UiA Centre for e-health

2022

ANNUAL REPORT

Centre for e-health

University of Agder

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ABOUT CENTRE FOR E-HEALTH

Since the beginning of the 21st century, the University of Agder (UiA) has been working to develop knowledge and expertise in e-health and modern care and welfare technology. The Centre for e-health was established in 2010, and in 2011, the centre was designated as UiA's first interdisciplinary priority area.

After an evaluation in 2015, the centre's status as a Top Research Centre was extended until 2018. In 2019, the centre was awarded the status of a Priority Research Centre and is among UiA's flagship for research efforts of national and international class.

Today, the centre is operated as a collaboration between five faculties: Health and Sports Sciences, Humanities and Education, Social Sciences, Technology and Engineering Sciences, and the School of Business. The centre's core group consists of one representative from each of these faculties. Part of the core group's mandate is to act as a link between the faculties and the centre, and to provide strategic input to ensure the quality and relevance of research and innovation at the centre.

In 2018, a joint professional council for research and innovation in e-health was established at the University of Agder. The council's ambition is to create a common meeting place, discuss current challenges, and provide advice to the University of Agder. In this way, the council can function as a coordinating body and contribute to a common effort for the entire e-health initiative in Agder.

Website
Strategy plan 2022-2024

Our vision and focus areas

Our vision is to create knowledge and solutions that elevate future digital health services.

In the centre's strategic plan for 2022-2024, we have focused on four priority areas:

1. User involvement in development and co-creation

2. Digital healthcare services

3. New technologies for health, coping, and learning

4. Better use of health data

Our societal mission

The centre conducts research on digital solutions that contribute to prevention, health promotion, and coping. We engage in interdisciplinary, practice-oriented, user-centered research and development with high academic quality. We develop knowledge and solutions through co-creation between users, the health care sector, the business community, and academia.

NEW ACADEMIC LEADER

At the Professional council meeting on June 2nd, it was announced that Professor Elin Thygesen from the Department of Health and Nursing Sciences will take over as the academic leader at the centre after Margunn Aanestad.

Elin completed her nursing education in 1987 and was hired at UiA (then called Agder University College) as a lecturer in 1992. She obtained her PhD from the University of Bergen in 2010 on the topic of "Subjective health and coping in care-dependent old persons living at home".

Previously, Elin has studied patients' and healthcare personnel's experiences with the use of various technology solutions and identified barriers to information and workflow. In recent years, she has been involved in various innovation projects with the development and implementation of technology solutions and digital services.

Central themes in her work include how vulnerable groups are involved in co-creation of new services and technology solutions and how change happens through interdisciplinary and cross-sectoral co-creation involving users, actors from the public and voluntary sector, as well as actors from the business community.

The Centre for e-health thanks Margunn for her outstanding work as academic leader and wishes her good luck with her future tasks.

A LOOK BACK AT 2022

2022 was a year that began with a resurgence of COVID-19 infections and lockdowns. Fortunately, there was a gradual reopening throughout the spring and eventually a dismantling of all COVID-19 measures.

Despite a somewhat difficult start to the year, activity at the centre has been high. Researchers at the centre have both led and participated in several regional, national, and international grant applications, resulting, among other things, in approval of a Horizon grant led by Oslo University Hospital, where the centre is a partner.

In collaboration with the Regional Coordination Group for e-health and welfare technology (RKG e-health), the centre has also submitted a new application to the European Commission, in which Agder has been granted reference region status for active and healthy aging with four stars (the highest possible score).

Together with Grimstad Municipality and i4Helse AS, we have continued to work on developing and increasing activity in the i4Helse building. The show room for welfare technology was officially opened on March 24 in connection with the SOVA conference. Furthermore, as part of the work on the new VR/AR lab, we have initiated collaboration with various professional communities in the region to produce films for use in the lab with the goal of establishing a film library that can be open to everyone in the region for education and training purposes.

As a result of the reopening of society, we have finally been able to host visits from all those associated with the centre through II-positions in 2022. We have also been able to visit strategic partners such as the National Centre for E-health Research in Tromsø and the University of Strathclyde, Digital Health & Innovation Centre, and NHS in Scotland, as well as participate in several national and international conferences.

In addition to actively providing input in several national hearings, the centre has also strengthened its connection to national authorities by becoming a member of an expert committee that is part of a national council model for the Directorate of e-health.

From August, I have taken over the position as academic leader of the centre after Margunn Aanestad. With great humility, I will continue the work of building on the solid job that has been done in shaping a strategy for the centre and building up a strong professional community and network.

The pandemic has contributed to a strong growth in the use of digital solutions in healthcare. In the years to come, there is a need for increased digital competence and technology solutions that can ensure better collaboration between services. Here, the Centre for e-health can contribute with its unique breadth of competencies and network both regionally, nationally, and internationally.

