

An aerial photograph of a city, likely Copenhagen, showing a mix of residential buildings with red-tiled roofs and modern commercial structures. A large, semi-transparent red rounded rectangle is overlaid on the lower half of the image, containing white and orange text.

Akutte patienter hjemsendt uden diagnostisk afklaring Risiko for oversete sygdomme

Rasmus Gregersen

Læge, ph.d.-studerende

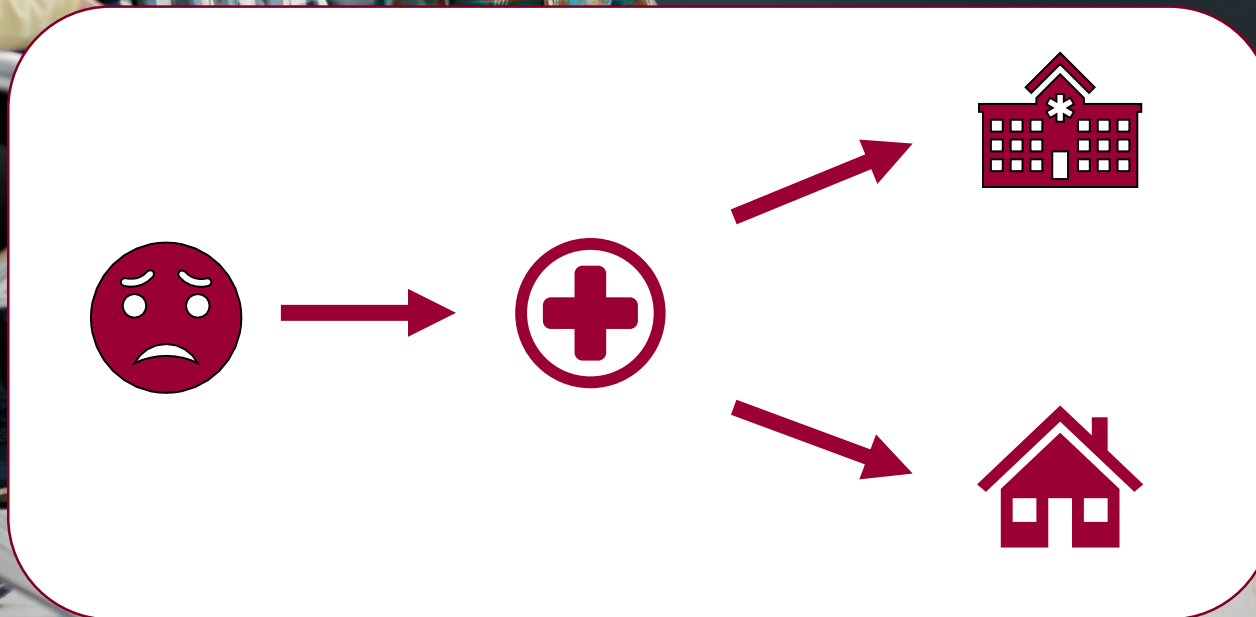
Akutafdelingen, Bispebjerg og Frederiksberg Hospital

Center for Klinisk Forskning og Forebyggelse, Bispebjerg og Frederiksberg Hospital

Biostatistisk afdeling, Københavns Universitet







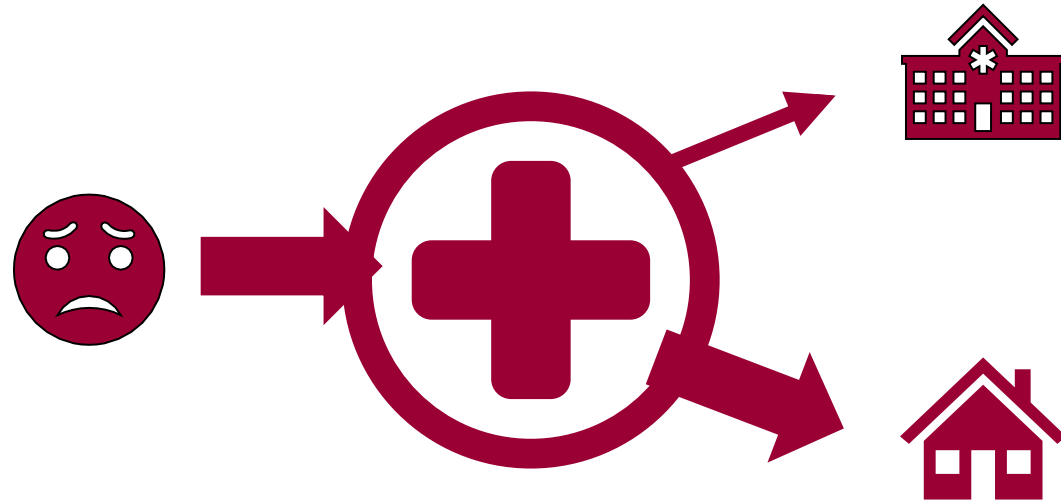


Overcrowding



Photo by [Jens Herndorff](#) on [Unsplash](#)

