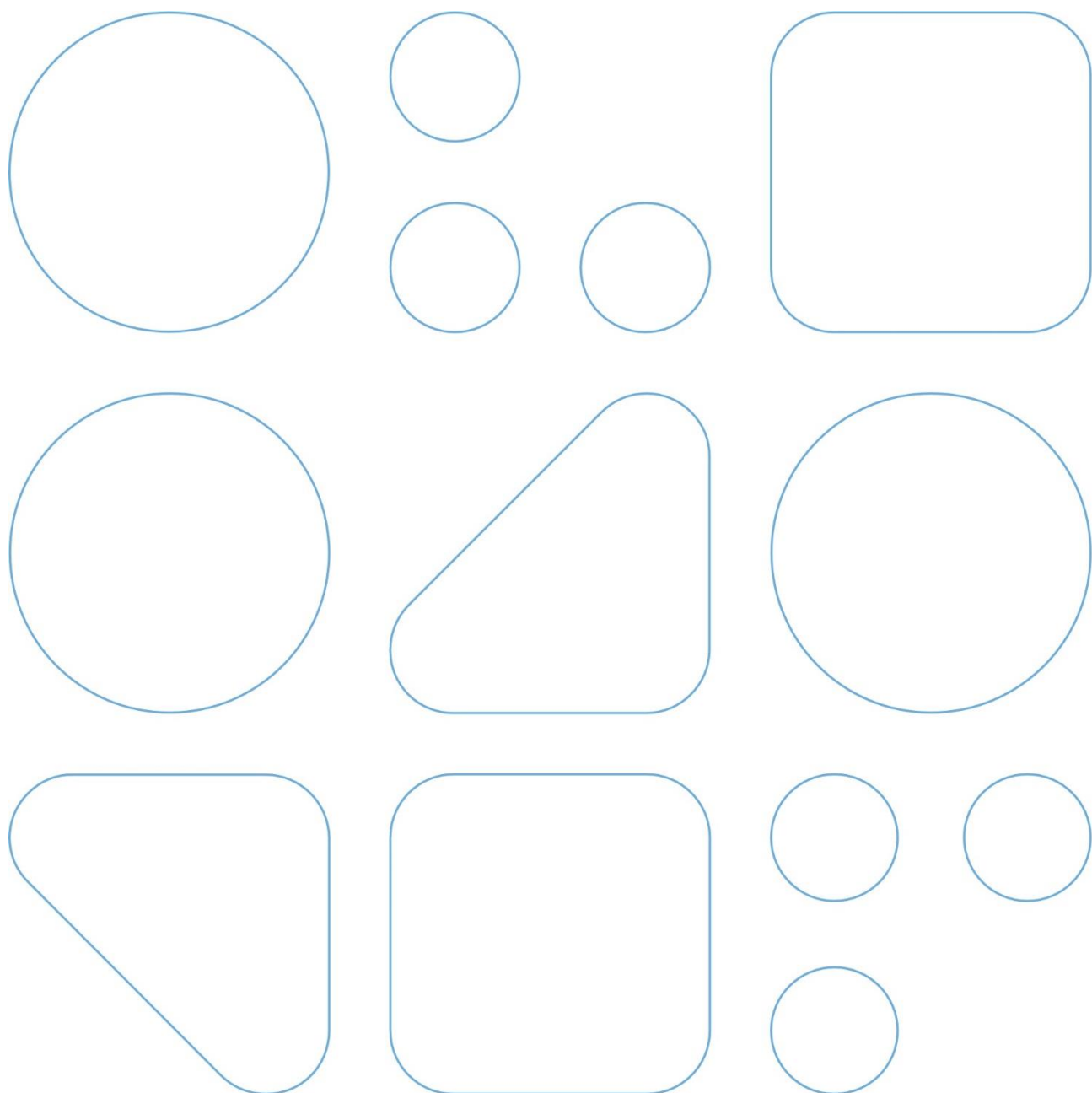


Research at Akershus University Hospital 2022



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1. Summary

A main objective for Akershus University Hospital in 2022 has been to strengthen and highlight the university function. This is a continuation of a long-term investment in research that has resulted in an increasing number of scientific articles and dissertations from the hospital over time.

A total of 428 scientific articles were published from Akershus University Hospital in 2022, compared to 427 the previous year. In 2022, 17 employees defended, which is significantly higher than in 2021 when we had 5 defences and which was low due to the pandemic.

For Ahus, it is important to have close and good cooperation with knowledge institutions and especially the university/high school (UH) sector for the development of Ahus as a university hospital.

The publication list from Akershus University Hospital for 2022 shows that there is close collaboration with researchers from other institutions, and especially with researchers from the University of Oslo and Oslo University Hospital (chapter 6, figure 5). The list also shows that there is increasing cooperation with international institutions.

Important sources of funding are South-Eastern Norway Regional Health Authority, the Norwegian Research Council and the Cancer Society (see chapter 9 for which projects have been awarded). KR 8 million was allocated as internal research funds. The award was based on an external peer review of registered applications and followed a process that has recently been evaluated by internal audit Ahus.

In 2022, Ahus has continued measures to strengthen and facilitate more clinical treatment studies. During 2022, a high number of new clinical treatment studies have been registered, a total of 46 new ones, respectively. 18 research and 28 industry-initiated studies. During 2022, 70 clinical treatment studies were registered which included a total of 2013 new patients, according to figures taken from national reporting of clinical treatment studies.

2. Organisation of research at Akershus University Hospital

The function as director of research and innovation was raised from level 3 to level 2 in the Organisation in September 2016. The reporting line for research follows the management line in the hospital. All divisions and clinics have their own departments for research. The head of research then sits on the division's management team and acts as an adviser to the division director on research matters.

Akershus University Hospital (Ahus) has a formalized collaboration with the University of Oslo (UiO) on research and teaching medical students. The Department of Clinical Medicine at the Faculty of Medicine has a local head who is a scientific employee and reports to the head of department. The person is an observer in the hospital management. The institute has local administration at Campus Ahus. Ahus also works closely with OsloMet within education and research. The collaboration is also formalized here in an overarching collaboration agreement.

The research management in the university line is organized in three clinics; (1) clinic for internal medicine and laboratory subjects (equivalent in the Ahus line Division of Medicine, Division of Diagnostics and Technology and Division of Paediatric and Adolescent Medicine), (2) clinic for surgical subjects (in the Ahus line Division of Surgery , Orthopaedic Clinic and Division of Gynaecology and Obstetrics) and (3) clinic for health services research and psychiatry (in the Ahus line Department for health services research, FID and Division of Mental Health).

A significant proportion of the researchers at Ahus have combined positions with UiO, and thus also have a connection to the university line. These report to the clinic manager at the University for their University Tasks and to the immediate manager in the hospital line for tasks related to the employment relationship at Ahus.

Research committees have been established in most divisions and clinics and joint research committees for Ahus and Campus Ahus. The committee consists of representation from the research management, research managers from the clinic/division and clinic managers from the university. The joint research committee, which is a strategic advisory body for the managing director in research matters, is anchored in the collaboration agreement with the university and holds approximately 6 meetings per year. OsloMet and Ahus's user committee are also represented in the committee.

3. Scientific production

In 2022, 428 articles with the address Akershus University Hospital were registered in CRISStin (Current Research Information System in Norway)¹, compared to 427 in 2021. Of these articles, 30 percent were published in a level 2 journal, which is defined as a leading journal in its field, and the rest are published in level 1 journals. Table 1 shows the number of scientific publications according to level 1 and 2 for the years 2014-2022. Table 2 shows the distribution of scientific publications and publication points per division/clinic in 2022.

Figure 1 shows the divisional development of publications for the period 2012 – 2022.

Table 1: Number of scientific publications by level 1 and 2 from 2014 - 2022

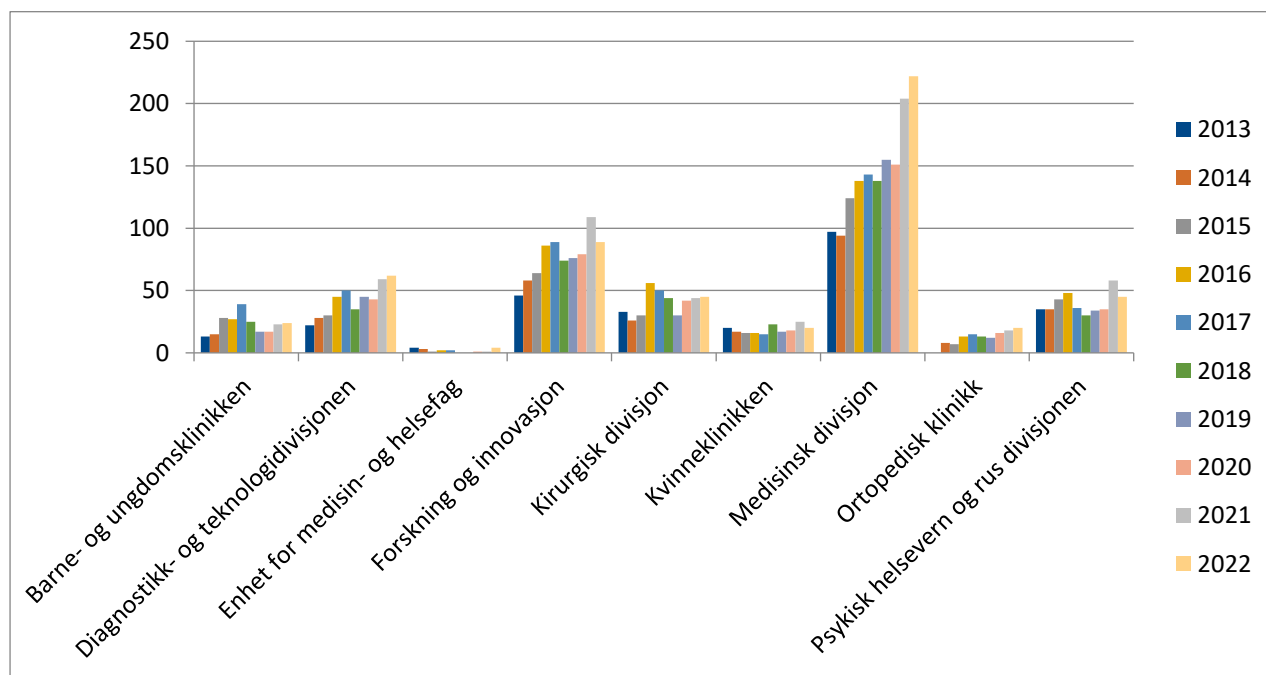
Year	Number of level 1	Number of level 2	Total number of articles
2014	191	47	238
2015	234	51	285
2016	289	74	363
2017	297	61	358
2018	253	70	323
2019	245	77	322
2020	249	84	333
2021	331	96	427
2022	299	129	428

Table 2: Scientific publications and publication points per division 2022

	Total	Level 1	Publ. point	Level 2	Publ. point
Division of Paediatric and Adolescent Medicine	24	18	6.75	6	5.67
Division of Diagnostics and Technology	62	48	15.40	14	9.79
Division of Research and Innovation	89	61	16,78	28	29,96
Division of Surgery	45	31	10,84	14	11,19
Division of Gynaecology and Obstetrics	20	16	7,49	4	5,25
Division of Medicine	222	150	54,37	72	63,59
Orthopaedic Clinic	20	14	5.89	6	7.39
Division of Mental Health	45	33	14,13	12	16.91
Division of Medicine and Health Science	4	3	0.84	1	0.56

¹ www.cristin.no

Figure 1: Development by division in publications 2017 – 2022



In 2022, 17 employees sat their dissertation. Table 6 shows the distribution of the number of awarded doctoral degrees per division. In chapter 12 there is an overview of who argued the thesis with a short summary of the various theses.

