Norwegian Centre for
E-health Research

Annual Report 2022

Norwegian Centre for
E-health Research

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Contents

Statement from the head of the steering committee

The Norwegian Centre for E-health Research provides important knowledge to the health sector and is widely acknowledged for its research. Its societal mission is central: to collect, create and disseminate knowledge that contributes to a knowledge-based development of the e-health field. The knowledge will help to support national initiatives.

Knowledge is developed in several ways; research is only one method. Research is thorough and time-consuming, and in some contexts there will be other methods that are more suitable. This is assessed on a case-by-case basis. Knowledge is developed both through research and the sharing of this knowledge, for example through popular science dissemination, webinars or presentations.

It is gratifying that the Norwegian Centre for E-health Research in 2022 set a new record for the number of publications. A total of 75 papers were published. This is very good and bodes well for the future.

I would particularly like to highlight one of the articles from the doctoral work of Anette Vik Jøsendal, a recent PhD and one of the seventeen research fellows affiliated with the centre in 2022. She wrote about how e-prescription affects the work of pharmacists: From paper-based to electronic prescribing of multidose drug dispensing - Effects on pharmacy workload. She found that e-prescribing multidose is better for patients but increases pharmacies' workload.

In addition, I would like to mention the first article from PraksisNett, the infrastructure for research in primary care, which receives funding from the national budget: The Norwegian PraksisNett: A nationwide practice-based research network with a novel IT infrastructure.

It is important to have good research environments and that research funding is directed

towards meeting the need for knowledge. The steering group encourages the Ministry of Health and Care Services to continue to support these communities so that they can continue to develop expertise and capacity in line with the ever-increasing challenges facing the sector.

In 2022, the Norwegian Centre for E-health Research revised its strategy. Work is based on the needs of the health and care sector, national and international health and e-health strategies and general technological and societal developments. The steering group has discussed the strategy on several occasions and supported the changes made. The centre will put more emphasis on sustainability and the role of technology in addressing the challenges in the health sector.

The results from 2022 show a continued good development for the Norwegian Centre for E-health Research. Results show that the centre director, the management team and all employees are jointly able to solve the tasks and challenges that follow from the important social mission given to the centre. However, it is important to ensure that there is sufficient basic funding for the Norwegian Centre for E-health Research to be able to maintain and further develop its national role.

Erik M. Hansen,
Head of the steering committee

The steering committee

Purpose

The purpose of the steering committee is to ensure that:

- the centre further develops its expertise and carries out research assignments and investigations on e-health in line with the sector's needs and priorities; to the extent that such competence does not exist at the current centre, this must be acquired and built up, possibly through partnership with other relevant environments. This especially applies in fields where the health authorities request expertise and services from the centre through annual assignment documents and award letters.
- the centre further develops its national (and international) role within research and investigations on e-health, and is considered useful, relevant and competent within the sector.
- the centre maintains high quality in relation to its professional activities, support functions and administrative tasks.

Steering committee members:

- Erik M. Hansen, Director e-health, Western Norway RHA (head of the steering committee)

- Bjørnar Alexander Andreassen, Programme Manager National Welfare Technology Programme, Norwegian Directorate of Health
- Egil Rye-Hytten, The Norwegian Federation of Organisations of Disabled People – user representative
- Helge Garåsen, Director of Health and Welfare, Trondheim Municipality
- Jostein Jensen, Divisional Director Security, Norwegian Health Network
- Kjetil E. Telle, Director of Health Services Research, Norwegian Institute of Public Health
- Margunn Aanestad, Professor, University of Agder
- Markus Rumpsfeld, Director E-health, Collaboration and Innovation, University Hospital of North Norway
- Nis Johannsen, Head of Digital Innovation, South-Eastern Norway RHA
- Roar Jakobsen, Senior Adviser, Directorate of e-health
- Siv Mørkved, Professor and Assistant Director of Health Sciences, Central Norway RHA
- Terje Wistner, Dept. Director, Norwegian Association of Local and Regional Authorities (KS)
- Tove Klæboe Nilsen, Director of Research, Northern Norway RHA

- Kristian Skauli, Dept. Director, Ministry of Health and Care Services – observer

The steering group meets digitally

Asbjørn Johansen Fagerlund, Senior Researcher Patient pathways:

What was the best thing about 2022?
The best thing about the year 2022 was that everyday life as a researcher became more normal than in the previous two years. Collaborative relationships, nationally and internationally, benefited from the opportunity to meet in person again. We put a lot of effort into organising a large data collection in Norway, Sweden, Finland and Estonia. We now have data that can shed light on how digital citizen services are perceived and utilised by users.

I look forward to analysing and sharing the results of this work, especially as Norway and our neighbouring countries are world leaders in providing their citizens with digital information about their own health and treatment.

The organisation

Number of employees:

- 97 with 76,5 FTEs
- 51 women and 46 men
- 68 permanent employees
- 17 part-time employees
- 12 additional positions
- Nine new co-workers in 2022, one in a permanent position, six in temporary/limited term positions and two PhD Candidates.

Educational background:

- Bioengineering
- Biology
- Pharmacy
- Physics
- Physiotherapy
- Graphic design
- Health science
- ICT
- Journalism
- Communication
- Medicine
- Organisation and management
- Pedagogy
- Psychology
- Accounting and audits
- Social Science
- Socioeconomics
- Civil engineering
- Business administration
- Sociology
- Statistics
- Nursing
- Technology

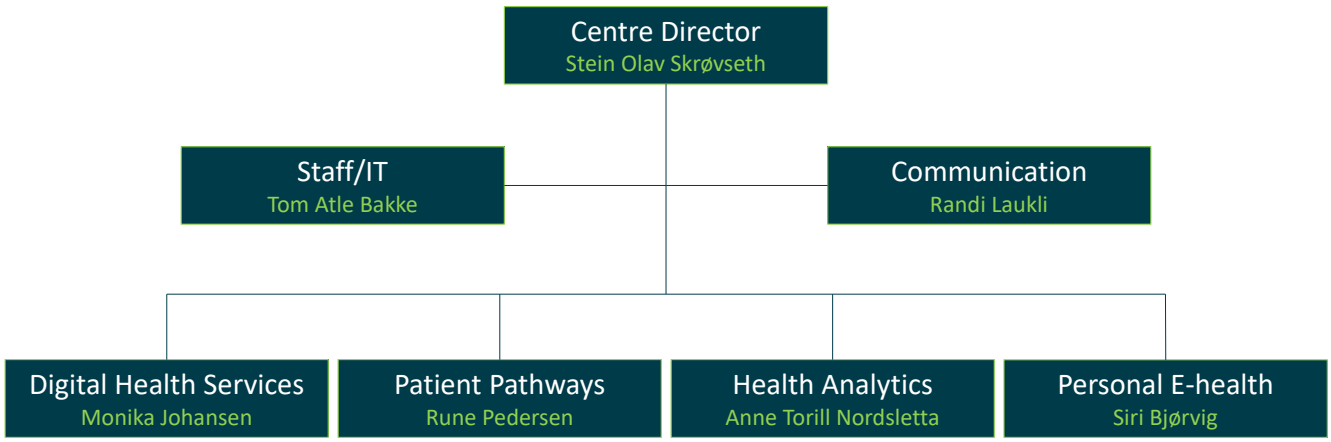
Level of education:

- 13 PhD Candidates, of which eight are women and five are men
- 43 with doctorates comprising 21 women and 22 men

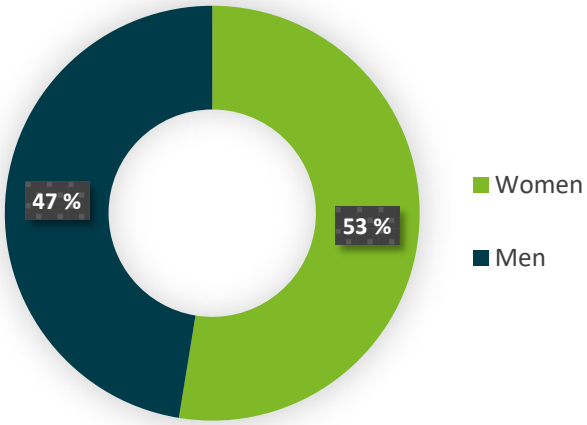
Where do we come from?

69 of us come from Norway and 28 come from:

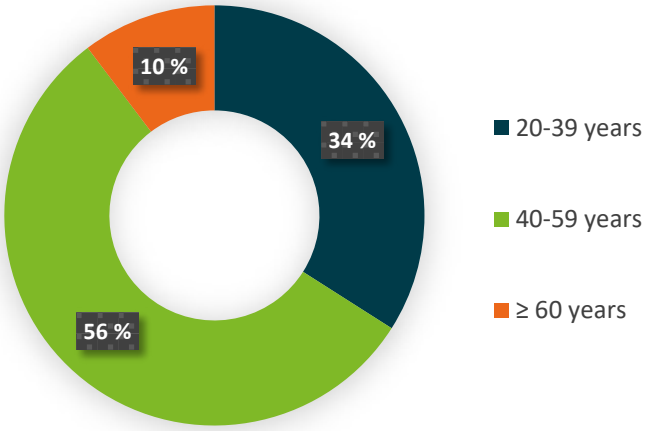
- Canada
- China
- Czech Republic
- Ethiopia
- France
- Germany
- Ghana
- Greece
- Iran
- Iceland
- Italy
- Lithuania
- Portugal
- Russia
- Spain
- Sweden
- USA
- Vietnam
- Zimbabwe



Gender distribution



Age distribution



Sustainable healthcare with e-health

We are proud of Norway's fantastic health service.

But there are some dark clouds on the horizon.

The Health Personnel Commission's report points out that the sustainability of our health services is under serious threat. The Commission emphasises research and technology as important tools to ensure that health services will have the same quality for those who come after us, despite changes in the way services are delivered.

But technology can also be a medicine with unintended side effects. Sometimes the introduction of new technology can increase workloads and we need to be aware of the impact it leaves on the environment.

The availability of a sufficient labour force is one of the cornerstones of a sustainable health service, but the concept of sustainability encompasses much more. Sustainability in healthcare means, among other things, providing good quality care and ensuring good health for all, while taking care of the most important thing we have - our planet. The health services account for up to 5 per cent of Norway's greenhouse gas emissions.

Technology development continues at a rapid pace. Artificial intelligence has been democratised in earnest, for example through the ChatGPT language bot. It is possible to create both realistic texts that no human has written and images of events that have never happened. The opportunities and threats this development represents are highly ambiguous, but there is little doubt that it will bring change.

Will this new technology give us more tools to tackle sustainability challenges, or will it lead us astray? We believe that this technology can also help us achieve better and more sustainable healthcare, if we use it wisely.

