

Digitalt arbeidsmiljø på sygehuse - brugskvaliteten af elektroniske patient journal systemer kan være vigtig for ansattes sundhed

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NeRN: Nordic e-health research network

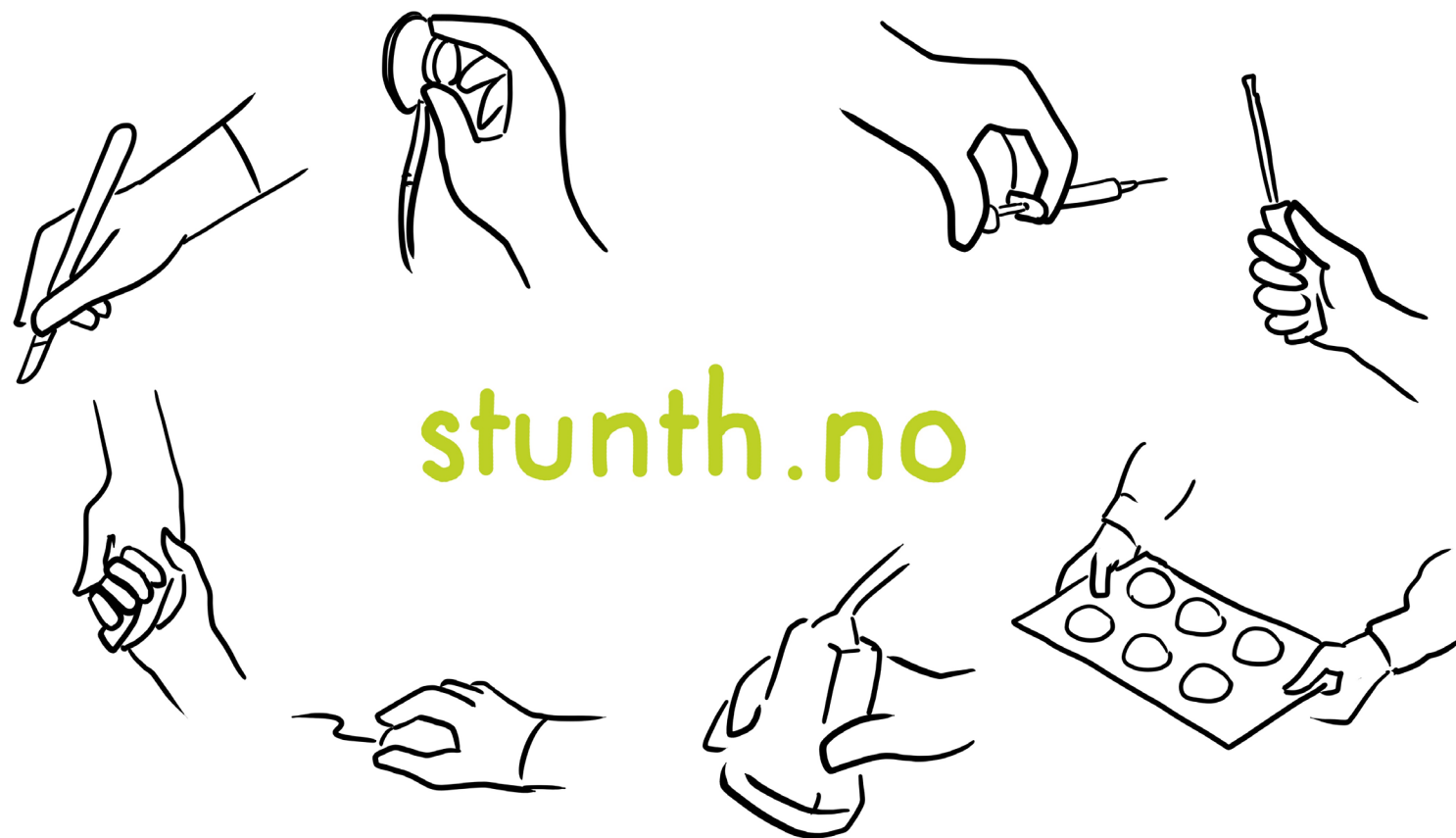
Supportive technologies



Disruptive technologies



Sykehusstudien ny teknologi og helse



Prosjektleder Sigmund Gismervik3

Typer av pasientjournaler

Papir-basert journal



Elektronisk medisinsk journal (EMR)