Table 3: The number of dissertations per division 2014-2022

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Division of Paediatric and Adolescent Medicine	1	2	1	2	2	4	1		1
Division of Diagnostics and Technology			2	1	1	1	1	2	1
Division of Research and Innovation	4	3	1	2	2		3	1	2
Division of Surgery			1	1	3		3		3
Division of Gynaecology and Obstetrics	4	1	2		1	1	1		1
Division of Medicine	5	8	2	6	6	3	8	1	4
Orthopaedic Clinic		2		1	1	3	0	1	3
Division of Mental Health	1	1		3	6	1	3		2

Figure 2 shows the development for clinical studies at Ahus. In 2022, there was a slight decrease in the number of new reported clinical studies compared to 2021, where the number of new studies was a record high. At the same time, there was an increase of 6% for clinical treatment studies that included new patients. Inclusion of the number of new patients has increased by 75% in 2022, compared to 2021 (Figure 3). There is also an increase in the number of clinical studies that have an active project period at the Regional Ethics Committee (REK). In 2022, Ahus received 41 registered inquiries about participation in new industry-initiated clinical studies from various companies associated with the healthcare industry.

Figure 2: The development of clinical studies at Ahus

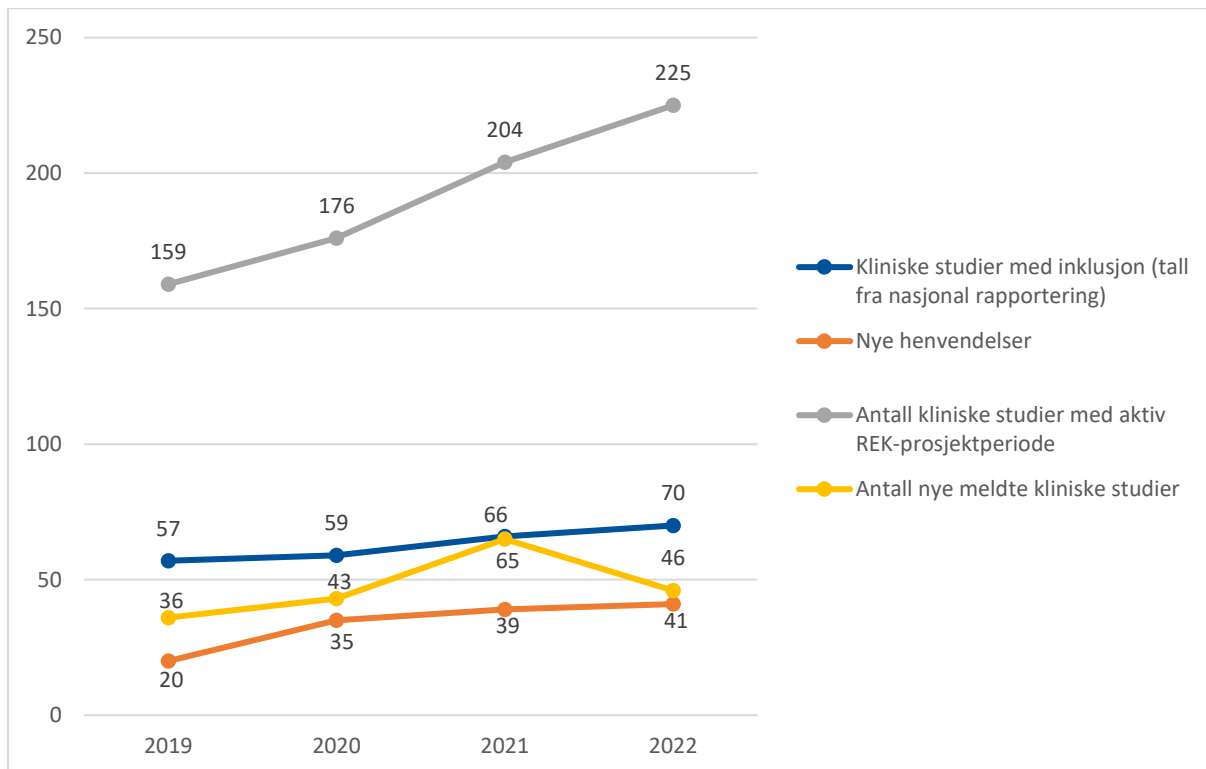
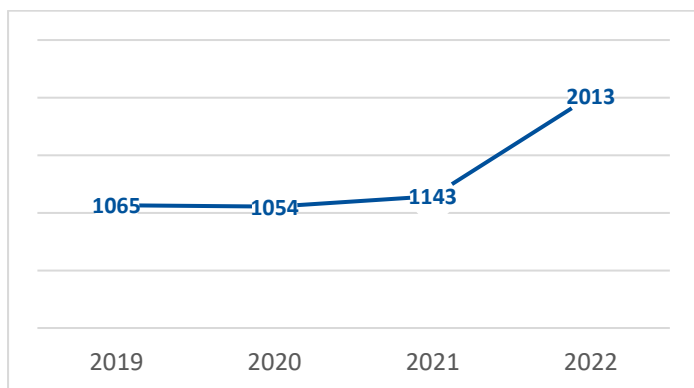
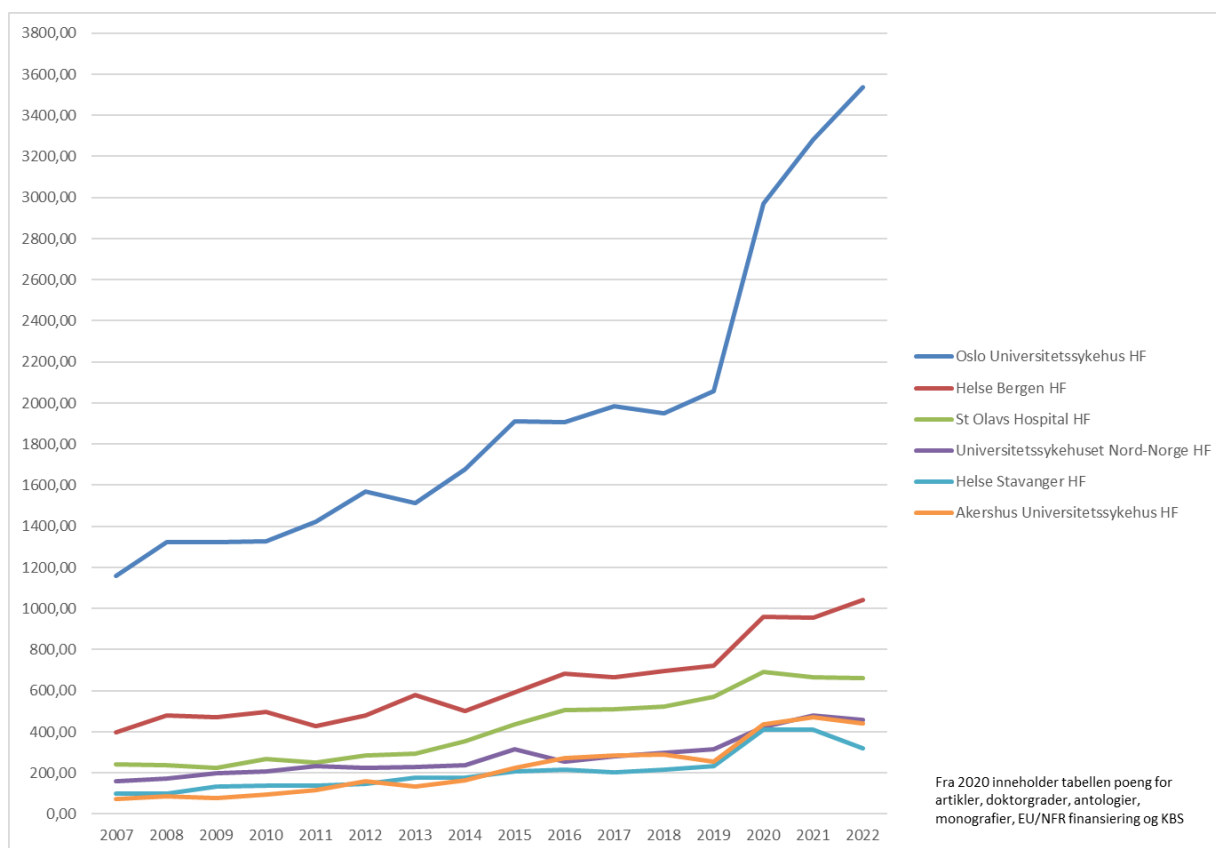


Figure 3: Inclusion of new patients in clinical studies at Ahus



The number of research points including clinical treatment studies has increased slightly from 438 in 2021 to 442 in 2022. For the period 2006 – 2019, the graph only shows points for scientific articles and doctorates, but from 2020 we have expanded the overview to apply to the total number of research points (scientific articles, doctorates, anthologies, monographs and EU/The Research Council of Norway funding) and KBS points (Clinical treatment studies). Figure 4 shows a comparison between the Norwegian university hospitals for the period 2006 to 2022.

Figure 4: Research points (scientific articles, doctorates, and anthologies, monographs, EU /The Research Council of Norway funding) and clinical treatment studies (KBS) – comparison between the Norwegian university hospitals. For the period 2007-2019, the graph only shows points for scientific articles and doctoral degrees



DOFIs (report on invention) have been submitted to our TTO (Technology Transfer Office, Inven2), 5 patents and a license agreement.

Table 4: Innovation activity 2022 - reported from Inven2

	Number
DOFI	10
Patent applications	5
License Agreement	1

4. Development in the number of publications and doctorates

Table 5 and figures 5 and 6 show the development in the number of scientific publications and the number of doctoral degrees awarded in the period from 2011 to 2022. The number of published articles has shown a positive increase from 2011 and in 2022 Ahus will return to pre-pandemic levels in the number of dissertations.