Elin Thygesen
Academic leader

AFFILIATED WITH THE CENTRE

Elin Thygesen
Academic leader (60%)
Affiliated with Department of Health and Nursing Science

Ragni MacQueen Leifson
Administrative leader (100%)

Elisabeth Giil
Higher Executive Officer (100%)

Mebers of the core group

Geir Inge Hausvik
Researcher (20%)
Affiliatied with Department of Information Systems

Martin Engebretsen
Professor (20%)
Affiliated Department of Nordic and Media Studies

Hege Mari Johnsen
Forsker (20%)
Affiliated with Department of Health and Nursing Science

Morten Goodwin
Professor (10%)
Affiliated with Department of Information and Communication Technology

Marianne Klungland Bahus
Researcher (20%)
Affiliated with Department of Law

Elisabeth Holen-Rabbersvik
Researcher /external network coordinator (20%)
Affiliated with Department of Health and Nursing Science

Associated centre members

Gunnar Hartvigsen, UiT
Professor II
Affiliated with Department of Health and Nursing Science

Helinä Melkas, LUT University, Finland
Professor II
Affiliatied with Department of Information Systems

Sandeep R. Purao, Bentley University, US
Professor II
Affiliatied with Department of Information Systems

Leonora Onarheim Bergsjø, HiOF
Associated professor II
Affiliated with Department of Religion, Philosopphy and History

Henriette Sinding Aasen, UiB
Professor II
Affiliated with Department of Law

Roma Maguire, UoS, Skottland
Professor II
Affiliated with the Faculty of Health and Sport Sciences

Overview of all members affiliated with the Centre for e-health

KPI & TARGET FIGURES 2022

3 **NEW PHD**

29 **RESEARCHERS**

57 **PUBLICATIONS**

3577 **CITATIONS**

KPI: Top quality in research, teaching, communication, and project work.	Status 2013-2018	Target nr. 2019-2023	2019	2020	2021	2022
Scientific conference publications (DBH index)	90	250	17	16	13	16
Scientific journal articles level 1.	105	250	36	33	37	32
Scientific journal articles level 2	13	50	7	5	12	9
Interdisciplinary publications	50%	60%	22%	19,5%	17,5%	19%
Citations of our publications	950	3000	1115	607	2454	3577
Researchers affiliated with the centre	15	32	17	20	28	29
Professors affiliated with the centre	5	15	6	9	11	14
New PhD/postdocs	14	25	3	4	4	3
Number of dissertations	4	15	6	5	1	0

RESEARCH AND DEVELOPMENT

Project overview

Projects led by the centre

Project title	Funding	Period	Budget
InnArbeid	Norwegian Research Council	2017-2022	NOK 15 mill
Agder as model region in e-health	AAUKF	2019-2023	NOK 23 mill
I2I- From Isolation to Inclusion	Interreg North Sea Region	2020-2023	Euro 3,2 mill
DIPAR	Norwegian Research Council	2020 - 2022	NOK 4,5 mill
Health workers on social media	The Norwegian Media Authority	2022 - 2023	NOK 0,48 mill

Projects in which the centre is a partner

Prosjekttitle	Funding	Period	Budget
CoTech – Cocreated health technology	Norwegian Research Council	2022 - 2027	NOK 27 mill
SOS/ Partially Digital Citizens	Nordforsk	2021 - 2023	Euro 1,47 mill
Dual diagnosis by Spectral Artificial Visual Examination for Female Genital Schistosomiasis and cervical cancer. Digital, new, low-cost, and simple diagnosis and training (DUALSAVE-FGS)	Horizon Europe	2022-2026	NOK 80 mill
ENACT - Ethical risks assessmeNt of Artificial intelligenCe in practice	Norwegian Reserach Council	2021-2025	NOK 12 mill
Learning control activities to ensure correct reimbursement from health reimbursement schemes.	Norwegian Reserach Council	2021-2024	NOK 13 mill
Pre project: ECG247 - Can we prevent serious complications of atrial fibrillation in users of home-based services?	Regional Research Funds- Agder	2021-2022	NOK 0,3 mill

Prosjekttitle	Funding	Period	Budget
KOM/Use the User: Pre project: Digital pathways for pasients with HIV (DIGPAS-HIV)	SSHF - RFF-Agder	2021- 2023	NOK 0,3 mill
Digital pathways for young people with diabetes (DIGPAS-DIA)	Internal SSHF-funds	2022-2024	NOK 0,5 mill
HELKOST- COVID19	DAM - foundation	2021-2023	NOK 0,66 mill
Can increased knowledge about body image improve healthcare for families with children who are overweight?	Norske Kvinners Sanitets forening - forskningsfond	2021 - 2023	NOK 2,25 mill
What are the experiences of children with type 1 diabetes, their relatives, and healthcare professionals with "remote control" via video conferencing and available patient data with the specialist health service, compared to attendance-based check-ups at the outpatient clinic?	Centre for e-health, UiA, post doc position	2021 - 2024	
Heart health for people with intellectual disabilities: Rare, forgotten or overlooked?	DAM-foundation	2019-2024	NOK 3 mill

Reference groups the centre is represented in

Title	Funding	Period	Budget
DignityCare	Norwegian Research Council	2021- 2025	NOK 16 mill
"Video for all - Inclusive video services in healthcare."	Health South - East	2022-2023	NOK 0,95 mill

Applications 2022

TACIT: Trustworthy AI contering cognitive impairments through telecare. Horizon Europe. Led by NHS Scotland

VIZPER: Visualising data for personalised health care. NRC/KSP. Led by Centre for e-health/ Martin Engebretsen.