Centre Director Stein Olav Skrøvseth

We need knowledge. Creating, introducing and using new technologies offers opportunities, but it has to be done properly and based on experience and knowledge. We have seen too many examples of technology projects, especially in health, failing to achieve their objectives.

We at the Norwegian Centre for E-health Research are confident that knowledge helps us make the best decisions. Every day we contribute with research-based knowledge. Our new strategy is written with this in mind, and we will continue to work and do our part to ensure sustainable health services for the future. We will not do this alone - we will collaborate with the entire sector.

Stein Olav Skrøvseth, Centre Director

We are social

In order for people to know what we are working on and researching, we need to share a lot of content on social media. Experience suggests that it pays to be visible and attract followers on a selection of platforms, but not necessarily in all networks.

In a way, the cases we share on social media determine 'who we are', how the general public perceives us. All the same, we do not meet the same people on Twitter, Facebook, Linkedin and YouTube. And that's perfectly OK. Everyone has their favourites. Wherever we are, we want to be perceived as open and good to work with.

Facebook:
We have 3306 followers on Facebook.

LinkedIn:
5119 people follow us on LinkedIn.

Twitter:
Our Twitter account has 1499 followers.

Instagram:
838 people follow our centre on Instagram.

Media articles

In 2022, 104 different media outlets and websites referred to us in 143 articles.

Media articles about us – the top 10

Dagens Medisin	10
Forskning.no	9
Helse- og omsorgsdepartementet	6
Stortinget Saker og Publikasjoner	3
Dagsavisen	2
Avisa Nordland	2
Sarpsborg Arbeiderblad	2
Aftenposten	2
Forskersonen	2
Arbeids- og inkluderingsdepartementet	2

www.dagensmedisin.no
DAGENS MEDISIN 14/2022 TORSDAG 3. NOVEMBER

DEBATT 27

Hvor går veien videre for e-helse – nå?

Statsbudsjettets stopp for finansiering av Felles Kommunal Journal (FKJ) er svakt begrunnet – og utgjør et skudd for baugen for mulig løsning av ett av de viktigste problemene i helsesektoren. Helseanalyseplattformen er satt på pause, og veien videre synes å være usikker.

Kronikk

Stein Olav Skrøvseth, senterleder ved Nasjonalt senter for e-helseforskning

Margunn Aanestad, professor ved Universitetet i Agder

REGJERINGENS FORSLAG til statsbudsjett var på forhånd varslet å være trangt, og for e-helse ser dette i stor grad ut til å stemme. Men selv i trange tider må det være en plan for utvikling – i dette tilfellet til det beste for pasienter, innbyggere og helsepersonell.

Et hovedproblem for helsetjenestene i Norge er en informasjonsflyt som i altfor mange tilfeller ikke fungerer. Dette gjelder både mellom nivåene og innad, særlig i den kommunale helse- og omsorgstjenesten. En del av grunnen er IT-systemer som «ikke snakker sammen», eller som rett og slett ikke er tilrettelagt for kommunikasjon, men laget for dokumentasjon og pasientbehandling i en konkret situasjon.

Vi trenger gode IT-systemer som er brukervennlige og sømløse slik at informasjon flyter – og er tilgjengelig for de som trenger det når de trenger det.

SKUDD FOR BAUGEN. I statsbudsjettet stoppes finansieringen til Felles Kommunal Journal (FKJ). Vi mener dette er svakt begrunnet – og utgjør et skudd for baugen for mulig løsning av et av de viktigste problemene i helsesektoren i dag. Det har tidligere vært reist mye kritikk mot innretningen av Akson, men FKJ-arbeidet har lagt opp til et annet lop med stegvis utvikling og en plattform- og økosystemtenkning i tråd med myndighetenes anbefaling.

Derfor er det merkelig at FKJ i statsbudsjettet vurderes opp mot kriteriene fra Akson, og at man konkluderer med at FKJ ikke har levert – før de leverer sin rapport i november.

STYRING – OG SAMHANDLING. Helse- og omsorgsdepartementet (HOD) arbeider med helseteknologiordningen, som skal stimulere til investeringer i e-helse ved bruk av leverandørmarkedet. Dette er fornuftig, men det er avgjørende at den strategiske styringen av e-helse ikke overlates til markedet. For eksempel vil det fortsatt trenges nasjonale grep for å få på plass de nødvendige standardene og minstekravene slik at alle kommuner får systemer som kommuniserer med hverandre, både innad i kommunen og med andre helseaktører. Her har vi forhåpninger til at FKJ vil peke ut noen retninger som vil være nyttige for kommunenes videre arbeid. Regjeringens tydelige plan for å få gode IT-løsninger i kommunal sektor er derimot vanskelig å få øye på.

Det er helt nødvendig å få på plass mer samhandling. Det er derfor veldig gledelig at viktige tiltak blir finansiert, eksempelvis pasientens legemiddelliste, dokumentdeling, den nye tjenesten for radiologi- og laboratorierevar samt videreutvikling av de nasjonale løsningene kjernejournal, helsenorge.no, e-resept og helsenettet. Pasientens legemiddelliste er et av de viktigste kvalitetstiltakene vi gjør, og selv om det tar tid er veien fram mot en felles legemiddelliste tydelig, og vil utvilsomt redde liv.

FREMTIDSVEIEN? Helsedatasatsingen videreføres, noe som også er nødvendig. Samtidig er veien videre usikker, med Helseanalyseplattformen på pause og et uttrykt ønske om å benytte helsedata i stort – også utenfor registerfeltet – mangler. Samtidig kommer EU med sine satsinger, og særlig det veldig ambisiøse European Health Data Space (EHDS) som kan komme til å bli implementert i løpet av noen få år. Sammenhengen mellom EHDS og de nasjonale helsedatasatsingene er uklar. Vi må være forberedt, og rigge oss nå. Vi har ikke tid til å gjøre ting på nytt når EHDS kommer.

For å forberede oss til fremtiden, trenger vi en kunnskapsbasert tilnærming. Tiltakene trenger forskning, for eksempel i form av kunnskapsoppsummeringer i forkant, følgeforskning underveis og implementeringsforskning for, underveis og etter. Da må finansiering følge med.

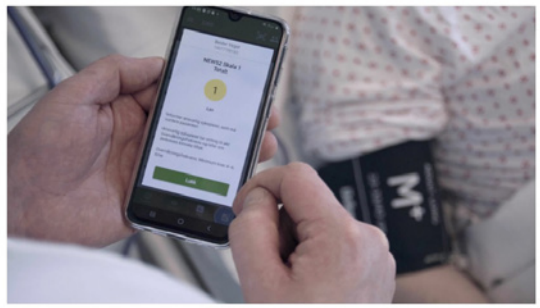
UTYDELIG RETNING. Regjeringen har skapt usikkerhet i forskningsmiljøene når det gjelder finansiering fra Norges forskningsråd. Det er vanskelig å se at regjeringen har en tydelig retning og plan for en kunnskapsbasert utvikling på e-helseområdet.

Informasjonsteknologi er ryggraden for god informasjonsflyt. At deler av helsevesenet fortsatt bruker faks og taxi for å formidle informasjon, er ikke en moderne velferdsnasjon verdig. Pasienter og innbyggere fortjener bedre. Da trenger vi en langsiktig plan der det offentlige, næringslivet og forskere spiller sammen. Målet er ikke teknologi, men kvalitet i alle ledd av helsetjenesten. Da er IT et viktig middel mot målet – og vi kan ikke ta oss råd til at e-helse blir en salderingspost. Forslaget til statsbudsjett er for passivt på et så viktig område, med avgjørende betydning for fremtiden til både helsetjenesten, norsk e-helsenæring og velferdsstaten. ■

Ingen oppgitte interessekonflikter

Referanse:
Se www.dagensmedisin.no/debatt

> *Forslaget til statsbudsjett for e-helse er for passivt på et område med avgjørende betydning for fremtiden*



HØY MOTIVASJON: Det har vært høy motivasjon for å få prøvd ut en mobil løsning i Helse Nord, forteller forsker Gro-Hilde Severinsen. – Hvis man kan bruke mobil mer i klinisk praksis, vil man kunne få en mer effektiv arbeidsflyt og datautveksling. Foto: Medanets

Foto:

Har byttet ut «post-it»-lapper med app: – Ga umiddelbar effekt for brukeren

Forskere ved Nasjonalt senter for e-helseforskning har undersøkt erfaringene med innføring av en ny mobilapp i Nordlandssykehuset. – Suksess, sier forsker Gro-Hilde Severinsen.

www.dagensmedisin.no
DAGENS MEDISIN 11/2022 TORSDAG 22. SEPTEMBER

Variasjon i rekruttering er forskerens samfunnsansvar

For å redusere sosial ulikhet i helse, må forskningsverdenen ta ansvar. Hvis fastlegene skal lære hvordan de kan begrense ulikheter i møte med pasienter – og myndighetene skal iverksette gode og effektive tiltak – må vi forskere tilby kunnskap de kan basere dette på.

Kronikk

Meghan Bradway, postdoktor ved Nasjonalt senter for e-helseforskning

Henriette Lauvhaug Nybakke, doktorgradsstipendiat ved Nasjonalt senter for e-helseforskning

Stine Agnete Ingebrigtsen, doktorgradsstipendiat ved Nasjonalt senter for e-helseforskning

Kari Dyb, seniorforsker ved Nasjonalt senter for e-helseforskning

HVEM FALLER UTENFOR? Individer som det er vanskelig å nå, må også rekrutteres selv om det er utfordrende. Dessverre har det seg slik at personer som blir rekruttert i helseforskning, ofte er dem som allerede er opptatt av egen helse, og dermed de som er ressurssterke og har høy helsekompetanse.

De som faller utenfor helsetjenesten, faller også utenfor forskningen.

Gjennom et litteraturs øk har vi undersøkt hvem som kategoriseres som vanskelige å nå innenfor helse- og teknologiforskning. Søket var ikke begrenset til Norge, men funnene er likevel av relevans for norsk forskning. De vanligste beskrivelsene vi fant av folk som er vanskelige å nå, er blant annet personer med lav sosioøkonomisk status, minoritetsgrupper, kvinner og personer bosatt i rurale områder.

ALLE MÅ MED! – Hvis en ikke inkluderer utsatte grupper i forskningsprosjekter, blir det vanskelig å tilpasse nye digitale og analoge løsninger slik at disse også sikres god og trygg helsehjelp, fastslår forfatterne. FOTO: GETTYIMAGES

gruppene, men oppfordret likevel til at de burde rekrutteres i fremtidige prosjekter. Årsakene som ble oppgitt, var for det meste av praktisk art.

For å rekruttere informanter fra grupper som er vanskelige å nå, må man bruke kreative rekrutteringsmetoder som også er mer tidkrevende.

KVALITET – OG SAMSPILL. Ved å øke variasjonen i rekrutteringsstrategiene og hvem en rekrutterer, øker kvaliteten på forskningen som gjøres. Alle som har forsøkt å rekruttere informanter til forskningsprosjekter, vet at dette er en komplisert og til tider frustrerende prosess.

