# Svår sepsis

- och diagnosen som försvann

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Region Östergötland

**Epidemiologiska utmaningar**

Bakgrund

SIR

Resultat

# Hur många drabbas av svår sepsis?

- Definitioner
- Många parametrar → resurskrävande
- Använda befintliga register:
  ICD-kod för infektion + ICD-kod för organsvikt

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# Någon kan säkert redan svaret

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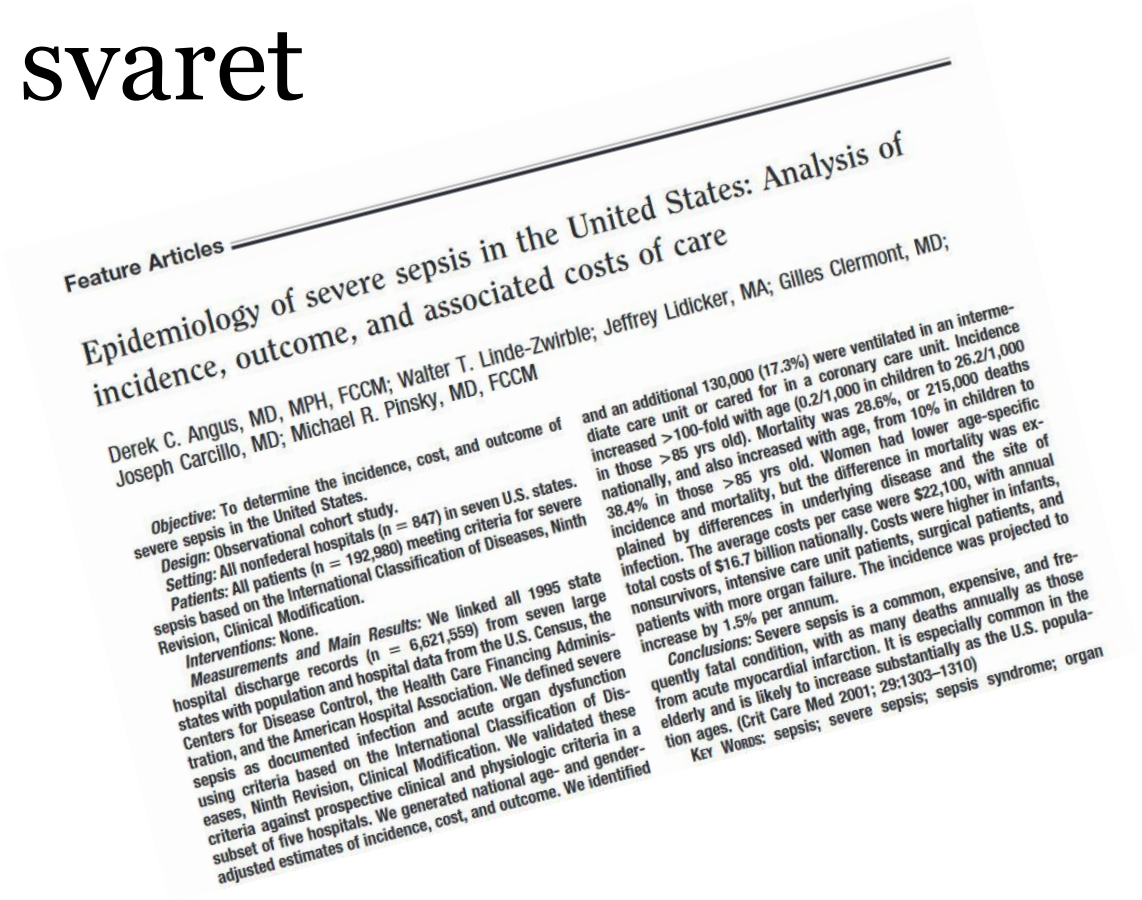

Feature Articles

## Epidemiology of severe sepsis in the United States: Analysis of incidence, outcome, and associated costs of care

Derek C. Angus, MD, MPH, FCCM; Walter T. Linde-Zwirble; Jeffrey Lidicker, MA; Gilles Clermont, MD; Joseph Carcillo, MD; Michael R. Pinsky, MD, FCCM

*Objective:* To determine the incidence, cost, and outcome of severe sepsis in the United States.

*Design:* Observational cohort study.

*Setting:* All nonfederal hospitals (n = 847) in seven U.S. states.

*Patients:* All patients (n = 192,980) meeting criteria for severe sepsis based on the International Classification of Diseases, Ninth Revision, Clinical Modification.

*Interventions:* None.