IMMERSIVE MIND: Advancing mental health learning practices through co-designes scenarios. NRC/ KSP. Led by Centre for e-health/ Sofie Wass.

DEMLAB: Dementia friendly living models. NRC/KSP. Led by Centre for Care Research south

DIGPAS-DIA: Digital patient pathways for young diabetics. Internal SSHF funding. Initiated by Ellen M. Iveland Ersfjord, postdoctoral fellow at the Centre for e-health in collaboration with Annette Cecilie Bævre, diabetes nurse at SSHF.

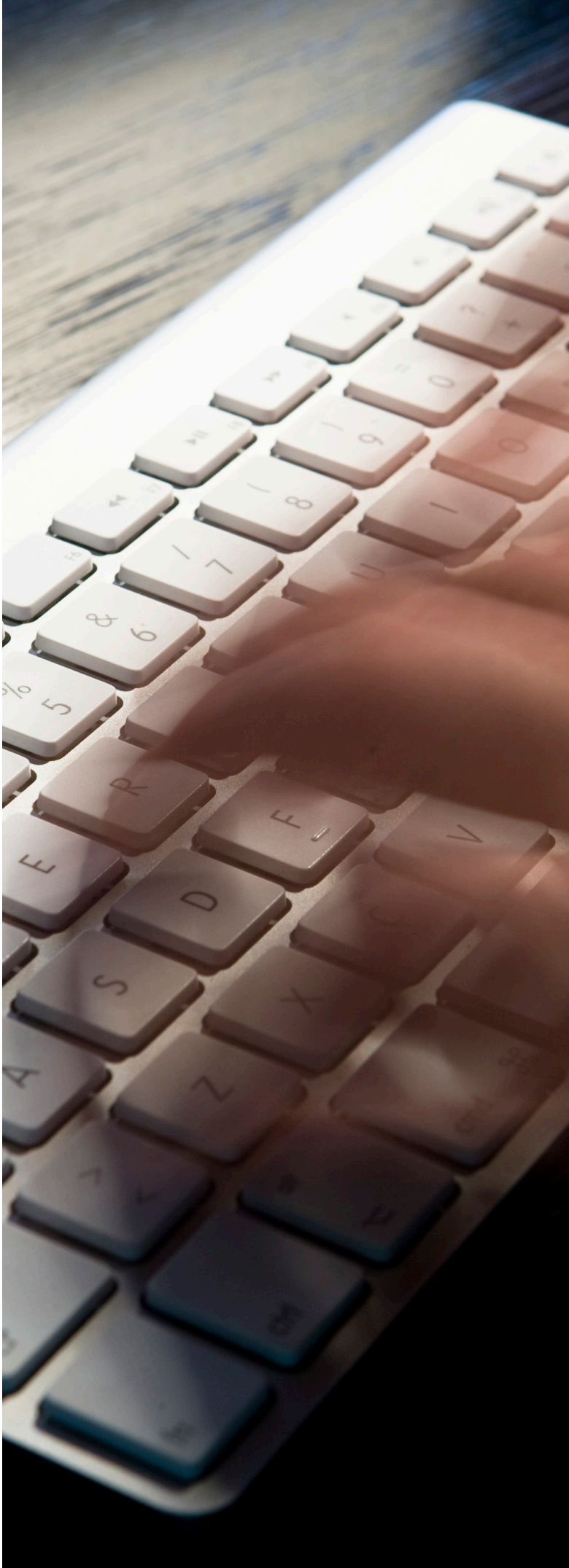
UNG-PREDIA: Prevention of type 2 diabetes in youth with obesity and prediabetes using sensor technology for glucose monitoring. Dam Foundation. Led by Ellen M. Iveland Ersfjord, postdoctoral researcher at the Centre for e-health.

RadPar: Intelligent Radar Sensing for the Diagnosis, Monitoring, and Therapy of Parkinson's Disease. NFR. Led by Matthias Pätzhold (Faculty of Engineering and Science), the Centre for e-health joined as partner.

SURE: Sustainable Digital Transformation of Health and Social Care Services in the Nordics University cooperation call (2. stages). NordForsk. Led by the Centre for e-health/Elin Thygesen, a collaboration through the Nordic Network: Research i Health and welfare Technology (HWT).

Reference region - The European Innovation Partnership on Active and Healthy Ageing (EIP on AHA). Led by Centre for e-health/ Ragni M. Leifson and Kathrine Melby Holmerud / RKG e-health.

ENACT: Ethical risks assessmeNt of Artificial intelligenCe in pracTice. NRC/IKTPLUSS. Led by Sintef Digital. The centre is connected as an advisory board, and through Associate Professor II, Leonora O. Bergsjø.