Det kan være praktisk vanskelig, tes stemme blir hørt. Dette gjelder ikke bare innenfor helse- og teknologiforskning. Derfor bør du tenke over hvilke grupper du representerer i forskningen din, og hvordan dette påvirker dine resultater og kunnskapen du gir tilbake til samfunnet.

Hvis vi skal oppnå et mål om likeverdige helsetjenester, trenger vi mer kunnskap. Selv om det norske helsevesenet skal tilby likeverdig helsehjelp til alle, finner vi ulikheter innenfor helse også her til lands.

Dette ble ekstra tydelig under koronapandemien, for eksempel ved sosial isolasjon og redusert tilgang til helsetjenester. Jo mer samfunnet digitaliseres, desto flere havner i det digitale

For å redusere sosial ulikhet i helse, må også forskningsverdenen ta ansvar. Hvis fastlegene skal lære hvordan de kan begrense ulikheter i møte med pasienter, og myndighetene skal iverksette gode og effektive tiltak, må vi forskere tilby kunnskap de kan basere dette på.

Forskningen skal gjøres for – og gagne alle i samfunnet – ikke kun de mest tilgjengelige og ressurssterke. ■

Ingen oppgitte interessekonflikter

Referanser: Se www.dagensmedisin.no/debatt

De første leveukene er mest kritiske. Spesielt gjelder det for sidlig fødte barn i lavinntektsland. (Foto: UNICEF / UN0683497 / Dejongh)

Påminnelser på mobilen kan gjøre at færre mødre og barn dør

Noen ganger kan et pling og et godt råd være nok til å redde livet til en mor eller et spedbarn.

Lene Lundberg
KOMMUNIKASJONSRÅDGIVER
Nasjonalt senter for e-helseforskning

Tirsdag 20. september 2022 - 04:30

Hvis samfunnet legger til rette for gode helsevalg hos den enkelte, betyr det mye for helsen og livene til store og små. Riktig helseinformasjon er også viktig for det ufødte barnet i mors mage.

Henriette Lauvhaug Nybakke:

Forsker på feilmedisinering

– Det er over ti ganger så mange mennesker som dør som konsekvens av feilmedisinering, som de som dør i trafikken hvert år.

MARIT BEATE KASIN
marit.kasin@avisa-valdres.no

E-HELSE: *Henriette Lauvhaug Nybakke er utflytta valdris i Tromsø, og doktorgradsstipendiat ved Nasjonalt senter for e-helseforskning.* **FOTO: PRIVAT**

TROMSØ/FAGERNES: Det forteller Henriette Lauvhaug Nybakke, utflytta fagernesing som nå er i gang med en doktorgrad hvor hun skal se nærmere på digital legemiddelhåndtering.

Hoppet av lektorstudiet

Det var sosiologifaget som ledet henne i den retninga.

– Jeg flyttet til Tromsø for å studere til å bli lærer, men etter fire år på lektorutdanninga, forsto jeg at det var sosiologi som virkelig interesserte meg.

Masteroppgava hennes handlet om digitalisering av helsevesenet, noe som igjen banet vegen videre for doktorgrad-stipendiatet ved Nasjonalt senter for e-helseforskning i Tromsø.

Nå skal hun bruke sosiologien for å forske på digitalisering, organisasjon og helse. Det er et stort og viktig felt, mener hun.

– Et stort problem

Legemiddelhåndtering er en av de største utfordringene i helsevesenet i dag, både på individnivå og samfunnsnivå. En av årsakene er at legemiddelhåndtering foregår på mange ulike nivå i helsevesenet, noe som gjør samhandling utfordrende.

– Hvert år blir mange syke eller dør på grunn av feilmedisinering. En av grunnene til det er at vi ikke har et helhetlig digitalt system der all informasjonen om hver enkelt pasient står, og som alt av helsepersonell har tilgang til. Det er mange pasienter som ikke er klar over at dette er tilfellet. Ofte har pasienter liten kontroll over medisinlistene sine selv, ettersom man stoler på at helsepersonell har oversikt, forteller hun.

Snakker ikke sammen

Informasjonsflyten mellom ulike digitale systemer er ofte mangelvare. Sagt på en annen måte: Datasystemene som de ulike delene av helsevesenet benytter snakker ofte ikke sammen.

Du som pasient er en del av et behandlingsapparat med fastlege, legevakt, helsestasjon, helsehus, heimebaserte tjenester, fødestue, rustilbud og sykehjem, uten at det nødvendigvis er noen god informasjonsflyt mellom sektorene som skal ivareta deg og din helse. Det betyr at viktig, medisinsk informasjon kan glippe.

– Når systemene ikke snakker sammen, kan det for eksempel føre til krasj mellom de medisinene du står på og de du blir satt på, eller det kan føre til feildoseringer eller annen type feilbehandling, forteller Lauvhaug Nybakke.

Heier på Valdres-initiativ

Hun skal nå ut i felt å se nærmere på hvordan organiseringa av helsevesenet er. Hun mener sosiologien kan si noe om organisasjons- og endringskulturen i helsevesenet, som et viktig bidrag til debatten, som ofte kun handler om de digitale løsningene.

– Hovedmålet med forskninga min er å danne ny kunnskap om digitalisering og samhandling i helsevesenet, og bidra med kunnskap som kan sikre tryggere legemiddelhåndtering.

Lauvhaug Nybakke har nå minst tre år med intens doktorgrad-jobbing foran seg. Om hun blir værende i Tromsø, eller vender nesa heimover på sikt, er for tidlig å si.

– Jeg trives veldig godt i Tromsø. Her er det fjell og flott natur, i kombinasjon med et rikt kultur- og byliv. Men jeg kjenner på heimlengsel av og til, og jeg heier veldig på initiativet om å etablere et høgskoletilbud i Valdres.

VIL TILBAKE: *Henriette Lauvhaug Nybakke (25) flytter gjerne tilbake til Valdres på sikt, om jobbmarkedet tilsier at det er mulig.* **FOTO: PRIVAT**

Det ville vært moro å kunne dra heim til Fagernes for å undervise på høgskolenivå.

Sammen kan vi få til det meste

E-HELSE

MARKUS RUMPSFELD, GRY ANDERSEN, GURI LAJORD, MONIKA DALBAKK, LISBETH SPANSVOLL, BRITA JØRGENSEN OG PER HASVOLD VED E-HELSE-, SAMHANDLINGS- OG INNOVASJONSSENTERET PÅ UNN, GRO ROSVOLD BERNTSEN VED NASJONALT SENTER FOR E-HELSEFORSKNING OG MAGNE NICOLAISEN I TROMSØ KOMMUNE

Du har sikkert hørt politikere og ledere innen helsetjenestene snakke om mangel på penger og personell, om eldrebølgen og at det blir for få yrkesaktive i kommunene og i sykehusene fremover.

Alle blir påvirket om vi ikke klarer å gi gode helsetjenester til befolkningen. Noen av dem som er mest sårbare er pasienter med sammensatte og omfattende behov. Med måten vi jobber på i dag, har 10 prosent av disse pasientene behov som er så omfattende at de trenger 66 prosent av ressursene.

Dagens helsetjeneste er i de fleste tilfeller god når du har én diagnose som ivaretas av fastlegen din og ett fagområde på sykehuset. Vi har også laget pakkeforløp for kreft og andre

VANSKELIG: Det er vanskelig å koordinere behandling av pasienter med mange helseproblemer, men UNN jobber med å utvikle pasientsentrerte helsetjenesteteam.

FOTO: TORBJØRN O. KARLSEN / FRAMTID I NORD

Nå vil regjeringen at du kan få sykemelding uten å møte opp fysisk på legekontoret

– At sykemeldinger kan gis gjennom e-konsultasjon kan være en god løsning både for den som sykemelder og den sykemeldte, sier arbeids- og inkluderingsminister Marte Mjøs Persen.

Av Camilla Skjær Brugrand
camilla@dagensperspektiv.no

I dag må personer med behov for sykemelding ha en personlig, fysisk undersøkelse hos legen. Nå foreslår regjeringen å åpne for å skrive sykmelding basert på elektronisk konsultasjon (e-konsultasjon).

– Å reise til et legekontor kan oppleves som en unødig byrde når man er syk. I tillegg gir e-konsultasjon mer effektivitet og fleksibilitet for fastlegen, sier arbeids- og inkluderingsminister Marte Mjøs Persen i en pressemelding.

Vellykket ordning under pandemien

De siste to årene har bruken av e-konsultasjon i helsetjenestene økt. Under pandemien ble det midlertidig åpnet for at også sykmelding kan gis uten personlig oppmøte hos legen.

Den midlertidig ordningen er undersøkt av Nasjonalt senter for e-helseforskning og erfaringene er i hovedsak positive. Nå foreslår regjeringen å gjøre ordningen permanent.

For å begrense risikoen for at sykmelding gis på feil grunnlag, foreslår Arbeids- og inkluderingsdepartementet enkelte rammer for en slik ordning.

Blant annet at det i større grad åpnes for å gi rett til å sykmelde etter e-konsultasjon ved forlengelse av sykmeldinger og ved kroniske lidelser, enn ved førstegangs sykmelding for et nytt helseproblem.

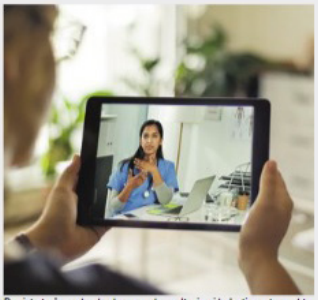
Må kjenne legen

Konkret foreslår departementet at det åpnes opp for e-konsultasjon ved sykmelding under følgende rammer:

- Pasienten er kjent for legen
- Pasientens diagnose er kjent for legen
- Krav om faglig forsvarlighet

I tillegg foreslår regjeringen en særbestemmelse som åpner for sykmelding ved e-konsultasjon der det er risiko for at pasienten smitter andre dersom vedkommende møter fysisk.

Frist for å sende inn høringssvar er 1. august 2022.



De siste to årene har bruken av e-konsultasjon i helsetjenestene økt.
FOTO: AJ WATTSTOCK

Finances

Accounts for 2022. Figures indicated in millions of Norwegian Kroner.