Table 5: Publications and doctorates 2010-2022

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Publications	210	238	228	238	285	363	358	323	322	333	427	428
Doctoral degrees	8	20	10	15	17	9	16	22	13	20	5	17

Figure 5: Development in the number of publications

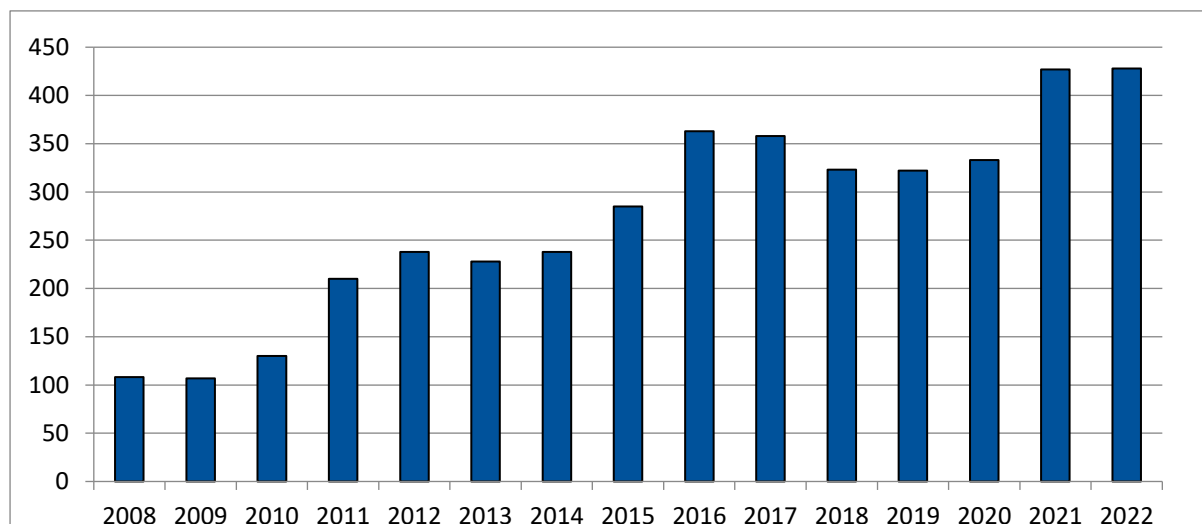
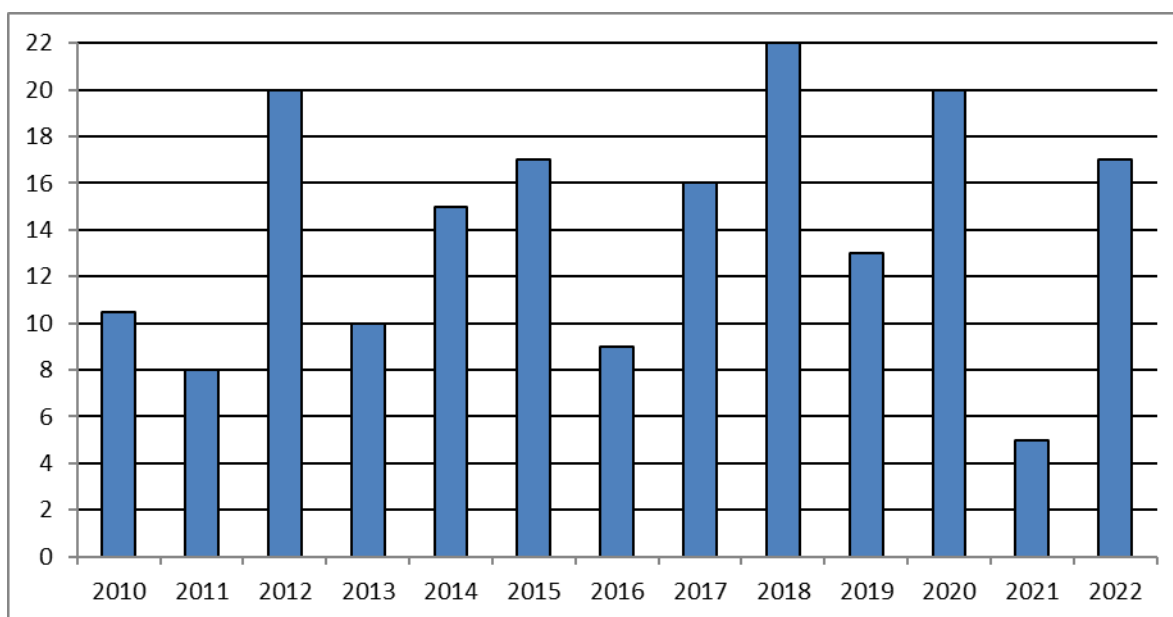


Figure 6: Development in the number of doctoral degrees



5. Publishing researchers

The tables below show the number of researchers who published at least one scientific article with the address Akershus University Hospital in 2022. Table 6 shows publishing researchers broken down by gender and age, and table 7 shows the corresponding overview per division. Data are taken from CRISStin.

Table 6: Publishing researchers divided by gender and age

Men		Women		Total	
Number	Avg. age	Number	Avg. age	Number	Avg. age
166	49.7	191	46.0	357	47.7

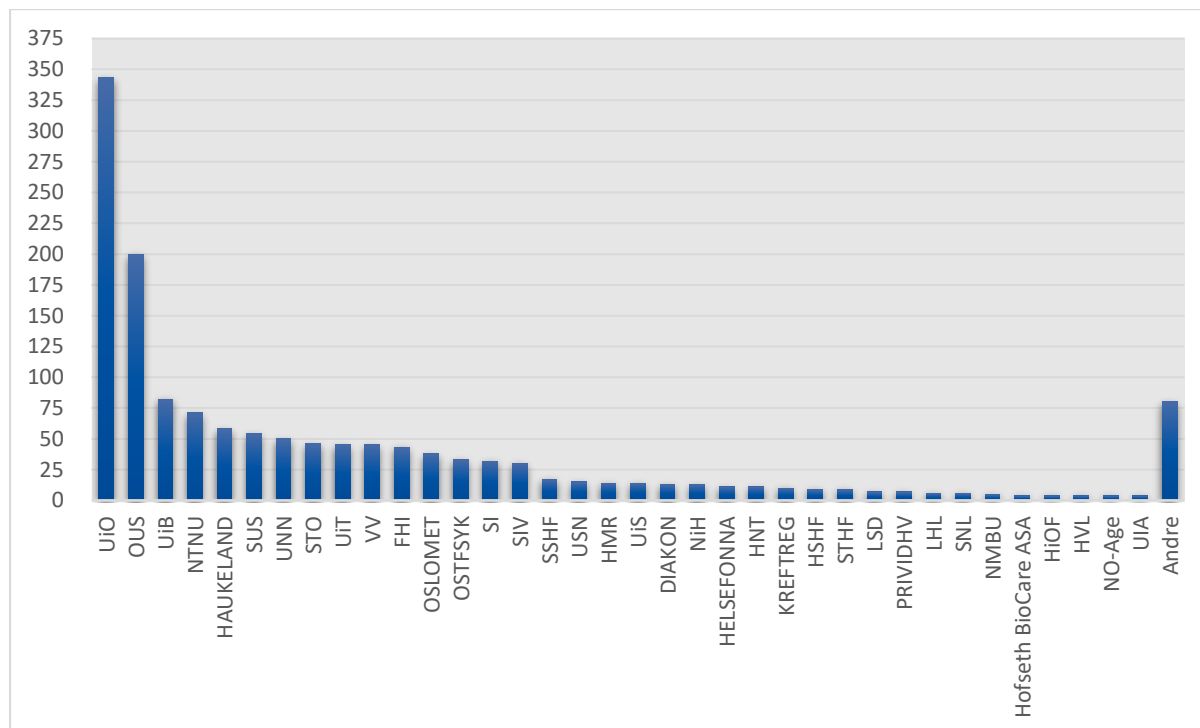
Table 7: Publishing researchers divided by gender and age per division

	Men		Women	
	Number	Avg. age	Number	Avg. age
Division of Paediatric and Adolescent Medicine	7	45.6	11	42.6
Division of Diagnostics and Technology	24	52,0	40	49,7
Division of Research and Innovation	15	45,7	18	48,4
Division of Surgery	22	50,7	13	46,5
Division of Gynaecology and Obstetrics	1	65	12	47
Division of Medicine	69	48,0	68	43
Orthopaedic Clinic	18	50,7	4	40,5
Division of Mental Health	10	59,1	23	47,5
Division of Medicine and Health Science	0	-	2	52,5

6. National cooperation

Figure 7 shows an overview of Norwegian institutions that researchers at Akershus University Hospital have published together with in 2022. Co-publishing with the University of Oslo and Oslo University Hospital is currently the most common.

Figure 7: Joint publication with Norwegian institutions



Description of the abbreviations in the figure above:

- | | |
|--|--|
| <ul style="list-style-type: none"> • UiO - University of Oslo • OUS – Oslo University Hospital HF • UiB - University of Bergen • NTNU – The Norwegian University of Science and Technology • HAUKELAND – Health Bergen HF - Haukeland University Hospital • SUS – Health Stavanger HF - Stavanger University Hospital • UNN – University Hospital of Northern Norway HF • STO – St. Olav’s Hospital HF • UiT – UiT Norway’s Arctic University • VV – Vestre Viken HF • FHI – Institute of Public Health • OSLOMET • OSTFSYK – Østfold Hospital Trust • SI – Innlandet Hospital Trust • SIV – Hospital in Vestfold Trust • SSHF – Sørlandet Hospital Trust • USN – The University of Southeast Norway • HMR – Health Møre and Romsdal | <ul style="list-style-type: none"> • UiS – University of Stavanger • DEAKON – Deacon Home Hospital • NiH – Norwegian Sports Academy • HELSEFONNA – Helse Fonna • HNT – Health Nord-Trøndelag • KREFTREG - Cancer register - Institute for population-based cancer research • HSHF – Helgeland Hospital Trust • STHF – Telemark Hospital Trust • LSD – Lovisenberg Diakonale Hospital • PRIVIDHV – Private non-profit in Helse Vest • LHL – The LHL clinics • SNL – Norwegian Air Ambulance Foundation • NMBU – Norway’s University of the Environment and Life Sciences • Hofseth BioCare ASA • HiOF – Østfold University College • HVL – The University of Western Norway • NO-Age – The Norwegian Centre on Healthy Ageing • UJA – University of Agder |
|--|--|

7. International cooperation

In 2022, 224 articles or 52 per cent of the published articles were joint publications with foreign partners. As Figure 8 shows, the number of articles that include international collaboration has been stable in recent years. Figure 9 shows countries with which we have international co-publications. The USA and Great Britain are the countries with which we have the most joint publications.