Ongoing PhD-projects

Mugula Chris Safari - Department of Psychosocial Health
Title of thesis: *Technology design with people with intellectual disabilities*
- Started 2019 - planning disputation in 2023
- Main supervisor: Elin Thygesen, UiA
- Co-supervisor: Sofie Wass, UiA

Ayan Chatterjee - Department of ICT
Title of thesis: *Design of an AI-based Smart e-Coach System to provide personal behavioural recommendations for increased physical activity and reduced obesity risks*
- Started 2019 - planning disputation in 2023
- Main supervisor: Martin Wulf Gerdes, UiA
- Co-supervisors: Andreas Prinz, Santigao Martinez, UiA

Trine Holm - Department of Health and Nursing Science
Title of thesis: *Proxy ePROM in public health centers and school health services*
- Started 2021 - planning disputation in2025
- Main supervisor: Thomas Westergren, UiA
- Co-supervisors: Elin Thygesen, Geir Inge Hausvik, UiA

Hans Gunnar S. Lian - Department of Religion, Philosophy and History
Title of thesis: *Sensing mental health: Sensor-based monitoring and its ethical implications for the well-being of acute mental health patients*
- Started 2019 - planning disputation in 2023
- Main supervisor:Terje Mesel, UiA
- Co-supervisors: Bjørn Morten Hofmann, UiO/ NTNU, Leonora B. Onarheim, HiOF/UiA

Magnus R. Wanderås - Department of Health and Nursing Science
Title of thesis: *Video consultation in general practice*
- Started 2020 - planning disputation in 2024
- Main supervisor: Santiago Martinez, UiA
- Co-supervisors: Elin Thygesen, UiA, Eirik Abildsnes, Kristiansand kommune/UiA

Katherine Brown - Dep. of Information systems
Title of thesis: *Digital infrastructures in immigrants healthcare networks in Norway*
- Started 2021 - planning disputation in 2024
- Main supervisor: Margunn Aanestad, UiA
- Co-supervisor: Carl Erik Moe, UiA

Sarala Ghimire Subedi - Institutt for ICT
Title of thesis: *Augmented video consultation*
- Started 2020 - planning disputation in 2024
- Main supervisor: Martin Wulf Gerdes, UiA
- Co-supervisors: Santiago Martinez, UiA , Gunnar Hartvigsen, UiA/UiT

Dragana Paparova - Dep. of Information systems
Title of thesis: *Data centric platforms and the governance of personal healthcare data in patient-centered care initiatives*
- Started 2020 - planning disputation in 2023
- Main supervisor: Margunn Aanestad, UiA
- Co-supervisors: Sara Hofmann, Marianne K. Bahus UiA

Henriette Hovland -Department of Health and Nursing Science
Title of thesis: *Older adults, social inclusion, and digital technology*
- Started 2020 - planning disputation in 2024
- Main supervisor: Elin Thygesen, UiA
- Co-supervisors: Cecilie Karlsen, Kristin Haraldstad, UiA

Anne Line Møllen - Department of Religion, Philosophy and History
Title of thesis: *Digital home follow-up in nursing care: Reflections on ethical issues from the nurses' perspective.*
- Started 2022 - planning disputation in 2025
- Main supervisor:Leonora B. Onarheim, HiOF/UiA
- Co-supervisor: Tina L. Barken, UiA

Linda Sørensen - Department of Health and Nursing Science
Title of thesis: *How can Humanoid Robots assist users with disabilities in activities of daily living? - A qualitative study on user needs, perceived usefulness, ease of use and acceptance.*
- Started 2021 - planning disputation in 2025
- Main supervisor: Hege Mari Johnsen, UiA
- Co-supervisors: Åshild Slettebø, Dag Thomas Sagen, UiA

Ida Victoria K. Pedersen - Dep. of Economics and Finance
Title of thesis: *Birth outcomes and human capital*
- Started 2022 - planning disputation in 2025
- Main supervisor: Eirin Mølland, UiA
- Co-supervisor: Jonas Minet Kinge, FHI/UiA

Jishnu Das - Dep. of Information systems
Title of thesis: *Design of Decision Support for Clinical Decision Making*
- Started 2022 - planning disputation in 2025
- Main supervisor: Geir Inge Hausvik, UiA
- Co-supervisor: Carl Erik Moe, UiA

COMPLETED PROJECTS

InnArbeid

Need-driven innovation for the inclusion of people with intellectual disabilities in the labor market using technology.

Project owner: UiA
Funding: NRC
Budget: NOK 15.0 mill.
Contact person: Elin Thygesen
Duration: 2017-2022

The starting point for the InnArbeid project has been the desire to develop a new service model that includes technology support to facilitate a smoother transition to employment for people with intellectual disabilities. InnArbeid aims to contribute to innovation and improvements in several areas. By using digital tools, people with intellectual disabilities can receive better services based on common and coordinated goals and measures.

The project has conducted a comprehensive survey of the transition from school to work, focusing on needs, barriers, and opportunities for increased labor participation for people with intellectual disabilities. Several idea and concept workshops have been conducted in collaboration with users.

A picture of some of the researchers in the project.
Photo taken in connection to the end conference on May 6th on Campus Grimstad.
From left: PhD Mugula Chris Safari, professor Carl Erik Moe, Associated professor Sofie Wass,
Associated professor Lise Amy Hansen, Associated professor Elisabeth Holen-Rabbersvik og professor Elin Thygesen.

Photo credit: Magnus Nødland Skogedal, UiA

Innovations in the InnArbeid-project

Through the project, four new digital tools have been developed based on the users' own needs to help people with developmental disabilities to find, obtain, and maintain a job.

The four digital tools are:

JodaBook - Personal storytelling

Kompass - Career tool for self-determination in education and employment.

VR-solution- Practice in handling unforeseen situations.

Romforarbeid.no - Website for inspiration for employers.