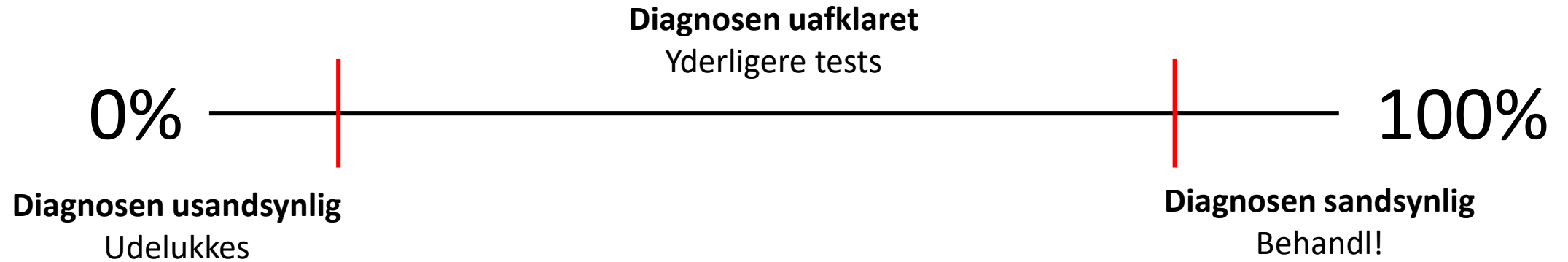
Overcrowding



Den diagnostiske proces

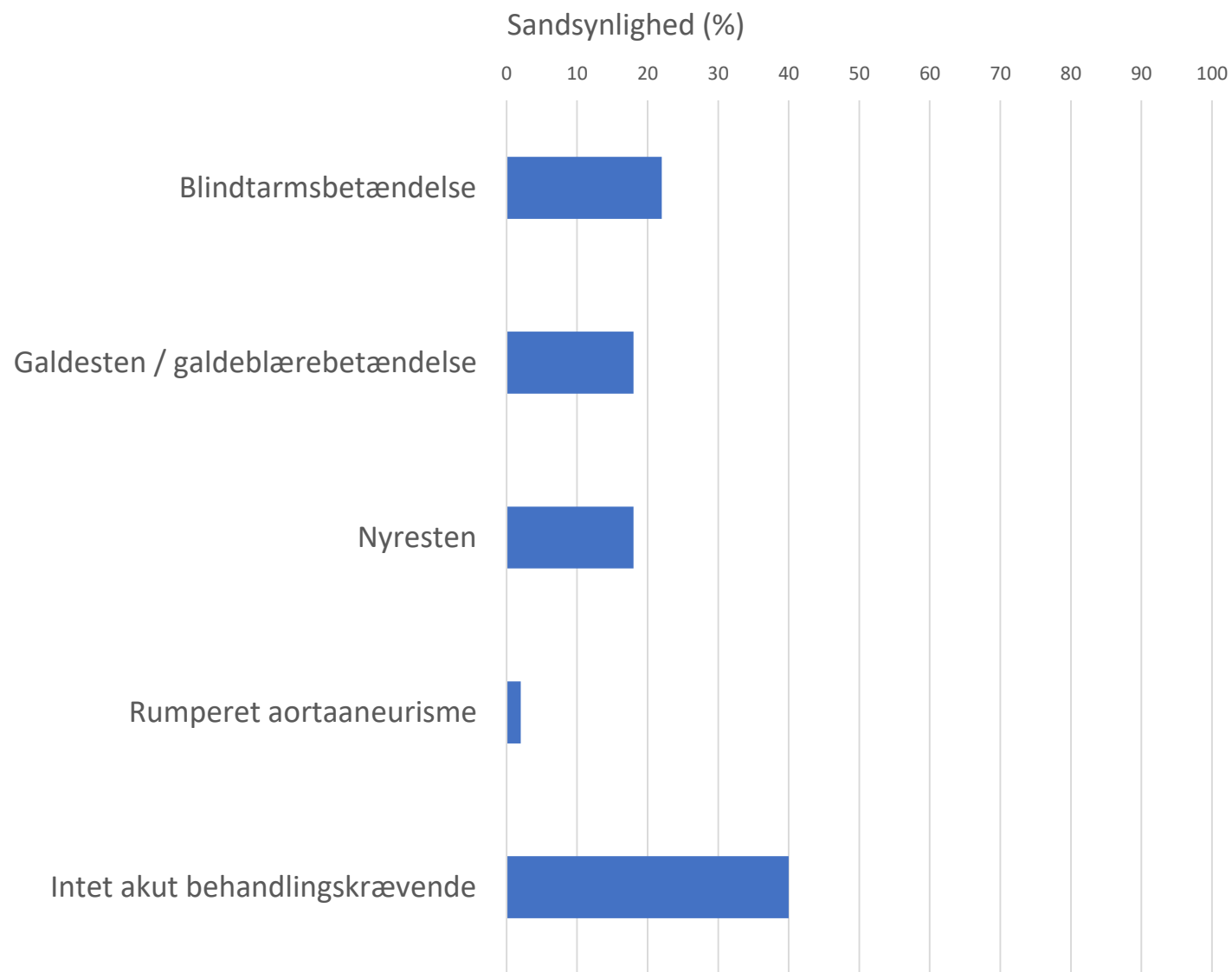
SYMPTOM → DIAGNOSE

Probabilistisk diagnostik



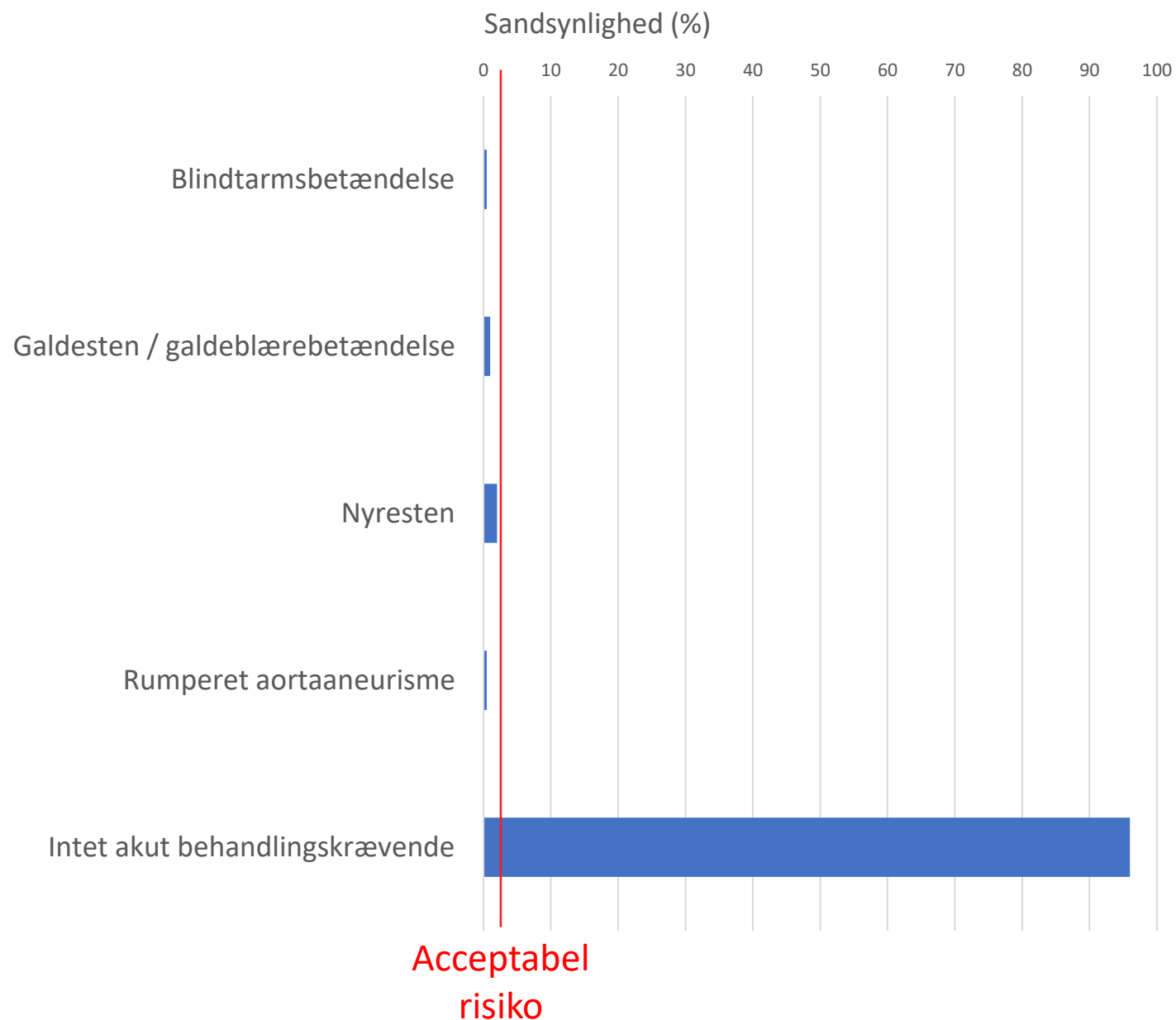
- 62-årig mand med akutte mavesmerter

- Tidligere fjernet blindtarmen
- Ingen feber
- Normale infektionstal
- Normal urin undersøgelse
- Ultralyd uden aortaaneurisme eller galdesten



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Den diagnostiske proces



Patienter udskrevet uden etableret diagnose

- Patienter vi ikke tror fejler noget
- Patienter vi tror fejler noget, men:
 - Ikke kan sige det med sikkerhed akut
 - Ikke kræver fuld akut udredning

Ingen etableret = Uspecifik aktionsdiagnose
diagnose (R og Z03)

Klinisk

Administrativ / epidemiologisk

**Uspecifikke diagnoser?
Hvorfor er det spændende?**



Hvorfor er det spændende?

Det er hyppigt! – og i stigning

Do Emergency Department Patients Receive a Pathological Diagnosis? A Nationally-Representative Sample

Leana S. Wen, MD, MSc*
Janice A. Espinola, MPH†
Joshua M. Mosowsky, MD‡
Carlos A. Camargo, Jr., MD, MPH, PhD†

*George Washington University, Department of Emergency Medicine,
Washington, District of Columbia
†Massachusetts General Hospital, Department of Emergency Medicine,
Boston, Massachusetts
‡Brigham and Women's Hospital, Department of Emergency Medicine,
Boston, Massachusetts