- *provider centric*



Elektronisk pasientjournal (EPR)

- *facility centric (Doculive)*



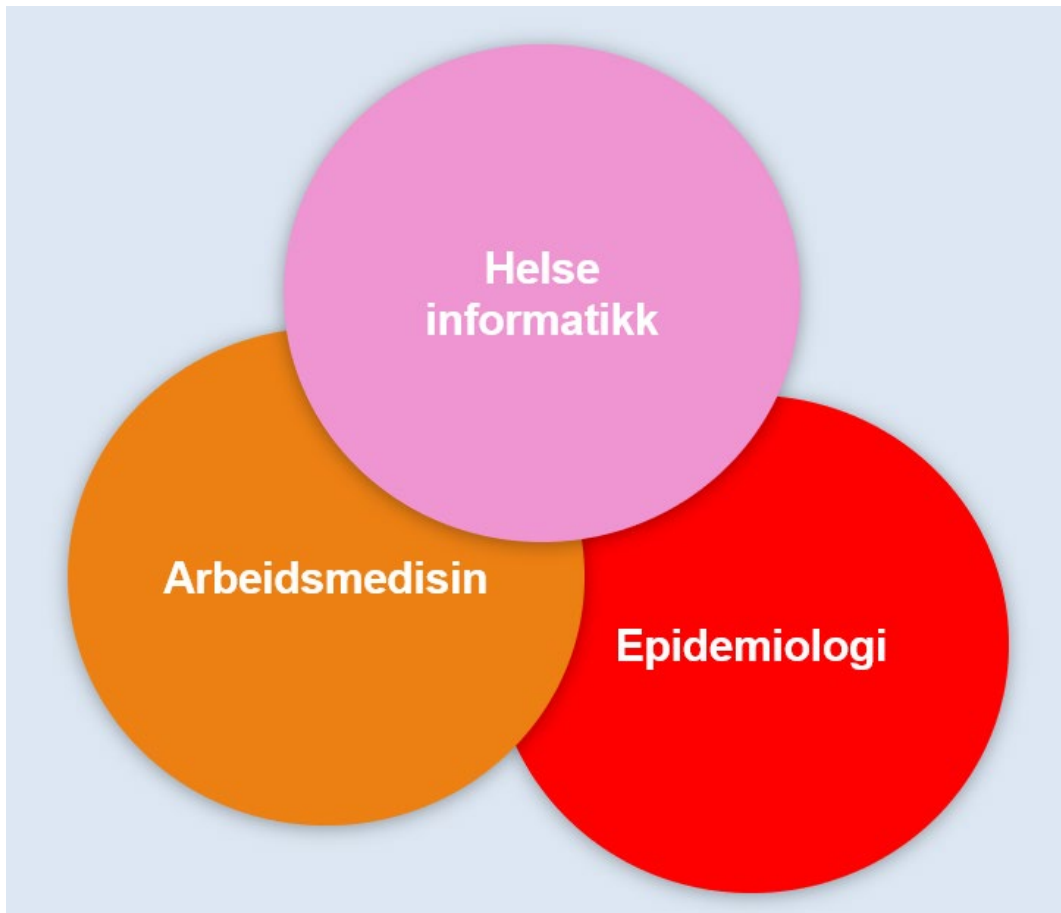
Elektronisk helsesjournal-system (EHR)

