

Research at Akershus University Hospital 2017



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1. Summary

A main objective for Akershus University Hospital in 2017 has been to strengthen and highlight the university hospital function. This is a continuation of a long-term commitment to research that over time has resulted in an increasing number of scientific articles and public defences from the hospital, and the annual report documents a high level of research activity.

A total of 358 scientific articles were published from Akershus University Hospital in 2017, compared with 363 the year before. 17 per cent of the articles were published in level 2 journals. The number of doctoral students registered is increasing, and in 2017 16 employees defended. The number of publication points, calculated on the basis of publications and doctoral degrees, was 237 in 2017. This was a decrease from 2016, when Ahus had 277 points. Akershus University Hospital was previously lowest in points of the Norwegian university hospitals. But even with the decline, Ahus is now ahead of both Stavanger University Hospital and the University Hospital of North Norway for the second year in a row. The publication list from Akershus University Hospital 2017 shows that there is close collaboration with researchers from other institutions, and especially with researchers from the University of Oslo and Oslo University Hospital.

A total of 194 man-years, distributed among 568 employees, were used for research at Akershus University Hospital in 2017. Much of the research was externally funded. Solid planning and good applications from the research groups have led to an increased allocation of external research funding. In 2017, the hospital was allocated just over NOK 97 million for research, almost the same level as in 2016. Important sources of funding are the South-Eastern Norway Regional Health Authority, the Research Council of Norway, the Norwegian Cancer Society and the Extra Foundation. NOK 6 million was distributed as internal strategic research funding. The allocation was based on external peer review of submitted applications, and funding will go to research areas that are considered important to the hospital.

Clinical research is a strategic focus area, and Akershus University Hospital has had an increasing number of clinical trials in recent years. In 2017, 46 new clinical trials, of which 25 were initiated, were reported to the Data Protection Officer. The research environment in the hospital participates actively in NorCrin, and thus contributes to the national collaboration in clinical research.

Within research-based innovation, nine DOFIs (report on invention) have been filed with our TTO (Technology Transfer Office, Inven2), and two approved patents (Table 7). The nine DOFIs come mainly from the Division of Medicine, but also from the Division of Mental Health, Division of Diagnostics and Technology, Unit for Economics and Interaction. The DOFIs deal with treatment methods, methods for operational analysis and monitoring of treatment effect.

The figures presented above indicate a levelling off of research activity. Competitive external allocations for research at Ahus have been approximately NOK 100 million annually, but grants granted in 2017 (for 2018 and beyond) fall significantly due to the low grant percentage. Over time, this may lead to declining research activity, and now provides reason to initiate strategic measures. In order to increase the grant percentage, we have initiated three processes:

i) Clinical Research Post Project

ii) project to make imaging techniques available for research

iii) make available advanced proteomic techniques for research

An increasing proportion of centrally and regionally announced research grants are directed towards experimental treatment in clinical research projects. Here, Ahus has natural advantages in terms of, among other things, catchment area and expertise. However, land-use issues, not least in disciplines that will naturally increase this part of research activity, are limiting.

The hospital management has mandated process i), and the group working on this project will submit a report before 1 September 2018. ii) and iii) are long-term processes that we recommend that be followed up further.

2. Organisation of research at Akershus University Hospital

The function of Director of Research and Innovation was elevated from level 3 to level 2 in the organisation in September 2016. The reporting line for research follows the lead line in the hospital. The Division of Mental Health, the Division of Medicine, the Division of Gynaecology and Obstetrics and the Division of Paediatric and Adolescent Medicine have their own research departments. The Head of Research sits on the Division's management team and acts as an advisor to the Division Director on research issues. Divisions without a research department have research managers who are part-time employed on the division director's staff.

Akershus University Hospital (Ahus) has a formalized collaboration with the University of Oslo (UiO) on research and teaching of medical students. The Department of Clinical Medicine at the Faculty of Medicine has a resident manager who is a scientific employee who reports to the head of department. The person in question is an observer in the hospital management. The department has local administration at Campus Ahus. The research management in the university line is organized into three clinics; Division of Medicine and Division of Diagnostics and Technology, Division of Surgical Sciences and Division of Surgery, Orthopaedic Clinic and Division of Gynaecology and Obstetrics), as well as Division of Health Services Research Unit and Psychiatry (Department of Health Services Research Unit which is organized directly under Deputy Chief Executive Officer 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 head of the clinic at the University for their University Tasks and to the head of department 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 of the research management, research leaders from the clinic/division and clinic leaders from the university. The Joint Research Committee, which is a strategic advisory body for the Executive Director of Research Affairs, is based on the collaboration agreement with the university.

3. Use of resources

In 2017, a total of 194 man-years were used for research and development (R&D). Of this, research man-years accounted for 175.8. The full-time equivalents were distributed among 568 persons, since most research professionals have combined positions with both research and clinic. In addition, 50.6 full-time equivalents are affiliated with UiO. Ahus also has employees who have part-time positions/doctoral fellowships at OsloMet, and OsloMet has employees with part-time positions at Ahus.

Table 1 shows the distribution of research man-years and the number of employees per division/clinic. Table 2 shows the distribution of man-years associated with Campus Ahus, UiO.

The research support at the hospital is partly financed by UiO and partly by Ahus. Research support includes libraries, data capture, statistics, biobank, administrative and technical services.

Table 1: Divisional distribution of full-time equivalents and R&D employees. Akershus University Hospital 2017

Ahus 2017	DDT	PSYK	KIR	Orto	MED	KK	BUK	HØKH	Forskings- støtte	Analyse/ Datafangst	Enhet for medisin og helsefag	Totalt
Internt finansiert	16,1	29,8	5,6	3,1	34,0	2,4	4,5	9,1	5,8	3,0	0,2	113,6
<i>Antall ansatte internt finansiert</i>	60	121	32	19	102	12	25	15	10	3	1	400
Eksternt finansiert	3,2	14,2	0,5	3,6	35,4	3,8	5,5	14,3				80,5
<i>Antall ansatte eksternt finansiert</i>	4	26	2	23	70	8	14	21				168
Ahus totalt årsverk	19,3	44,0	6,1	6,7	69,3	6,3	10,0	23,4	5,8	3,0	0,2	194,0
AHUS totalt antall ansatte	64	147	34	42	172	20	39	36	10	3	1	568

Table 2: Divisional distribution of full-time equivalents and employees in academic positions. Campus Ahus, UiO, 2017

UiO - Campus Ahus 2017	DDT	PSYK	KIR	Orto	MED	KK	BUK	HØKH	Forskings- støtte*	Datafangst *	Adm ansatte*	Totalt
Internt finansiert	1,4	0,4	6,7	2,7	15,3	1,4	2,2	0,2	6,0	2	2,5	40,8
<i>Antall ansatte internt finansiert</i>	7	2	12	5	29	3	3	1	6	2	3	73
Eksternt finansiert	0,2	0,2	0,8	0,0	7,0	0,0	0,2	1,4				9,8
<i>Antall ansatte eksternt finansiert</i>	1	1	4	0	12	0	1	4				23
UiO totalt årsverk	1,6	0,6	7,5	2,65	22,3	1,4	2,4	1,6	6	2	2,5	50,6
UiO totalt antall ansatte	8	3	16	5	41	3	4	5	6	2	3	96

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

Analysis/data collection includes the two UiO employed advisers

Adm employees are univ adm Campus Ahus

Table 3 shows the development in the number of man-years over the last five years. Figures 1 and 2 show the number of man-years used for research at Ahus and Campus Ahus by internal and external funding. Figure 3 shows the divisional distribution of man-years and publications.

Table 3: Development of divisional distribution of man-years for R&D at Ahus and Campus Ahus for the period 2013 - 2017

	DDT	PSYK	KIR	Orto*	MED	KK	BUK	HØKH	Forsknings- støtte**	Analyse/ Datafangst	Adm ansatte**	Enhet for medisin og helsefag	TOTAL Forskning og utvikling
Ahus årsverk													
2013	12,8	22,2	8,5		46	7	3,3	23	8,5				131,3
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
UiO årsverk													
2013	2,4	0,9	8,5		13	1,4	2,1	1,6	7				36,9
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	41	3	4	5	6	2	2,5		50,6

* In 2013, Orto was organized under the Division of Surgery.

** This includes the research engineers at EpiGen, statistician and IT support. Data collection includes the two UiO employed advisers.