OPERATING REVENUE

Total revenue competitive funds	35,6
Total basic funding	50,2
Total revenue assignment funds	0,8
TOTAL operating revenue	**86,6**

OPERATING COSTS

Direct project costs	10,7
Payroll and social costs	67,6
Amortisation	0,2
Other operating costs	11,4
TOTAL operating costs	**89,9**
OPERATING RESULT	**-3,3**
Operating result transferred to balance sheet	3,3
PROFIT/LOSS FOR THE YEAR	**0,0**

Line Linstad, PhD Candidate and Senior Adviser, Health Analytics:

What was the best thing about 2022?
The best part and the most important for me was that I got to dig deeply into data collection and analysis of the process of "national governance of One Citizen - One Journal". My goal was to provide knowledge about this process and produce knowledge that is of value to an international audience of both managers and researchers. I have also been able to translate the knowledge from my PhD work on e-health governance, innovation and the introduction of artificial intelligence in the clinic directly into EU and The Research Council of Norway applications. I have also had an abstract approved at the Health Technology Assessment International (HTAi) conference, which is a network where I would like to promote the centre and research on governance.

Knowledge for improved healthcare services

The Norwegian Centre for E-health Research will contribute to evidence-based development within the field of e-health through research, cooperation and dissemination.

Through interdisciplinary research and knowledge development, we want to help improve healthcare services for citizens. Together with the entire sector, we aim to achieve national goals for patient care services.

Our ambition is to be an internationally recognized and leading national research centre.

Our vision is: Knowledge for better health services.

Our most important task is to conduct research with other professional communities, both nationally and internationally. Our research must be independent and maintain high ethical standards.

The dissemination of knowledge is a core activity, and all our research is published openly and made readily accessible. We will endeavour to ensure that the knowledge is utilised.

Through our national role, we will build a network and cooperate with the entire sector. Everyone who researches e-health will be able to participate.

Personal e-health

We will conduct research into how technology designed for independence and self-management impacts healthcare for the elderly, the chronically ill and those who actively aim to change their lifestyle.

Digital health services

We will conduct research on national digital healthcare services and acquire knowledge of conditions and contexts which need to be in place before the services can be developed. While the services are being tested, we will look at what prevents or promotes usage. Finally, we will study the effects and consequences of using the services. Digitalisation of medication management and the services offered on Helsenorge.no are important themes.

Holistic patient pathways

We will study how digital solutions can facilitate holistic patient pathways.

Technological, semantic and organisational collaboration is challenging in healthcare services and we will look at patients' health records as a collaboration tool. We will investigate how strategies for implementation, standardisation and work processes impact quality.

We will conduct research on conditions for and the effects of digitalisation; with the aim of understanding the complex interaction between technology and healthcare services.

Health analytics

We will look at how health data can be used to predict, detect and treat illness.

Machine learning algorithms and data extraction methods are two areas we study. We will develop methods for both analysing data and safeguarding privacy.

A key theme is how the health sector can adopt reliable and sustainable algorithms.

Vision and values

Our vision is: Knowledge for better health services.

Values

Our values are crucial to our success over time and are at the heart of our culture. They motivate us to perform and guide us as to how we should run the centre and cooperate with our stakeholders.

Openness

Openness is one of the most important values in our organisational culture and helps to ensure transparent processes. By making our activities transparent and sharing knowledge and information, we build trust in our partners and society.

Openness demonstrates a desire to learn, to be curious about others and be receptive to new ideas. This also entails the ability to give and receive constructive feedback. We positively encourage different opinions.

Cooperation

E-health is a multi-disciplinary field, and no one is capable of doing everything on their own. Cooperation is therefore something we hold in high regard. We often cooperate with those we compete with for funding. Trust lies at the heart of any good cooperation. Trust and mutual respect makes working together a pleasant experience. Inclusion is the key to building a community, and being part of a community provides a sense of belonging, friendship and wellbeing. By including others, both internal and external cooperation partners, we work more efficiently towards our common goals.

Integrity

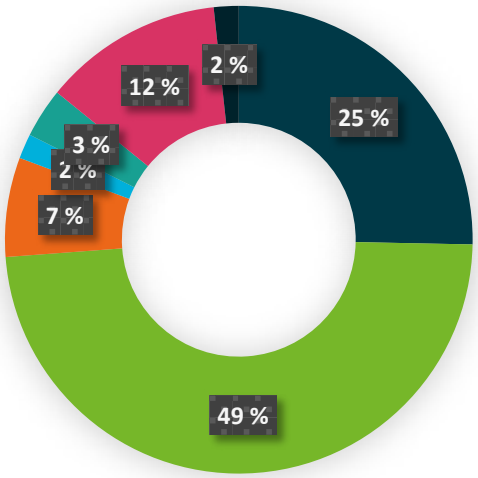
To us at the Norwegian Centre for E-health Research, integrity means being reliable and conducting ourselves properly. We are characterised by doing what we say. We are confident that we want the best for each other and that everyone is doing the best they can. Quality should be the hallmark of what we deliver.

It is important that we fulfill our public mission as best we can, which is why we must set clear expectations for the centre and our co-workers. Our organisation wants autonomous, committed employees who take co-responsibility for the centre's success. We must be able to depend on each other for support, even when we make mistakes.

Karianne Mørken, Research Assistant, Personal e-health:

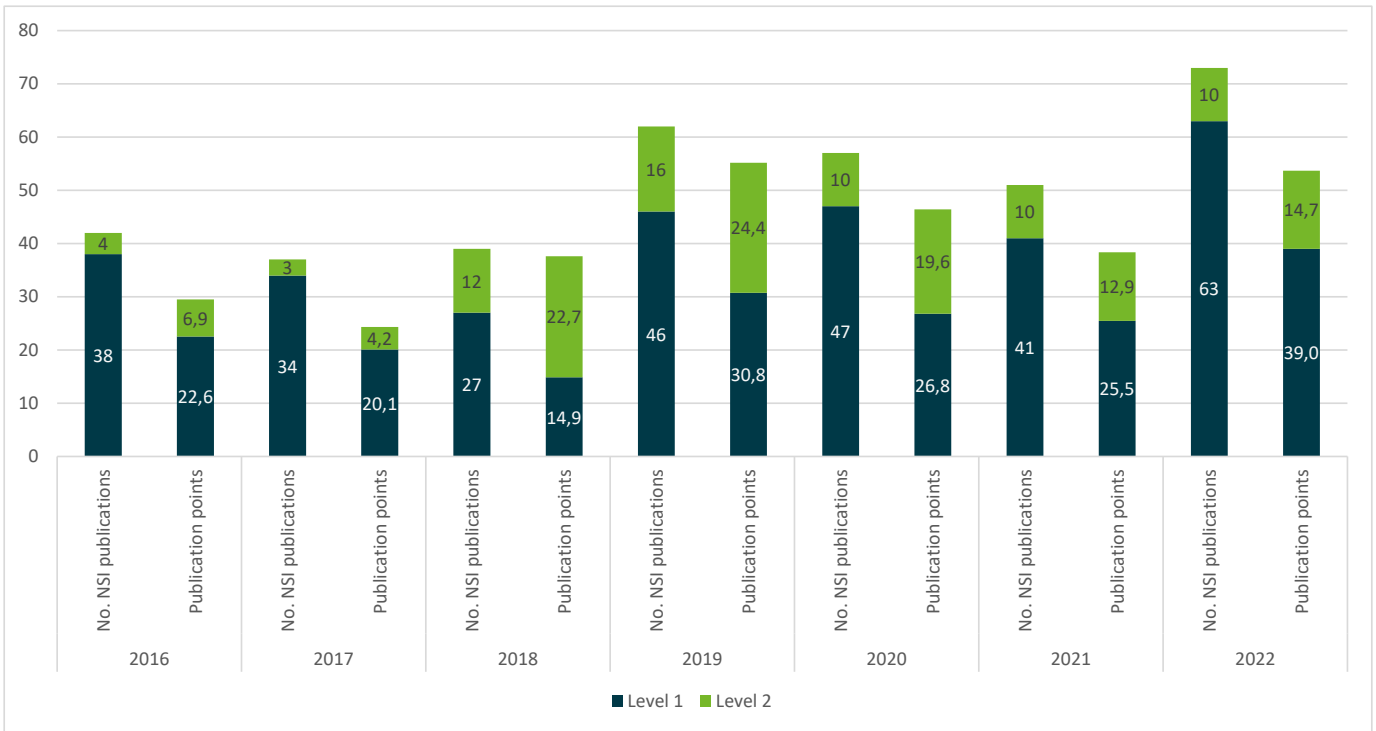
What was the best thing about 2022?
I started a part-time position at the Norwegian Centre for E-health Research in February 2022, while writing my master's thesis. In June I completed my master's degree, which is naturally one of the highlights of the year for me! After delivering my thesis, it was great to be able to fully focus on projects here at the centre. I worked mainly in the Poland project, and I had the opportunity to be a stand-in project coordinator in Dignity Care. A lot of exciting things happened in both projects! As I have previously worked clinically, 2022 was a steep learning curve for me. It's good to be in a place like this, where there is room to be new and where you are surrounded by great people on all sides.

Our research in numbers



- 59 scientific articles/overview articles
- 113 scientific/academic lectures and poster presentations
- 16 scientific chapters/articles/conference articles
- Four abstracts
- Eight chronicles
- 29 popular science articles
- Four reports

Numbers from Cristin



NSI: Norwegian Scientific Index
NSI publications: Publications that earn publication points and are part of the funding schemes in the healthcare, institution and university hospital sector

Research cooperation

North America

USA
- Brown University
- Louisiana State University
- Marymount University
- Mayo Clinic, College of Medicine
- Memorial Sloan-Kettering Cancer Center
- University of Colorado at Boulder
- University of Wisconsin-Madison
- Washington International School

South America

Brazil
- Federal University of Juiz de Fora

Europe

Belgium
- Cliniques Universitaires Saint-Luc

Croatia
- University of Zagreb

Cyprus
- Health Insurance Organization, National Health Insurance System, Nicosia

Czechia
- Charles University

Denmark
- Hospital South West Jutland
- University of Copenhagen
- Region Zealand (Region Sjælland)
- Rigshospitalet - Copenhagen University Hospital
- Aalborg University

Estonia
- University of Tartu

Finland
- Kela, The Social Insurance Institution of Finland
- Tampere University
- University of Eastern Finland
- Aalto University

France
- Centre Hospitalier Lyon-Sud
- University Hospital of Montpellier
- Nice University Hospital
- University Hospital of Nimes
- Cyklad Group
- The Rennes University Hospital
- Gustave Roussy and Paris-Saclay University
- Dermatologist, private practice, Joué-lès-Tours
- Dermatologist, private practice, Morlaix
- University Hospital of Lyon (HCL)
- Service de dermatologie, Hôpitaux Drôme Nord, Romans sur Isère
- Saint-Pierre University Hospital
- University Claude Bernard (Lyon I)
- University of Burgundy
- University of Rouen Normandy

Germany
- Charité - Universitätsmedizin Berlin
- Hochschule für Technik und Wirtschaft Berlin (HTW Berlin)
- Heidelberg University Hospital
- University Medical Center Göttingen

Greece
- Aristotle University of Thessaloniki
- Athens University of Economics and Business
- Institute of Communication and Computer Systems