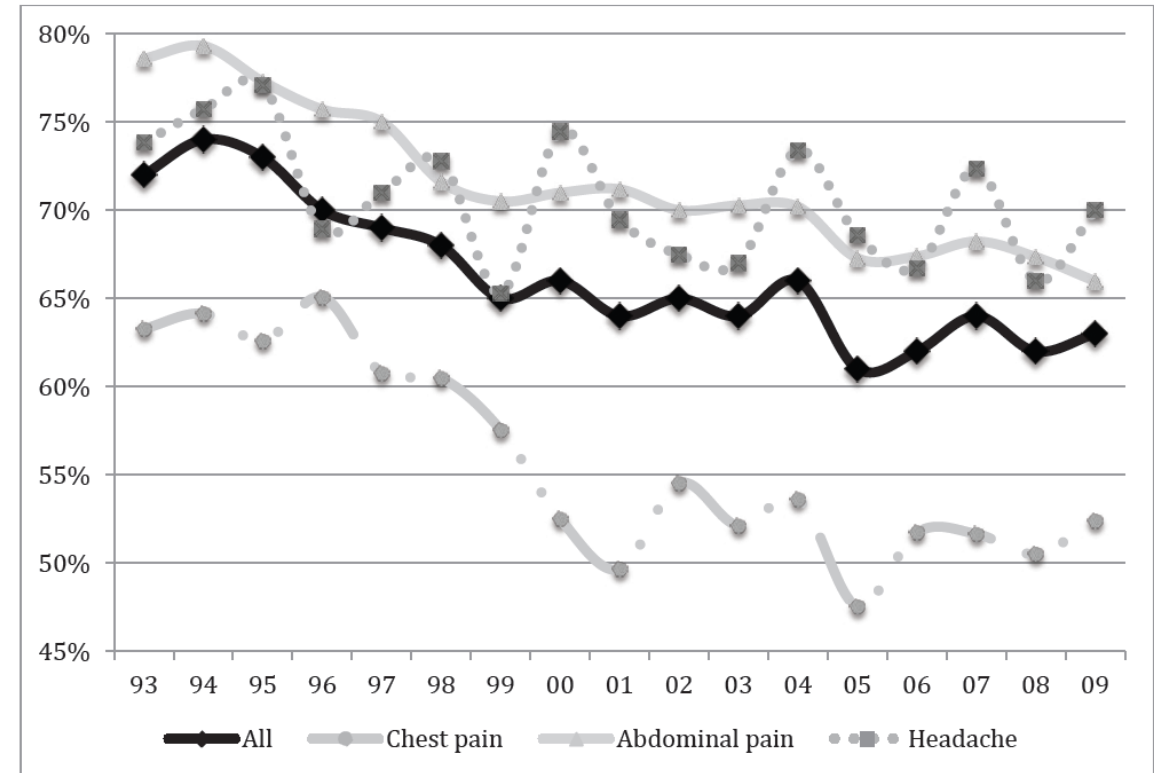


Figure. Proportion of emergency department patients discharged with pathological discharge diagnosis for three most common chief complaints, 1993-2009.

Hvorfor er det spændende?

Det er hyppigt! – og i stigning

Open access

Research

BMJ Open Trends in the utilisation of emergency departments in California, 2005–2015: a retrospective analysis

Renee Y Hsia,^{1,2} Sarah H Sabbagh,¹ Joanna Guo,¹ Thomas J Nuckton,^{3,4} Matthew J Niedzwiecki^{1,2}

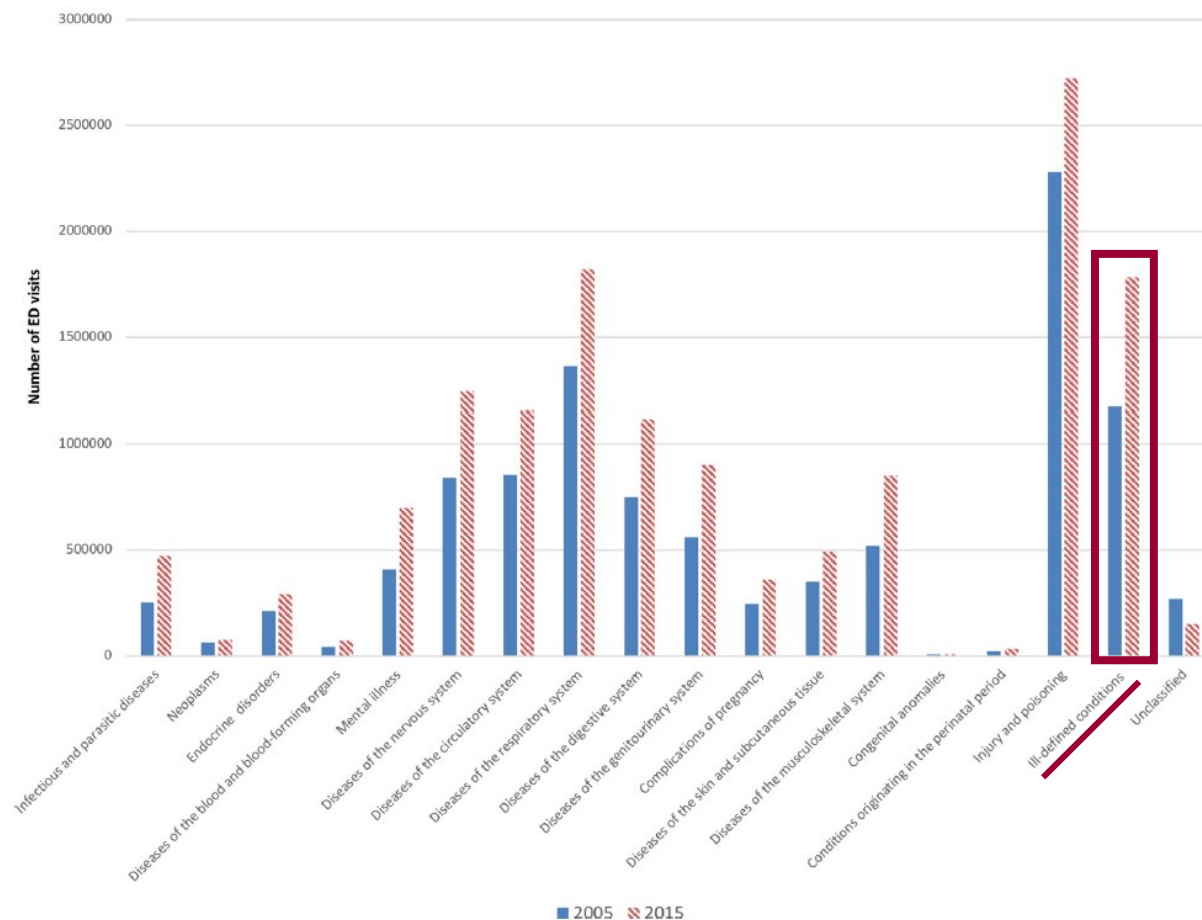


Figure 3 California ED visits by diagnosis, 2005 and 2015. *Source:* Authors' analysis of Emergency Discharge Data from the California Office of Statewide Health Planning and Development, 2005 and 2015. ED, emergency department.

**Uspecifikke diagnoser?
Hvorfor er det spændende?**



Hvorfor er det spændende? Dødeligheden er ikke-negligierbar

Gunnarsdottir (2007, 2008, 1013), Island, 1995-2001.

Patienter hjemsendt fra akutmodtagelsen

30-dages dødelighed:

- R-diagnoser: 0,5%**
- Andre diagnoser: 0,7%**

Hvorfor er det spændende? Dødeligheden er ikke-negligerbar

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**Risikoen for at dø sammenlignet med
baggrundsbefolkningen var >50% øget**

Diagnostic error

- **Missed diagnoses**
- Wrong diagnoses
- Delayed diagnoses
- Diagnoses not properly communicated



Gregersen *et al.*
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(2024) 32:32
<https://doi.org/10.1186/s13049-024-01191-4>

Scandinavian Journal of
Trauma, Resuscitation
and Emergency Medicine

ORIGINAL RESEARCH

Open Access



Acute patients discharged without an established diagnosis: risk of mortality and readmission of nonspecific diagnoses compared to disease-specific diagnoses

Rasmus Gregersen^{1,2,3*}, Marie Villumsen², Katarina Høgh Mottlau¹, Cathrine Fox Maule^{2^},
Hanne Nygaard^{1,3}, Jens Henning Rasmussen¹, Mikkel Bring Christensen^{4,5,6} and Janne Petersen^{2,3}

Characteristics	Short (3- <12 hours)	
	Unspecific discharge diagnoses	Disease-specific discharge diagnoses
	n=47,308 (50.7%)	n=45,993 (49.3%)
Age (years), median (Q1-Q3)	56.0 (38.0-72.0)	56.0 (39.0-72.0)
Female	54.2%	50.5%
No or low comorbidity (M3 score <1)	83.1%	82.1%
Length of stay (hours), median (Q1-Q3)	5.2 (4.0-7.1)	5.1 (3.9-7.1)

Characteristics

	Short (3- <12 hours)		Longer (12-168 hours)	
	Unspecific discharge diagnoses n=47,308 (50.7%)	Disease-specific discharge diagnoses n=45,993 (49.3%)	Unspecific discharge diagnosis n=26,337 (26.0%)	Disease-specific discharge diagnosis n=74,827 (74.0%)
Age (years), median (Q1-Q3)	56.0 (38.0-72.0)	56.0 (39.0-72.0)	66.0 (47.0-78.0)	69.0 (53.0-79.0)
Female	54.2%	50.5%	52.5%	49.1%
No or low comorbidity (M3 score <1)	83.1%	82.1%	74.5%	69.2%
Length of stay (hours), median (Q1-Q3)	5.2 (4.0-7.1)	5.1 (3.9-7.1)	25.2 (18.1-49.5)	50.9 (24.7-96.0)

Korte hospitalsophold (3-12 timer)

30-dages dødelighed

Uspecifikke diagnoser: 0,6%
Specifikke diagnoser: 0,8%

30-dages genindlæggelser

Uspecifikke diagnoser: 7.3%
Specifikke diagnoser: 8.4%

Længere hospitalsophold (12-168 timer)