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
 HØKH: Health Services Research Unit including Head and neck research group

Figure 1: Number of full-time equivalents distributed by internal and external financing at Ahus in 2017

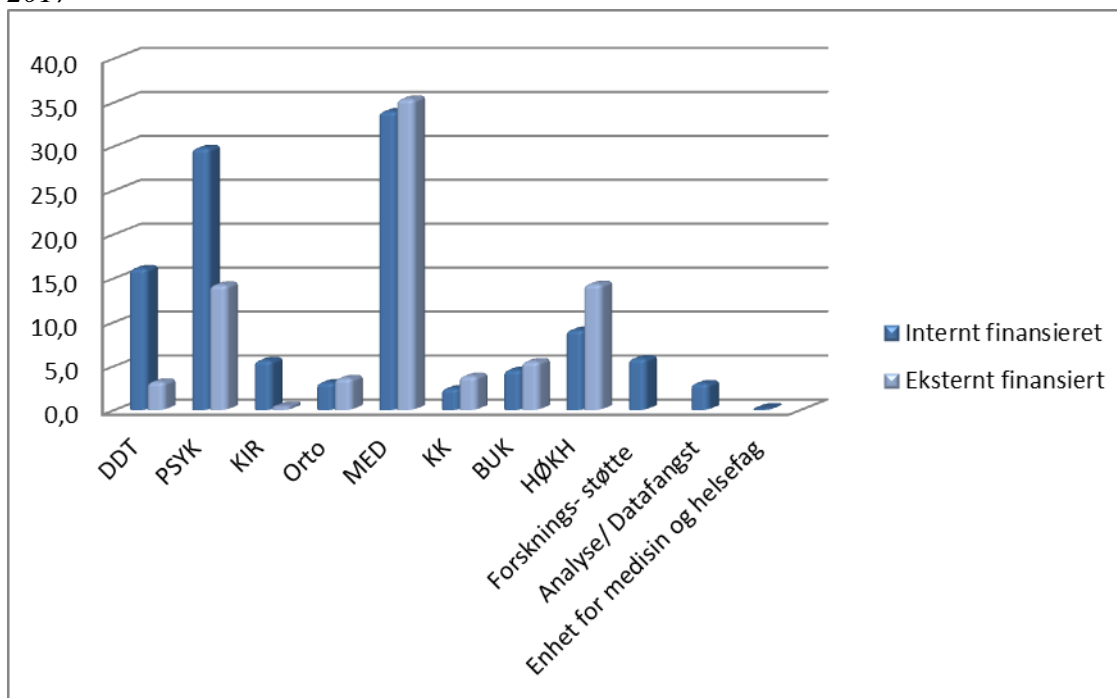


Figure 2: Number of full-time equivalents distributed by internal and external funding at Campus Ahus in 2017

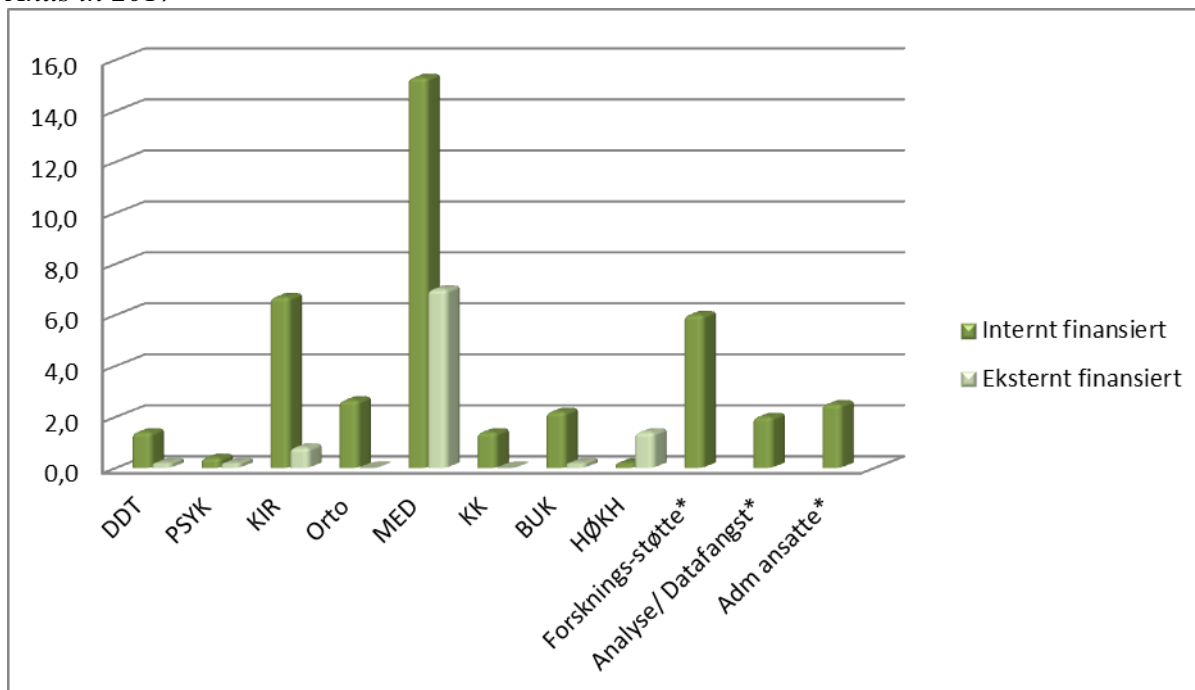
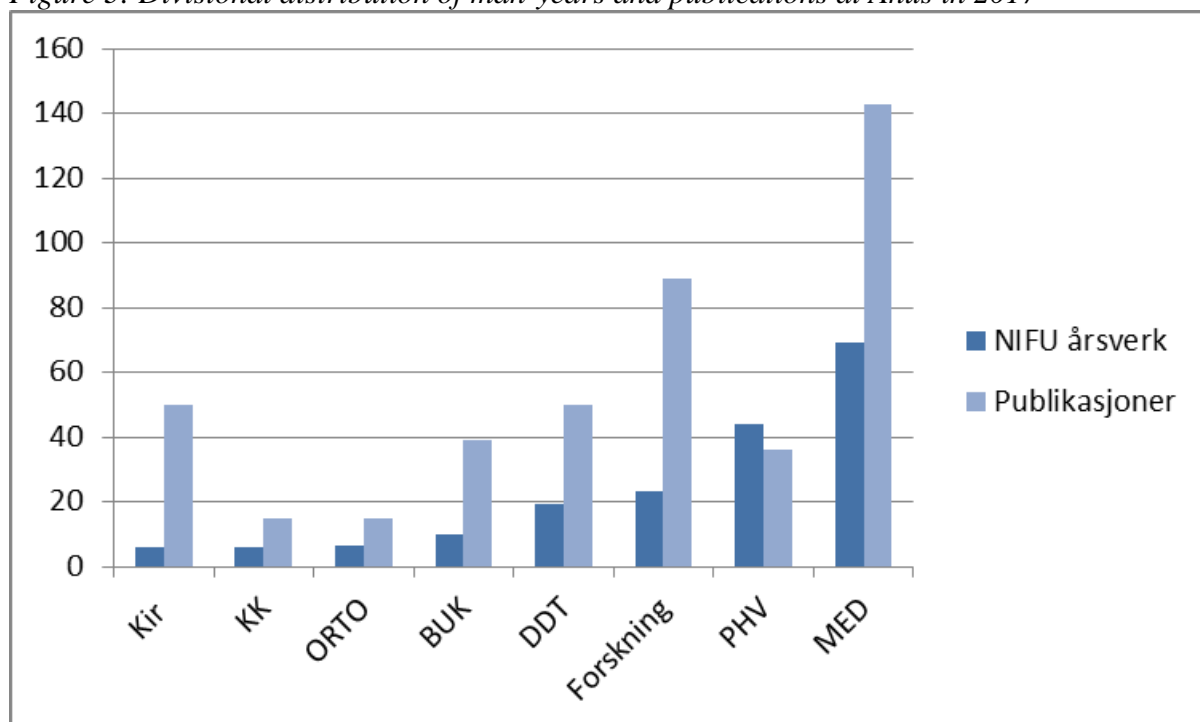


Figure 3: Divisional distribution of man-years and publications at Ahus in 2017



4. Scientific production

In 2017, 358 articles addressed at Akershus University Hospital were registered in CRISin (Current Research Information System in Norway)¹, compared with 363 the year before. Of these, 17 per cent were published in a level 2 journal, the rest in a level 1 journal. Table 4 shows the number of publications by levels 1 and 2 for the years 2014-2017. Table 5 shows the distribution of scientific articles and publication points by divisions/clinics in 2017.

Figure 4 shows the divisional development of publications for the period 2011 – 2017. Table 7 shows the innovation activity for 2017. Nine DOFIs (report on invention) have been submitted to our TTO (Technology Transfer Office, Inven2), two approved patents and five projects.

Table 4: Number of scientific publications by levels 1 and 2 from 2014 - 2017

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

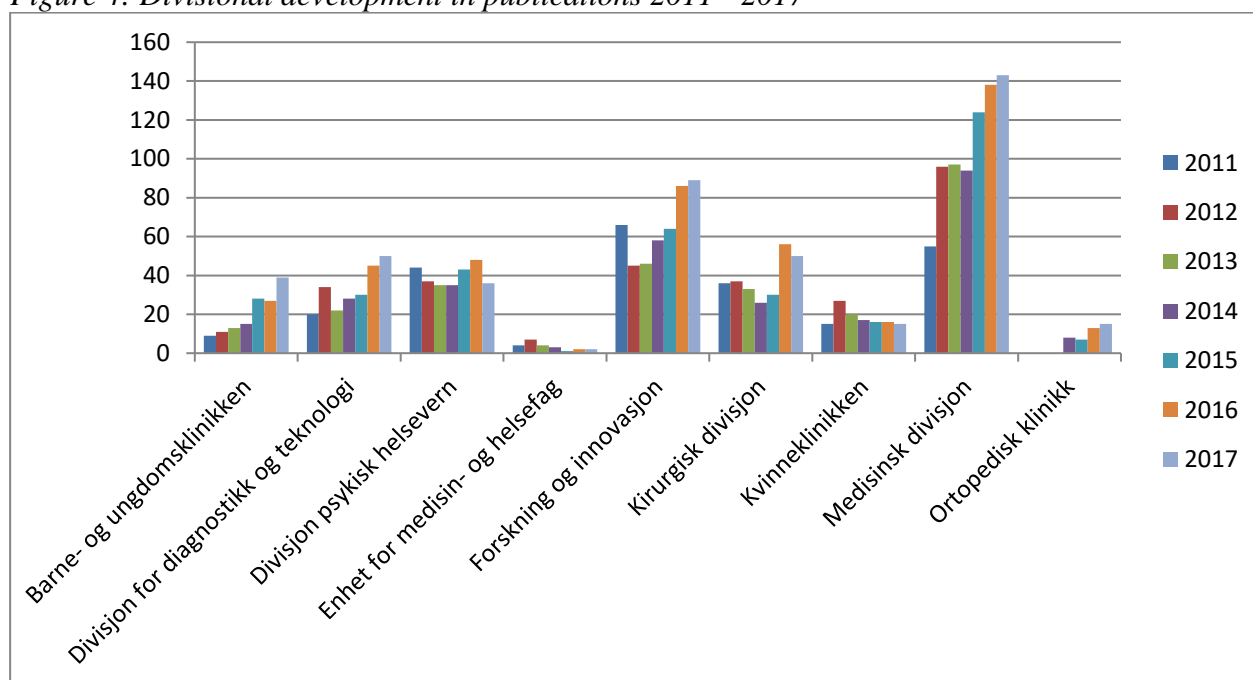
Table 5: Scientific publications and publication points by division 2017