Figure 8: Number of publications from Ahus with international collaboration

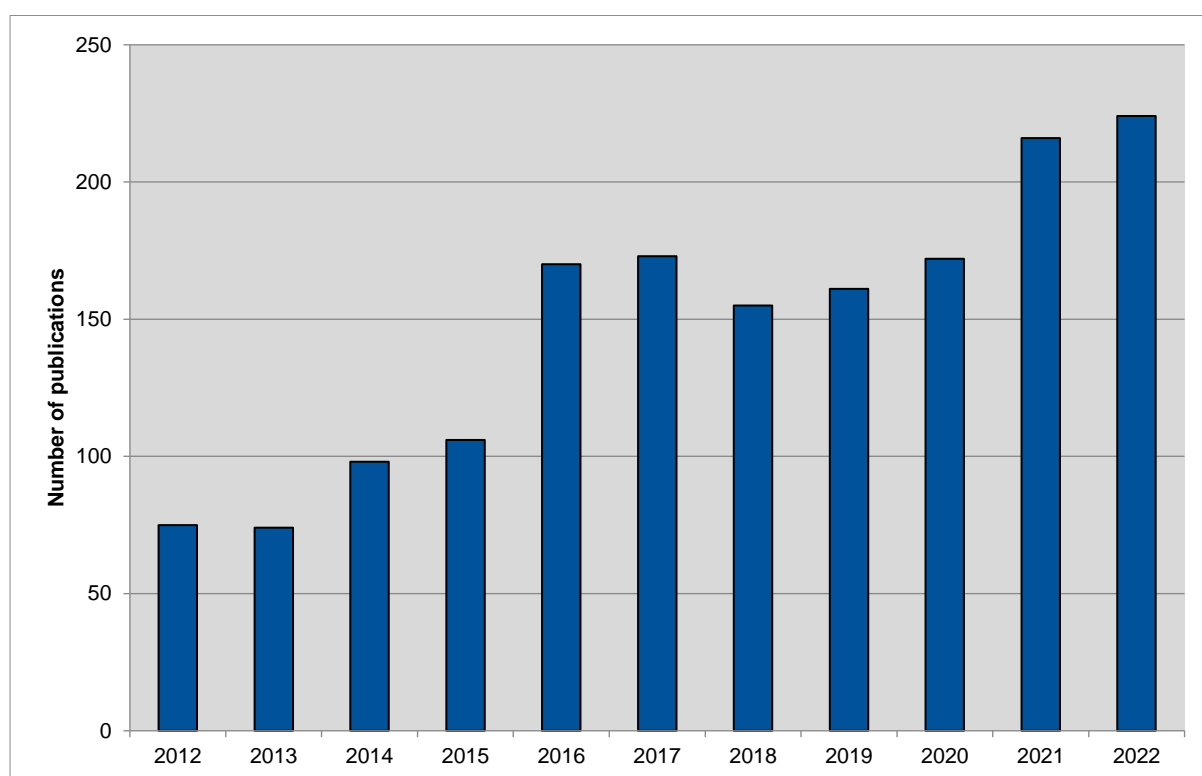
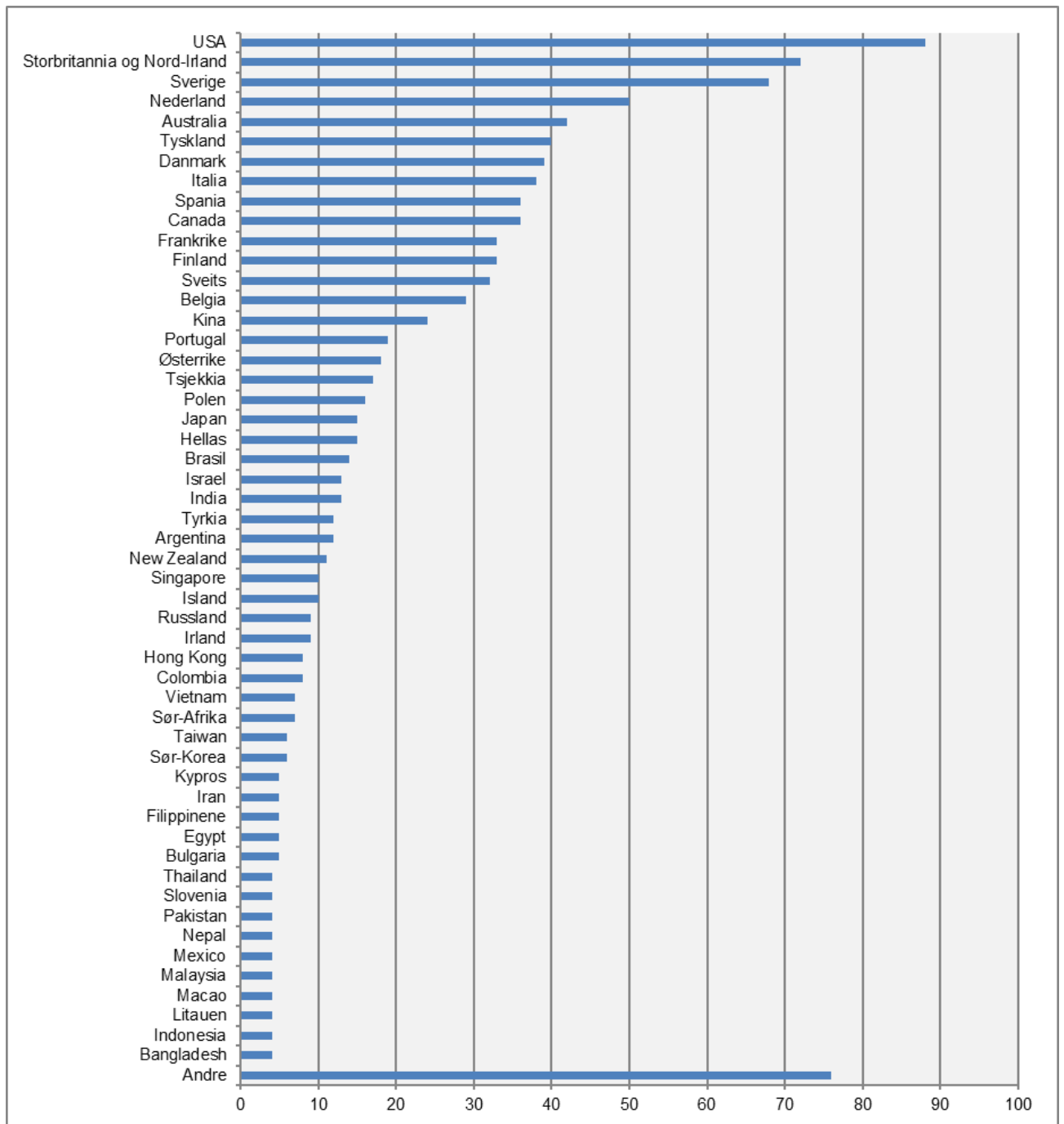


Figure 9: Co-publishing internationally



8. Resource use

In 2022, a total of 200.7 man-years were used for research and development work (R&D report to Statistics Norway (formerly NIFU) for 2021). Of this, research man-years accounted for 187.2. In addition, 50.7 man-years are associated with UiO. Ahus also has employees who have side positions/doctoral scholarships at OsloMet and OsloMet has employees with side positions at Ahus.

The research support at the hospital is mainly financed by Ahus and partly by UiO. The research support includes finance, personnel, internal control, medical library, clinical studies, clinical research polyclinic, biobank /ebiobank, innovation, research law, digital research infrastructure, statistics and Grants.

Table 8 shows the distribution of research man-years and the number of employees per division/clinic at Ahus. Table 9 shows the distribution of man-years and employees associated with Campus Ahus, UiO.

Table 8: Divisional distribution of man-years and employees at R&D, Akershus University Hospital 2022

Ahus 2022	DDT	PSYK	KIR	Orto	MED	KK	BUK	FID/HØKH	FID/Forskning s-støtte/andre	Analyse/ Datafangst	Medisin og helsefa	Totalt
Årsverk internt finansiert	12,39	25,14	8,38	3,82	50,78	3,25	5,70	7,55	17,33	0,40	1,19	135,93
<i>Antall ansatte</i>	45,00	67,00	52,00	16,00	125,00	11,00	16,00	14,00	24,00	1,00	4,00	375,00
Årsverk eksternt finansiert	4,01	8,39	2,90	2,08	28,45	2,11	5,44	9,47	1,94	0,00	0,00	64,79
<i>Antall ansatte</i>	9,00	28,00	7,00	6,00	64,00	10,00	16,00	20,00	4,00	0,00	0,00	164,00
Ahus totalt årsverk	16,40	33,53	11,28	5,90	79,23	5,36	11,14	17,02	19,27	0,40	1,19	200,72

Table 9: Divisional distribution of man-years and employees in scientific positions. Campus Ahus, UiO, 2022

UiO - Campus Ahus 2022	DDT	PSYK	KIR	Orto	MED	KK	BUK	HØKH	Forskning s-støtte*	Analyse/ Datafangst *	Adm ansatte *	Totalt
Årsverk internt finansiert	1,4	0,4	4,5	1,6	15,0	1,1	3,6	1,7	5,0	1	2,5	37,8
<i>Antall ansatte internt finansiert</i>	7,0	2,0	11,0	4,0	29,0	4,0	5,0	3,0	5,0	1	3	74,0
Årsverk eksternt finansiert	0,2	0,2	0,6	0,0	7,2	0,0	0,2	3,0	1,5	0	0	12,9
<i>Antall ansatte eksternt finansiert</i>	1,0	1,0	3,0	0,0	15,0	0,0	1,0	4,0	4,0	0	0	29,0
Årsverk UiO totalt	1,6	0,6	5,1	1,6	22,2	1,1	3,8	4,7	6,5	1,0	2,5	50,7
<i>UiO totalt antall ansatte</i>	8,0	3,0	14,0	4,0	44,0	4,0	6,0	7,0	9,0	1,0	3,0	103,0

*

Research support includes the engineers at EpiGen as well as the IT manager.

Analysis/data capture includes the two UiO-employed advisors.

Administrative staff are univ admin Campus Ahus.

Table 10 shows the development in the number of man-years over the past nine years.