- *patient centric, cross-institutional (Helseplattformen)*



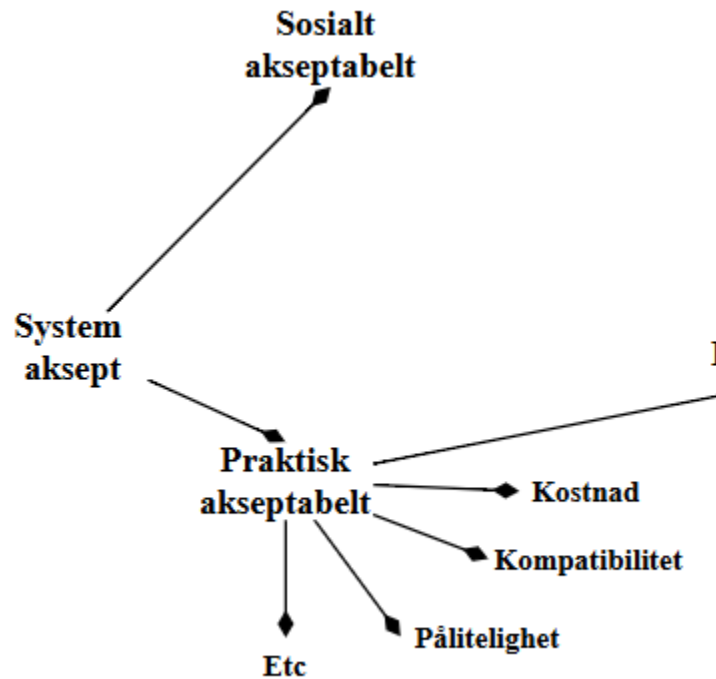
Digital
transformasjon

**Hvordan måle ansattes eksposition/eksponering
for et nytt elektronisk helse journal (EHR) system?**



System aksept / brukskvalitet

- av tversektorielle, omfattende og komplekse EHR systemer



Fritt etter
Jacob Nilsen 1993

Brukskvalitet definisjon (usability) anno 2019

Electronic health record system usability, is the extent to which the technology can be used by the users to achieve specified goals with

- effectiveness
- efficiency
- satisfaction

in a specified context of use

(ISO 9241-210, <https://www.iso.org/standard/77520.html>)



International
Organization for
Standardization

Usability of an electronic health record 6 months post go-live and its association with burnout, insomnia and turnover intention: a cross-sectional study in a hospital setting

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ABSTRACT

Objective The aim of this study was to assess how different groups of health professionals evaluated the usability of a new electronic health record (EHR) and to investigate the association between the usability and burnout, insomnia and turnover intention.

Methods This cross-sectional study included 1424 health professionals who worked at a Norwegian University Hospital. The usability was measured with the System Usability Scale (SUS) 6 months after the previous electronic record was replaced with a more comprehensive, sector-wide, patient-centred EHR in 2022.

Results The median SUS score was 25 (IQR 12.5–37.5) out of 100 and ranged from 15 (IQR 7.5–25.0) among medical doctors to 40 (IQR 27.6–55.0) among laboratory technicians. Nurses reported a score of 25 (IQR 12.5–40.0). In clinical contexts, the median SUS score ranged from 15 (IQR 10.0–30.0) within radiology to 27.5 (IQR 15.0–42.5) within internal medicine, whereas laboratory medicine reported a score of 37.5 (IQR 27.5–55.0). In multivariable analyses using health professionals in the highest quarter of the SUS as the reference, those in the lowest quarter were more likely to report burnout (OR 3.05, 95% CI 1.86 to 5.00), insomnia (OR 1.72, 95% CI 1.18 to 2.50) and turnover intention (OR 2.35, 95% CI 1.53 to 3.64).

Conclusion Most health professionals across all occupational groups and clinical contexts reported low usability of a new EHR 6 months after go-live. Those who reported the lowest usability were more likely to report burnout, insomnia and turnover intention.

INTRODUCTION

Over the last decade, vast investments in health information technology, such as electronic health records (EHRs), have been made globally.^{1–3} These investments have been built on the assumption that EHRs will improve patient care across healthcare settings.^{2,4} To support and facilitate clinical work, health professionals depend on the

WHAT IS ALREADY KNOWN ON THIS TOPIC

- ⇒ Although electronic health records (EHRs) intend to enhance the quality and efficiency of healthcare delivery, they may create substantial challenges for the health professionals such as increased workload, job dissatisfaction and symptoms of burnout.
- ⇒ Previous studies have focused on the usability of EHRs among medical doctors and nurses only, and no study has investigated the association between the usability and burnout, insomnia and turnover intention shortly after go-live.