	Total	Level 1	Publ. points	Level 2	Publ. points
Division of Paediatric and Adolescent Medicine	39	35	17,64	4	4,13
Division of Diagnostics and Technology	50	47	16,81	3	2,50
Division of Mental Health	36	30	16,06	6	6,65
Division of Medicine and Health Science	2	2	0,58		
Health Services Research Unit*	89	65	24,81	24	30,25
Division of Surgery	50	40	15,54	10	12,49
Division of Gynaecology and Obstetrics	15	14	6,39	1	2,12
Division of Medicine	143	123	48,38	20	20,49
Orthopaedic Clinic	15	13	7,07	2	2,91

*: Including Head and Neck

¹ <http://www.cristin.no>

Figure 4: Divisional development in publications 2011 - 2017



In 2017, 16 employees defended their dissertation. Table 6 shows the distribution of the number of completed doctoral degrees per division. Chapter 14 provides an overview of who defended their thesis with a brief summary of the various theses.

Table 6: Number of public defences per division 2013-2017

	2013	2014	2015	2016	2017
Division of Medicine	4	5	8	2	6
Health Services Research Unit (incl. Head & Neck)	2	4	3	1	2
Division of Gynaecology and Obstetrics		4	1	2	
Division of Diagnostics and Technology				2	1
Division of Paediatric and Adolescent Medicine		1	2	1	2
Division of Surgery	3			1	1
Division of Mental Health	1	1	1		3
Orthopaedic Clinic			2		1

The number of publication points, calculated on the basis of publications and doctoral degrees, decreased slightly from 277 in 2016 to 239 in 2017. Figure 5 shows a comparison between the Norwegian university hospitals for the period 2006 to 2017.

Figure 5: Publication points (publications and doctoral degrees) – comparison between the Norwegian university hospitals for the period 2006 – 2017.

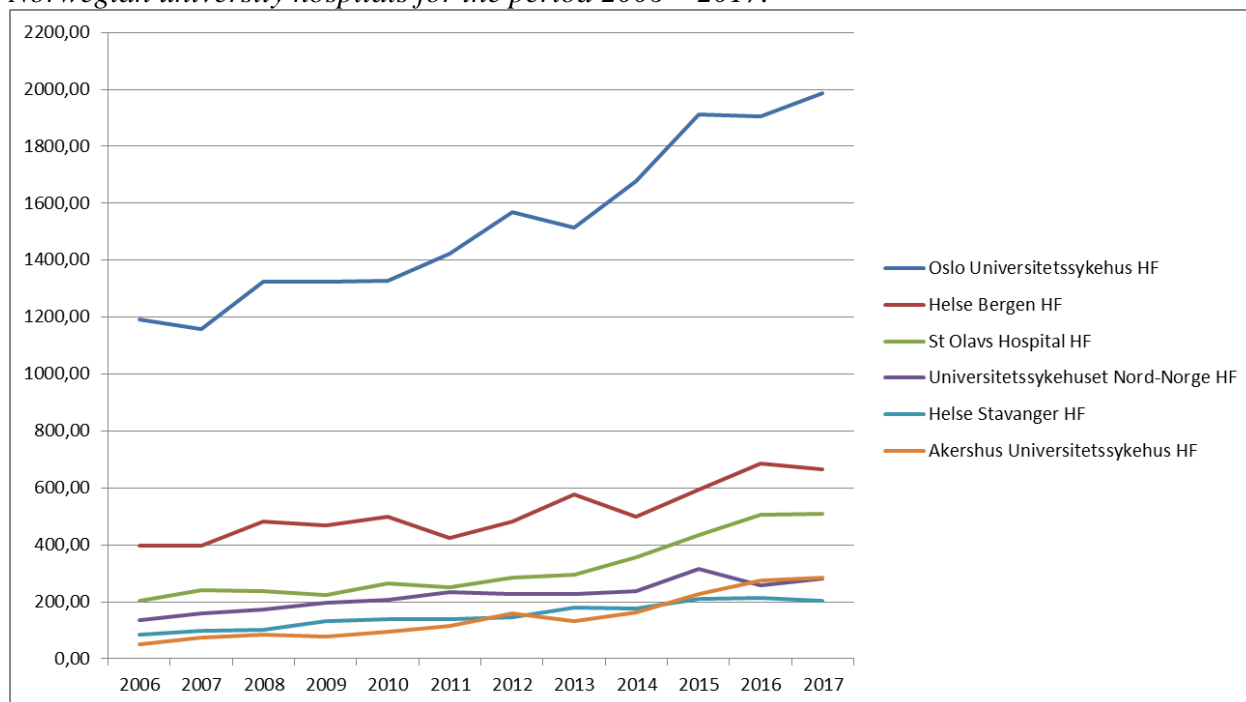


Table 7: Innovation activity 2017- reported from Inven2

	Number
DOFI	9
Patents	2
Projects	5

5. Development in the number of publications and doctoral degrees 2008-2017

Tables 8 and 6 and 7 show the development in the number of scientific publications and the number of completed doctoral degrees in the period from 2008 to 2017. The number of published articles has remained relatively stable in recent years, but from 2014 we see a positive increase. The number of completed doctoral degrees has fluctuated somewhat, but there is an underlying growth from 2008 to 2017.

Table 8: Publications and doctoral degrees 2008-2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Publications	108	107	130	210	238	228	238	285	363	358
Doctoral degrees	5	7	10,5	8	20	10	15	17	9	16

Figure 6: Development in the number of publications

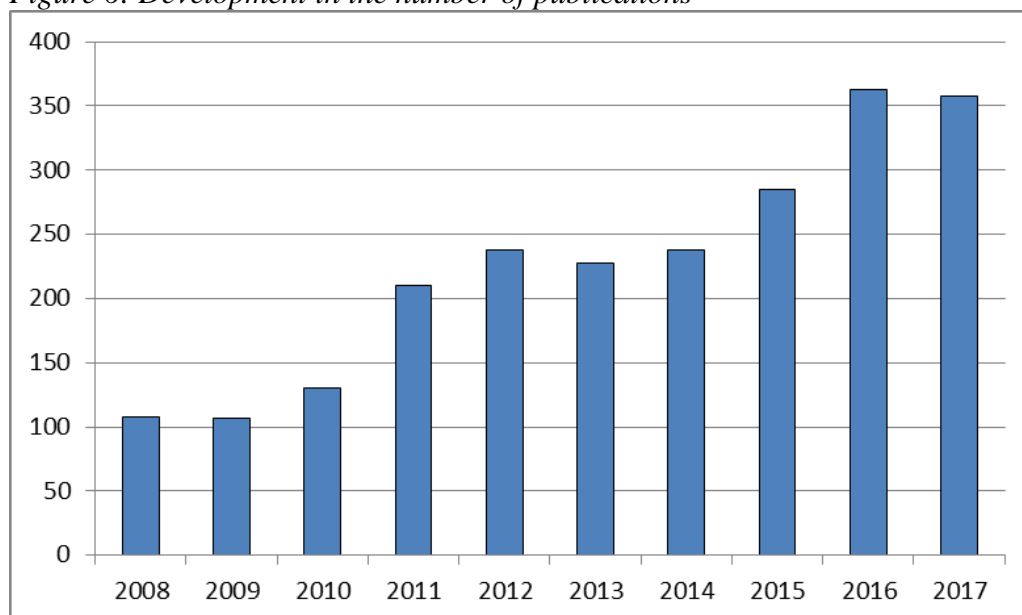
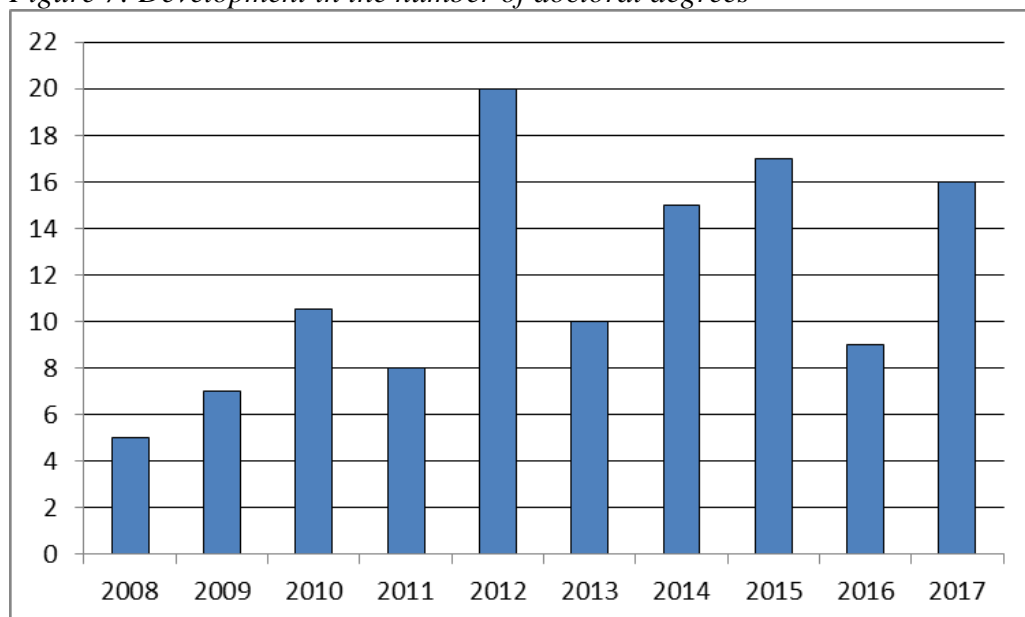


Figure 7: Development in the number of doctoral degrees



6. Clinical treatment studies

Akershus University Hospital (Ahus) works purposefully and strategically to facilitate clinical research in order to help increase national clinical research activity and to increase the number of clinical treatment studies.