Table 10: Development of divisional distribution of man-years for R&D at Ahus and Campus Ahus for the period 2014 – 2022

	DDT	PSYK	KIR	Orto	MED	KK	BUK	FID	Forsknings- støtte**	Analyse/ Datafangst	Adm ansatte*	Medisin og helsefag- divisjonen	TOTAL Forskning og utvikling
Ahus årsverk													
2014	13	30,6	4,4	4,9	55,6	6,9	9	19,7	9,6				153,7
2015	11	29,5	5,3	7,4	64,8	6,1	12,8	21,9	10,5				169,3
2016	17,9	47,7	6,4	6,2	71,2	5,4	11,4	19,9	5,8	3,2			195,1
2017	19,3	44	6,1	6,7	69,3	6,3	10	23,4	5,8	3		0,2	194
2018	19,3	44	6,1	6,7	69,3	6,3	10	23,4	5,8	3		0,2	194
2019	15,6	29,8	10,1	5,9	73,9	6,9	7,8	18,1	13,8	0,3		1,4	183,6
2020	15,6	29,8	10,1	5,9	73,9	6,9	7,8	18,1	13,8	0,3		1,4	183,6**
2021	16,4	33,53	11,28	5,9	79,23	5,36	11,14	17,02	19,27	0,4		1,19	200,72
2022	16,4	33,53	11,28	5,9	79,23	5,36	11,14	17,02	19,27	0,4		1,19	200,72
UiO årsverk													
2014	1,4	0,4	6,2	3,2	16,7	1,9	1,4	2,8	9,8				43,8
2015	1,4	0,4	7,7	2,9	20	1,4	1,4	1,6	10,5				47,3
2016	1,4	0,4	7	2,7	19,3	1,6	2,4	2,8	6,4	2	2,7		48,7
2017	1,6	0,6	16	5	22,3	3	4	5	6	2	2,5		50,6
2018	1,6	0,6	16	5	22,3	3	4	5	6	2	2,5		50,6
2019	2	0,6	5,2	1,7	16,4	1,6	3,6	2,9	6	2	2,5		44,5
2020	2	0,6	5,2	1,7	16,4	1,6	3,6	2,9	6	2	2,5		44,5
2021	1,6	0,6	5,1	1,6	22,2	1,1	3,8	4,7	6,5	1	2,5		50,7
2022	1,6	0,6	5,1	1,6	22,2	1,1	3,8	4,7	6,5	1	2,5		50,7

* In 2013 Orto was organised under the Division of Surgery.

** This includes the research engineers at EpiGen, statisticians and IT support. Data capture includes the two UiO employee advisors.

*** Same figures as in 2019, there was no reporting of figures to NIFU/SSB in 2020.

DDT:	Division of Diagnostics and Technology
PSYK:	Division of Mental Health
KIR:	Division of Surgery
ORTO:	Orthopaedic Clinic
MED:	Division of Medicine
KK	Division of Gynaecology and Obstetrics
BUK:	Division of Paediatric and Adolescent Medicine
FID:	Division of Research and Innovation

9. Granting of external research funds

In 2022, Akershus University Hospital was awarded a total of KR 127.5 million in external research funds; among others from Health South-East RHF, the Research Council of Norway, and the National Association for Public Health and the Cancer Society. Figure 10 shows external funding broken down by funding source from 2011 to 2022. Tables 11 and 12 show the allocation per project.

Figure 10: External funding broken down by funding source 2011 - 2022

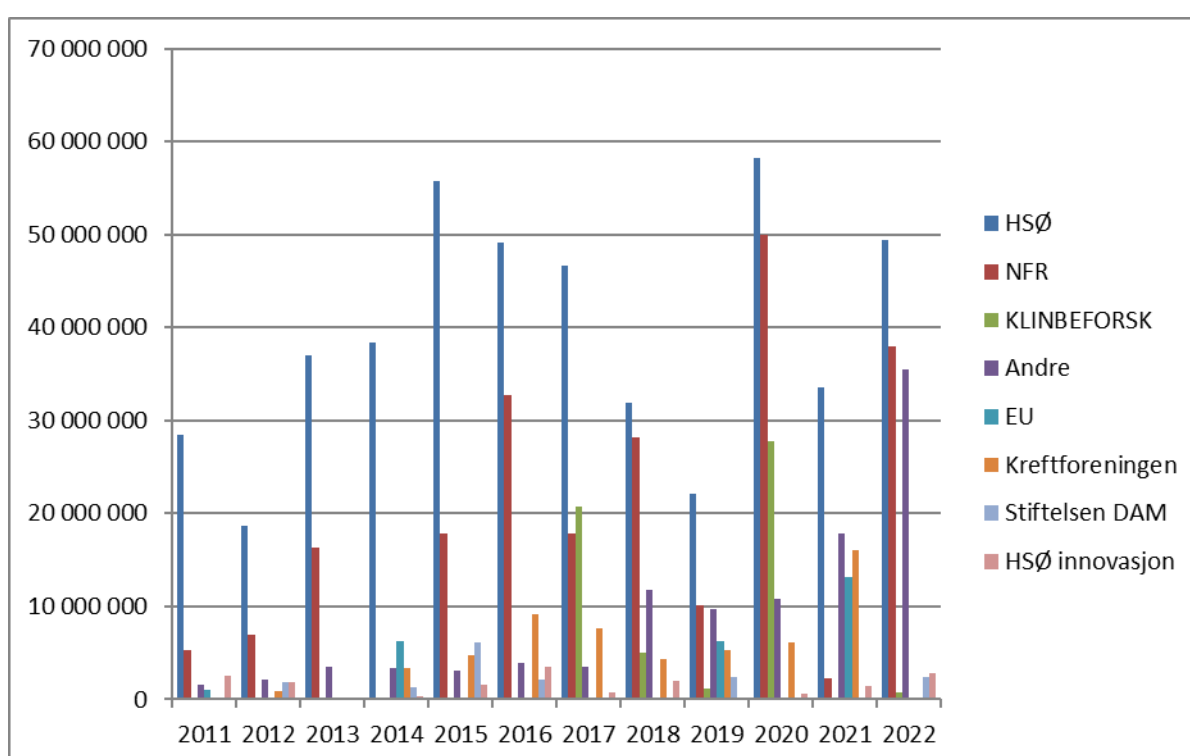


Table 11: Projects that have been granted external research funding for PhD fellows, post doc fellows and major operating grants

Project title	Project Manager	Division/Clinic	Funded by:	Allocation 2022
MESSVESS-AI: Machine learning for automatic creation of patient-specific vascular maps during colon cancer surgery	Dejan Ignjatovic	Division of Surgery, Department of Gastrointestinal Surgery	HSØ Innovation funds	KR 500,000.00
Anterior cruciate ligament reconstruction in children	Guri Ranum Ekås	Orthopaedic Clinic	Sophies Minde Orthopaedics	KR 535,124.00

SAINT: Safe Induction of Labor Trial	Camilla Haavaldsen	Division of Gynaecology and Obstetrics	Klinbeforsk via collaboration agreement with OUS	KR 731,327.00
Strength training with electrical stimulation for women with weak pelvic floor muscles. A randomized controlled pilot study.	Ingeborg H Brækken	Division of Surgery , Pelvic Center	Physiofond	KR 816,000.00
Home birth - Individually adapted home-based maternity care	Andrea Solnes Miltenburg	Division of Gynaecology and Obstetrics	HSØ Innovation funds	KR 950,000.00
Integrated health services for the frail elderly	Anette Melsnes Skogvold	Division of Medicine and Health Science, Dept. Interaction and health promotion	Innovation funds from HSØ	KR 985,000.00
A solution to the kneecap fracture problem	Hendrik Frølich Birdsong	Orthopaedic Clinic	Novo Nordisk Foundation	KR 992,000.00
A new generation of patient-reported quality measurements within mental health care and interdisciplinary specialized substance abuse treatment	Ketil Hanssen-Bauer	Division of Mental Health, R&D	The Research Council of Norway via cooperation agreement with FHI	KR 1 058 608,00
ProBio: An outcome-adaptive and randomized multi-arm biomarker driven study in patients with metastatic prostate cancer	Jan Oldenburg	Division of Medicine, Department of Oncology	Karolinska Institutet, Department of Medical Epidemiology and Biostatistics	KR 1 200 000,00
Randomized phase III trial investigating the survival benefit of adding thoracic radiotherapy to durvalumab immunotherapy plus chemotherapy in extensive stage small-cell lung cancer (TRIPLEX)	Kirill Neumann	Division of Medicine , Lung Department	Astra Zeneca via collaboration agreement with NTNU.	KR 1,200,000.00
Biomarkers of subclinical myocardial injury and dysfunction in HUNT-COVID-19	Torbjørn Region	Division of Medicine , Department of Cardiology	ABBOTT	KR 1,531,800.00
Establishment of regional infrastructure for pragmatic clinical studies at Akershus University Hospital HF	Magnus Lyngbakken	Division of Research and Innovation	HSØ	KR 2,000,000.00
Turning up mitophagy to blunt Alzheimer Tau pathologies	Evandro Fei Fang	Division of Medicine , EpiGen	Cure Alzheimer's Fund	KR 2,088,845.00
Long-term effects after coronavirus infection in young people	Vegard Wyller	Division of Paediatric and Adolescent Medicine	The DAM Foundation via Recovery Norway	KR 2,343,000.00
Norwegian EQ-5D-5L valuation study completion	Kim Rand	Division of Research and Innovation, HØKH	EuroQol Research Foundation	KR 2 343 060,00
A combination of artificial intelligence and wet lab techniques to identify robust mitophagy inducers as drug candidates for Alzheimer's disease and other neurodegenerative diseases	Evandro Fei Fang	Division of Medicine, EpiGen	VitaDao via Inven2	KR 2 397 750,00

Restoring mitophagy to inhibit Tau seeds-induced pathology in Alzheimer's disease	Domenica Caponio	Division of Medicines , EpiGen	The National Association	KR 2,820,000.00
Cooperation agreement with SpinChip Diagnostics	Helge Røsjø	Division of Research and Innovation	SpinChip Diagnostics	KR 3,486,472.00
ACE 5 Study: Lung Cancer Screening Plus Program to reduce cardiovascular morbidity and mortality	Helge Røsjø	Division of Research and Innovation	HSØ	KR 3,561,000.00
Effect of NicotinAmide Riboside on myocardial and skeletal muscle Injury and function in patients with metastatic breast cancer receiving Anthracyclines (NARNIA)	Torbjørn Omland	Division of Medicine	HSØ	KR 3 561 000,00
RCT: Brief Intervention for medication misuse among elderly	Anders Christofer Lundqvist	Division of Research and Innovation (HØKH)	HSØ	kr 3 561 000,00
Patient safety during robotic surgery. Protecting the brain during modern prostate surgery.	Signe Søvik	Division of Surgery	HSØ	kr 3 561 000,00
What works for the patients? A prospective, longitudinal cohort study of treatment of psychosis.	Kristin Sverdvik Heiervang	Division of Mental Health	HSØ	kr 3 561 000,00
Challenging the paradigm of autism as primarily heritable: The impact of socio-demographic factor	Andrea Kagge Wister	Division of Paediatric and Adolescent Medicine	HSØ	kr 3 561 000,00
Linking mycobacteria infection, BCG vaccination and post vaccination immune responses to Amyotrophic Lateral Sclerosis and Multiple Sclerosis risk: A population based cohort study	Ola Nakken	Division of Medicine	HSØ	kr 3 564 000,00
Prediction of disease course and treatment escalation in ulcerative colitis through gut microbiota profile recognition (UC study)	Stephan Brackmann	Division of Medicine, Digestion	The Research Council via collaboration agreement with Genetic Analysis	kr 3 780 000,00
Towards elimination of cervical cancer: DNA methylation analyses to improve specificity and reduce overtreatment related to HPV-based screening	Mari Nygård	The cancer registry	HSØ	KR 4,707,000.00
wideSN	Henrik Schirmer	Division of Medicine , Department of Cardiology	The Research Council via cooperation agreement with CardiNor AS	KR 4,736,000.00
New blood test for diagnosing early stage Parkinson's Disease	Tormod Fladby	Division of Medicine , Neurology	The Research Council of Norway via cooperation agreement with Pre Diagnostics AS	KR 4,950,000.00
PredARIA : A new biomarker system to predict ARIA side effects	Tormod Fladby	Division of Medicine , Neurology	The Research Council of Norway via cooperation agreement with Pre Diagnostics AS	KR 5,000,000.00