*Measurements and Main Results:* We linked all 1995 state hospital discharge records (n = 6,621,559) from seven large states with population and hospital data from the U.S. Census, the Centers for Disease Control, the Health Care Financing Administration, and the American Hospital Association. We defined severe sepsis as documented infection and acute organ dysfunction using criteria based on the International Classification of Diseases, Ninth Revision, Clinical Modification. We validated these criteria against prospective clinical and physiologic criteria in a subset of five hospitals. We generated national age- and gender-adjusted estimates of incidence, cost, and outcome. We identified and an additional 130,000 (17.3%) were ventilated in an intermediate care unit or cared for in a coronary care unit. Incidence increased >100-fold with age (0.2/1,000 in children to 26.2/1,000 in those >85 yrs old). Mortality was 28.6%, or 215,000 deaths nationally, and also increased with age, from 10% in children to 38.4% in those >85 yrs old. Women had lower age-specific incidence and mortality, but the difference in mortality was explained by differences in underlying disease and the site of infection. The average costs per case were $22,100, with annual total costs of $16.7 billion nationally. Costs were higher in infants, nonsurvivors, intensive care unit patients, surgical patients, and patients with more organ failure. The incidence was projected to increase by 1.5% per annum.

*Conclusions:* Severe sepsis is a common, expensive, and frequently fatal condition, with as many deaths annually as those from acute myocardial infarction. It is especially common in the elderly and is likely to increase substantially as the U.S. population ages. (Crit Care Med 2001; 29:1303–1310)

KEY WORDS: sepsis; severe sepsis; sepsis syndrome; organ

Angus et al: 3,0/1000 (år 1995, USA).
4011 citeringar.

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The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

The Epidemiology of Sepsis in the United States from 1979 through 2000

Greg S. Martin, M.D., David M. Mannino, M.D., Stephanie Eaton, M.D., and Marc Moss, M.D.

ABSTRACT

BACKGROUND

Sepsis represents a substantial health care burden, and there is limited epidemiologic information about the demography of sepsis or about the temporal changes in its incidence and outcome. We investigated the epidemiology of sepsis in the United States, with specific examination of race and sex, causative organisms, the disposition of patients, and the incidence and outcome.

METHODS

We analyzed the occurrence of sepsis from 1979 through 2000 using a nationally representative sample of all nonfederal acute care hospitals in the United States. Data on new cases were obtained from hospital discharge records coded according to the International Classification of Diseases, Ninth Revision, Clinical Modification.

RESULTS

From the Division of Pulmonary, Allergy, and Critical Care, Department of Medicine, Emory University School of Medicine (G.S.M., S.E., M.M.); and the National Center for Environmental Health, Centers for Disease Control and Prevention (D.M.M.) — both in Atlanta. Address reprint requests to Dr. Martin at the Division of Pulmonary, Allergy, and Critical Care, Department of Medicine, Emory University, Grady Memorial Hospital, 69 Jesse Hill Jr. Dr., SE, Rm. 2D-004, Atlanta, GA 30303, or at greg_martin@emory.org.

N Engl J Med 2003;348:1546-54.



Martin et al: 0,81/1000 (år 2000, USA).
2955 citeringar.

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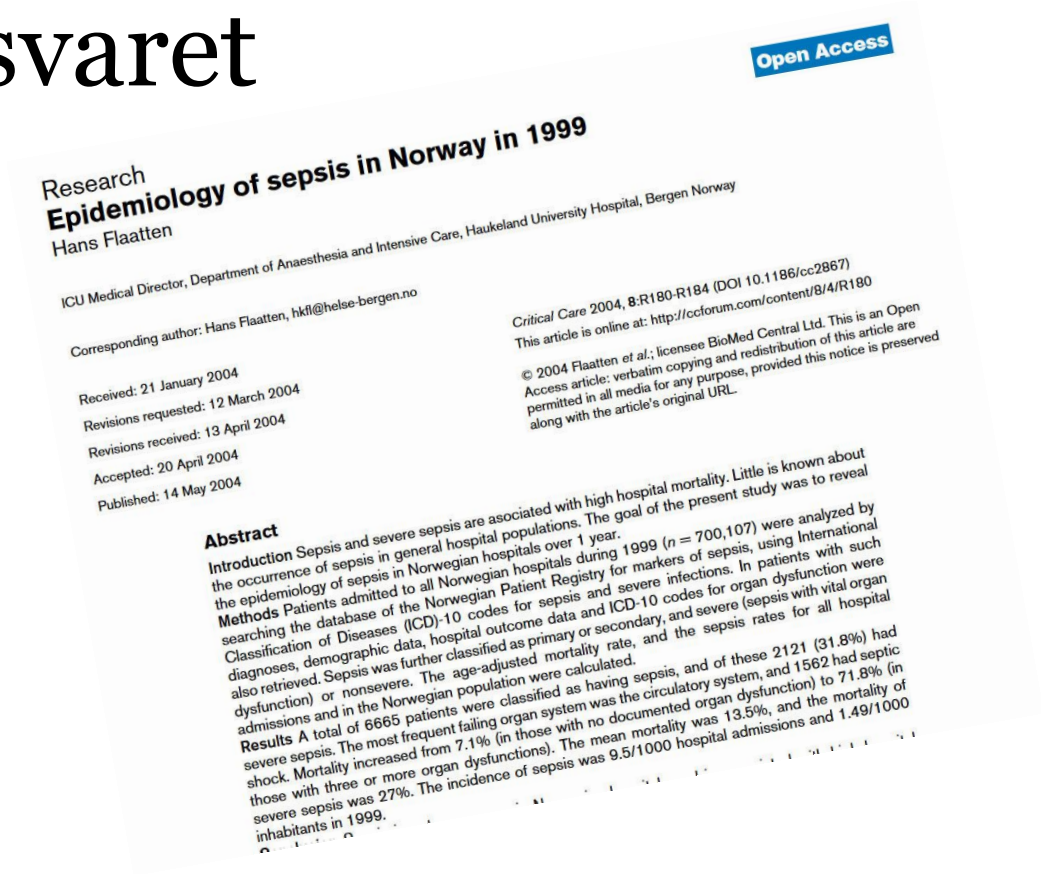