Ahus has a catchment area of approx. 500,000 inhabitants, which provides access to recruit participants in diseases that affect large patient groups. The goal is to ensure that our patients have access to new, experimental and potentially better treatment before the treatment is available on the market. To achieve this goal, we must to a greater extent choose to participate in clinical treatment studies that are relevant and appropriate for our patient populations and ensure close integration of research into the clinical part of the business. For the hospital, participation in clinical treatment studies may lead to increased treatment quality, and new methods for efficient operations and priorities. Health personnel will gain increased knowledge and competence, experience with Good Clinical Practice and will contribute to the development of new and innovative treatment methods that can be transferred to clinical practice.

National focus on clinical treatment studies

Ahus participates actively in the national research infrastructure Norwegian Clinical Infrastructure Network (NorCRIN) and leads the work package "Collaboration with industry". NorCRIN's main objective is to strengthen and simplify collaboration within all categories of clinical research in Norway.

The commissioning and ordering document (OBD) from the South-Eastern Norway Regional Health Authority for 2017 states that 5 per cent of patients at the hospital should be included in clinical research. In the OBD from the Ministry of Health and Care Services for 2018 to the Regional Health Authorities (RHF), it is stipulated that the health trusts shall carry out a trial reporting for 2017 on the number of ongoing clinical treatment studies and the number of patients participating.

The purpose of the reporting is to highlight the scope of clinical treatment studies in the health enterprise and the number of patients participating, with a view to providing the regional health authorities and thereby hospitals with a financial incentive to conduct clinical treatment studies. The information obtained can provide a basis for the management, prioritisation and facilitation of clinical treatment trials and contribute to a good service for patient participation in clinical treatment trials.

The development of clinical treatment studies at Ahus

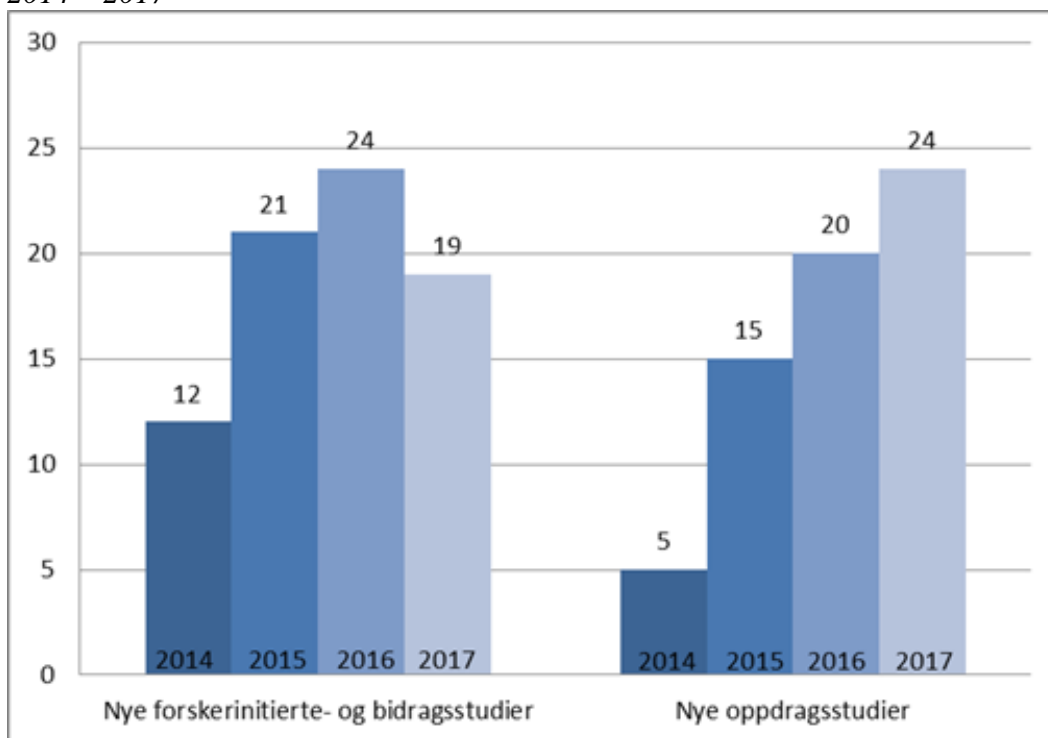
The number of clinical treatment studies at Ahus has increased in recent years, both within clinical treatment studies in collaboration with industry (commissioned studies) and clinical treatment studies initiated by the researcher at the hospital (researcher-initiated and contributory studies), see Figure 8.

Figure 9 shows a departmental distribution of newly registered clinical treatment trials/agreements in 2017. Studies are now being conducted in more therapeutic areas than in previous years, and

among the commissioned studies, the main emphasis is on drug trials. For researcher-initiated and contributory studies, the type of trial is distributed over several categories, see Figure 10.

Ahus cooperates locally, multiregionally and internationally in the implementation of clinical treatment studies. Ahus is the national coordinator in 9 of 19 researcher-initiated and contributory studies and in 16 of 24 commissioned studies reported in 2017, see figure 11.

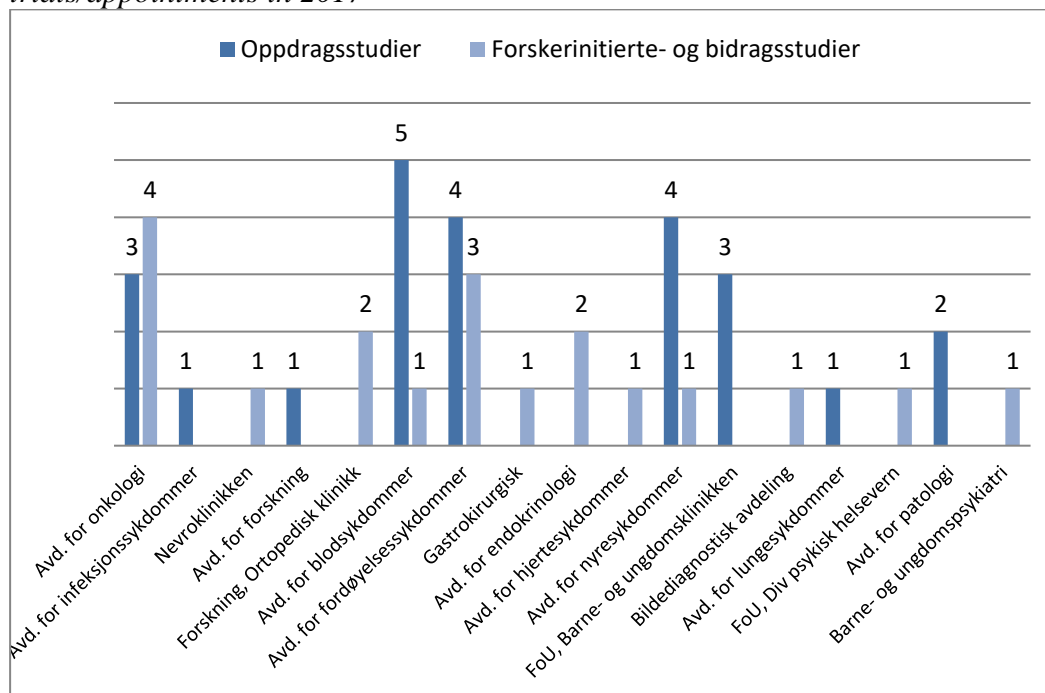
Figure 8: Development in the number of registered clinical treatment trials/appointments from 2014 – 2017



Contract studies: Clinical treatment studies initiated by industry

Researcher-initiated and contributory studies: Clinical studies initiated by researchers at the hospital, including studies that have contributions from industry either in the form of financial support or in the form of medicines/equipment, or both types of support.

Figure 9: Departmental* figures for the number of new registered clinical treatment trials/appointments in 2017



*Departments with registered activity

Figure 10: Distribution by type of trial for researcher-initiated, contributory and commissioned studies for newly registered clinical treatment trials/agreements in 2017.