Assisted Peptide and Protein Clearance in Alzheimer's Disease	Tormod Fladby	Division of Medicine , Neurology	The Balder Foundation	KR 5,065,000.00
Evaluation of SARS-CoV-2 vaccination of immunosuppressed and transplanted patients and revised vaccine guidelines for poor responders	Frode H. Eidset	Division of Medicine , Digestion	CEPI via cooperation agreement with OUS	KR 6,300,000.00
The NorTrials initiative for the health institutions in South-Eastern Norway	Helge Røsjø	Division of Research and Innovation?	HSØ	KR 7,500,000.00
NorHEAD	Kjersti Vetvik (Espen S. Kristoffersen)	Division of Medicine , Neurology	The Research Council via collaboration agreement with NTNU (FKB centre)	KR 8,323,000.00
Inequalities in aging well and the significance of transitions in later life (TRILL)	Marijke Veenstra	Division of Research and Innovation, HØKH	The Research Council	KR 9,282,000.00
NorTrial's center for cardiovascular diseases	Peder Langeland Myhre	Division of Medicine , Department of Cardiology	HSØ	KR 10,000,000.00

Table 12: Projects granted smaller grants from external funding sources

Project title	Project Manager	Division/Clinic	Funded by:	Allocation 2022
Research funds from Ødegaard's and Frimann-Dahl's funds to promote Norwegian radiological research	Joana Reis	Division of Diagnostics and Technology	Ødegaard and Frimann-Dahl's fund	KR 40,000.00
Save the meniscus – The Bucket Handle study. Repair technique, functional outcome, and prognostic factors	Axel Szava Petterson	Orthopaedic Clinic	Smith and Nephew (awarded at the Winter Meeting)	KR 40,000.00
Genetic investigation of predictive biomarkers for colon and rectal immunotherapy	Sebastian Meltzer	Division of Medicine , cancer department	Fam. Blixen Fund	KR 40,000.00
Effect of Agaricus Blazei Murill based on mushroom extract for asthma and allergies	Faiza Mahmood	Division of Diagnostics and Technology, IMTRA	Norwegian Association for Immunology and Transfusion Medicine (via The Norwegian Medical Association)	KR 50,000.00
Post imaging contrast recovery from patient urine pilot project	Line Ausland	Division of Diagnostics and Technology, Image diagnostics	GE Healthcare	KR 75,000.00
Intracellular and extracellular characterization on the tumor/tumor microenvironment coagulome in breast cancer patients	Shakila Jabeen	Division of Medicine , EpiGen	National Network for Breast Cancer Research via Vestre Viken	KR 80,000.00
Research funds from Supreme Court lawyer Per Rygh's grant	Ingeborg Steinholt	Division of Surgery	Supreme Court lawyer Per Rygh's	KR 90,000.00

			scholarship (UNIFOR)	
Functional investigations of treatment effect for metastatic colon and rectal cancer	Sebastian Meltzer	Division of Medicine , cancer department	Astrid and Birger Torstedt's grant to fight cancer	KR 100,000.00
Research funds to carry out NMR of surgical preparations from patients operated on for bowel cancer	China Mari Bakke	Division of Medicine , cancer department	Astrid and Birger Torstedt's grant to fight cancer	KR 100,000.00
Quality control of analysis, sub-project of Granins as biomarkers in suspected acute decompensated heart failure (ACE2)	Torbjørn Omland	Division of Medicine , Department of Cardiology	SpinChip Diagnostics AS	KR 100,000.00
Heart muscle function	Eirik Nestaas	Division of Paediatric and Adolescent Medicine	Transferred operating assets from SIV (original allocation from Fam Blix fund)	KR 100,000.00
Research Grant; UCB's research grant for younger neurologists and winner of Sanofi's research grant in MS research	Rune Hoglund	Division of Medicine , Neurology	Sanofi-aventis Norge AS. This also includes scholarships awarded at Nevrodagen 2022 (50,100 KR)	KR 100,000.00
Tear-off fracture of the cruciate ligament attachment in children. How is it actually going? (Award from Grythfeldt)	Maren Gundersen	Orthopaedic Clinic	Dr T Grythfeldt and Mrs Research fund	KR 130,470.00
Nordic seminar on hepatitis C	Olav Dalgard	Division of Medicine , Infection medicine	The Research Council of Norway	KR 149,000.00
"Genetics in dilated cardiomyopathy: significance and molecular mechanisms of ADAMTSL3 variants"	Ida Gjervold Lunde	Division of diagnostics and technology	The National Association	KR 200,000.00
Return to Work – How to Prevent Opioid-induced Neck and Back Pain?	Johannes Gjerstad	Mental Health Care	STAMI	KR 200,000.00
Biomarkers that predict the spread of bowel cancer	Anne Hansen Ree	Division of Medicine , cancer department	The Research Council of Norway via Inven2	KR 200,000.00
Positioning and project establishment support (PES2022)	Vegard Bruun Wyller	Division of Paediatric and Adolescent Medicine	The Research Council via OUS	KR 200,000.00
Uracil Base Excision Repair as a tumor enabler in APOBEC expressing tumors – Implications for B-cell lymphomagenesis	Hilde L Nilsen	Division of Medicine , EpiGen	The Norwegian Cancer Society via cooperation agreement with UiO	KR 220,000.00
Variations in trajectories, utilization and costs in Norwegian municipal in-patient acute care units – MipAC	Hilde Lurås	Division of Research and Innovation, HØKH	The Research Council of Norway via collaboration agreement with NTNU	KR 233,000.00

A phase 3 multicenter, randomized, prospective, open-label trial of ibrutinib monotherapy versus fixed-duration venetoclax plus obinutuzumab versus fixed duration I ibrutinib plus venetoclax in patients with previously untreated chronic lymphocytic leukemia (CLL)	Hoa Thi Tuyet Tran	Division of Medicine, hematologic disorders	University of Cologne through a collaboration agreement with St. Olav's Hospital	kr 233 040,00
Target CRC	Sebastian Meltzer	Division of Medicine , cancer department	Oncosyne AS	KR 240,000.00
Early detection of heartbeats with the help of artificial intelligence	Ole Morten Rønning	Division of Medicine , Neurology	Cooperation agreement with Helse Stavanger (funding from Helse Vest)	KR 240,000.00
PARASTOP-Paracetamol with Strong Opioids: A randomized, double-blind, parallel-group non-inferiority phase III withdrawal trial of paracetamol versus placebo in conjunction with opioids for moderate to severe cancer-related pain	Olav Magnus Fredheim	Division of Surgery , Palliative	HSØ (Open project support) via cooperation agreement with OUS	KR 250,000.00
The challenging behavioral phenotype of Smith Magenis Syndrome - a preparation for a PhD project.	Monica Stolen Dønnum	Division of Mental Health, Adult Habilitation	National Competence Center for Rare Diagnoses (NKSD, OUS)	KR 265,000.00
Plate fixation versus nailing of 3 and 4 part shoulder fractures. A prospective randomized study.	Annette KB: Wikerøy	Orthopaedic Clinic	Sophies Minde Orthopedics	KR 278,133.00
Lumbar fusion vs interdisciplinary rehabilitation. A multicenter RCT.	Sverre Mjønes	Orthopaedic Clinic	Sophies Minde Orthopedics	KR 348,654.00
Validation lung cancer risk model	Haseem Ashraf	Division of diagnostics and technology	NTNU	KR 350,000.00
Identification of factors of importance for treatment failure and patient satisfaction after torn Achilles tendon: Minimum 5-year follow-up of patients randomized to non-surgical treatment, open surgery or mini-open surgery	Tor Kristian Molstad Andresen	Orthopaedic Clinic	Sophies Minde Orthopedics	KR 374,802.00
Distance in medial tibiotalar distance, in lateral ankle fractures, on standing and supine images	Haseem Ashraf	Division of Diagnostics and Technology, BDA	Sophies Minde Orthopedics	KR 393,400.00
Integrated healthcare services for frail elderly people with complex needs	Bendik Westlund Hegna	Enterprise development,	HSØ Innovation funds	KR 400,000.00
The Norwegian Node of the International Neuroinformatic Coordinating Facility*	Tormod Fladby	Division of Medicine , Neurology	The Research Council of Norway via cooperation agreement with UiO	KR 455,000.00
Collaboration agreement Novartis EKG AI	Jesper Ravn	Division of Medicine , Department of Cardiology	Novartis	KR 495,000.00
Medical consulting services by being an advisory member of the steering committee for one of the RSW studies	Ellen Brodin	Division of Medicine , Blood diseases	Pfizer	KR 45,000 (Annual invoicing)

Better hearing habilitation with detailed speech sound testing	Juha Silvola	Division of Surgery , ENT	The DAM Foundation via cooperation agreement with OUS	KR 4,165 (Annual invoicing)
A randomized phase II, open-label, multicentre study investigating efficacy and safety of anti-PD-1/PD-L1 treatment +/- UV1 vaccination as first line treatment in patients with inoperable advanced and metastatic non-small cell lung cancer (LUNGVAC)	Anne Siri Gløersen	Division of Medicine , Lung Department	Western Cove	0-, (Annual invoicing)

*Extension of a project from 2017, where a new allocation has been made.

10. Internal research funds

Once a year, internal research funds are advertised for which employees can apply. The applications are assessed for quality by external peers.

In 2022, a total of NOK 20,958,046 was applied for in 57 applications. The total sum allocated was 8 million distributed over 25 projects (see table 13). Applicants are encouraged to use the feedback from their colleagues to improve their applications when applying for research funding from South-Eastern Norway Regional Health Authority and other external sources.