JodaBook is an app that facilitates individuals with intellectual disabilities to share more about themselves and what is important in their lives. Systematic use of pictures makes it easier to create good narratives. This is an aspect that has often been missing in the communication between individuals with intellectual disabilities and their employers or teachers. Information about the individual's interests can contribute to better collaboration.

Kompass is a digital career tool that aims to make the transition from school to work easier for individuals with intellectual disabilities. The tool makes it easier to identify, express, and present one's abilities and goals in a visual and personalized way. Among the features are mapping of interests, skills, and abilities, goal setting, and progress overview.

Many individuals with intellectual disabilities find the use of public transportation challenging. Therefore, InnArbeid has developed a **VR solution** that allows individuals to practice taking public transportation. In the simulation, one waits for a bus when an acquaintance comes over to talk. At the same time, the bus passes by. This provides practice in handling unexpected situations and can make it easier to handle public transportation.

Romforarbeid.no is a website that provides inspiration for employers who want to recruit individuals with intellectual disabilities, either for internships or jobs. The goal of the website is to sort information, provide inspiration, and advice on what to consider in the hiring process. The website also features employers who share their experiences in hiring individuals with intellectual disabilities.

Project website

DIPAR

Digital Infrastructure for Robust and Scalable PatientMonitoring in Pandemic Response Situations

Project owner: UiA
Funding: NRC
Budget: NOK 4,5 mill.
Contact person: Margunn Aanestad
Duration: 2020-2022

The research project "Digital Infrastructure for Robust and Scalable Patient Monitoring in Pandemic Response Situations" was funded by the Norwegian Research Council under the extraordinary Covid19 call for proposals.

In addition to the Center for e-Health, the participants included UiA (which was the project leader), the municipalities in Agder represented by Kristiansand municipality, Sørlandet Hospital, the ICT cluster Digin, I4Helse AS, Siemens Healthcare, and the start-up company Medsensio.

The project focused on digital home monitoring of patients with Covid-19. Based on the same technology used in the region's home monitoring, a solution for digital home monitoring of Covid patients was developed in the spring of 2020 and offered to patients in Agder. The project supported the healthcare system's evaluation of how the service worked.

The researchers conducted evaluations of the solution's user-friendliness based on feedback from patients who have used it. Other researchers interviewed healthcare personnel about their experiences providing digital monitoring to Covid patients, and leaders in municipalities to understand what makes an innovative response to crises possible. Workshops have also been held with technology partners to explore future opportunities for digital monitoring services that can help the healthcare system be better prepared for future pandemics and crises.

Nasjonalt pionérprosjekt: Med denne appen kan helsevesenet i Agder overvåke deg og viruset

– Vi har jobbet dag og natt. Appen er klar og systemet på plass. Vi kan nå overvåke pasienter og koronaviruset i Agder.

sykepleier Miriam Høyland var i karantene med datteren Ida Egeland (10 mnd) på hjemmekontor, mens hun sammen med rådgiver Camilla Gabrielsen (t.v.) har testet ut og laget den nye appen. I Farsund fikk de hjelp av lokale pasienter som ble smittet med Covid 19 på skiferie i Østerrike. Foto: **Jarle Martinsen**

SOME ONGOING PROJECTS

From Isolation to Inclusion - I2I

Project owner: UiA
Funding: Interreg
Budget: EURO 3,2 mill.
Contact person: Ragni M. Leifson
Duration: 2020-2023

More than 75 million Europeans only see their families once a month or less. Social isolation affects our physical and mental health. Just like smoking and physical inactivity, social isolation can increase the risk of premature death.

From Isolation to Inclusion works to reduce loneliness in communities and neighborhoods in the North Sea region. Together, we work to help the public sector think differently about social inclusion. We do this by connecting academia, municipalities, businesses, and those affected by social isolation.

Our approach to promoting innovation in public services to contribute to social inclusion and reduce loneliness in at-risk groups is to:

- ◊ Identify at-risk groups and involve them in the design of new services (co-creation)
- ◊ Develop new services that involve technological support
- ◊ Contribute to closer collaboration between users, the public sector, business, and academia
- ◊ Contribute to increased innovation capacity through awareness raising and collaboration

Project website

UiA University of Agder
Region Värmland
Diakonie Bremen
Gemeente Assen
TURNHOUT
Abertay University
ARENDAL MUNICIPALITY
Campaign to EndLoneliness
CONNECTIONS IN OLDER AGE
Canal & River Trust
Making life better by water
CITY OF AARHUS
Stad Aalst

HEL-KOST COVID

The right to a health-promoting diet for individuals with intellectual disabilities living in their own homes during the COVID pandemic.

Project owner/leader: Unge kokker
Funding: Dam- foundation
Budget: NOK 0,66 mill.
Contact person: Ellen Ersfjord
Duration: 2021-2023

In collaboration with the Regional Center for Obesity Research and Innovation, Health Mid-Norway, and the volunteer organization Young Chefs, we received funding from the Dam Foundation to investigate how the pandemic affected the dietary habits, nutrition, and overall lives of individuals with intellectual disabilities living in adapted housing during the COVID-19 pandemic. This was investigated through a survey and interview study of leaders and staff.