Hungary
- University of Pécs

Ireland
- South Infirmary-Victoria University Hospital, Cork

Italy
- The University of Campania Luigi Vanvitelli
- The University of Trieste
- University of Naples Federico II

Lithuania
- Vilnius University

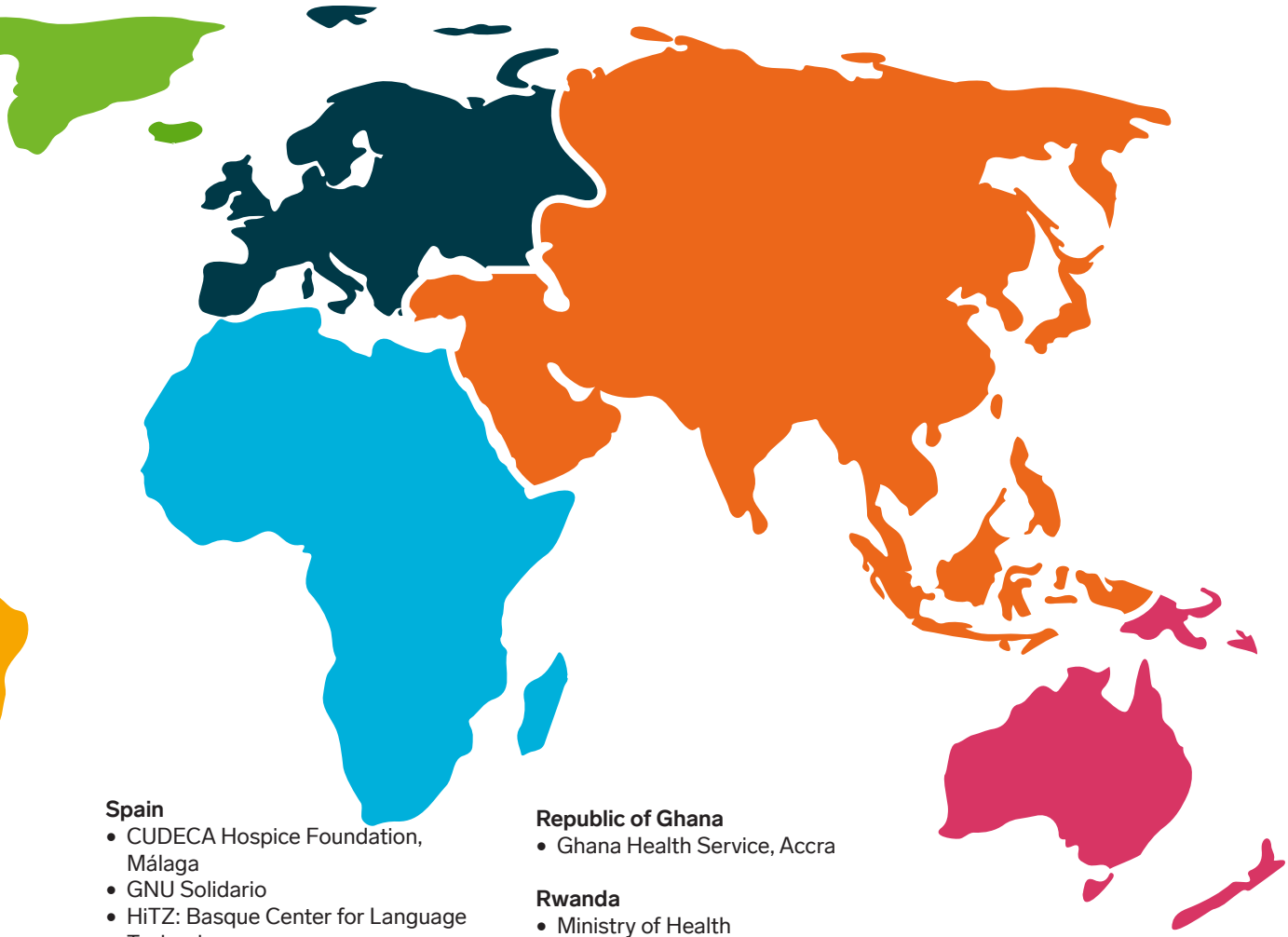
Netherlands
- Secura
- University of Amsterdam
- University Medical Center Groningen

Norway
- Akershus universitetssykehus HF
- Direktoratet for e-helse
- Finnmarkssykehuset
- Helse Nord IKT
- Helse Nord-Trøndelag HF
- Helse Stavanger HF - Stavanger universitetssjukehus
- Helse Vest IKT
- Høgskolen i Østfold
- Lovisenberg Diakonale Sykehus
- NORCE Norwegian Research Centre AS
- Nord universitet
- Nordlandssykehuset HF
- Norges teknisk-naturvitenskapelige universitet
- Oslo universitetssykehus HF
- OsloMet - storbyuniversitetet
- Private ideelle i Helse Vest
- Sikt – Kunnskapssektorens tjenesteleverandør
- SINTEF AS
- St. Olavs Hospital HF
- Sykehuset i Vestfold HF
- UiT Norges arktiske universitet
- Universitetet i Agder
- Universitetet i Bergen
- Universitetet i Oslo
- Universitetet i Sørøst-Norge
- Øya Legesenter

Poland
- Medical University of Lodz
- Maria Sklodowska-Curie Memorial Cancer Center and the Institute of Oncology

Portugal
- Centro Dermatologia Epidermis, Instituto CUF
- University of Porto
- Lusófona University of Humanities and Technologies

Serbia
- Military Medical Academy



Spain
- CUDECA Hospice Foundation, Málaga
- GNU Solidario
- HiTZ: Basque Center for Language Technology
- Universitary Hospital Virgen Macarena
- Biomedical Research Institute of Málaga (IBIMA)
- University of Seville
- Unversity of Barcelona

Sweden
- Stockholm University
- Uppsala University

Switzerland
- University of Geneva
- University of Bern

United Kingdom and Northern Ireland
- Brighton and Sussex Medical School
- Cardiff University
- University of Oxford
- Welsh Wound Innovation Centre WWIC
- Winton Centre for Risk and Evidence Communication

Afrika

Morocco
- Mohammed V university
- Ibn Sina University Hospital

Republic of Ghana
- Ghana Health Service, Accra

Rwanda
- Ministry of Health

Asia

Iran
- Ferdowsi University of Mashhad
- Islamic Azad University
- Mashhad University of Medical Sciences
- Varastegan Institute for Medical Sciences, Mashhad

Israel
- Ono Academic College
- Tel Aviv University

Japan
- National Cancer Center Hospital
- National Institute of Public Health
- Saitama Medical University International Medical Center

Philippines
- University of the Philippines Manila

Singapore
- Skin Research Institute of Singapore (SRIS)

South Korea
- Pusan National University
- Seoul National University

Turkey
- Dokuz Eylul University

United Arab Emirates
- United Arab Emirates University

Oceania

Australia
- Alfred Health, Melbourne
- Austin Health
- Community Based Rehabilitation Service, Western Health, Melbourne
- Deakin University
- Institute for Breathing and Sleep, Melbourne
- Respiratory and Sleep Medicine Clinic, Melbourne
- Faculty of Medicine, Melbourne
- La Trobe University
- Monash University
- Royal Hobart Hospital
- The University of Queensland
- University of Melbourne
- University of Sydney

New Zealand
- University of Otago

Webinars

In collaboration with municipalities, hospitals, authorities and other research organisations, we produce three different webinar series. Each series dives into a current topic in e-health.

In October 2022, we started our third series - Patient pathways, looking at how we can improve healthcare.

Our webinars are free and open to anyone who can benefit from the knowledge and experiences shared. They are aimed at practitioners, especially advisers and managers, mainly in municipalities and hospitals. The series on E-medicine management particularly appeals to pharmacists.

All webinars are recorded and sent to all registered participants afterwards, as well as being published on our YouTube channel and as a podcast. This ensures that the topics covered remain alive and relevant after the broadcast.

In January 2022, we set a record number of registrations for a webinar with 502 participants!

E-medicine management

- Number of webinars: 16
- Number of participants: 2544
- Average numbers of participants per webinar: 159
- Number of views on YouTube: 3999

ehealthresearch.no/webinarer/digital-legemiddelhandtering

Remote care and monitoring

- Number of webinars: 17
- Number of participants: 3260
- Average numbers of participants per webinar: 192
- Number of views on YouTube: 4050

ehealthresearch.no/webinarer/digital-hjemmeoppfolging

Patient pathways

- Number of webinars: 4
- Number of participants: 752
- Average numbers of participants per webinar: 150
- Number of views on YouTube: 745

ehealthresearch.no/webinarer/helhetlige-pasientforlop

Maria Östensson, Senior Adviser, Administration:

What was the best thing about 2022?
The pandemic ended and I finally got back to the office. Not least, getting into new premises was great fun after a long period of working from home.

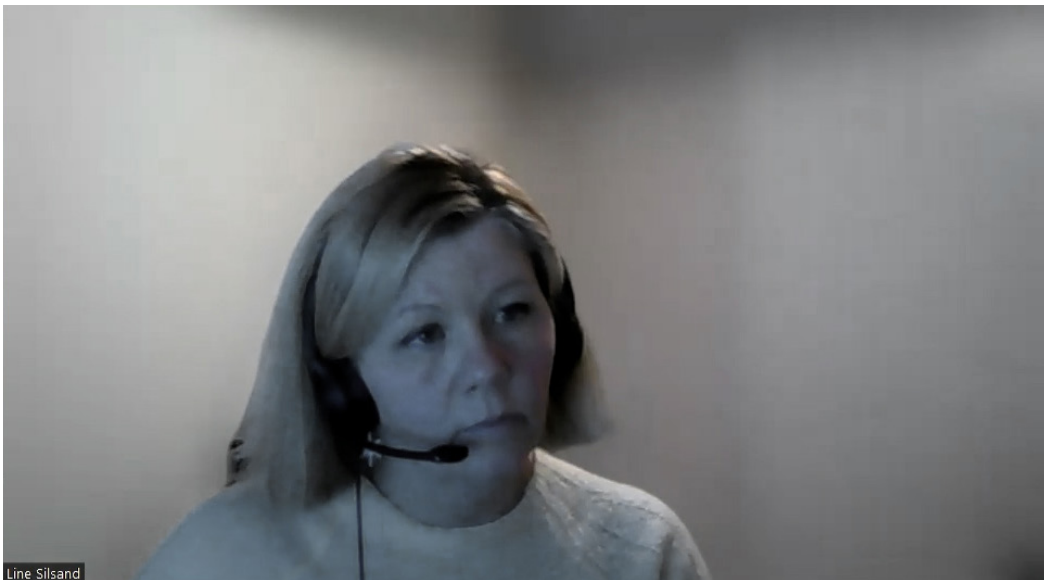
During 2022, we produced a lot of funding applications and many people at the centre have submitted applications throughout the year and at the beginning of 2023.