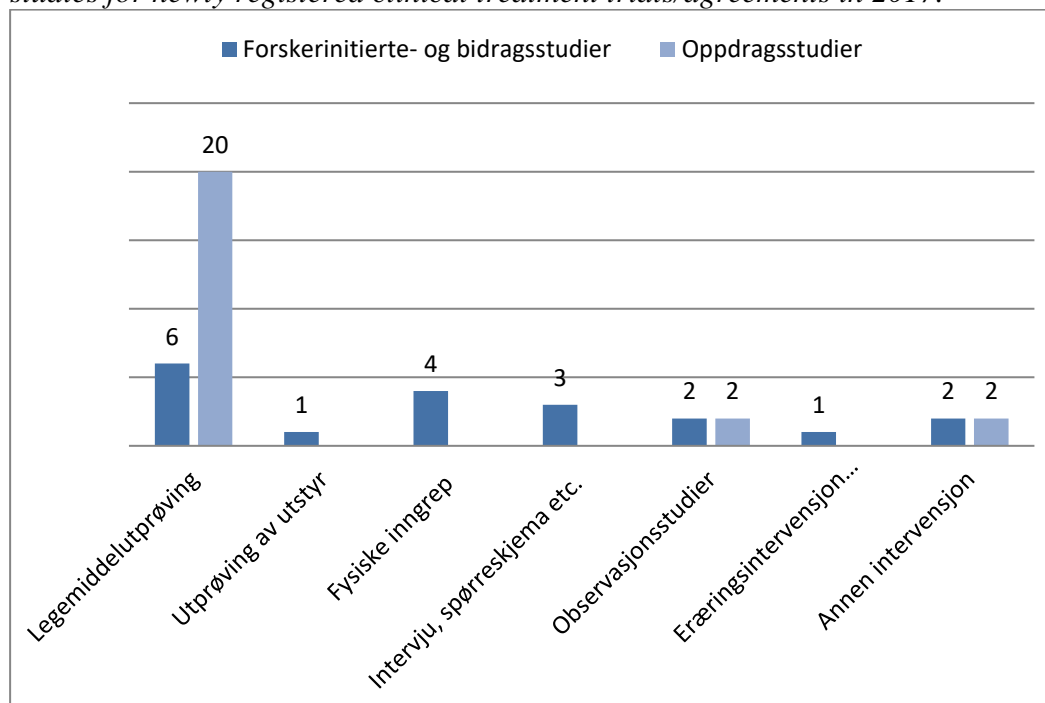
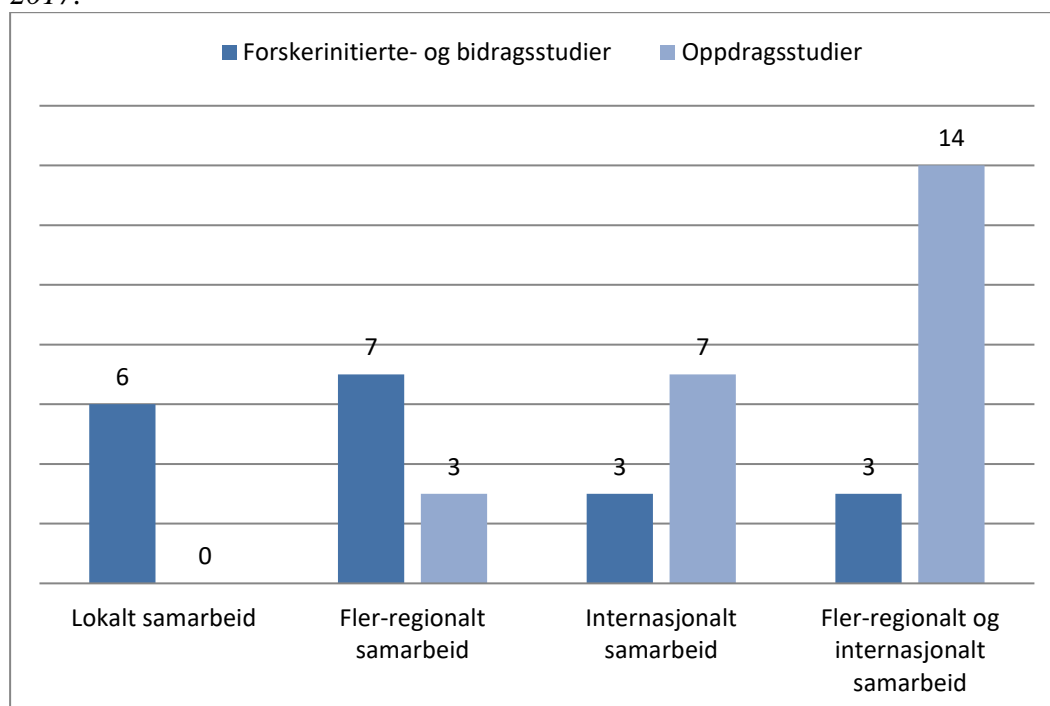


Figure 11: Local, multi-regional and international collaboration for researcher-initiated, contributory and commissioned studies for newly registered clinical treatment trials/agreements in 2017.



Local: Collaboration with institutions in the South-Eastern Norway Regional Health Authority

Multi-regional: Cooperation with institutions in other health regions

International: Cooperation with institutions internationally

Infrastructure for clinical treatment studies

Good infrastructure for clinical treatment studies is a necessary prerequisite that will ensure good and professional implementation from start to completion and will contribute to making the hospital an attractive partner nationally and internationally.

Infrastructure includes physical premises, resources (coordinators, doctors, nurses, biomedical laboratory scientists, service departments, etc.), courses, routines and guidelines, and are crucial elements for good and professional implementation of this type of clinical trial. Ahus has two dedicated coordinators who assist investigators in all therapeutic areas with counselling and guidance in the start-up phase of both commissioned studies and researcher-initiated and contributory studies.

Course

In 2017, two courses in Good Clinical Practice (GCP) were held at Ahus, one basic course in the spring and one refresher course in the autumn. A total of 41 employees have participated in GCP courses at Ahus in 2017.

In 2017, for the first time, a researcher course was held for Ahus employees, where "Package pathways for clinical trials" was presented. The researcher training course is one of the measures in the action plan that was implemented after an internal audit of the research area conducted in 2016. The research course will be offered to employees on a permanent basis in the coming years.

Routines and guidelines

In 2017, there has been a revision of several routines and guidelines related to clinical treatment studies. Special mention is made of 'Roles and responsibilities in clinical drug trials and trials of medical devices', as well as 'Guidelines for registration of clinical trials in ClinicalTrials.gov and in Helsenorge.no'. These guidelines and procedures are available in EQS, and will be published on the website of research support on www.ahus.no during spring 2018.

Cooperation with service departments

The service departments are internal departments at the hospital that provide services/examinations during the course of study. The service departments' contributions can either be purely service purchases, where the department must have paid for the services performed (especially relevant in commissioned studies) or research collaboration (especially relevant in researcher-initiated and contributory studies). Services/surveys related to commissioned studies are priced according to established price lists.

In 2017, a separate form was published for requests to service departments for participation in clinical commissioned studies. The form with accompanying guidelines is available in EQS. A separate form for requests in researcher-initiated and contributory studies will be available in EQS during spring 2018.

7. Publishing researchers

The tables below show the number of researchers who published at least one scientific article with an address at Akershus University Hospital in 2017. Table 9 shows publishing researchers by gender and age, and Table 10 shows the corresponding overview by division. Data were obtained from CRISin.

Table 9: Publishing researchers by sex and age

Men		Women		Total	
Number	Avg. age	Number	Avg. age	Number	Avg. age
157	47,6	164	44,6	321	46

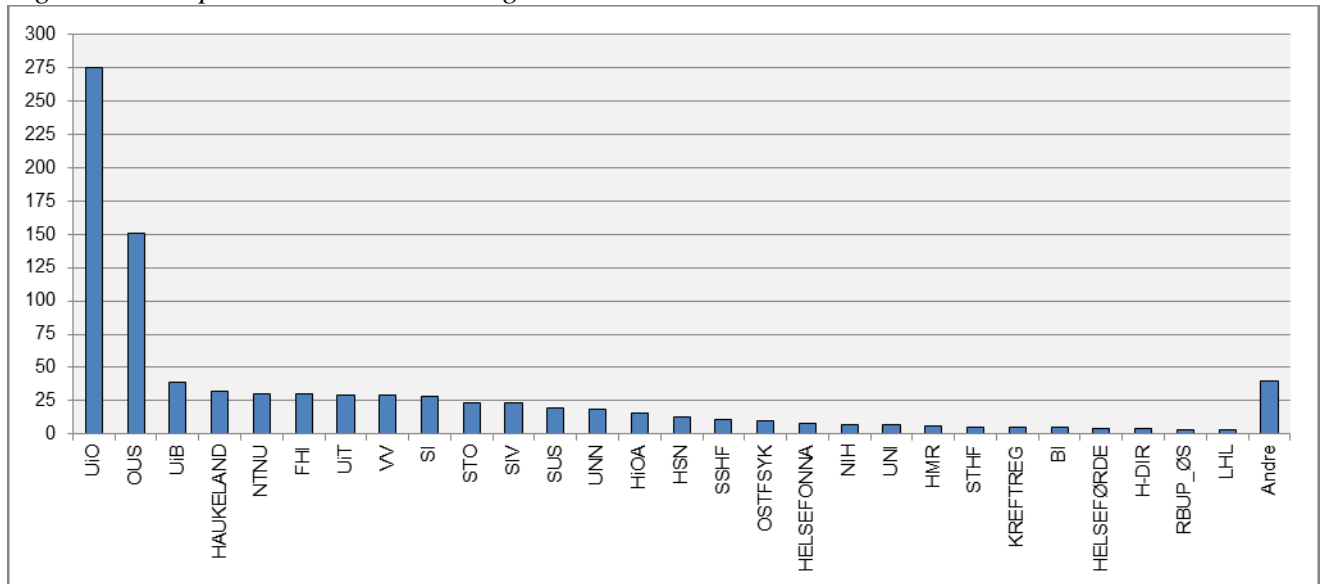
Table 10: Publishing researchers by sex and age per division

	Men		Women	
	Number	Avg. age	Number	Avg. age
Division of Paediatric and Adolescent Medicine	11	49,4	16	44,8
Division of Diagnostics and Technology	19	44,9	27	45,7
Division of Mental Health	15	50,5	14	43,1
Division of Medicine and Health Science			2	45
Health Services Research Unit	13	42,4	15	47,2
Division of Surgery	24	51,7	13	44,9
Division of Gynaecology and Obstetrics	4	54	14	45,9
Division of Medicine	58	46	61	43,1
Orthopaedic Clinic	11	47,5		

8. National cooperation

Figure 12 shows an overview of Norwegian institutions that researchers at Ahus have published together with. Co-publication with the University of Oslo and Oslo University Hospital is most common.