In collaboration with Young Chefs, digital tools were developed to enhance the nutrition and guidance competence of service providers in light of the pandemic and potential future epidemics. The residential communities also received support in the systematization and anchoring of their nutrition and guidance work.

Through the project, we identified many challenges faced by people with intellectual disabilities living in adapted housing during the pandemic. We found different practices regarding social isolation and lockdowns. Some places implemented visitation bans and closed common areas for residents for extended periods, while others banned visitors but kept common areas open so that residents could interact with each other as a cohort.

High levels of sick leave among staff meant that residents in all the homes had to deal with many unfamiliar people. We also found that many of the residents' healthcare services were discontinued during the pandemic, such as specialist health check-ups and municipal health services such as physiotherapy, dental care, foot care, visits to the GP, and annual health checks. This led to functional decline for some residents.

During the pandemic, residents in all the homes included in the study lost access to their work and activity programs. Staff reported that this was a significant strain on all the residents, and that they were still dealing with negative consequences from this. This was particularly true for homes that were closed for an extended period. The residents also had less physical activity than usual and had limited contact with relatives and other residents.

According to the staff, there were significant communication challenges during the pandemic due to the lack of digitalization of the service. Since several staff members do not have municipal email, it was not possible to conduct digital staff meetings. This made it difficult for leaders to provide staff with important information about the pandemic, such as infection control, changes in guidelines, and so on. We also gained insight into the lack of training in digital tools (both staff and leaders) and the lack of training in journal writing. Overall, this contributed to a poorer service offering for the residents.

Regarding diet, staff could report that many residents had increased levels of comfort eating during the pandemic. They missed social contact and something to do (supported work). Some residents started taking more responsibility for their own cooking due to many substitute staff, which created a more unhealthy diet for most. According to the staff, it was unclear if residents had gained weight during the pandemic as few staff/homes had routines for regularly weighing residents. Our results suggest that there was less negative impact on residents' diets in homes that had worked more systematically with diet and nutrition before the pandemic. However, several residents had to be assisted with shopping (through home delivery of groceries based on shopping lists) or have an accompanying staff member in the store. This meant that some residents received increased guidance on purchasing healthier food, which was positive.

Our results suggest that municipalities in Norway have not conducted risk and vulnerability analyses for people with intellectual disabilities living in adapted housing during the pandemic. This is not in line with the Health and Care Services Act or the Act on Municipal Preparedness Duty, and it is also a violation of the rights of people with intellectual disabilities.

During 2023, the article "Resilience during the pandemic. A qualitative study of challenges and strategies among staff in adapted housing for people with intellectual disabilities" will be published in the Journal of Care Research.

Agder as model region in e-health

Project owner/leader: UiA
Funding: AAUKF
Budget: NOK 15 mill.
Contact person: Ragni M. Leifson
Duration: 2019-2023

The project "Agder as a model region in e-health" was awarded 15 million Norwegian kroner over five years from the Aust-Agder Development and Competence Fund in 2019.

The project aims to elevate Agder as a region in e-health, building on an already established position nationally and internationally. This will create very favorable development conditions for e-health products and projects. Such an exposed position strengthens all parties in the quadruple helix model:

- Users (citizens) receive better health services both within and outside the healthcare system, improving general living conditions and health outcomes.
- Businesses have a functioning ecosystem both technologically and in terms of expertise to develop new tailored products and services that are easy to use.
- The healthcare system receives better-integrated solutions that strengthen collaboration, division of labor, and the development of new modern services.
- The university gains access to data, laboratories, and expertise to conduct forward-looking research in a living region that is dynamically evolving.

The project is based on the existing status of the Centre for e-health and places additional focus on competence, infrastructure, and visibility. This is expected to lead to additional results in these areas.

The project is organized with the following four sub-projects:

Sub-project 1: Competence
The project aims to attract international expertise in e-health to create a broader basis for further development.

Sub-project 2: Infrastructure
The Centre for e-health aims to establish a "test infrastructure" that reflects national common infrastructure and develop a test arena for integration with national solutions.

Sub-project 3: Visibility - Show room
Visibility focuses on citizens in Agder and Norway with a common show room in the i4Helse building that can display both current and future-oriented technology and its use and development for both users and developers. This is a collaboration between the Centre for e-health, Grimstad municipality, and i4Helse AS.

Sub-project 4: Visibility - SFI and reference region
In terms of national visibility, the Centre for e-health, together with business, municipalities, and users, applied for status as a Centre for Research-Driven Innovation (SFI) in 2019. The application received a good score, but unfortunately did not receive funding. Internationally, Agder is already visible by being a reference region within EIP-AHA. This status was applied for in 2016 and 2019, where the Agder region received three stars, and in 2022, it finally received full recognition with four stars.

Some results from the project

Competence:
Three international professors have been employed in II positions at UiA. All of them are involved in activities at the center, either through collaboration on articles, PhD supervision, courses, or grant applications. All of them also visited Agder physically during 2022.

Helinä Melkas
LUT Univ.
Finland

Roma Maguire
Strathclyde Univ.
Scotland

Sandeep Purao
Bentley Univ.
USA

Reference region:
Agder achieved four-star reference region status in 2022, which is recognition of the longstanding work in e-health that has been done in the region. This network provides the region with a unique opportunity for collaboration with other regions in Europe. Steinar Omnes, CEO of i4Helse AS, and Erlend K. Faanes from Grimstad municipality had the honor of attending the award ceremony in Brussels.