WHAT THIS STUDY ADDS

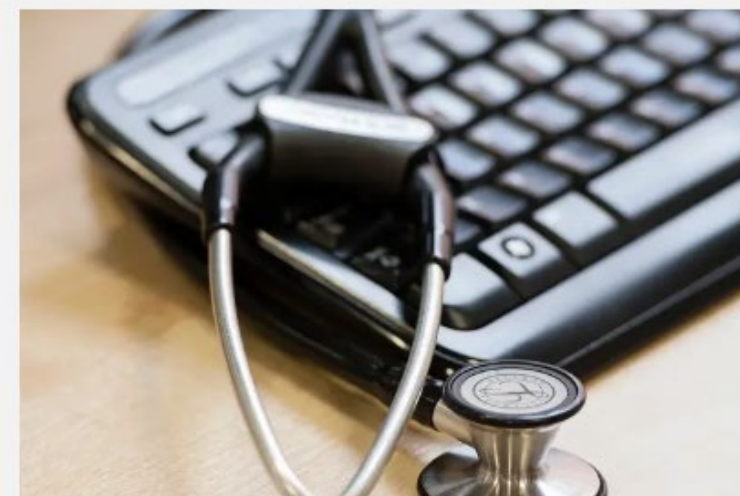
- ⇒ This is the first study to assess and quantify perceived usability among all groups of health professionals when transitioning from a simple record to a more comprehensive EHR in a hospital setting.
- ⇒ Although this study found some differences in usability between occupational groups and clinical contexts, all reported an unacceptable low usability level 6 months after go-live.
- ⇒ Burnout, insomnia and intention to seek a job elsewhere were more prevalent among health professionals who reported the lowest usability.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

- ⇒ These findings highlight the importance of ensuring acceptable usability of a new EHR to support clinical work and reduce the potential burden for health professionals in hospitals.
- ⇒ Our findings are relevant for policymakers and hospitals that are planning the implementation of comprehensive, sector-wide, patient-centred EHRs.

usability of an EHR to enter, view and extract health information quickly and accurately. To reach an acceptable usability level in hospital, it is important to have a well-designed EHR architecture.^{5–7} Usability, which is defined as

Editor's Choice



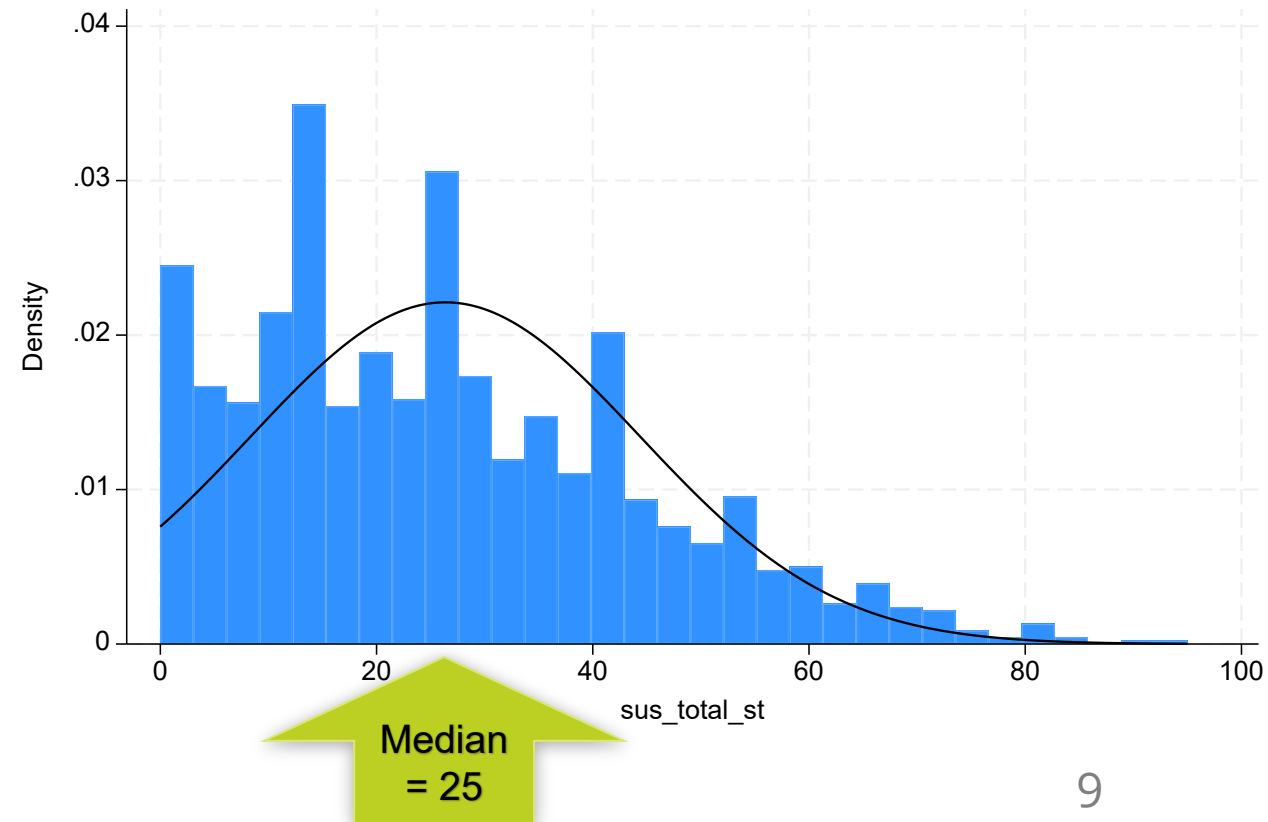
Usability of an electronic health record 6 months post go-live and its association with burnout, insomnia and turnover intention: a cross-sectional study in a hospital setting

