomar, D Monnet, C



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