Show room i4Helse:
Sunniva Whittaker, the rector of UiA, had the honor of officially opening the new show room in the i4Helse building. This took place during the annual SOVA conference in March. An Open Day has also been organized, to which everyone in the region was invited. The event had good attendance, and suppliers thus had a unique opportunity to showcase their products. The arena is open to everyone from 8 am to 3 pm Monday to Friday.

Centre gatherings

As tradition dictates, the Centre for e-health invited its affiliated and associated members to a centre gathering in June and December. The goal of these gatherings is to bring together members of the centre from different faculties and research areas to create cohesion and familiarity with each other's research activities.

The June gathering took place at Strand Hotel Fevik with 20 registered participants. In addition, department heads and deans were invited to a dialogue meeting on the first day. The discussion focused on how e-health can be integrated into teaching at UiA, and the future of e-health, both at UiA and in the Agder region.

Marianne Bahus from the School of Business held a presentation on the "Safer Health Apps" project, which aims to provide citizens and patients with access to health apps that meet minimum requirements for data security, privacy, health benefits, and user-friendliness.

Our PhD candidates had the opportunity to receive feedback on their projects in individual groups with different researchers.

The last day was spent on group work on the topic of user involvement. Professor II, Helinä Melkas from LUT University in Finland, introduced the topic with a presentation on different perspectives on user involvement in e-health. Who are the users really?

The seminar ended with a review of the centre's action plan and the specification of which activities to focus on in the future.

The December gathering took place at Lillesand Hotel Norge with 25 registered participants. In addition to these, 9 deans and department heads attended a dialogue meeting on the first day, where, among other things, Vice Rector Hans Kjetil Lysgård presented the interdisciplinary initiatives at UiA.

There were many exciting presentations on the topics of ethics, rights, and digital solutions in e-health, and Leonora O. Bergsjø presented the new NRC project ENACT which had just been approved.

Professor II, Sandeep Purao, made the trip all the way from the USA to participate, and gave a presentation aimed more towards our PhD candidates, on how they should think strategically to become part of a research environment. Day 1 ended with a delicious dinner and a quiz.

The first part of day 2 was reserved for the PhD candidates, who received individual feedback on their projects in groups with different researchers.

The seminar ended with a discussion and planning of an Open Research Day in 2023.

We thank everyone who participated in these gatherings. It is important for the centre to have such meeting places, precisely to ensure interdisciplinary collaboration and, not least, to ensure a good professional environment for e-health at UiA.


ENACT
Ethical risks assessmeNt of
Artificial intelligenCe in
pracTice

Arendalsuka - a political gathering

Researchers from the centre participated in several events during Arendalsuka, and overall, the recurring themes were digital exclusion and social inequality and loneliness.

One project that was highlighted in several events was the Interreg project I2I - "From Isolation to Inclusion". In collaboration with municipalities in Agder, researchers from the centre participated in the production of two podcasts as part of the podcast series "Dialog på vannet" hosted by Agder County Council:
1. How does Agder use digital technology for social contact and inclusion?
2. Digital and living the whole life.
Here, Associate Professor Cecilie Karlsen and PhD Candidate Henriette Hovland presented the I2I project, both in relation to the quality reform "Leve hele livet" and how the project aims to promote innovation in public services. The tool KOMP, which is a digital screen with one button, was used as an example of how the elderly can use digital technology in a simple way to stay in touch with their loved ones.

At the Public Transport Association's event "Age-friendly transport - can we afford not to?", Professor and academic leader Elin Thygesen highlighted that the I2I project has revealed that a lack of, or challenges with, transportation is one of the main challenges when it comes to social inclusion and reducing loneliness.

At the EHiN event "Can innovation stop social inequality and loneliness?", Elin highlighted the I2I project as an example, as the project has been a driving force in connecting and contributing to collaboration across sectors, services, and professional communities, which is essential for innovation.

Professor Carl Erik Moe presented the Nordforsk project "Infrastructures for partially digital citizens: Supporting informal welfare work in the digitized state" (SOS), which deals with what they call "digitally vulnerable citizens". These are citizens who are unable to use digital self-service solutions and therefore struggle to access welfare services they are entitled to and in need of. The focus was on the fact that it is not just the elderly who are affected by the increasing digitization of everyday life. Immigrants, who often encounter digital barriers due to cultural, linguistic, or societal factors, are also affected.

At the UiA tent, the Centre for e-ealth invited to a session on the topic of public health and digital technology for people with intellectual disabilities.

People with intellectual disabilities do not always have equal access to adequate healthcare, and many do not have the ability to make decisions about their own health treatment. They are also less physically active than the general population. Only 25 percent of the group in working age have a job, and access to both regular and adapted work is limited, with negative trends over several years. There is also social inequality in the use of, and research on, digital technology related to this group.

Recent research was presented in three important areas of the lives of people with intellectual disabilities: diet, physical activity, and work;

Postdoctoral fellow Ellen Ersfjord of the Centre for e-health presented the project HELKOST-COVID, which mapped how people with intellectual disabilities living in adapted housing have been affected in their diet during the Covid-19 pandemic.