Open Access

Research

**Epidemiology of sepsis in Norway in 1999**

Hans Flaatten

ICU Medical Director, Department of Anaesthesia and Intensive Care, Haukeland University Hospital, Bergen Norway

Corresponding author: Hans Flaatten, hkfl@helse-bergen.no

*Critical Care* 2004, 8:R180-R184 (DOI 10.1186/cc2867)

This article is online at: http://ccforum.com/content/8/4/R180

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**Abstract**

**Introduction** Sepsis and severe sepsis are asociated with high hospital mortality. Little is known about the occurrence of sepsis in general hospital populations. The goal of the present study was to reveal the epidemiology of sepsis in Norwegian hospitals over 1 year.

**Methods** Patients admitted to all Norwegian hospitals during 1999 ($n = 700,107$) were analyzed by searching the database of the Norwegian Patient Registry for markers of sepsis, using International Classification of Diseases (ICD)-10 codes for sepsis and severe infections. In patients with such diagnoses, demographic data, hospital outcome data and ICD-10 codes for organ dysfunction were also retrieved. Sepsis was further classified as primary or secondary, and severe (sepsis with vital organ dysfunction) or nonsevere. The age-adjusted mortality rate, and the sepsis rates for all hospital admissions and in the Norwegian population were calculated.

**Results** A total of 6665 patients were classified as having sepsis, and of these 2121 (31.8%) had severe sepsis. The most frequent failing organ system was the circulatory system, and 1562 had septic shock. Mortality increased from 7.1% (in those with no documented organ dysfunction) to 71.8% (in those with three or more organ dysfunctions). The mean mortality was 13.5%, and the mortality of severe sepsis was 27%. The incidence of sepsis was 9.5/1000 hospital admissions and 1.49/1000 inhabitants in 1999.

Flaatten: 0,49/1000 (år 1999, Norge).
49 citeringar.

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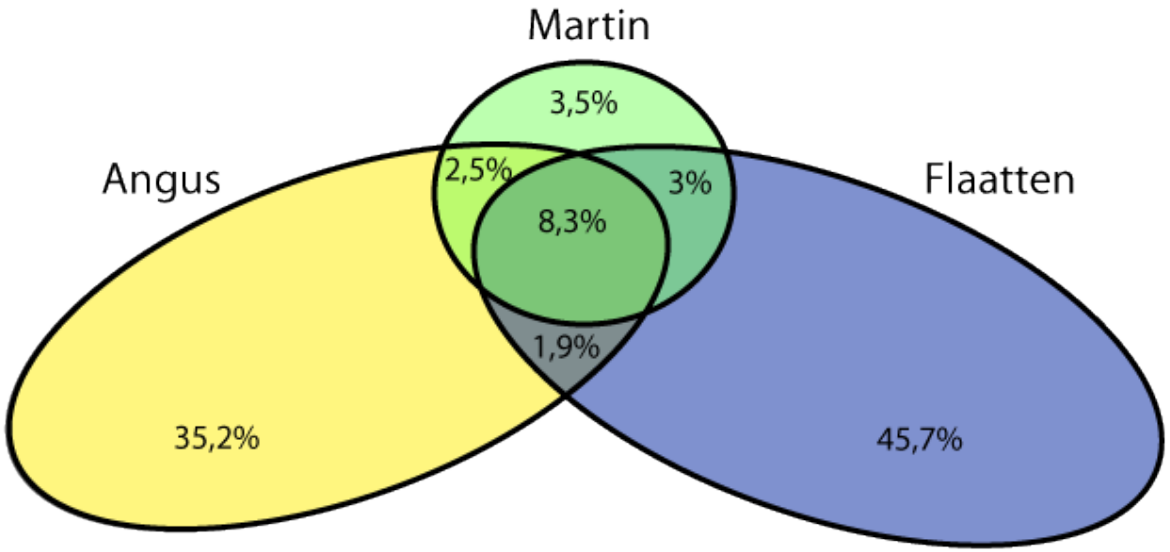
# Ingen kunde svaret?