It is incredibly inspiring to take part in all the research and project ideas in the application process. It has also been fantastic to see that there are several interdisciplinary and cross departmental applications being written. I'm looking forward to more applications in the coming year.

From the webinar 'Comorbidity patients' needs for multidisciplinary care'.

From left: Birgitte Forsaa Åbotsvik, Specialised Nurse at Tromsø municipality and Marte Broks, PhD Candidate at the Norwegian Centre for E-health Research and Senior Adviser at the University Hospital of North Norway.

Line Silsand in the editorial committee, Senior Researcher at the Norwegian Centre for E-health Research.



Open Days – cooperation with Poland

The centre started with new webinars that we called “Open Days.” They are part of a collaborative project with Polish health authorities, funded by Norway Grants, to disseminate knowledge about e-health solutions in various fields. Both Norwegian and Polish researchers and professionals were among the participants in the three English-language webinars in 2022. Each webinar lasted three hours and had between 40 and 50 participants.

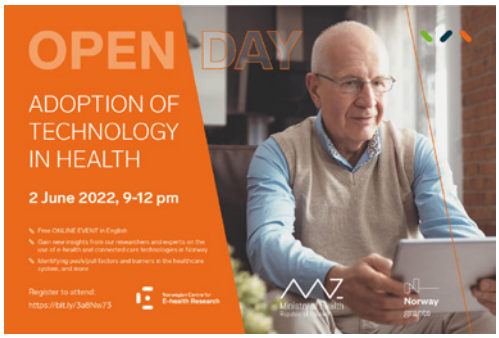
The aim was to share existing knowledge about digital solutions in the health sector so that more people can adopt them. It is important to identify both enablers and inhibitors to the adoption of innovative solutions. In addition, we want to highlight success stories and exciting research at our centre. The presenters’ contributions were posted on the E-health Research YouTube page afterwards, making them available to the general public.

Project manager Eirin Rødseth says that through the Open Days, researchers at our centre have shared knowledge that is useful for health services, students, other researchers and the general public. They find that the recordings on YouTube are also useful, and that many people watch them afterwards.

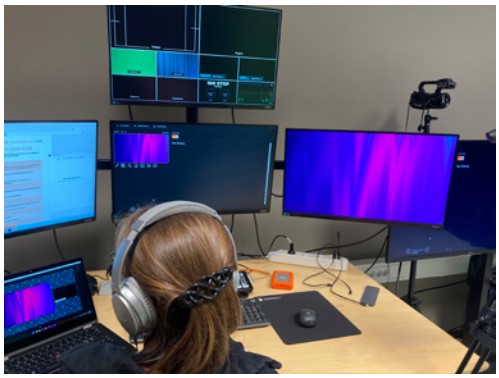
– It has been very exciting to work with Open Days! We get to communicate our research to the public in Norway and Poland, and also in other parts of the world, says Rødseth.

3 Open Days in 2022

- 2 June: Adoption of technology in health
  Number of audience members logged in: 48
- 27 October: Digital mental health services
  Number of audience members logged in: 44
- 22 November: Social media and health
  Number of audience members logged in: 40



Photos from the recording of Open Days



Erlend Bønes, PhD Candidate, Digital Health Services:

What was the best thing about 2022?
The best thing for me was that I finally published the first article of my doctoral thesis in January. My doctoral thesis is about the ICT challenges of FACT teams, which provide holistic and coordinated services to people with severe mental illness.

I was also able to present the experiences of FACT teams working with adult patients at the major international conference, the Medical Informatics Europe Conference, in Nice in May.

Film, Uzbekistan and new WHO agreement

In January, our contacts at WHO told us that they had premiered a film on youth and mental health from Tromsø.

Rewind to February 2020. Our centre was invited by the WHO to think about how they could make a film on adolescent mental health and the use of digital technologies to get funding. We were aware of their use of video consultation in a child and adolescent psychiatry department at UNN and suggested that. The WHO gave it thumbs up and sent their film makers north. We were lucky to get interviews with a great young person and a skilled psychiatrist. Due to the pandemic, nothing happened for a long time, until the finished film was shown at an international conference with participants from health authorities in many countries.

Watch the film here:

ehealthresearch.no/nyheter/2022/ungdom-og-psykisk-helse

At the telemedicine conference in Central Asia. From left: Karianne Lind, Stein Olav Skrøvseth, Lene Lundberg and Monika Gullslett.

Reference:

Monika Gullslett et al: Telemedicine meeting and visit to an emergency hospital in Uzbekistan. Report from the Norwegian Centre for E-health Research, 2023 (ISBN 978-82-8242-107-2) NSE report (02-2023)

During 2022, we provided comments on draft publications and guidance documents produced by the WHO. Among other things, we provided input about a strategic toolkit for the digitalisation of health services.

In September, the WHO launched the Regional digital health action plan for the WHO European Region 2023-2030. They want to align their strategy with countries' needs and emphasise the importance of reducing health inequalities.

In the autumn, we signed a new two-year cooperation agreement with the WHO. The centre will continue to support research and development of digital health services. We will help build knowledge that is useful for the region and capitalise on the opportunities that international cooperation brings.

At the end of the year, four staff members travelled to Uzbekistan. The invitation to the telemedicine conference in Tashkent came from the Robert Koch Institute and Charité University Hospital in Berlin. The WHO was co-organiser and all five Central Asian countries were represented. We gave presentations and contributed to group work with very enthusiastic participants. We also visited an emergency hospital, where Uzbek and German doctors demonstrated how they used video to collaborate on patient care.

Uzbek doctor Abror Valihanov (left) and German doctor Björn Weiss benefit from using video to share knowledge about patient care. The colleague on the screen is at the Charité hospital in Berlin.

Nordic Research Network inspires more co-operation

Nordic countries are similar but not exactly the same. It is therefore both exciting and useful to share experiences with other Nordic researchers in health and welfare technology.

– We established this network in 2019, and since then we have organised several webinars and had many good meetings. The members have also initiated projects, says Eirin Rødseth. She is a senior adviser at the centre and manages large international projects in addition to this network.

More digitalisation requires more collaboration

Globally, health and care is facing a shift where digitalisation and technology will play an increasingly important role.

– The fact that Nordic researchers share experiences in health and welfare technology adds value both to those who will introduce the technology and to those who will use it, explains research fellow Gunn Hilde Rotvold. She is one of the founders of the network.

Identifying knowledge needs

The network has obtained funding for its own research projects, such as the PROTECT project.

– Through this project we have identified research needs related to the introduction and use of health and welfare technology. The report (see link in the fact box) will be published in 2023, says Rotvold, who further explains that the work is a result of workshops with users, health personnel and decision-makers in all the Nordic countries.

User involvement

– It is important to involve users before, during and after a development and implementation process. User involvement in the research process is also something this research network is working towards. In that way, we are very much at the forefront, concludes Rødseth.

Facts about the network:

- Established in May 2019.
- Close cooperation with the Nordic Welfare Centre.
- The core group consists of Mälardalen University College, LUT University, University of Agder, Nordic Welfare Centre, University of Copenhagen, University of Iceland and the Norwegian Centre for E-health Research.
- The administration and management of the network follows the Presidency of the Nordic Council of Ministers.
- In 2022, Norway held the presidency and the Norwegian Centre for E-health Research led the the network.
- Members from research institutions in the Nordic Region, and each country representative in the core group is the contact person for their country.
- The network is open to all.
- The report on research needs “Proactive health and welfare technology for Nordic users and societies - A policy brief” can be found here: bit.ly/444wONM
- Read more about the network here: ehealthresearch.no/en/projects/the-nordic-research-network-health-and-welfare-technology

Gunn Hilde Rotvold and Eirin Rødseth in the Nordic Research Network.

Health workers want to be taken seriously about technology

The Government has failed to adequately communicate the need for technological competency to health workers.

Ten years ago, it was common to understand care and technology as opposites: cold technology was contrasted with warm hands. This attitude took root in the education system and contributed to scepticism about the introduction of new technologies in the health care sector.

The tension between care and technology also led to a specific linguistic practice. It was best to talk less about technology and more about people. Elements that don't quite fit in are excluded in order to create a coherent and harmonious understanding.

Language is power. When government sends important messages about care and technology, it has consequences for the development of health services.

Researchers Hilde G. Corneliussen from Vestlandsforsking and Kari Dyb from the Norwegian Centre for E-health Research study the language that arises in the public sphere when discussing the introduction of technology in health care.

80 per cent people and 20 per cent technology?

The researchers have closely followed the national welfare technology programme of the Norwegian Directorate of Health, KS and the Norwegian Directorate of E-health for several years. This programme aims to promote the use of welfare technology in municipalities. The aim is to help and support citizens to cope with health challenges and to live longer at home.

The researchers have also analysed the language of NOU reports (Norwegian public reports) to see what characterises texts on innovation in care.

In addition, they interviewed employees and managers in municipal care services in Western Norway and Northern Norway about their experiences with welfare technology.
– It quickly became apparent that welfare technology solutions were not "80 per cent people and only 20 per cent technology", says Hilde G. Corneliusse.

The regime of truth

The researchers compared the public language with how healthcare professionals actually experience welfare technology. In a scientific article, they described the comparison. One finding is that in some texts, certain opinions become dominant, while other interpretations are rejected.

Kari Dyb says that this can be described as a truth regime. The public language prevails. That narrative is accepted as more true than other narratives.

The urgency of marriage counselling

When health + technology = not quite true, researchers believe it's time for some 'marriage counselling'. Parties need to understand and accept each other's point of view.

Healthcare professionals report anger and frustration when technology is dumped in their laps and they have no idea what to do with it.

Dyb says that the divide between technology and care should be broken down in education. Bridges must be built between health and technology. Technological expertise is needed in order to succeed with health innovation in the municipalities.

Senior Researcher Kari Dyb

Some benefits as well?

Middle managers interviewed said that they sat in meetings and discussed welfare technology solutions without having any ICT expertise themselves or professionals to rely on.

Does this mean that authorities and politicians have oversold the message that everyone can use the technology? The researchers think there may have been some advantages in pushing out the message, to talk more about the benefits for people than about the technology itself.

Dyb believes that this message may also have been successful because welfare technology has received much more attention in recent years.

– But where they have succeeded, health managers and IT staff have managed to work closely together, says Dyb.

Corneliussen emphasises that public discourse and linguistic practices about welfare technology are not just innocent words.

– A message that is perceived by many as a truth can set political guidelines. This may mean that money is not allocated to important needs such as more ICT personnel and skills training for health workers, she says.

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Home carers do not always encounter a shovelled driveway when they visit a resident

Coming research will look at how to close the gaps in the care system in favour of the patient.

History repeats itself every winter. People's driveways fill up with snow. For the elderly and disabled, clearing snow themselves is often impossible. When they don't get help, heaps of snow cause trouble for the home carer who drives to the patients' houses.