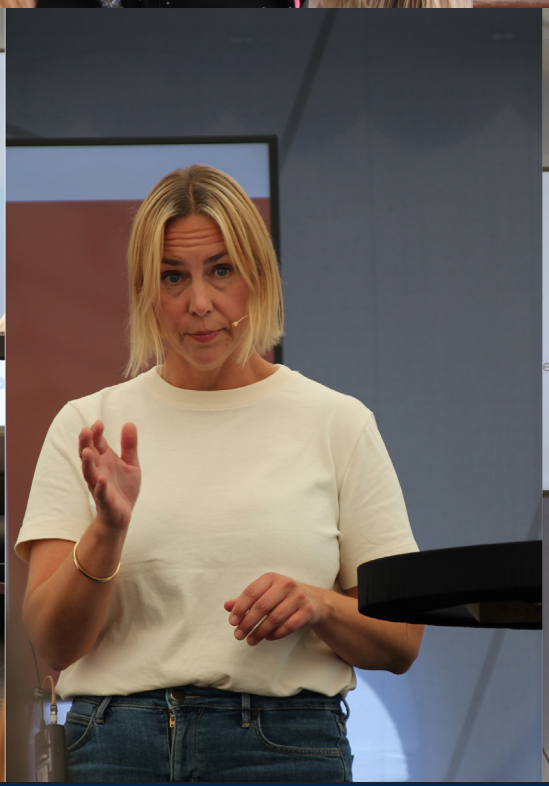
Henriette Michalsen, PhD candidate and psychologist at the University Hospital of Northern Norway, presented her doctoral project on how apps can help motivate people with intellectual disabilities to increase their activity levels, thereby improving their health and quality of life. The study is part of a larger international project, move IT.

PhD candidate Chris Safari, also affiliated with the Centre for e-health, presented findings from the InnArbeid project, which was completed this spring. The project conducted a comprehensive survey of the transition from school to work, with a focus on needs, barriers, and opportunities for increased work participation for people with intellectual disabilities.

Finally, a debate was held with invited professionals, researchers, users, and politicians on how people with intellectual disabilities can have their basic rights fulfilled. Barriers to good public health were discussed, as were various solutions to the problems.


Noen praktiske utfordringer
Institutt for informasjonssystemer
UiA


Hva viser forskning?
Mindre fysisk aktivitet



Study trip to Scotland

In late November, parts of the core group as well as some researchers from the centre went on a three-day study trip to Glasgow, Scotland. The purpose of the trip was to gain academic insights and to establish contacts for possible collaborations in projects and applications.

Since 2018, the Centre for e-health has had a formal MoU agreement with the Digital Health & Care Innovation Centre (DHI) and the University of Strathclyde (UoS) in Glasgow. The collaboration began long before this through various projects and networks such as the European Innovation Partnership on Active and Healthy Aging.

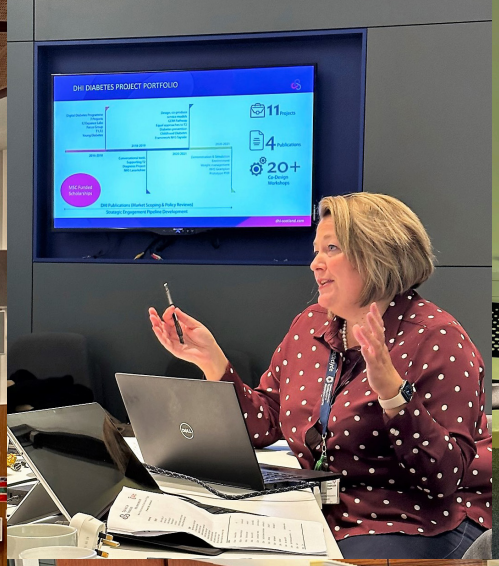
One of the people we met in Glasgow was Professor Roma Maguire, who, due to her international expertise in e-health, was recruited as a professor II at UiA through project funding from AAUKF as part of the project "Agder as a model region in e-health". Roma had put together a varied and academically strong program for us on the first day. We met and were presented with exciting research from over 13 researchers from UoS. There were various topics that showed digital solutions for dementia, autism, cancer, palliative care, and for caregivers. In addition, research and PhD projects were presented in human-centered AI and health services. We were given a tour of different parts of the Strathclyde campus and ended the day at an Italian restaurant with Roma and her colleague Kieren Egan.

Day two was reserved for the Digital Health & Care Innovation Centre (DHI). There we were informed about innovation projects on how digital solutions can function as decision support for healthcare personnel as well as contribute to coping for people with COPD, dementia, and diabetes.

On the last day, we participated in the Digital Health & Care Fest, an annual conference co-organized by DHI. There, we had the opportunity to hear exciting project and poster presentations, as well as meet exhibitors.

The study trip is followed up with regular meetings with our Scottish partners, where, among other things, further development of applications, webinars, visits, and exchanges are discussed.


DigiFest22
30 November 2022
@TECScotland @DigiCare4Scot
2022
Digital Health & Care Fest


DHI DIABETES PROJECT PORTFOLIO
11 Projects
4 Publications
20+


University of Strathclyde Glasgow


Innovation in Autism

PUBLICATIONS 2022

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