Figure 12: Co-publication with Norwegian institutions



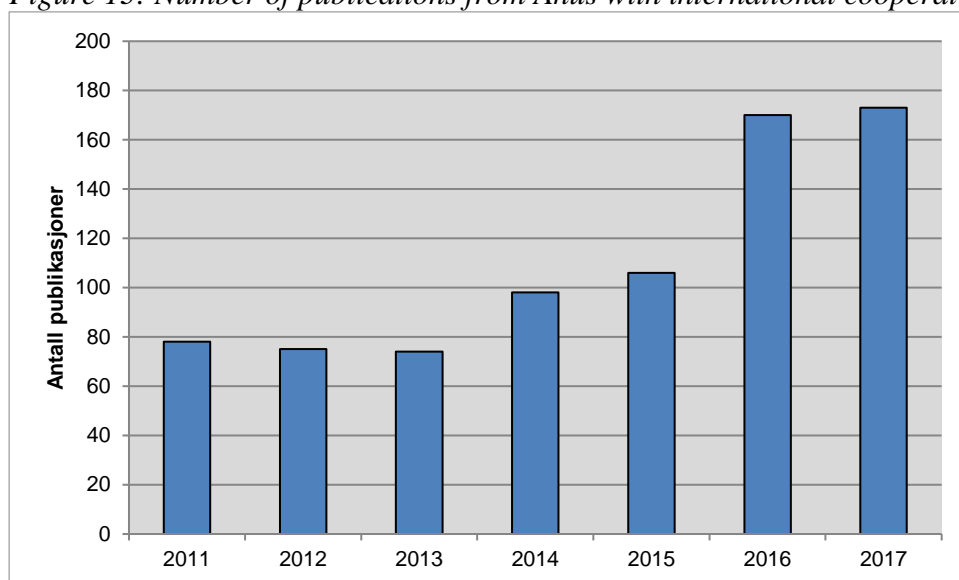
Description of the abbreviations in the figure above:

- | | |
|--|---|
| <ul style="list-style-type: none"> • UiO – University of Oslo • OUS – Oslo University Hospital • UiB – University of Bergen • HAUKELAND - Haukeland University Hospital • NTNU – Norwegian University of Science and Technology • NIPH – Norwegian Institute of Public Health • UiT – University of Tromsø • VV – Vestre Viken Hospital Trust • SI – Innlandet Hospital Trust • STO – St Olav Hospital • SIV – Vestfold Hospital Trust • SUS – Stavanger University Hospital • UNN – University Hospital of North Norway • OSLOMET – OsloMet Metropolitan University | <ul style="list-style-type: none"> • USN – University College of Southeast Norway • SSHF - Sørlandet Hospital Trust • OSTFSYK – Østfold Hospital Trust • Health Fonna • NIH – Norwegian School of Sport Sciences • UNI – UNI Research • HMR – Møre og Romsdal Hospital Trust • STHF – Telemark Hospital Trust • KREFTREG – Cancer Registry of Norway • BI – BI Norwegian Business School • HELSEFØRDE – Helse Førde Hospital Trust • H-DIR - Norwegian Directorate of Health • RBUP-ØS - RBUP East and South • LHL - clinic |
|--|---|

9. International cooperation

In 2017, 173 articles, or 48 per cent of the published articles, were co-publication with international partners. As figure 13 shows, the number of articles that include international collaboration has increased significantly in recent years, but levelled out from 2016 to 2017.

Figure 13: Number of publications from Ahus with international cooperation



10. HRCS (Health Research Classification System)

In a letter dated 21 August 2017, the Ministry of Health and Care Services and the Ministry of Education and Research asked Ahus and 11 other institutions to carry out pilots to map the results of health research in 2017. It is estimated that these institutions account for about 80 per cent of health research in Norway (excepted by the business sector). The purpose of the survey is that the Health Research Classification System (HRCS) in health trusts, universities, university colleges and research institutes will contribute to improving the statistics on health research nationally and will be able to provide the institutions with information about how research activity is distributed within different research activities and health categories.

HRCS is a system for mapping how research resources are distributed by health/disease category (e.g. cardiac, neurology or mental health) and research purpose/type of research (e.g. causal research, evaluation research or treatment research). Tables and figures below show the results for Ahus. Data from the mapping at divisional and clinic level has been made available to management and can be used internally for strategic purposes.

Table 11: HRCS reporting Ahus 2017

Alle finansieringskilder	2017
Årsverk omfattet av kategorisering:	194,01

Health Category (Fordeling nr. 1)	Andel i %
Blood	3,01 %
Cancer (all types, incl. Leukemia)	11,72 %
Cardiovascular	7,85 %
Congenital disorders	0,11 %
Ear	0,34 %
Eye	0,00 %
Infection	7,16 %
Inflammatory and Immune System	0,29 %
Injuries and Accidents	2,37 %
Mental Health	23,31 %
Metabolic and Endocrine	1,81 %
Musculoskeletal	1,26 %
Neurological	7,82 %
Oral and Gastrointestinal	0,83 %
Renal and Urogenital	1,19 %
Reproductive Health and Childbirth	4,52 %
Respiratory	2,64 %
Skin	0,00 %
Stroke	1,81 %
general health and wellbeing)	10,93 %
Other specific (inkl. MFS/ME)	11,03 %
<i>Total</i>	<i>100,00 %</i>

Alle finansieringskilder	2017
Årsverk omfattet av kategorisering:	194,01

Research Activity (Fordeling nr. 2)	Andel i %
Underpinning	5 %
Aetiology	18 %
Prevention	1 %
Detection and Diagnosis	23 %
Treatment Development (preclinical)	1 %
Treatment Evaluation	24 %
Disease Management (individual)	1 %
Health Services (also Health Economics)	27 %
<i>Total</i>	<i>100 %</i>

Figure 14: Research activity full-time equivalents 2017, Ahus

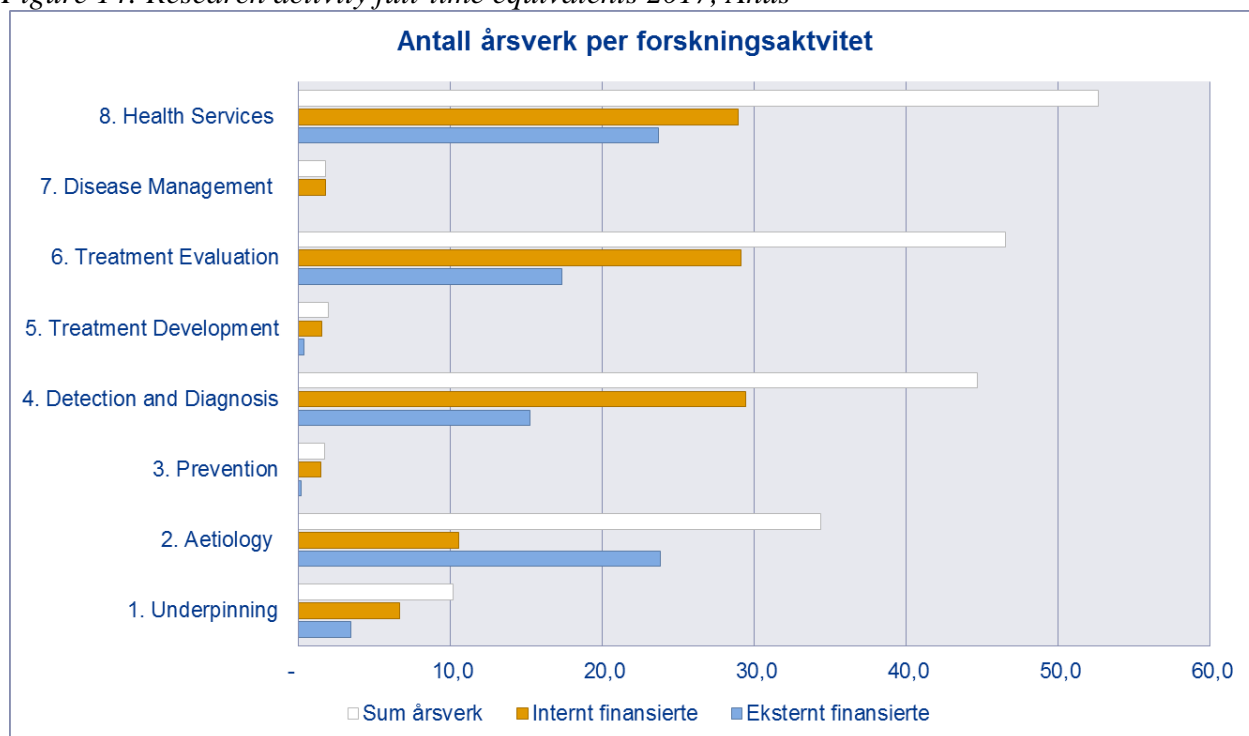
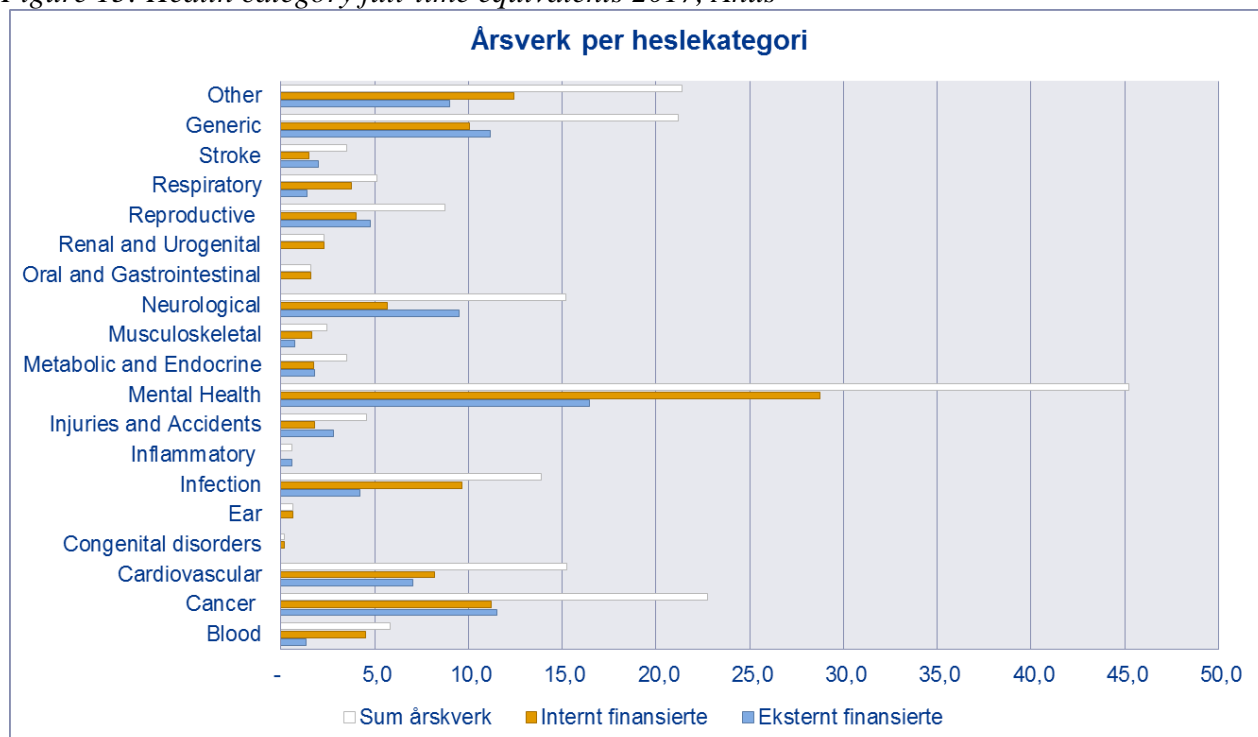