28 March 2025

Metode og resultat

System usability scale(SUS)

- Standardisert, validert spørreskjema
- 10 spørsmål
 - Score fra 0-100
 - Sammenligning med andre land – særlig USA - Epic
- Kontekst uavhengig
 - Designet til å måle brukskvalitet for ulike teknologier
- 6 måneder etter go-live
 - n = 1424 helsepersonell

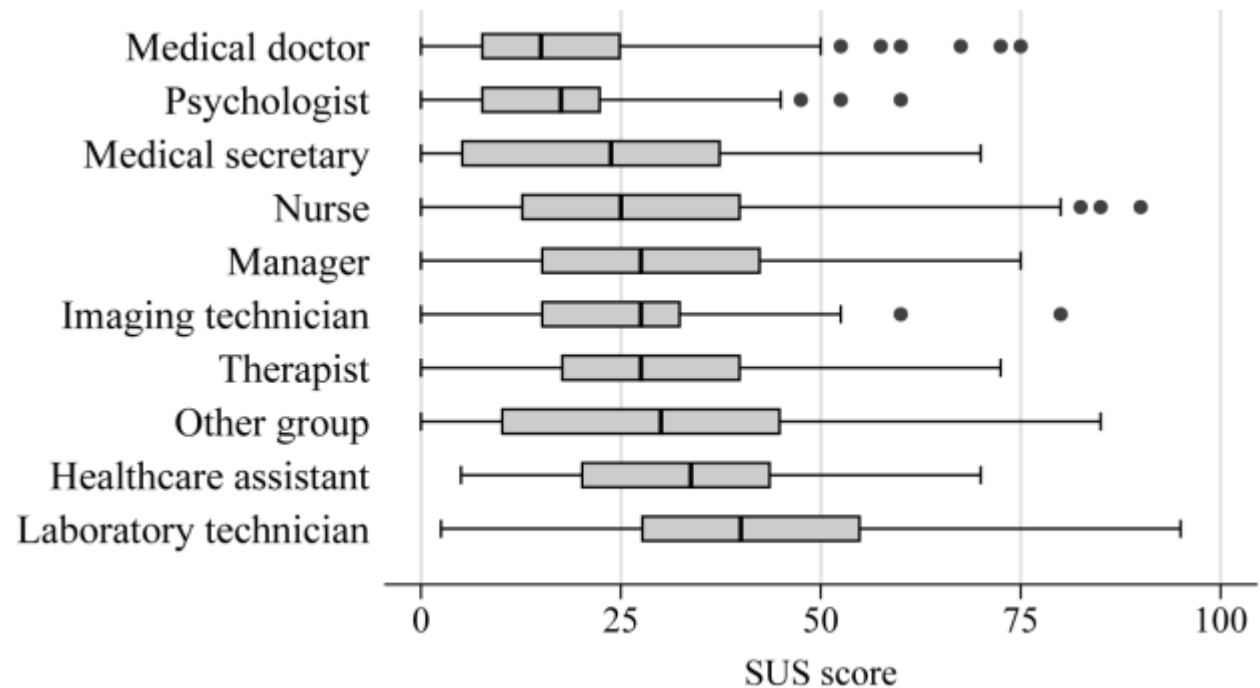


Forskningsspørsmål

Hvordan vurderer forskjellige grupper av helsepersonell brukskvaliteten av et nytt EHR-system 6 måneder etter go-live?