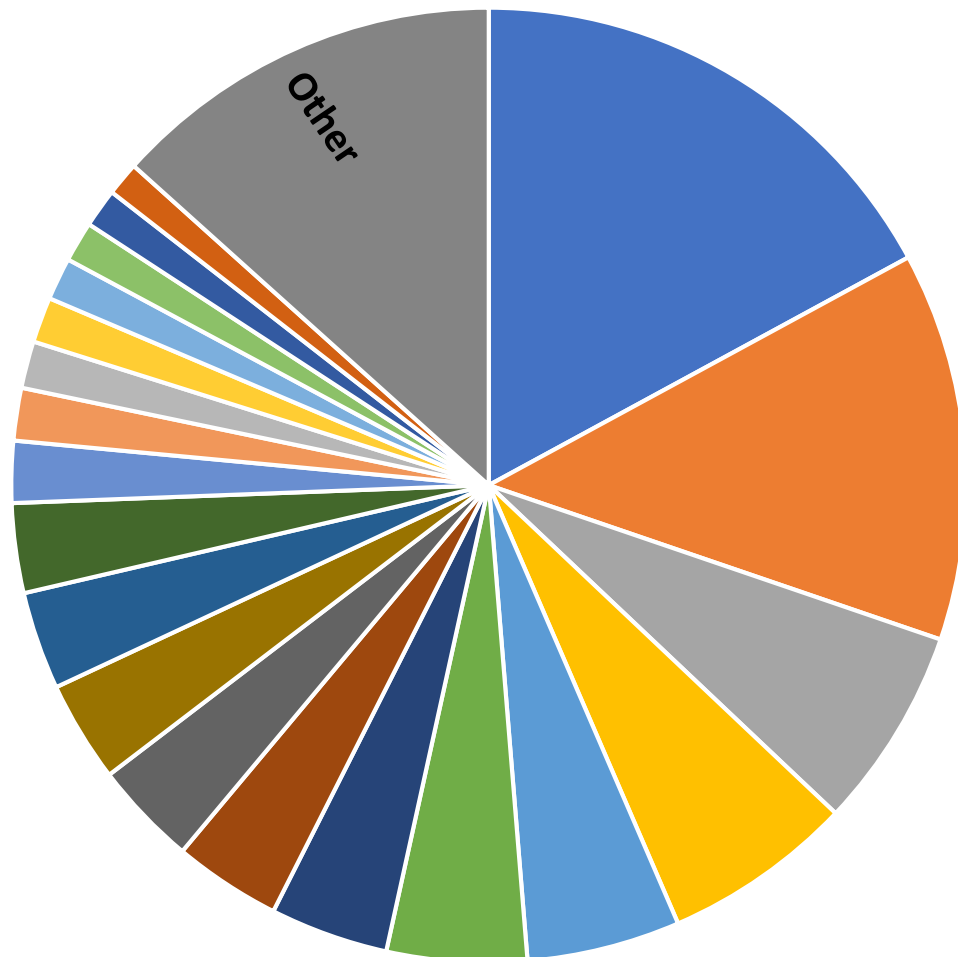
Uspecifikke diagnoser: 1,6%
Specifikke diagnoser: 2,6%

Uspecifikke diagnoser: 11,1%
Specifikke diagnoser: 13,7%



	Korte ophold		Længere ophold	
	Dødelighed	Genindlæggelser	Dødelighed	Genindlæggelser
Forudgået af uspecifik diagnose	304 (45.0%)	3460 (47.3%)	409 (17.8%)	2859 (22.2%)