– Such practical problems can lead to inadequate care for the oldest patients. We need to close the gaps in the care system, says Marte Broks, Senior Doctor and Adviser.

The most vulnerable fall outside the system

Broks is an adviser at the Norwegian Centre for E-health Research and a senior doctor at the geriatric department at the University Hospital of North Norway. She treats the oldest and frailest patients, who often have different diseases and need follow-up over time.

Broks is passionate about finding out how people in the health care system at different levels can work more closely together so that care intensive users receive better customised care.

Studying medical records in Northern Norway

Broks and her colleagues will analyse the medical records of around 20 patients in northern Norway, in a project they call PACT III. It builds on research that began in 2014. They will access records from hospitals, GPs and the municipal health service in Tromsø.

Not everyone has a carer nearby

More and more older people are living longer with various complex diseases. Better treatment and medicines have increased life expectancy. The authorities have long talked about the need for older people to live longer at home instead of moving to a nursing home. Welfare technology makes it possible for many people to live at home in safe conditions, even with health problems.

Many of our most frail citizens do not have a neighbour or family member who can help with small and large challenges. She says that the practical challenges of everyday life would not be insurmountable if everyone living at home had a helper, a kind of administrator.

– Instead, we see a system failure, where citizens are being tossed between the state and the municipality. The municipalities in particular have been given many new tasks in recent years as a result of the Coordination Reform. But there is still not a good enough system to ensure that all services are delivered "all the way home", says Broks.

In her work as a senior doctor, she often sees malnourished elderly people being hospitalised. They have been living at home, are chronically ill and have been unable to shop or cook for themselves.

– And then, unfortunately, they are discovered too late. Poorly coordinated health services, misunderstandings or delays mean that they receive inadequate care. This needs to be better organised.

Senior Doctor and Adviser Marte Broks

Developing holistic services

Researchers have previously pointed out that fragmented services are detrimental to those who need follow-up from different carers over time. Western health services have been described as doctor- and diagnosis-centred. This poses challenges for everyone living with and managing chronic diseases at home.

She hopes the study will provide some answers about what adjustments need to be made in health services, at individual and system level.

– Healthcare professionals need this knowledge to ensure that patients and their families have the best possible care. I believe, for example, that it is possible to prevent illness and many of the emergency hospitalisations we have today, says Broks.

E-prescription for medicine rolls offers many advantages

This is the result of a survey of GPs' experiences with multi-doses packaged by machines.

Electronic prescriptions, abbreviated to e-prescriptions, were introduced in 2013, and today more than 90 per cent of all prescriptions are electronic. The exception is for so-called multi-dose packaged medicines. Here, paper prescriptions, faxes or regular mail are used.

Multidoses are machine-packed rolls of medicine. Each bag is labelled with the date and time when the medicine should be taken.

Researchers at the Norwegian Centre for E-health Research have recently conducted a study looking at general practitioners' experiences with the introduction of e-prescription multidose.

A key goal for the authorities, the Directorate of e-health and the Norwegian Directorate of Health is that multidose prescribing should also be transferred to the e-prescription system, and the scheme is now being trialled in several municipalities in southern Norway.

This study evaluates parts of the trial, focusing on GPs' experience with initiating multidose in e-prescription. The Norwegian Healthnet is responsible for the trial, and the system is continuously introduced to GPs who are technically able and willing to start.

Together with other studies, different parts of the trial are being explored with GPs, pharmacists and municipal services.

GPs' experience

Increased use of medicines challenges both the capacity and safety of medication management for patients and changes in how GPs and other health professionals interact to follow them up.

The aim of the study by researchers at the Norwegian Centre for E-health Research is to map GPs' experiences of moving from paper and fax to electronic prescribing of multidoses.

Many advantages

The study shows that multidose in e-prescription offers many advantages.

The GPs who have used the system say that the benefits largely include a better overview of the patients' medication lists, they spend less time on prescriptions and cooperation with pharmacies and nurses in the home care service is easier.

But they also see challenges. There is variation in GPs' need for training and information, and there is significant variation in competency and motivation when using digital tools.

Furthermore, there are challenges related to information, training, initiation, responsibility for medication, interaction and the risk of medication errors.

In particular, time, costs and technological solutions in the introduction phase are highlighted as challenges.

Professor Monika Knudsen Gullslett

Multi-doses are machine-packed rolls of medicine. Each sachet is labelled with the date and time when the medicine should be taken.

Better and safer drug treatment

Today, around 100,000 patients in Norway use multidose.

E-prescription for multidose is now being used by 170 GPs and around 2,000 patients have their multidose prescription sent electronically to the pharmacy.

For those who are not yet connected to the e-prescription system, there is no drug information available electronically that doctors other than GPs can access.

The research the centre is conducting on multidose in e-prescription will contribute knowledge about experiences with the start-up and use of multidose in e-prescription as a basis before it is introduced in all doctors' offices throughout Norway.

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– It's scary to think how vulnerable our health service is in the ongoing cyber war

Computer attacks are being carried out against health institutions around the world, including in Norway. At the same time, more and more of our health data is being collected digitally. How can we secure our health records?

Electronic health records and new sources of health information have led to the collection of large amounts of health-related data. This also poses major challenges for the security and privacy of health data.

As the healthcare system becomes more digitalised, security systems must be able to prevent data breaches.

Several researchers, including four from the Norwegian Centre for E-health Research, have written a chapter about this in the book "Roadmap to successful Digital Health Ecosystem".

A roadmap for health authorities

The researchers address the security challenges posed by the storage and use of digital health data.

The book is intended as a roadmap to a successful digital health ecosystem.

– The main message of the chapter is that cybersecurity incidents can happen to healthcare organisations of all types and sizes. The consequences include social and economic loss as well as reduction in the quality of patient care which can be life-threatening, says researcher Kassaye Yitbarek Yigzaw of the Norwegian Centre for E-health Research.

Growing problem

Healthcare systems can be interesting targets for cybercrime, industrial espionage and government intelligence, with the intention of stealing, altering, obstructing or influencing data or functions. Sensitive health data can be found in registries and medical records.

Stolen health data can be used as leverage to achieve a goal. It can also be valuable for research and development. Such data breaches will have consequences for hospital operations even if hospitals have emergency response procedures and carry out contingency exercises, where breached IT systems is one of the scenarios.

Vulnerable healthcare institutions

Norway has many healthcare institutions with the same IT provider. If one supplier is attacked, many institutions will be more or less without IT support.

– For me, it is scary to think about how vulnerable our health service is as a result of the large collection of health institutions that have switched to using cloud-based IT systems and are now vulnerable in the ongoing cyber war, says Professor Johan Gustav Bellika of the Norwegian Centre for E-health Research.

Some healthcare institutions will have problems providing healthcare services after only two hours without IT support.

Risk strategy

It is a national objective that health data should be available for quality improvement, health monitoring, management and research. The data should be organised in a way that safeguards the privacy and trust of patients and health workers.

The researchers believe that healthcare organisations should put in place strategies to manage risk. So-called risk management should identify, assess and respond to risks.

Senior Researcher Kassaye Yitbarek Yigzaw

Professor Johan Gustav Bellika

A five-step roadmap for cybersecurity

In the book, health researchers address the most common challenges to the security and privacy of health data. They thus provide an overview of the concerns and types of security threats facing the healthcare system in Norway.

The researchers are also concerned with laws and policy guidelines to protect health data. Both in terms of patients' access to their own health data and data used for secondary purposes such as statistics and research.

The researchers' main point is that the healthcare system must protect patients and their digital health data.

The researchers' advice to healthcare organisations:

1. Create a cybersecurity roadmap to understand the institution's current security state and indicate what security outcomes need to be achieved.
2. Conduct risk assessment to determine the likelihood of a security breach and the impact the incident could have on the institution.
3. Creating a target profile that describes the institution's desired cybersecurity outcomes. In addition to user awareness and training, institutions can use new knowledge in access control, cryptography, de-identification, and privacy-preserving distributed data mining to develop a profile appropriate for the institution's risk appetite.
4. Healthcare institutions need to analyse the gap between current target cybersecurity profiles. This is to create a prioritised cybersecurity action plan to close security gaps based on business and legal requirements, risk tolerance and available resources.
5. Implementation of the action plan. Proper monitoring is essential to detect abnormal behaviour and activity that could be attempted security breaches. Once an attack is detected, it is crucial to take appropriate actions and restore normal operations in time to mitigate the impact of such an incident.

Reference:

Evelyn Hovenga and Heather Grain: Roadmap to Successful Digital Health Ecosystems, A Global Perspective. Elsevier, 2022. (Summary) Doi.org/10.1016/C2020-0-00424-X

Electronic access to health records helps Sámi people when dealing with mental health services

Electronic access allows the patient to check the therapists' cultural understanding and perception of what has been said and shared in a consultation.

Researchers at the Norwegian Centre for E-health Research and the Sámi National Competence Service - Mental Health Care and Substance Abuse (SANKS) wanted to find out if Sámi values, culture and language affect the experience of electronic access to health records for Sámi people.

- Our study shows that the Sámi population perceives electronic access to their own health records as useful because it can help to increase trust in health personnel and reveal potential misinterpretations due to health personnel's lack of cultural understanding, says researcher Asbjørn J. Fagerlund in the Department of Patient Pathways at the Norwegian Centre for E-health Research.

Patients have the right to good and safe communication

Electronic access to patient records in mental and somatic health services has been available to patients in three out of four health regions in Norway since 2015. It allows patients to check their therapists' understanding and perception of what has been shared and said during consultations.

In this way, possible misinterpretations caused by different cultural perceptions between patient and therapist can be detected.

Good and safe communication between patient and therapist is fundamental in all patient treatment. Patients have the right to use their own language, but also to be met by a culturally sensitive service, where the patient's relationship to health, illness and treatment must be seen in a cultural context.

Previous research shows that this is not always the case.

Greater transparency

- We know from previous research that the linguistic and cultural competence of health care professionals can affect Sámi patients' satisfaction with mental health care, says Renathe Aspeli Simonsen, Department Manager at SANKS.

She explains that having Sámi as a native language and belonging to an indigenous people who are in a minority may make Sámi patients more vulnerable in their encounters with the Norwegian health care system. The study shows that electronic access to patient records allows for greater transparency in mental health care treatment.

Problems with language

The researchers uncovered difficulties with Norwegian as the written language in the medical record. In line with government regulations, medical records in the Norwegian public health service are mainly written in Norwegian.

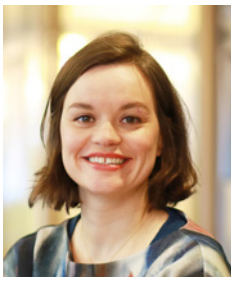
For patients who speak Sámi in consultations, the health record would have a translated account of what was said. The study shows that this translation can be perceived as problematic, even with an interpreter present.