Figure 15: Health category full-time equivalents 2017, Ahus



11. Grant of external research funding

In 2017, Akershus University Hospital was awarded a total of NOK 97 180 617 in external research funding; including from the South-Eastern Norway Regional Health Authority, the Research Council of Norway and the Norwegian Cancer Society. Figure 16 shows external funding broken down by funding sources.

Chart 16: External funding by funding source

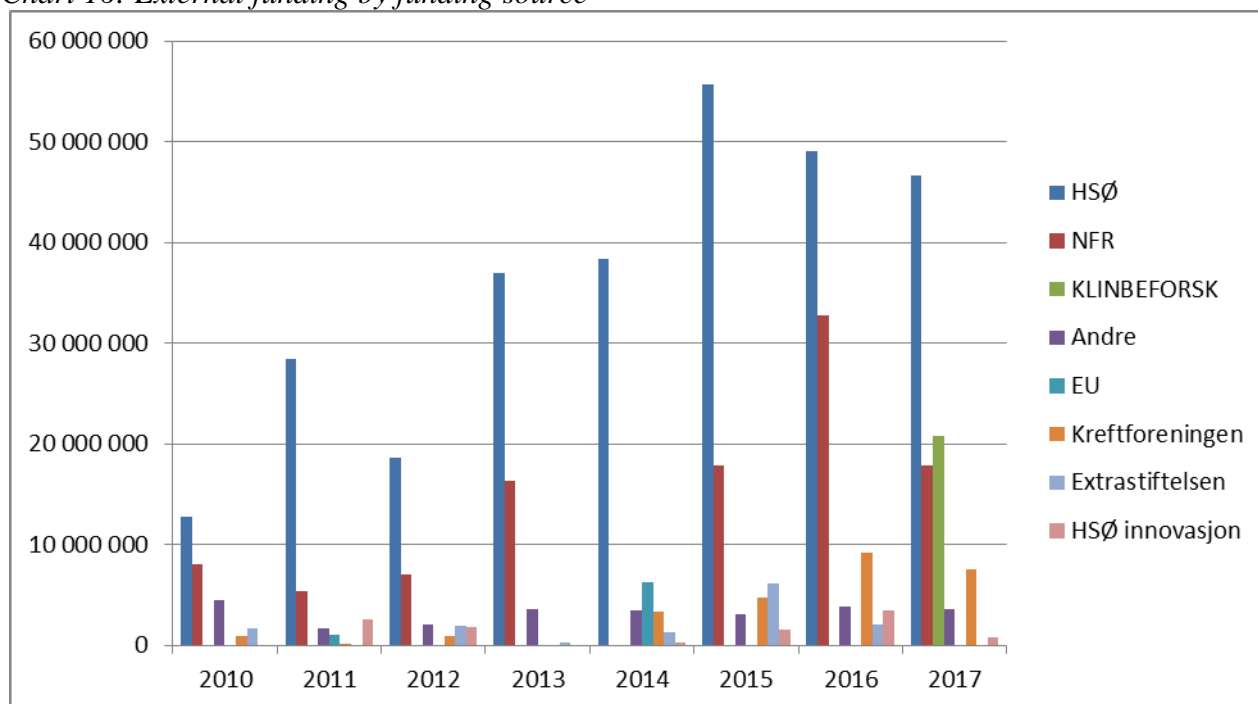


Table 12 shows an overview of research projects that in 2017 were granted external research funding for PhD candidates, postdoctoral fellowships or larger operating grants. Most of the allocations are multi-year, and the right-hand column of the table shows annual allocations. Table 13 presents an overview of smaller grants, which are usually one-time grants.

Table 12: Projects granted external research funding to PhD candidates, postdoctoral fellowships and larger operating grants.

Project title	Manager	Division/Clinic	Funded by:	Award 2017
Atherosclerosis and Childhood Diabetes (ACD)	Hanna Dis Margeirsdottir	Division of Paediatric and Adolescent Medicine	South-Eastern Norway Regional Health Authority	1 039 000
Are epigenetic modifications of key genes in placenta important links between mother's lifestyle and fetal pre- and postnatal growth patterns and future diabetes risk?	Line Sletner	Division of Paediatric and Adolescent Medicine	South-Eastern Norway Regional Health Authority	606 000

Project title	Manager	Division/Clinic	Funded by:	Award 2017
Validation of diagnostic criteria in adolescent Chronic Fatigue Syndrome/Myalgic Encephalomyelitis	Vegard Bruun Wyller	Division of Paediatric and Adolescent Medicine	South-Eastern Norway Regional Health Authority	1 039 000
		Division of Paediatric and Adolescent Medicine		1 754 000
Long Acting naltrexone for opioid addiction: the importance of mental, physical and social factors for sustained abstinence and recovery	Lars Tanum	Division of Mental Health	The Research Council of Norway	733 000
A Cluster randomized study on implementation of Guidelines on family involvement during severe mental illness	Ketil Hanssen-Bauer	Division of Mental Health, R&D	The Research Council of Norway via UiO	650 973
		Division of Mental Health		1 383 973
Development of an effective 3D navigation system for colon cancer surgery	Dejan Ignjatovic	Division of Surgery	South-Eastern Norway Regional Health Authority, Innovation funds	750 000
		Division of Surgery		750 000
Three dimensional (3D) ultrasound and magnetic resonance imaging (MRI) – the future tools to diagnose pregnancies with high risk of adverse outcome?	Anne Eskild	Division of Gynaecology and Obstetrics	South-Eastern Norway Regional Health Authority	1 039 000
		Division of Gynaecology and Obstetrics		1 039 000
Colorectal neoplasia in IBD: A prospective study comparing endoscopic surveillance with regular clinical follow-up	Stephan Brackmann	Division of Medicine	South-Eastern Norway Regional Health Authority	520 000
From worm to man: Disentangling disease mechanisms in ALS	Trygve Holmøy	Division of Medicine	South-Eastern Norway Regional Health Authority	1 039 000
An interdisciplinary translational approach for patients with locally advanced breast cancer	Jürgen Geisler	Division of Medicine	South-Eastern Norway Regional Health Authority	1 039 000
Impact of smoking on circulating cardiac troponin concentrations and cardiovascular risk	Torbjørn Omland	Division of Medicine	South-Eastern Norway Regional Health Authority	1 039 000
Modulating mitophagy as a therapeutic approach for Alzheimer's disease	Evandro F. Fang	Division of Medicine	South-Eastern Norway Regional Health Authority	2 347 000
Open chromatin mapping and nucleosome positioning in human adipose tissue depots from lean vs. obese individuals	Yvonne Böttcher	Division of Medicine	South-Eastern Norway Regional Health Authority	1 039 000
Center for Cardiac Precision Medicine: Multilevel Approach to Understand and Diagnose Left Ventricular Remodelling	Helge Røsjø	Division of Medicine	South-Eastern Norway Regional Health Authority	1 039 000