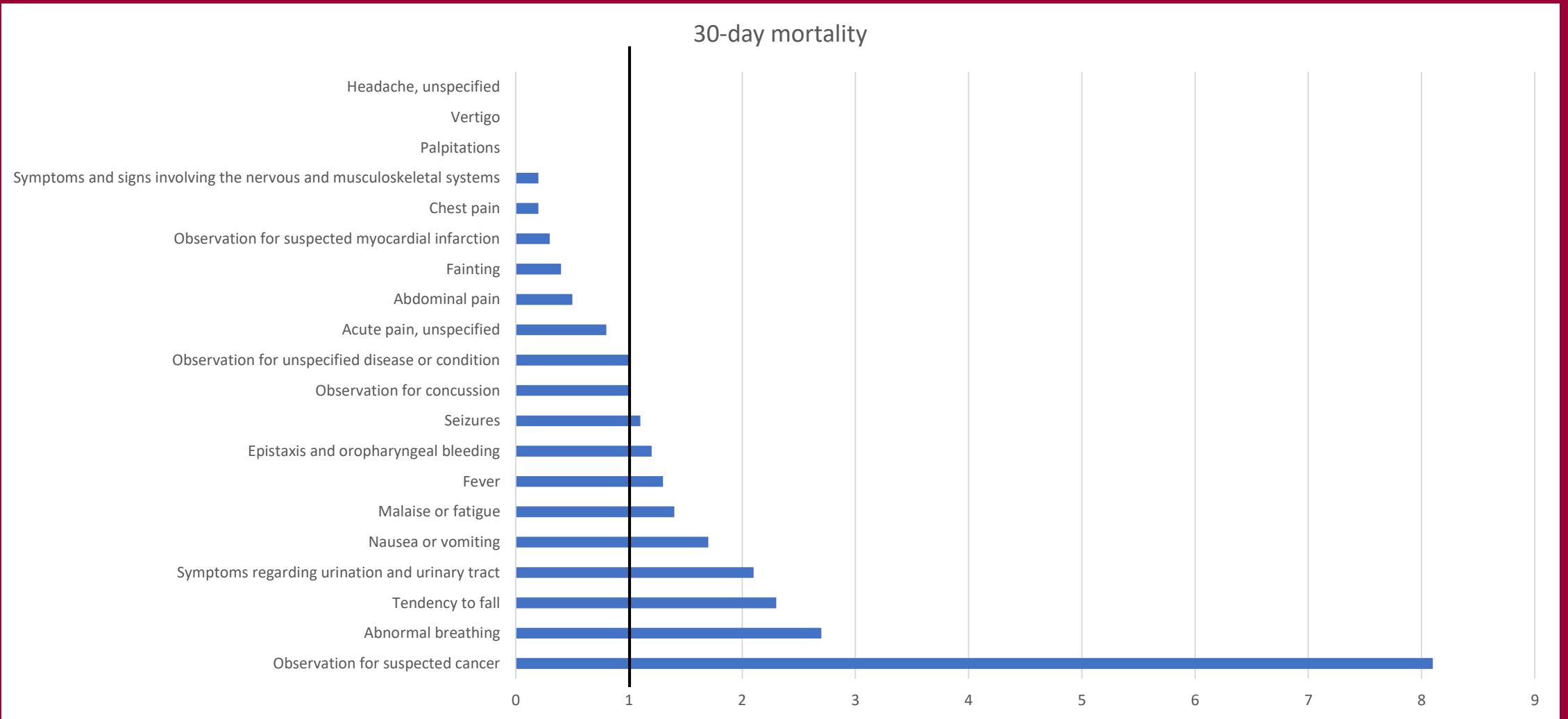
De hyppigste



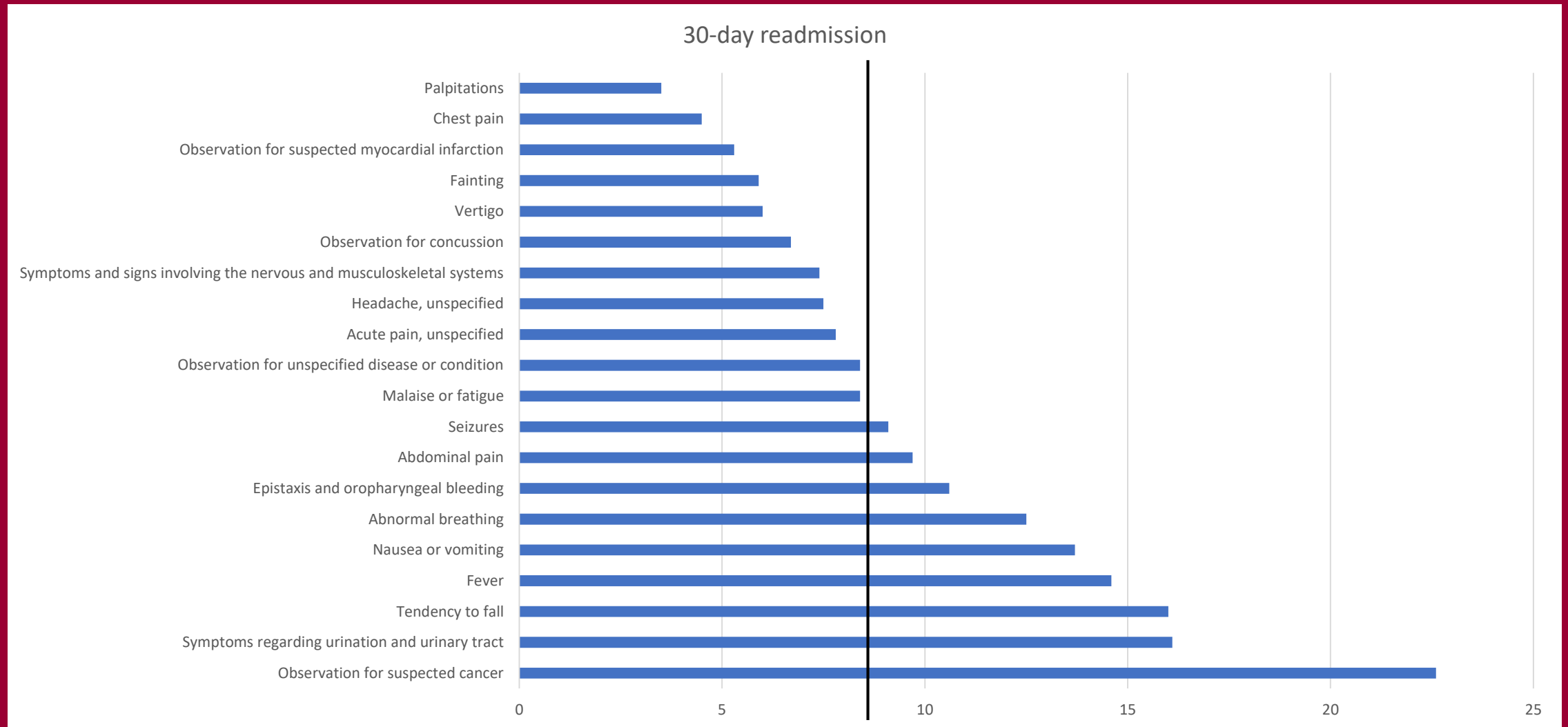
Number

- Abdominal pain
- Chest pain
- Observation for unspecified disease or condition
- Fainting
- Abnormal breathing
- Acute pain, unspecified
- Vertigo
- Observation for suspected myocardial infarction
- Headache, unspecified
- Symptoms regarding urination and urinary tract

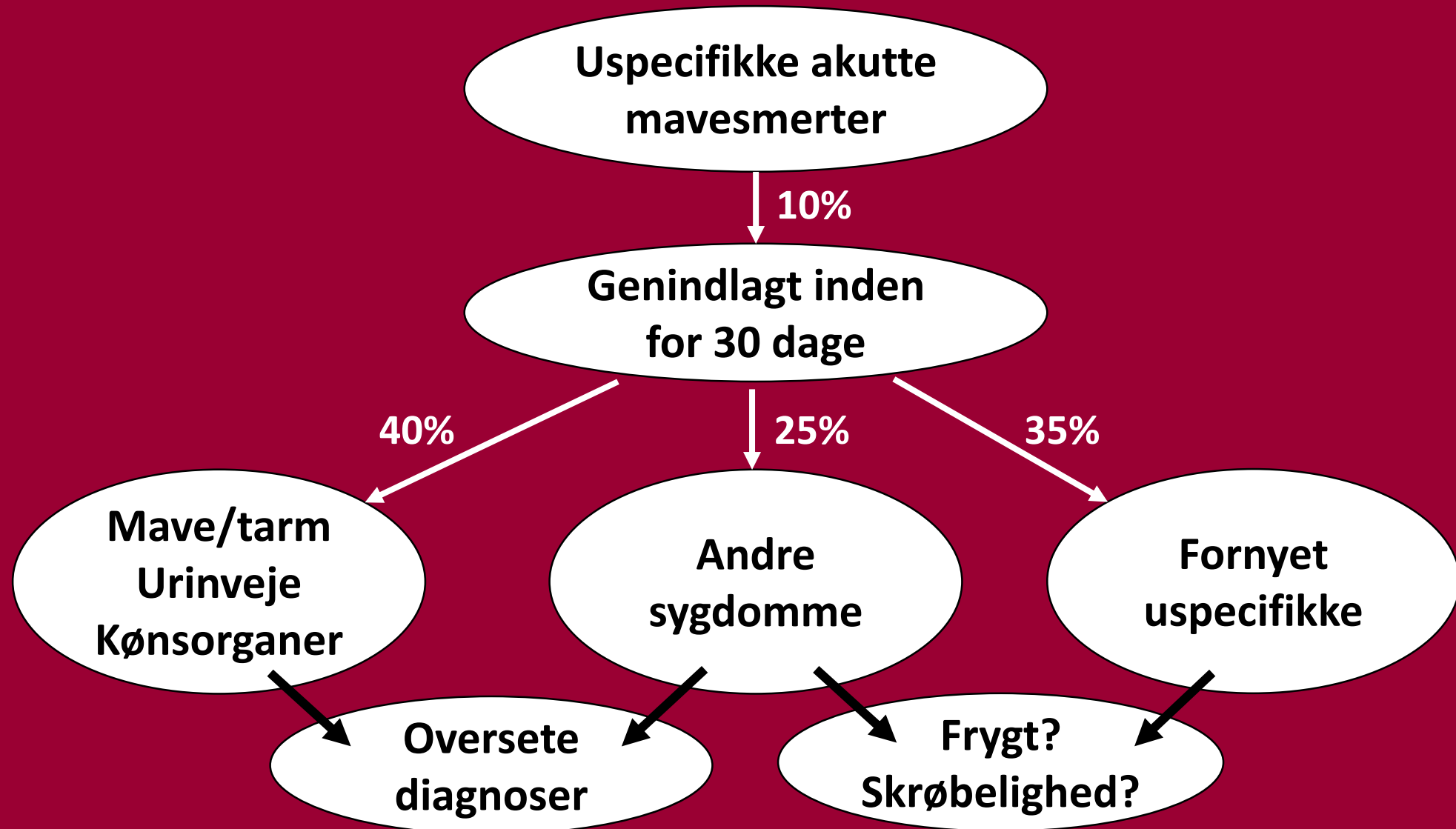
30-dages mortalitet



30-dages genindlæggelse



Hvad bliver patienterne genindlagt med?



Diagnosefejl i akutområdet

279 inkluderede studier

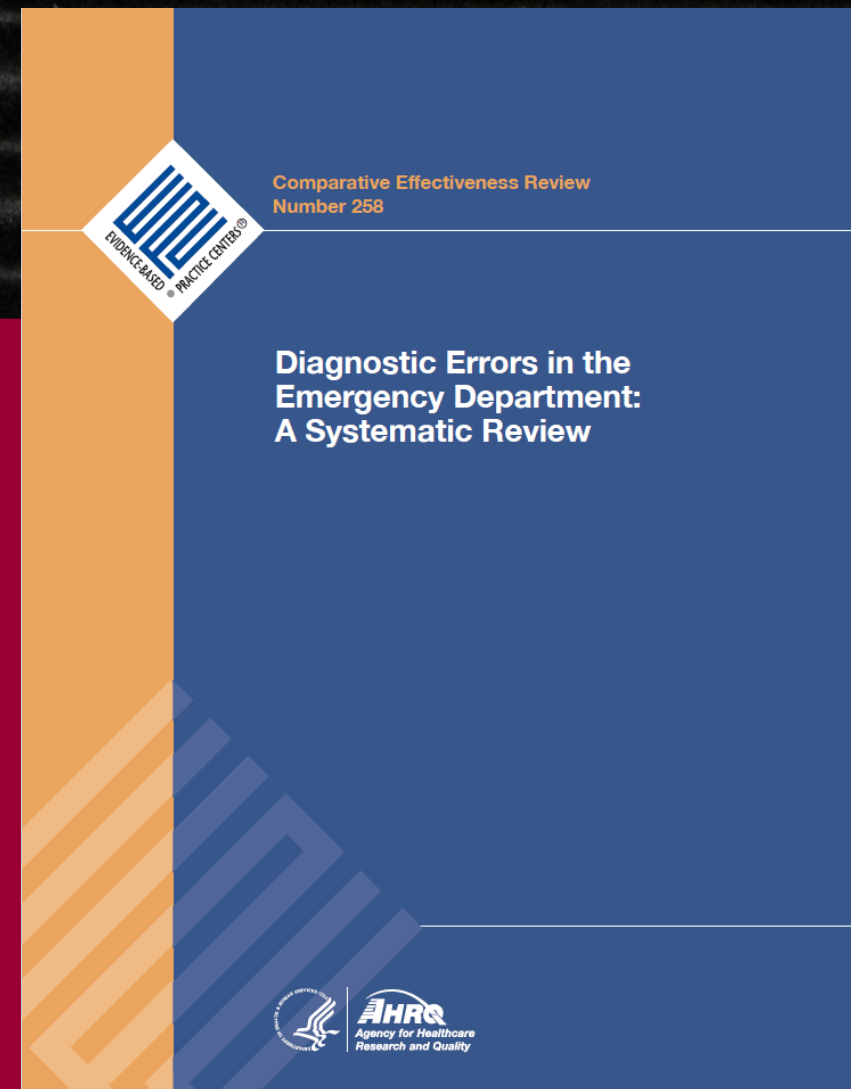
Diagnostic error: 5,7%

Diagnostic harm: 2,0%

Serious harm: 0,3%

Death: 0,2%

Bygger på 3 studier
n=1.758...