Har den opplevde brukskvalitet en sammenheng med utbrenthet, søvnproblemer og tanker om å forlate arbeidsplassen?

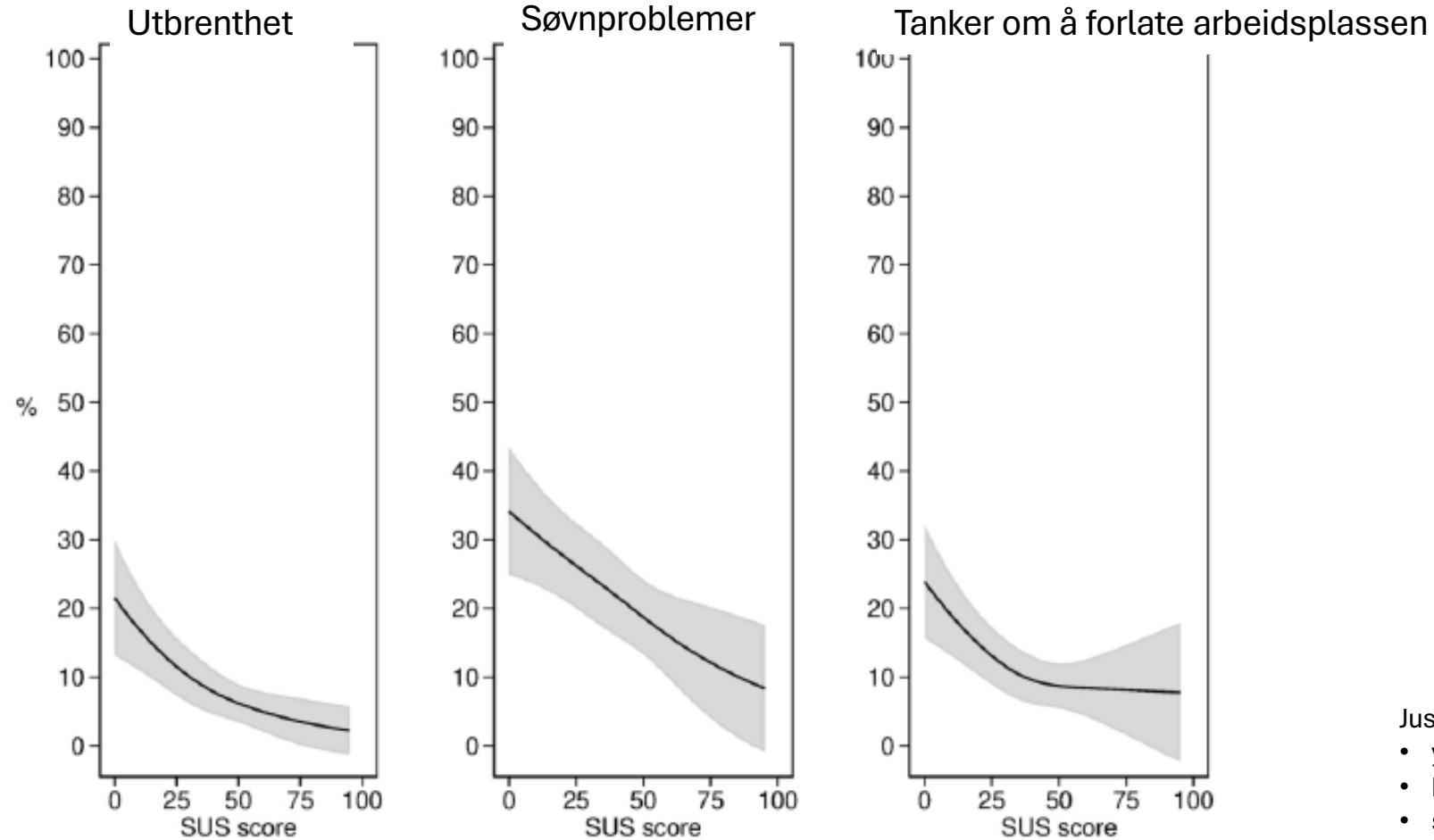
Users



Median SUS score

n = 1424, tverrsnittstudie, svarprosent ~ 36%
 seleksjonsbias/sensitivitetsanalyse