Valt olika ICD-koder att spegla svår sepsis.
Applicerar dem på samma material: Patientregistret.




Wilhelms SB et al. Assessment of incidence of severe sepsis in Sweden using different ways of abstracting International Classification of Diseases codes: difficulties with methods and interpretation of results. Crit Care Med 2010; 38:1442-9.

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# Vi går andra vägen…

Svår sepsis i SIR år 2005-2009
(9 271 patienter)

+

Utskrivningsdiagnoser från Patientregistret

=

Sant?

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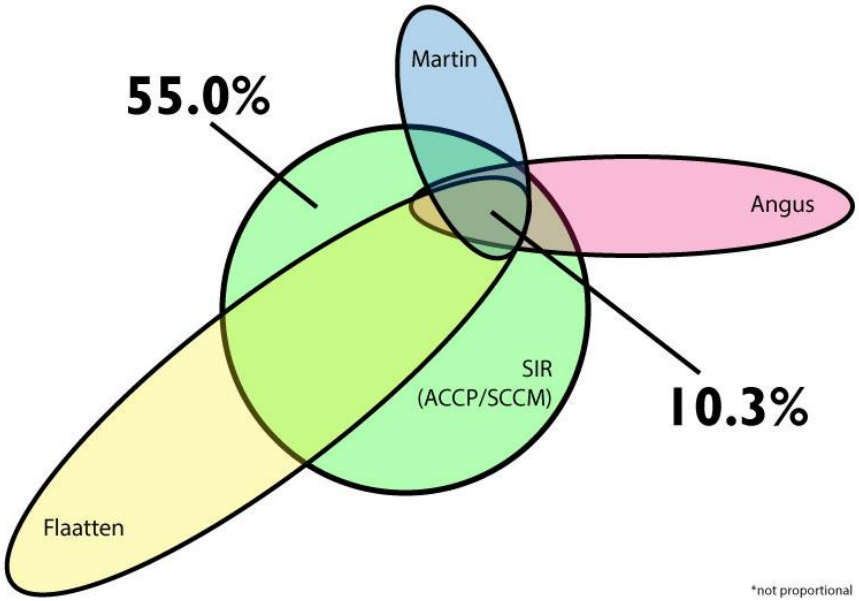
# Uruselt resultat




Majoriteten av patienterna med svår sepsis på IVA fångas inte av någon ICD-kodslista!

Wilhelms SB et al. Severe sepsis in the ICU is often missing in hospital discharge codes. Acta Anaesthesiol Scand 2017; 61(2): 186-193.

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# Vad saknas?

**Table 2** Percentage of patients with severe sepsis not meeting International Classification of Diseases coding who fulfilled specific coding criteria.

| | |
|---|---|
| Angus et al. infection | 62.8% ($n$ = 2896) |
| Angus et al. organ dysfunction | 4.1% ($n$ = 187) |
| Flaatten infection | 23.8% ($n$ = 1099) |
| Flaatten organ dysfunction | 26.7% ($n$ = 1230) |
| Martin et al. infection | 25.9% ($n$ = 1192) |
| Martin et al. organ dysfunction | 9.9% ($n$ = 456) |
| None | 29.4% ($n$ = 1355) |

Shown are data for patients who did not fulfill any specific International Classification of Diseases coding abstraction criteria but who had severe sepsis according to the American College of Chest Physicians/Society of Critical Care Medicine criteria.

1/3 av patienterna saknar både infektions- och organsviktskod.

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# Jamen, det är bättre nu…

År 2015:

| | **SIR** | **Patientregistret** |
|---|---|---|
| **Svår sepsis** (R65.1) | 1734 | 41 (inkl alla R65) |
| **Septiskt chock** (R57.2) | 1858 | 212 (inkl alla R57) |

# Nej…

Sunt med skepsis, ”good enough”, använd om möjligt flera källor.

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