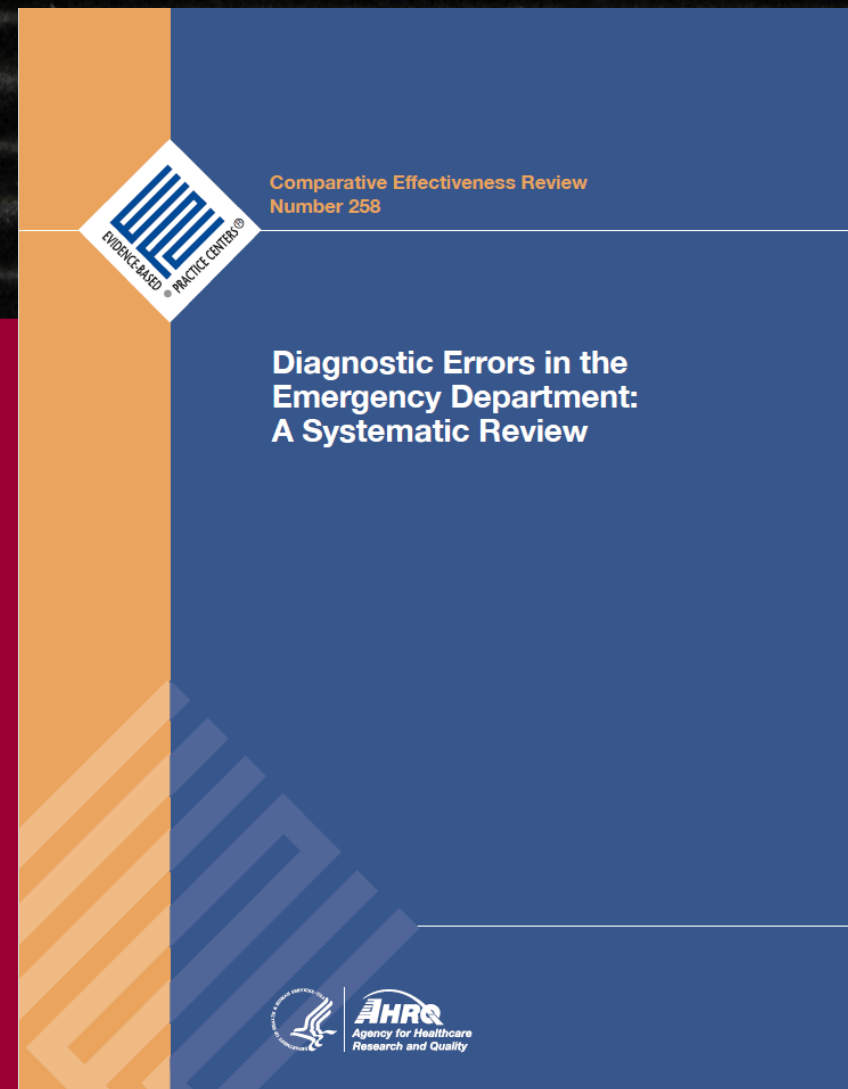


Diagnosefejl i akutområdet

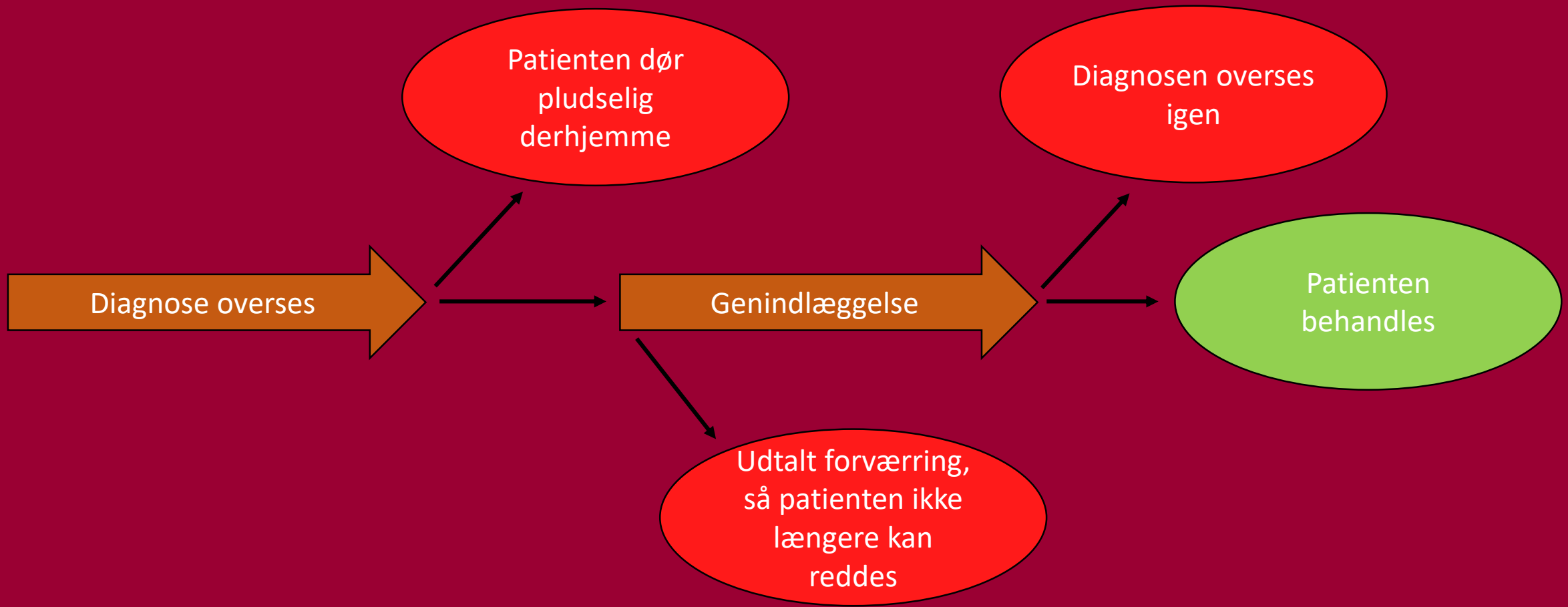
15 tilstande står for 70% af diagnostic harm:

Stroke, AKS, aorta-sygdomme, rygmarvsskader, DVT'er, meningitis, sepsis, perforeret organ, osv...