Predikert forekomst



n = 1424, tverrsnittstudie

Justert for:

- yrkesgruppe/faggruppe
- klinisk fagmiljø
- stillingsstørrelse
- alder
- kjønn



Intended consequences of new technologies
Un-intended consequences (bivirkninger)

THE QUINTUPLE AIMS

Health Equity — Quintuple Aim 2021

Clinician Well-Being — Quadruple Aim 2014

Lower Costs — Triple Aims 2007

Better Health Outcomes

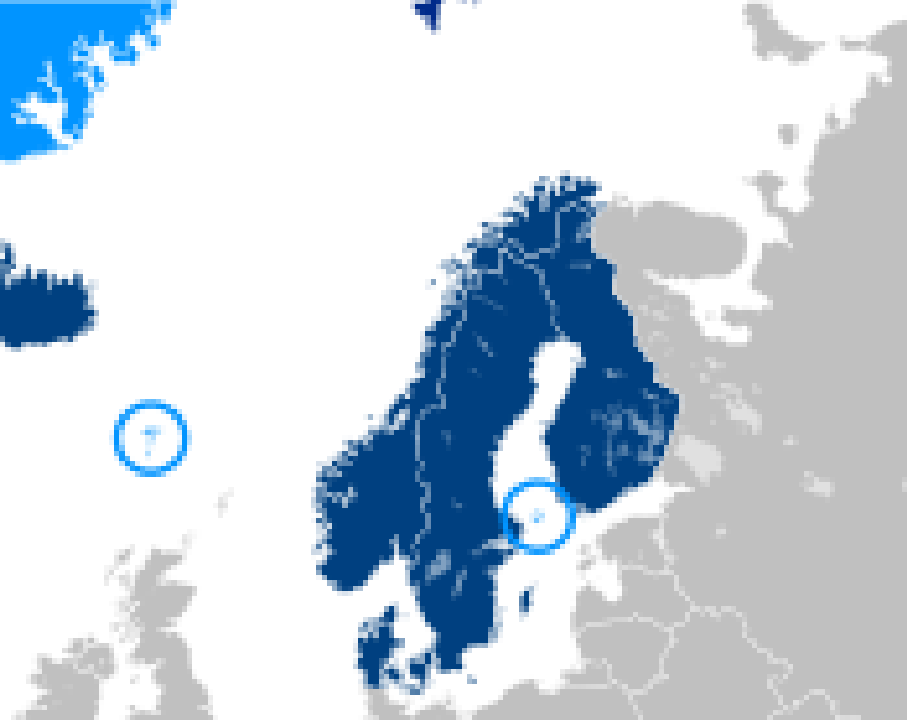
Improved Patient Experience

SOURCE: QUINTUPLE AIM SOLUTIONS

SOURCE: QUINTUPLE AIM SOLUTIONS



Sundhedslovene og arbejdsmiljølovene i Norden er ganske ens, men følger ikke med den digitale transformation



§ 45. Maskiner, maskindele, beholdere, præfabrikerede konstruktioner, apparater, redskaber, byggevarer, andre tekniske hjælpemidler og personlige værnemidler skal være indrettet og skal anvendes således, at de sikkerheds- og sundhedsmæssigt er fuldt forsvarlige.

(3) Maskiner og andet arbejdsudstyr skal være konstrueret og ha nødvendige verneinretninger slik at arbeidstaker er vernet mot skader.

5 § Maskiner, redskap och andra tekniska anordningar skall vara så beskaffade

STUNTH - forskningsgruppe



Takk



Prosjektleder Sigmund Østgård Gismervik



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Eivind Skarpsno Schjelderup



Lene Aasdahl



Karen Hara



Roar Munkeby
Fenne



Eivind Sæthre



Sindre Rabben
Svedahl



Solveig Osborg Ose



Paul Jarle Mork



Steinar Krokstad



Siw Tone Innstrand



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Digitalt arbeidsmiljø for helsepersonell betyr noe

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ARTIKKEL

Signe Lohmann-Lafrenz, Eivind Schjelderup Skarpsno Om forfatterne

LITTERATUR

KOMMENTARER (1)

Brukskvaliteten på elektroniske pasientjournalssystemer er en del av arbeidsmiljøet og bør være en av de viktigste kvalitetsindikatorerne ved innkjøp av slike systemer.

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