Digital access to psychiatric records can alleviate some of these problems by allowing patients to read the assessments and conclusions in their own patient journal and provide feedback in the event of misunderstandings or mistranslations.

Trust and respect

Some Sámi patients in mental health care under-communicate their belief in traditional healing and a spirit world where they can talk to their ancestors. They do this for fear of misinterpretation or stigma from the therapist.

Senior Researcher Asbjørn Johansen Fagerlund



Senior Adviser and PhD Candidate Eli Kristiansen

Photo:
Karin Beate Nøsterud

To mitigate under-communication and to map how the patient reports symptoms in such cases, SANKS has introduced the use of structured methods that include asking about cultural aspects such as the use of traditional healing and identity.

A culturally appropriate survey can help patients to talk about their beliefs in a spirit world without fear of being misunderstood or misdiagnosed. Participants in the study do not all agree on whether cultural characteristics and features should be recorded in the medical record.

– The study revealed that none of the participants could recall having been informed about the right to electronic access to their medical records by healthcare professionals. They had found out about the possibility to read their records online themselves, says Eli Kristiansen, senior adviser at the Norwegian Centre for E-health Research.

She says that if healthcare professionals inform and encourage patients to read their records, this can create a more transparent patient-provider relationship.

Reference:

Asbjørn Johansen Fagerlund et al.: Experiences from using patient accessible electronic health records -a qualitative study within Sámi mental health patients in Norway. International Journal of Circumpolar Health, 2022 Doi.org/10.1080/22423982.2022.2025682

Next of kin need help in the jungle of mobile aids for the chronically ill

Today, there are several different mobile tools available for people with chronic diseases. But who helps their relatives?

When you are diagnosed with a chronic disease such as diabetes, there are several assistive technologies that can help you measure and control your blood sugar levels. However, many people with chronic diseases need help and assistance from their relatives and other carers.

There is a lot of research about which devices can help make the daily life of a person with diabetes easier, but little on what can help make the role of a carer or next of kin easier.

Helping those who help

In a study published in the scientific journal Studies in health technology and information, Meghan Bradway and her colleagues at the Norwegian Centre for E-health Research call for more research on how mobile health can help next of kin of chronically ill patients.

- We need to understand how to help everyone involved with a person with a chronic illness. The research shows us how little we know about the needs of carers, says Bradway.

She believes we need to involve them more in the development of mobile health tools.

- We are of little help to others if we don't understand ourselves. So to effectively help those with diabetes, we also need to know how to care for their carers - to know their needs and the risks to the carer's health and wellbeing, Bradway writes in the article.

Not everything works equally well

Oddny Johnsen is the mum of a 20-year-old girl with developmental disabilitiy who requires 24-hour supervision. She says her days are hectic with medication, training, coordination and caring for her daughter. She is unsure whether mobile assistive devices can contribute to her everyday life, as she finds that those that already exist do not necessarily work so well.

Johnsen says that throughout her daughter's upbringing, they have been conscious of using assistive devices that they know are useful.

The most important aid they have is their daughter's Rolltalk, which is a small digital disc they use to communicate with her. In addition, their daughter has an iPad which is an important social development tool.

Creating their own solutions

Nevertheless, she asks for digital tools that can help them in their daily interaction with their daughter. They have tried various solutions for communication between home, assistants and school/kindergarten, but find that they do not necessarily work.

- Apps don't help if no one uses them or we forget to use them. In addition, there are no systems for coordinating the needs of a seriously ill person between home, hospital, municipality, The Norwegian Labour and Welfare Organization (NAV) and county council.

She says that in the public sector, everyone swears by their own system and method, and there is often a reluctance to deal with people who cannot give consent themselves.

Therefore, Johnsen herself has tried to create everyday solutions that are suitable and easy to use for both herself and the closest helpers around her daughter. This could be, for example, a closed group on Facebook for the family and her daughter's assistants.

Better control with apps?

Postdoc
Meghan Bradway

As a carer, you want the best for your loved ones and you do your utmost to help and contribute. Carers have many roles and in order to juggle their own life with someone who is chronically ill, mobile health technology may make it a little easier.

Encouraging collaboration

Bradway and her colleagues studied responses from a survey conducted by a group of m-health researchers from UiT The Arctic University of Norway. In total, 539 people from around the world responded to the survey.

These results captured only a small part of what we should know about the needs of carers. Dr Bradway hopes this will encourage other researchers to contribute more knowledge to this area of research.

Reference:

Meghan Bradway et al.: mHealth: Where Is the Potential for Aiding Informal Caregivers?. Stud Health Technol Inform., 2021. Doi: 10.3233/SHTI210306.

Mobile phone reminders can reduce maternal and child fatalities

Sometimes a nudge and a word of advice can be enough to save the life of a mother or a baby.

If society facilitates good health choices for individuals, it makes a big difference to the health and lives of young and old alike. Proper health information is also important for the unborn child in its mother's womb.

But how can information reach countries where women lack access to health services?

According to the United Nations Population Fund (UNFPA), about 800 women die every day due to pregnancy and childbirth. According to UNFPA, 295,000 women died in 2017. They die from preventable and manageable causes, including haemorrhage, complicated births and infections.

WHO figures show that in 2020, 2.4 million of the world's children died in their first month of life. And statistics show that infant mortality rates are highest in sub-Saharan Africa and South Asia.

Reviewing international research

– Fortunately, there have been positive developments in recent years. Fewer women are dying and more babies are surviving in the womb, during labour and the first weeks of life. But many still die in vulnerable countries. We need to contribute with new ideas and measures, says Elvis Bossman.

He is a former master's student at UiT The Arctic University of Norway and has, together with supervisors from Norwegian Centre for E-health Research, conducted a review of international research on mobile health solutions from 2010 to 2020.

23 studies were included: 16 from African countries and seven from South Asia.

The conclusion is that mobile phone reminders and counselling can lead to positive behaviour change among pregnant women and mothers. The mobile phone can also provide valuable training for health workers. The interventions can help reduce maternal and child mortality.

Health in every mobile phone?

With the introduction of the smartphone, many people became curious about how it can be used for health interventions, including in global health. Mobile health solutions, or m-health, are increasingly being used by ordinary people in the form of apps and recording their own information. Health workers are also interested in this.

Improving the health of the world's mothers and children is a priority. UN Sustainable Development Goal 3 is to ensure good health. The goal consists of sub-targets and a number of indicators.

SMS reminders in your own language

The advantage of mobile phone apps and messaging is that it is easy and cheap. Digital solutions are not dependent on a developed infrastructure or physically travelling to a health centre and getting guidance from a midwife or nurse.

– Take, for example, a study from Zanzibar in 2014. There, pregnant women received SMS reminders to come for regular check-ups at the health centre. The messages were in their language, Swahili. This meant that danger signs in pregnancy were more often recognised and better follow-up could be provided, says Bossman.

Addressing privacy challenges

The gadget in people's pockets and purses can provide support and guidance. But it's not enough to just start sending messages or storing people's health data.

Photo: UNICEF / UN0583497 / Dejongh

Mobile health solutions need to be useful, effective and, above all, safe.

– Privacy is very important. The studies I've examined often don't take it seriously. What about access control? Who in the health care institution can read a patient's information? The same applies when the person is at home, says Bossman.

Can be costly for the individual

Another consideration is cost. The cost of an intervention is not always included into the pilot study. There is also little research on the informal exchange of health information, for example between a patient and a clinician.

– Although it is not documented anywhere, we know it happens. A person takes a picture of something and sends it to the doctor for review via WhatsApp or Messenger. There are knowledge gaps that need to be filled. Technology use affects people's health behaviour, he says.

Reference:

Elvis Bossman et al.: mHealth interventions to reduce maternal and child mortality in Sub-Saharan Africa and Southern Asia: A systematic literature review. Front. Glob. Women's Health, 2022. Doi.org/10.3389/fgwh.2022.942146

Artificial intelligence can interpret your health record

The system will automatically suggest a disease code.

Health professionals have to deal with an international system of over 30,000 codes for different diseases. It is easy to make mistakes. Researchers are now developing a computer programme so that health workers can be assisted by artificial intelligence.

In the healthcare system, a lot of manual and time-consuming work is involved in documenting the care of a patient. After each patient contact, the practitioner must write a so-called discharge summary and record one or more condition codes that describe the type of assessment or treatment the patient has received.

Diagnosis becomes the coding language

The person treating the patient must make a diagnosis, i.e. determine what is bothering the patient. The diagnosis must then be translated into a code based on the 'International Statistical Classification of Diseases and Related Health Problems', abbreviated to ICD.

In Norway, we use the tenth revision of the ICD, known as ICD-10. It is most common for practitioners to register codes themselves, but this can also be done by office staff with special expertise.

– It takes time for the practitioner to find the correct diagnoses and codes. Not all information is in the discharge summary, so we also need to look at the patient's medical records, lab tests, medication lists and more. The patient may have been treated for a long time, and then there is a lot of information that needs to be collected to be able to set diagnoses and codes, says the project manager of the ClinCode project, Professor Hercules Dalianis of the Norwegian Centre for E-health Research.

Often the wrong code

The ICD-10 codes provided are used for statistical purposes and to predict future care needs. Researchers and clinical staff also look at the codes to get a quick overview of an individual's diagnoses.

Since 1997, codes have also been used as a basis for funding. One problem with the manually set ICD-10 codes is that they are often incorrect.

The ICD-10 coding system comprises over 30,000 codes and can be difficult and time-consuming to use. Often clinicians will record the wrong codes, or fail to capture all appropriate codes. An error rate of up to 20-30 per cent is estimated.

– It is important to understand that this coding tool will never work optimally if the documentation on which the coding is based is not good enough, says Lill Irene Hind, coding advisor at the University Hospital of North Norway (UNN).

Computer programme has learnt thousands of condition codes

Researchers from the Norwegian Centre for E-health Research have therefore developed an automatic coding tool based on artificial intelligence that can suggest ICD-10 codes for a patient's discharge summary.

The ClinCode project is a computerised clinical ICD-10 coding tool that aims to improve the efficiency and quality of health services. The project is funded by the Norwegian Research Council.

Professor Hercules Dalianis

– The tool we call Easy-ICD is based on the fact that the programme has been trained with machine learning techniques on thousands of previous discharge summaries in the field of gastrointestinal surgery that have already been manually coded. In this way, the programme has learned which condition codes a single discharge summary should receive, says Dalianis.

Correcting to reduce errors

Since a large part of the training material is miscoded, the system will also learn the wrong codes.

The researchers therefore want to correct the training material by re-coding the data to reduce errors. Easy-ICD will never be better than a human coder, but it will be able to work much faster, processing huge amounts of information 24/7.

The idea is that Easy-ICD will suggest ICD-10 codes for a specific discharge summary, which the practitioner will be able to choose from.

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