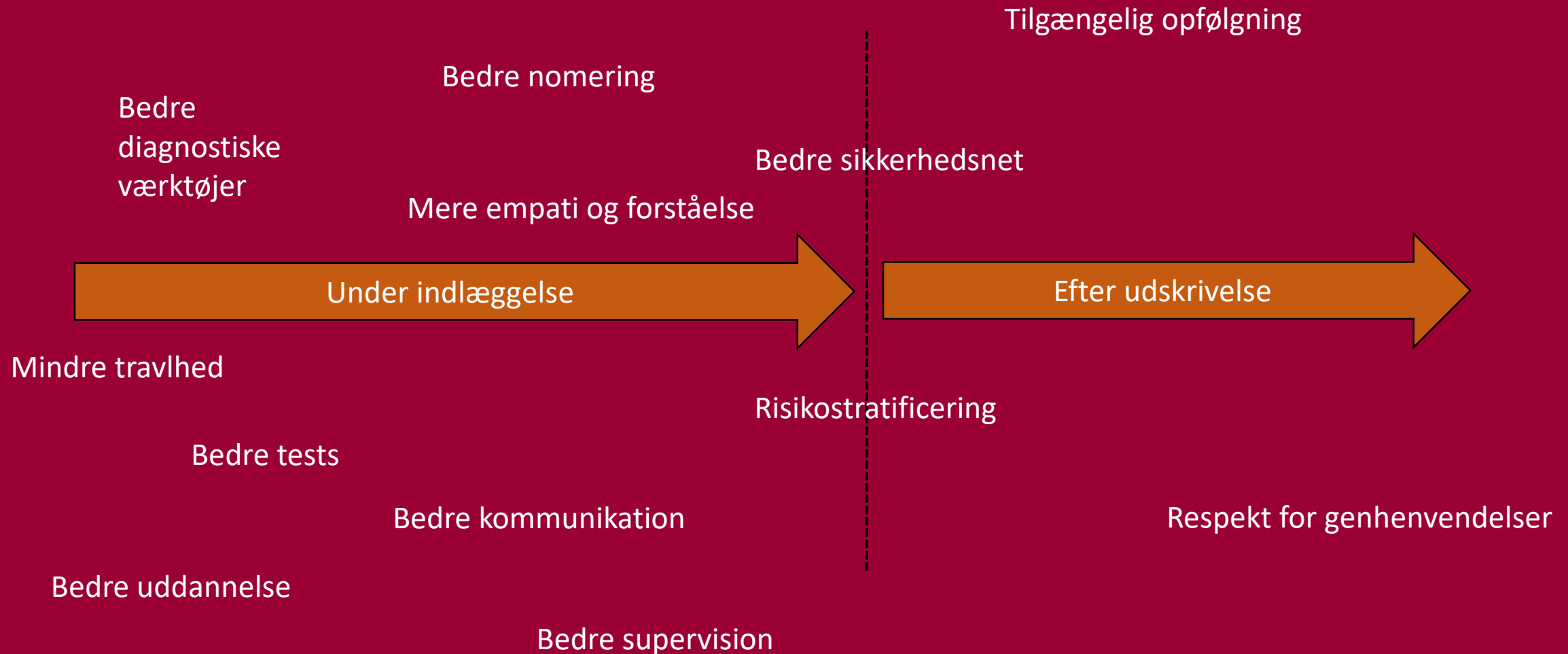
Atypiske præsentationer misses



Diagnostic error or diagnostic harm?



Hvor kan vi gøre det bedre?



Er flere tests altid bedre?

Regular Article

Clinical outcomes in patients with isolated subsegmental pulmonary emboli diagnosed by multidetector CT pulmonary angiography[☆]

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ABSTRACT

Introduction: CT Pulmonary Angiography has been shown in 3-month outcome studies, but it detects more pulmonary emboli. Isolated subsegmental pulmonary emboli are thought to account for some of the increase in diagnosis, but it is not known whether these emboli represent a harbinger for future thromboembolic events. The objective of this study was to determine the 3-month clinical outcomes of a cohort of patients diagnosed with isolated subsegmental pulmonary emboli.

Materials and Methods: Review of 10,453 consecutive CTPA radiology reports over 74-month period since the implementation of Multidetector CT Pulmonary Angiography identified a cohort of 93 patients found to have acute pulmonary embolism isolated to subsegmental pulmonary arteries without other evidence of deep venous thrombosis at one institution. The study measured (recurrence, death, hemorrhage) determined by review of medical records.

Results: Seventy-one patients (76%) were treated with anticoagulation and 22 (24%) were observed without therapy. One patient (1/93, 1.05%; 95% CI 0.03–3.12%) and a vena caval filter had a recurrent subsegmental pulmonary embolism. There were 8 hemorrhages, including 5 (5.5%) related mortality.

Conclusions: Patients diagnosed with isolated subsegmental pulmonary emboli have favorable short-term prognosis for recurrent thromboembolic events with anticoagulation in patients at high risk of bleeding.

Review

Overdiagnosis of pulmonary embolism: definition, causes and implications

Overdiagnosis of Pulmonary Embolism by Pulmonary CT Angiography

Overdiagnosis of Pulmonary Embolism: Evaluation of a Hypoxia Algorithm Designed to Avoid This Catastrophic Problem

JAMA | Original Investigation

Effect of the Pulmonary Embolism Rule-Out Criteria on Subsequent Thromboembolic Events Among Low-Risk Emergency Department Patients The PROPER Randomized Clinical Trial



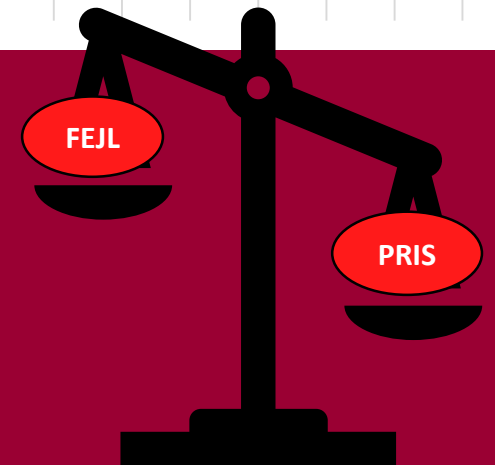
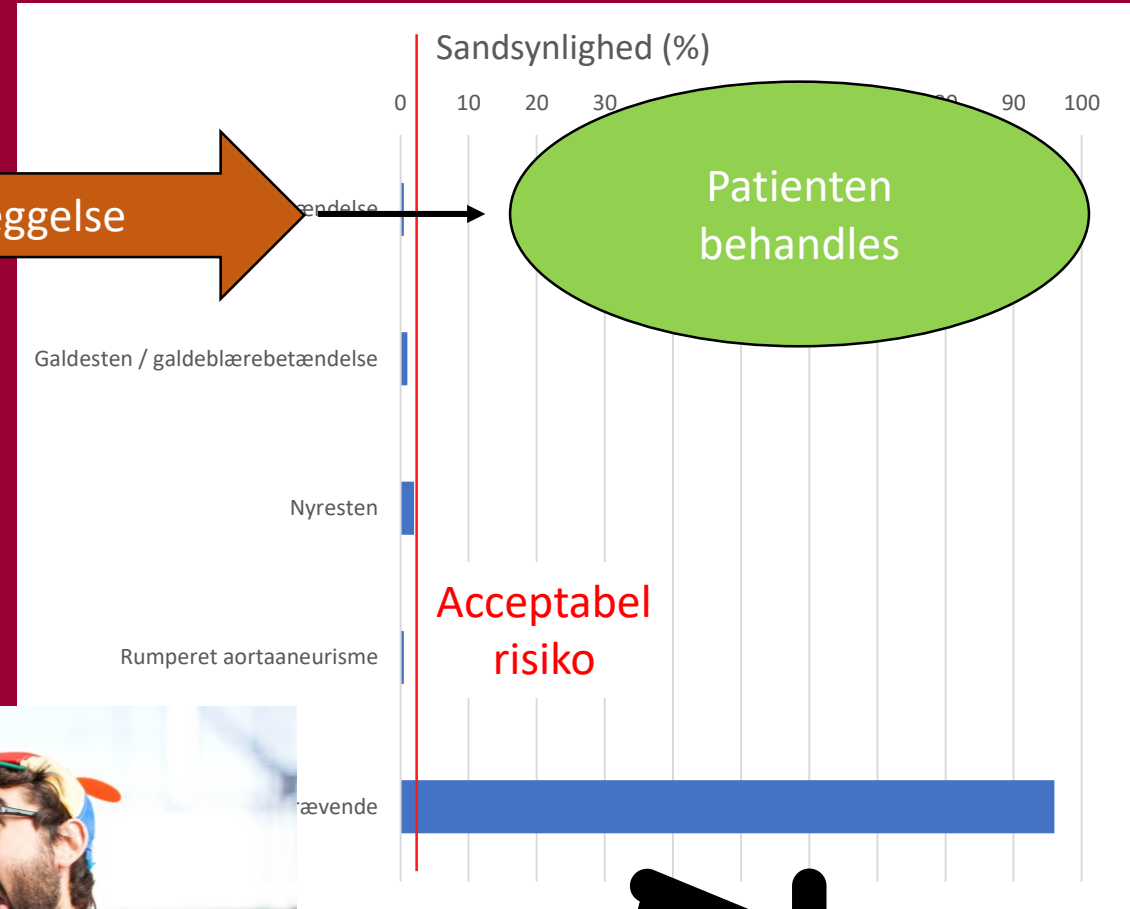
Diagnose overses