Table 13: Projects awarded internal research funds 2022

Project title	Project Manager	Division/Clinic	Allocated amount
Spatial-temporal evaluation of mitophagy in post-mortem brain tissues from AD patients covering Braak Staging I-VI and normal controls	Evandro Fei Fang	Division of Medicine	180 000
Uracil Base Excision repair as a tumour enabler in APOBEC expressing tumours – Implications for B-cell malignancies	Hilde Loge Nilsen	Division of Medicine	250 000
T follicular helper cells as disease-drivers in multiple sclerosis	Andreas Lossius	Division of Medicine	250 000
Linking REST in mitophagy and Alzheimer's disease	Maria Jose Lagartos-Donate	Division of Medicine	500 000
Assessing right colon cancer patients with metastatic central (D3) lymph nodes. Identifying the group benefiting from extended mesenterectomy and evaluation of radiological, pathological and genetics related prognostic factors.	Dejan Ignjatovic	Division of Surgery	500 000
Hormonal adaptation and resistance in locally advanced breast cancer patients	Jürgen Geisler	Division of Medicine	250 000
Novel Placental Diagnostic Tools for Real Time Assessment of Human Placental Development and Function in Pregnancy	Anne Eskild	Division of Gynaecology and Obstetrics	250 000
Communicating Medical INFORMATION to patients: An evidence-based toolbox of strategies (COME INFO Project)	Pål Gulbrandsen	Division of Research and Innovation	161 000
Plan D - a randomized controlled trial of vitamin D supplementation in psychotic disorders including the use of digital measures	Mari Nerhus	Division of Mental Health	250 000
ADAMTSL3 proteins: A fibroblast angle to understanding genetic variants in dilated cardiomyopathy	Ida Gjervold Lunde	Division of Diagnostics and Technology	500 000
Vaginal delivery; Have we overlooked injuries that may cause sexual dysfunctions?	Marie Ellström Engh	Division of Gynaecology and Obstetrics	250 000
Tibial Spine Avulsion fractures in children – Epidemiology, treatment and outcomes	Guri Ranum Ekås	Orthopaedic Clinic	500 000
"Picking the bad mole" - from primary melanomas to distant metastasis	Henrik Jespersen	Division of Medicine	500 000
Precision therapy versus standard therapy in Acute Myeloid Leukaemia and Myelodysplastic syndrome in elderly (PALM)	Anders Dahm	Division of Medicine	250 000
Secretoneurin: biomarker and therapeutic strategy in cardiovascular disease	Anett Hellebø Ottesen	Division of Research and Innovation	250 000

Project title	Project Manager	Division/Clinic	Allocated amount
Treating patients with anal incontinence using Remote Patient Monitoring (RPM) during a pandemic	Catherine J. Teig	Division of Surgery	70 000
Fractures of the proximal humerus Two Prospective Randomized Controlled Trials on the treatment	Rune Bruhn Jakobsen	Orthopaedic Clinic	250 000
Circulating cell-free DNA in breast cancer: methylation patterns lead to potential prognostic and predictive bio markers.	Jovana Klajic	Division of Medicine	500 000
Detection of renal fibrosis burden and prediction of kidney function deterioration: The role of kidney MRI and markers of accelerated renal aging.	My Svensson	Division of Medicine	250 000
"The dancing heart: A pilot study using computer vision and machine learning to assess myocardial function"	Siri Lagethon Heck	Division of Diagnostics and Technology	500 000
Antibiotics in viral community acquired pneumonia (ARCADE)	Olav Dalgard	Division of Medicine	250 000
Identifying modifiable risk factors for amyotrophic lateral sclerosis	Ola Nakken	Division of Medicine	500 000
Disease panorama and challenges in patients with acute dyspnea: The impact of novel and established cardiac biomarkers	Magnus Nakrem Lyngbakken	Division of Medicine	500 000
Epidemiology and outcomes of sarcoidosis in Norway: a national register-based cohort study	Knut Stavem	Division of Medicine	250 000

11. Outstanding Research Award

Each year, awards for outstanding research are awarded to three articles with the first author from Ahus. An important purpose of this is to stimulate good research and highlight the qualitatively good research that is produced and published by the hospital's staff. The three managers of the UiO clinics at Ahus nominate a ranked list of three articles each on the basis of set down criteria. The final decision is made in a coordination meeting between Ahus and Campus Ahus. The prize winners receive flowers, a diploma and NOK 10,000 which can be used for operational travel/conference attendance or the like.

The award winners in 2022 was Nazli Bahrami (Division of Surgery), Shakila Jabeen (Med division), Nina H. Schultz (Division of Medicine) and Christofer Lundqvist (Division of Research and Innovation)



From left: Nazli Bahrami, Christopher Lundqvist, Shakila Jabeen and Nina H. Schultz.

Announcement of the winners

Clinic for Health Service Research and Psychiatry:

Socheat Cheng, Tahreem Ghazal Siddiqui, Michael Gossop, Torgeir Bruun Wyller, Espen Saxhaug Kristoffersen and Anders Christofer Lundqvist.

The patterns and burden of multimorbidity in geriatric patients with prolonged use of addictive medications

DOI: <https://link.springer.com/article/10.1007/s40520-021-01791-5>

The article focuses on a clinically important area; elderly, multimorbid patients' use of addictive drugs. The study is based on data collected at the geriatric department and has so far resulted in 2 PhD degrees (Cheng and Siddiqui) and a 3rd is underway. The data set also forms the basis for the development of an intervention to detect inappropriate medication use among elderly patients.

Strong painkillers, sedatives and sleep-inducing drugs are recommended to be used only with great care in elderly patients due to the risk of side effects and addiction. At the same time, many

older people have several illnesses that lead to the use of several medications, which increases the risk of medication errors and side effects.

We have looked at relationships between the degree of morbidity (multimorbidity) and long-term use of these strong medicines among elderly patients admitted to somatic wards at Ahus. We found a strong association between multimorbidity and the use of such medications even when adjusting for factors such as age, gender, anxiety, depression and pain. The most common were the drugs to induce sleep, followed by the combined use of several drugs and the use of strong painkillers. Simultaneous use of several medications was directly correlated with the degree of multimorbidity. The organ systems that were most strongly associated with long-term use were the liver, gastrointestinal tract, nervous system and muscle/skeleton.

Our conclusion is that there is every reason to be extra observant of the risks associated with long-term use of these strong medicines among the elderly, especially within specialties that deal with diseases of the liver, stomach/intestinal system, nervous system and musculoskeletal disorders.

Clinic for surgical subjects:

Nazli Bahrami , Shakila Jabeen, Andliena Tahiri , Torill Sauer, Hilde Presterud Ødegård, Stephanie Beate Geisler, Berit Gravdehaug , Laurens Cornelus Reitsma , Knut Selsås , Vessela N. Kristensen and Jürgen Geisler.

Lack of cross-resistance between non-steroidal and steroidal aromatase inhibitors in breast cancer patients: the potential role of the adipokine leptin

DOI: <https://link.springer.com/article/10.1007/s10549-021-06399-x>

Nazli Bahrami, Shakila Jabeen and colleagues have conducted a randomized study in which they have compared letrozole or exemestane in the treatment of patients with breast cancer. This year's winner shows that it is possible to carry out a randomized clinical controlled study of high quality, even if you come from a small specialist field. The protocol was published in 2019, and the final results of the study published in 2021. This testifies to a great ability to implement and shows that interdisciplinary collaboration, across departments, is essential for success in research projects. The study is of great importance for improving the clinical environment and offering the best treatment to patients.

Aromatase inhibitors are a group of drugs that inhibit oestrogen production and therefore play a key role in the treatment of hormone-sensitive breast cancer. There are two main groups of aromatase inhibitors: the non-steroidal inhibitors (for example letrozole) and steroidal inactivators (exemestane).

Patients can develop resistance to the active substances, which can lead to resistance to drugs in the same group. This is called cross-resistance. In such cases, the cancer may progress, and a switch to a drug in the other group may lead to stabilization of the cancer. The explanation for this phenomenon of lack of cross-resistance is so far unknown, and cannot be explained on the basis of the theory of more potent inhibition by oestrogen.

In our study, we have taken a closer look at other therapeutic effects of letrozole and exemestane by analysing levels of cytokines during ongoing treatment. Our results show that serum levels of leptin were significantly lower during treatment with exemestane. Leptin is a so-called adipocytokine which, among other things, regulates body weight and is an important contributing factor in obesity and in the conversion of oestrogen in the body.

Based on this, we consider that exemestane may have a more central role in the treatment, especially in postmenopausal, obese patients who have high leptin values.

Clinic for internal medicine and laboratory subjects:

Nina Haagenrud Schultz, Ingvild Hausberg Sørvoll , Annika Michelsen, Ludvig Andre Munthe, Fridtjof Lund-Johansen, Maria Therese Ahlen , Markus Wiedmann , Anne Hege Aamodt, Thor Håkon Skattør, Geir Erland Tjønnfjord and Pål Andre Holme.

Thrombosis and thrombocytopenia after CHAdOx1 NCoV-19 vaccination

DOI: 10.1056/NEJMoa2104882

The article revealed the mechanism behind a rare but very serious side effect of the ChAdOx1 nCoV-19 adenoviral vector vaccine against covid 19. The article was published in the world's highest ranked medical journal with an impact factor of 91, and was commented on in an editorial in the same issue. The article was of great importance for the vaccine strategy nationally and internationally.

In March 2021, five patients were admitted with a similar life-threatening illness characterized by severe thrombosis in the head or abdomen in addition to a very low platelet count. Four of them also had brain haemorrhage. They had in common that they were all young, healthy healthcare workers who had received the vector-based covid-19 vaccine ChAdOx1 nCov-19 vaccine from AstraZeneca 7-14 days earlier. We wanted to investigate whether this life-threatening condition was related to the vaccine.

Extensive investigations were carried out, and we found that all five had platelet factor 4/ polyanion antibody in very high levels. PF4/ polyanion antibody can be formed by exposure to negatively charged surfaces such as during prosthetic surgery or during heparin treatment, but this was not the case in any of the patients. One could therefore determine with reasonable certainty that it was components of the vaccine that triggered the immune response and platelet activation that led to the disastrous combination of thrombosis, low platelet count and bleeding.

This condition was neither described in the large randomized trials investigating the efficacy and safety of the ChAdOx1 nCov-19 vaccine nor in any other vaccines. The syndrome was called vaccine-induced thrombotic thrombocytopenia (VITT), which has now become a known vaccination complication for vector-based Covid-19 vaccines.