Genindlæggelse

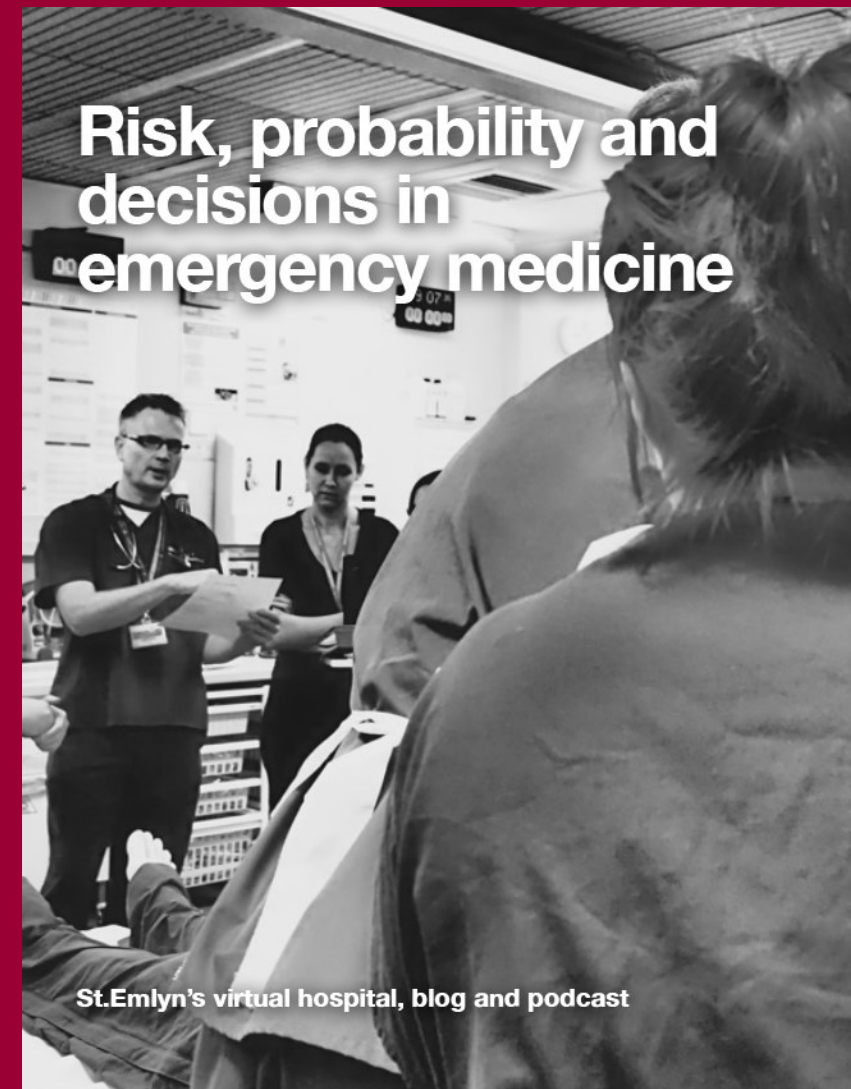
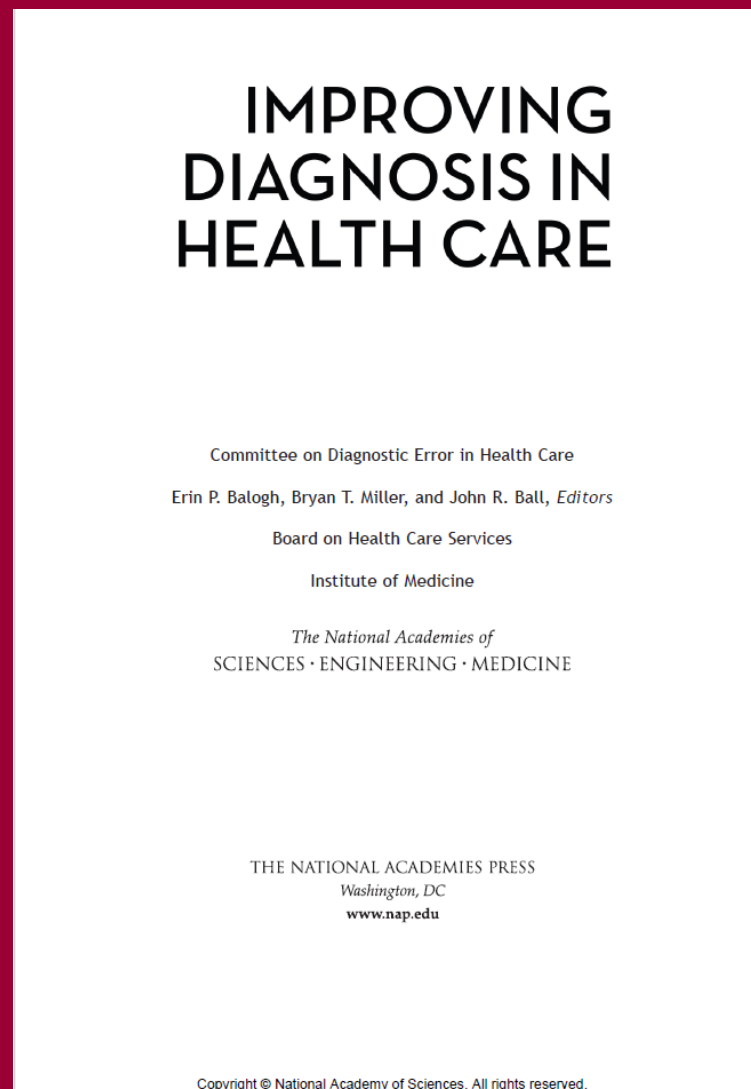
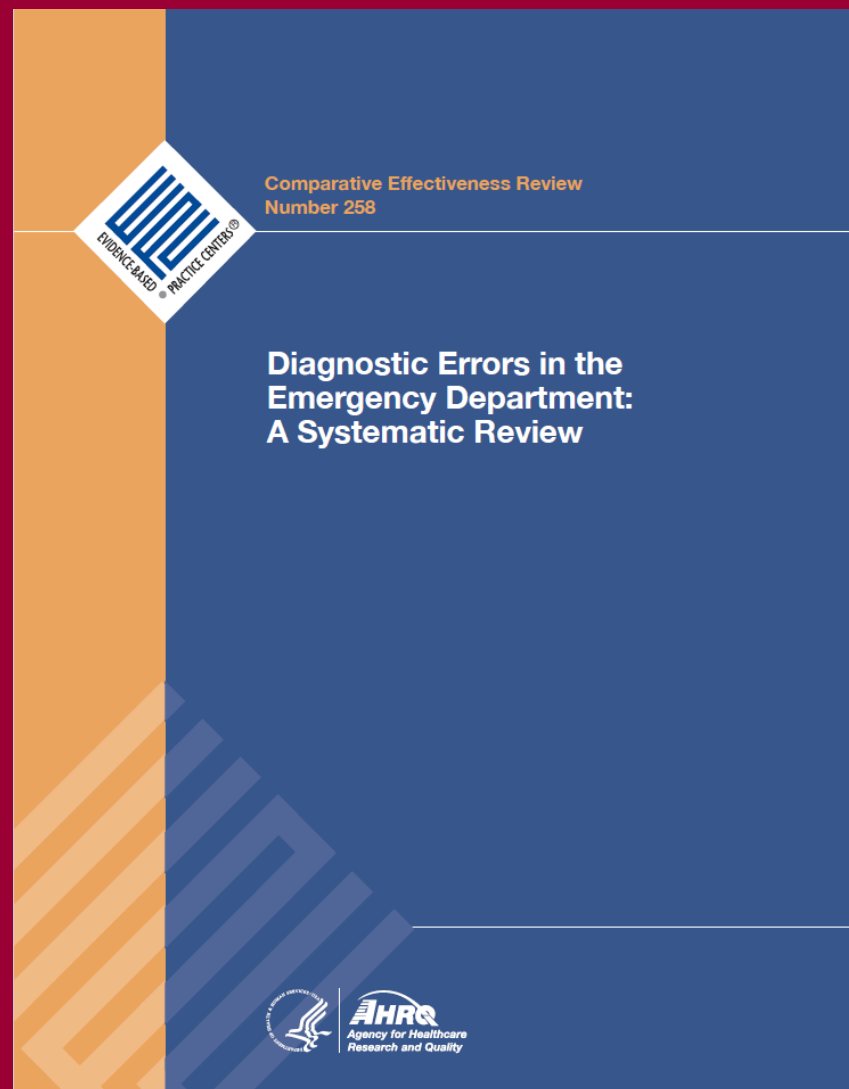
HVORDAN POKKER
KAN I OVERSE
ALVORLIGE
DIAGNOSER?!

Review

Overdiagnosis of pulmonary
embolism: definition,
causes and implications



Til de særligt interesserede



Tak!

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Sektion for biostatistik, Københavns Universitet**