12. This year's theses

In 2022, 17 employees at Akershus University Hospital defended their PhD. Table 6 shows the distribution of doctoral degrees per division. Below is an overview of the doctoral students' work:



Cand. psychol Luxsiya Waran at the Division of Mental Health defended the thesis on 11 January: ***"Family based treatment of Adolescent Depression and Suicidal ideation"***

The trial lecture was held on the stated topic *"The role of interpersonal relationships in the treatment of depression throughout the life course"*

Supervisor: Senior researcher Marianne Aalberg



MD Marthe Sørli Gottschalk at the Division of Gynaecology and Obstetrics defended the thesis on 28 February: ***"Age at menopause: Associated factors and temporal trends"***

The trial lecture was held on the stated topic *"Advancing maternal age at childbearing - trends and implications"*

Supervisor: Professor Anne Eskild



Cand. Med. Tarjei Tørre Asprusten at the Division of Paediatric and Adolescent Medicine argued on 7 March over the thesis: ***"Diagnosis of Chronic Fatigue Syndrome in Adolescents"***

The trial lecture was held on the stated topic *"Long-term symptoms after covid-19 infection: age differences and chronic fatigue"*

Supervisor: Professor Vegard Bruun Bratholm Wyller



Cand. Med. Ola-Lars Hammer at the Orthopaedic Clinic defended the thesis on 11 Mars: ***"Surgical treatment of distal radius fractures - Clinical outcome and health economics"***

The trial lecture was held on the stated topic *"The current status of shared decision making in orthopaedic surgery and its influencing factors"*

Supervisor: Associate Professor Per-Henrik Randsborg



MD Yngve Thorsen at the Division of Surgery defended the thesis 8 April: ***“Right Colectomy with Extended D3-Mesenterectomy: What can we say about the extent and the consequences of the injury to the superior mesenteric plexus?”***

The trial lecture was held on the stated topic *“Methods for evaluating safety of new or modified surgical techniques”*

Supervisor: Professor Dejan Ignatovic



MD Christian Thomas Pollmann at the Orthopaedic Clinic defended the thesis on 3 May: ***“Improving outcomes in hip fracture patients”***

The trial lecture was held on the stated topic *“Fractures in the upper extremity in the geriatric population - short- and long-term effects on function, PROMS and mortality”*

Supervisor: Professor II Asbjørn Årøen



Cand. Med. Julia Brox Cranes at the Division of Medicine, defended the thesis on 21 June: ***“Impact of tobacco on circulating troponin concentrations and cardiovascular risk”***

The trial lecture was held on the stated topic *“Strengths and limitations of contemporary risk predictions systems for the prevention of cardiovascular disease worldwide”*

Supervisor: Professor Torbjørn Omland



MD Meetal Kakad at the Division of Research and Innovation defended the thesis on 21 June: ***“Municipal acute units in Norway. Using operational research methods to model patient flows”***

The trial lecture was held on the stated topic *“The need for tactical planning in hospitals and the possibilities and limitations of applying operational research methods”*

Supervisor: Senior researcher Fredrik A. Dahl



MSc Tahreem Ghazal Siddiqui at the Division of Research and Innovation defended the thesis on 29 August: ***“Central nervous system depressant medication use among older hospitalized patients: Cognitive function, communication and mortality”***

The trial lecture was held on the stated topic *“Polypharmacy in older adults – strategies for intervention”*

Supervisor: Professor II Christofer Lundqvist



Cand. psychol Regina Sofia Skar-Frøding at the Division of Mental Health argued on 12 September over the thesis: **"Personal recovery and satisfaction among service users with psychosis"**

The trial lecture was held on the stated topic *"According to empirical evidence, what are the possible biological and psychological mechanisms of change in the treatment of psychosis, and how should we design services to accommodate our knowledge in these areas to optimize recovery for patients?"*

Supervisor: Associate Professor Kristin S. Heiervang



Cand. Med. Sjur Hansen Tveit at the Division of Medicine, defended the thesis on 20 September: **"Cardiac Troponin I and T: Comparison of the Diagnostic and Prognostic Performance in Coronary Artery Disease"**

The trial lecture was held on the stated topic *"Heart failure beyond ejection fraction - alternative definitions and classifications"*

Supervisor: Associate Professor Peder Langeland Myhre



Cand. Med. Thea Vigen at the Division of Medicine argued on 22 September over the thesis: **"Carotid atherosclerosis; Prevalence and relation with blood pressure and intracerebral blood flow velocities"**

The trial lecture became held on the stated subject *"Spontaneous intracerebral haemorrhage: acute management of blood pressure, anticoagulant-related haemorrhage and do-not-resuscitate orders"*

Supervisor: Professor II Ole Morten Rønning



Cand. Med. Felix Haidl at the Division of Surgery, defended the thesis on 23 September: **"Labor epidural analgesia: the role of adrenaline"**

The trial lecture was held on the stated topic *"A view into the future of labour analgesia with special focus on techniques, equipment, personalized medicine, and individualized care"*

Supervisor: Professor Emeritus Vegard Dahl



Cand. Med. Ståle Bergman Myhrvold at the Orthopaedic Clinic defended the thesis on 29 September: **"Outcomes, physical performance, and complications following treatment of acute Achilles' tendon ruptures"**

The trial lecture was held on the stated subject *"Classification, surgery and rehabilitation of ankle fractures"*

Supervisor: Senior researcher Sigurd Erik Hoelsbrekken



Cand. Med. Violet Dough Hugberg Sigurdardottir at the Division of Medicine defended the thesis on 11 October: ***"Common sleep disorders and cardiovascular biomarkers in the general population"***

The trial lecture was held on the stated topic *"Sleep habits and sleep disorders - impact Wed public health"*

Supervisor: Professor Torbjørn Omland



Cand. Med. Javier Armando Luzon at the Division of Surgery defended the thesis on 21 October: ***"Applying emerging 3D visualization technologies to macro and micro anatomical datasets, for the improvement of operative planning, performance, and outcomes in colon cancer surgery"***

The trial lecture was held on the stated topic *"Implementation of new technologies and techniques in surgery: Practical, ethical and economic considerations"*

Supervisor: Professor Dejan Ignatovic



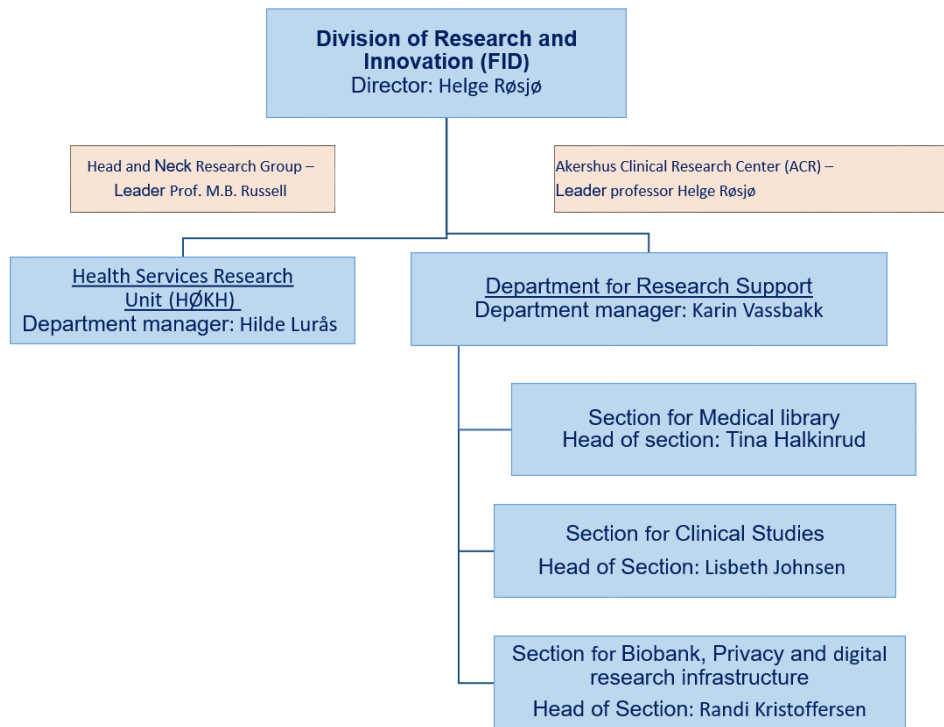
Cand. Med. Thien Trung Tran at the Division of Diagnostics and Technology defended the thesis on 8 December: ***"Prevention of venous thromboembolism in severe trauma: Inferior vena cava filters and pharmacological thromboprophylaxis"***

The trial lecture was held on the stated subject *"Aetiology and treatment of atrial fibrillation"*

Supervisor: Associate Professor Peter M. Lauritzen

14. Organisation map Division of Research and Innovation

Figure 14: Organisation map for the Division of Research and Innovation



15. Appendix 1:

Research groups – UPDATE June 2023

Division of Medicine. Research leader Per Selnes

- Cardiovascular Research Group (Torbjørn Omland)
- Pulmonary Research Group (Pulmonary Medicine research group) (Knut Stavem)
- Functional Genetics of Obesity Research Group (Yvonne Böttcher)
- Translational Cancer Research Group (TCRG), AHUS; (Cancer – Translational research group, AHUS) (Jürgen Geisler)
- Clinical neuroscience research group (Tormod Fladby)
- Gastroenterology Research Group (Jørgen Jahnsen)
- Center for haematological research at Ahus (Anders Dahm)
- Renal medicine research group (Ivar Eide)
- Endocrinology research group (Ingrid Nerموen)
- Clinical and Molecular Oncology in ColoRectal Cancer – CMOR (Anne Hansen Ree)
- 4D genome biology and circadian medicine (Anita Göndör)
- Molecular Mechanisms of Aging and Age-predisposed Alzheimer's disease (Evandro Fei Fang)

Division of Surgery. Research leader Juha Tapio Silvola

- Anaesthesia (Signe Søvik)
- Gastroscopy (Knut Magne Augestad, substitute for Johannes Schultz first half of 2023)
- Vascular/Thoracic Research Group (Jarlis Wesche, not formally created)
- Palliative medicine (Olav Magnus Fredheim)
- Ear-nose-throat (Harald Hrubos-Strøm)
- Urology (Stig Müller, formally not created)
- Quality and patient safety (Anne Karin Lindahl)
- The pelvic centre (Catherine Teig)

Orthopaedic Clinic / research group. Research leader Per-Henrik Randsborg

- Orthopaedic research group (Per-Henrik Randsborg)

Division of Gynaecology and Obstetrics. Research leader Anne Eskild.

- Women's diseases and obstetric care (Anne Eskild)

Division for mental health care/Department R&D (Research and development). Research leader Ketil Hanssen-Bauer

- Children & adolescents mental health (Marianne Aalberg)
- Mental health, treatment and implementation (Kristin S. Heiervang)
- Substance Use and Addiction (Lars Tanum)
- Psychobiology (Soili Marianne Lehto)
- Treatment and evaluation research mental health and addiction (Johan Siqueland)

Division of Research and Innovation. Research leader Helge Røsjo

- HØKH (Health service research) (Hilde Lurås)
- Head and neck research group (Michael Russel)

Division of Paediatric and Adolescent Medicine. Research leader Vegard Bruun Wyller

- PAEDIA (Vegard Bruun Wyller)

Division for diagnostics and technology. Research leader Anita Blomfeldt

- MIKS: Microbiology and infectious medicine (Kristiane Søreng)
- PA: Pathology research group (Ulla Randen)
- BDA: Clinical radiology (Jon Terje Geitung)
- TLMB. No research group, but a research network led by Ragnhild Røysland

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