Project title	Manager	Division/Clinic	Funded by:	Award 2017
Regional Research Network ACREDIT: Advanced ColoRectal Cancer – Individualization of Therapies	Anne Hansen Ree	Division of Medicine	South-Eastern Norway Regional Health Authority	2 000 000
Towards Alzheimer’s disease pre-dementia intervention: Meeting-point of diagnostics, genetics, and individual risk estimates (APMeD) (Travel grant)	Tormod Fladby	Division of Medicine	South-Eastern Norway Regional Health Authority	361 000
Prevention of cArdiac Dysfunction during Adjuvant breast cancer therapy (PRADA-2): A Randomized, Placebo-controlled, Multicenter Trial	Torbjørn Omland	Division of Medicine	South-Eastern Norway Regional Health Authority	19 998 270
PALLION - Improved Care for cancer patients with short life expectancy - A cross-regional cluster-randomized trial	Hanne Hamre	Division of Medicine	KLINBEFORSK via OUS	331 660
Genome Instability and Inflammation in Early Stages of Cancer Development:	Hilde Nilsen	Division of Medicine	The Norwegian Cancer Society via UiO	564 848
METIMMOX therapy study	Anne Hansen Ree	Division of Medicine	The Norwegian Cancer Society via UiO	1 315 698
Bequest - Alzheimer's research	Tormod Fladby	Division of Medicine		700 000
ALS Donation 2017	Trygve Holmøy (Ola Nakken)	Division of Medicine	ALS Norwegian Support Group	550 000
ALS Donation EpiGen	Hilde Nilsen	Division of Medicine	ALS Norwegian Support Group	500 000
The Norwegian Node of the International Neuroinformatic Coordinating Facility	Tormod Fladby	Division of Medicine	The Research Council of Norway via UiO	628 000
Prediagnosis - FORNY	Tormod Fladby	Division of Medicine	Prediagnostikk AS	264 921
Donations ALS Research (Research Related to ALS)	Trygve Holmøy /Joel Glover	Division of Medicine	ALS Norwegian Support Group	500 000
		Division of Medicine		35 776 397
Plate fixation versus riveting of 3 and 4 party proximal humerus fractures.	Annette Wikerøy	Orthopaedic Clinic	Sophies Minde	385 000
		Orthopaedic Clinic		385 000
Buy-out for clinicians for cancer research (Anne H Ree)	Tone Ikdahl/ Karin Vassbakk	Akershus University Hospital	The Norwegian Cancer Society	700 000
		Akershus University Hospital		700 000

Table 13: Projects granted minor allocations from external funding sources

Project title	Manager	Division/Clinic	Funded by:	Award 2017
Ødegaard Fund - award of scholarships	Hasan Banitalebi	Division of Diagnostics and Technology, BDA joint	Odegaard's Fund	40 000
		Division of Diagnostics and Technology		40 000

Project title	Manager	Division/Clinic	Funded by:	Award 2017
Application for support to host the 2018 Operational Research Applied to Health Service (ORAHS)	Hilde Lurås	HØKH, Health Services Research Unit	The Research Council of Norway	200 000
		Research and Innovation		200 000
Biogen Research Grant	Rune Høglund	Division of Medicine	Norwegian Neurological Association	100 000
The Biostop study	Jørgen Jahnsen	Division of Medicine		6 610
Travel grant from the Norwegian Cancer Society	Lisa Lirussi	Division of Medicine	The Norwegian Cancer Society	48 000
The Nor-Drum study	Kristin Kaasen Jørgensen / Jørgen Jahnsen	Division of Medicine	Diakonhjemmet hospital	16 500
Kolbjørn Brambani's Cancer Research Grant	Sebastian Meltzer	Division of Medicine, cancer department	Kolbjørn Brambani's Cancer Research Fund	200 000
		Division of Medicine		371 110
Charnley Scholarship 2016	Christian Pollmann	Orthopaedic Clinic	Ortomedic AS	100 000
Gythfeldt Research Fund	Rune Bruhn Jakobsen	Orthopaedic Clinic	Dr Trygve Grythfeldt and Lady's Research Fund	75 000
Predictor of infection in the knee after surgical reconstruction of the anterior cruciate ligament	Monica Sailer	Orthopaedic Clinic	NOF scholarship 2017 from the Norwegian Orthopaedic Association	50 000
		Orthopaedic Clinic		225 000

12. Internal research funding

Once a year, internal strategic research funding is announced for which employees can apply. The applications will be quality assessed by external referees.

In 2017, a total of NOK 47.5 million was applied for, divided into 55 applications. The total sum allocated was six million NOK spread over 33 projects (see table 14). Applicants are encouraged to use peer feedback to improve their applications when applying for research funding from the South-Eastern Norway Regional Health Authority and other external sources. In 2017, Ahus introduced a new category, "Strategic Initiative". In this category, up to NOK 1 million is allocated annually for up to three years to a project of strategic importance, in accordance with the hospital's research strategy. Emphasis was placed on cooperation between different departments and divisions. For 2017, priority was given to projects related to "Healthy Aging".

Table 14: Projects awarded internal research funding 2017

Project title	Manager	Division/Clinic	Allocated amount
Disease burden and consequences of respiratory syncytial virus in Norway: A prevaccine assessment	Britt Nakstad	Division of Paediatric and Adolescent Medicine	150 000
Healthy Aging Promoted by Transgenerational Social Encounter: a Randomized Controlled Trial	Vegard Bruun Wyller	Division of Paediatric and Adolescent Medicine	150 000
		Division of Paediatric and Adolescent Medicine	300 000
Magnetic Resonance Imaging of the bowel and bile ducts in patients with longstanding inflammatory bowel disease: estimate of disease extent and severity with evaluation of prognostic risk factors. The Ibsen cohort.	Anne Negård	Division of Diagnostics and Technology	300 000
Improved diagnostics of orthopaedic implant-related infections	Hege Vangstein Aamot	Division of Diagnostics and Technology	150 000
		Division of Diagnostics and Technology	450 000
Implementation of national guidelines for psychosis treatment	Torleif Ruud	Division of Mental Health	150 000
		Division of Mental Health	150 000
How do we provide better, safer and more cost-effective care pathways for older people?	Jorun Rugkåsa	Research Centre	150 000
A new life - life after cardiac arrest - prediction, function and life situation	Christofer Lundqvist	Research Centre	150 000
Better involvement in MS treatment	Pål Gulbrandsen	Research Centre	80 000
		Research Centre	380 000
The Constitutive Migration of the Tympanic Membrane Keratinocytes	Magnus von Unge	Division of Surgery	300 000
Studies on the ileo pouch anal anastomosis	Tom Øresland	Division of Surgery	300 000
		Division of Surgery	600 000

Project title	Manager	Division/Clinic	Allocated amount
Three dimensional (3D) ultrasound and magnetic resonance imaging (MRI) - the future tools to diagnose pregnancies with high risk of adverse outcome?	Anne Eskild	Division of Gynaecology and Obstetrics	150 000
Diagnostic technology and foetal mortality: Evidence from the introduction of ultrasound and CTG in Norway	Jostein Grytten	Division of Gynaecology and Obstetrics	100 000
		Division of Gynaecology and Obstetrics	250 000
Improved treatment of acute myeloid leukemia in elderly patients	Hilde Nilsen	Division of Medicine	500 000
The importance of idiotypes and allotypes for the B-cell response in multiple sclerosis	Trygve Holmøy	Division of Medicine	100 000
n-3 polyunsaturated fatty acids - the vasculature, heart and kidney: an epidemiological study	My Hanna Sofia Svensson	Division of Medicine	1 000 000
Personalised treatment of locally advanced breast cancer: The Petremac study	Jürgen Geisler	Division of Medicine	150 000
Extracellular Vesicles from Hypoxic Tumors - Mediators of Cancer Metastasis	Anne Hansen Ree	Division of Medicine	300 000
The MetAction Study - Actionable Target Identification for Palliative Systemic Therapy in Cancer Metastasis. The 2017 Study Conduct at Akershus University Hospital	Anne Hansen Ree	Division of Medicine	500 000
Apixaban as treatment of venous thrombosis in patients with cancer. The CAP study	Anders Erik Astrup Dahm	Division of Medicine	150 000
Prospective follow-up of the PRADA (Prevention of cArdiac Dysfunction during Adjuvant breast cancer therapy) trial	Torbjørn Omland	Division of Medicine	150 000
Exploring Novel Pathophysiology in Heart Failure	Helge Røsjø	Division of Medicine	150 000
Patterns and mechanisms of brain atrophy in healthy aging and dementia: Why is the aging brain susceptible to Alzheimer's Disease?	Per Selnes	Division of Medicine	220 000
Circulating- and imaging biomarkers in rectal cancer	Kathrine Røe Redalen	Division of Medicine	300 000
BioPicture	Kathrine Røe Redalen	Division of Medicine	150 000
Age, estrogen, and immune response: from mammographic density to characterization and quantification of infiltrating immune cells and inflammation-induced epigenetic alterations in breast adenocarcinoma and adjacent normal tissue	Vessela N. Kristensen	Division of Medicine	150 000
Tumor microenvironment interactions: relation to breast cancer risk and progression	Andliena Tahiri	Division of Medicine	300 000
Transition from healthy aging to Cognitive Diseases	Tormod Fladby	Division of Medicine	150 000
Molecular drivers and inhibitors of colorectal cancer in inflammatory bowel diseases	Stephan Brackmann	Division of Medicine	500 000
Molecular drivers and inhibitors of colorectal cancer in inflammatory bowel diseases	Stephan Brackmann	Division of Medicine	150 000
Prediction and detection of Occult Atrial fibrillation in patients after acute Cryptogenic stroke and Transient Ischemic Attack (PROACTIA)	Kjetil Steine	Division of Medicine	150 000
		Division of Medicine	5 070 000
I. Fixation of chondral fractures in the adolescent knee - Surgical technique and clinical outcome in 10 patients /	Per-Henrik Randsborg	Orthopaedic Clinic	100 000

Project title	Manager	Division/Clinic	Allocated amount
2. Reliability of the International Cartilage Repair Society (ICRS) classification system for grading cartilage lesions of the knee			
Plate fixation versus riveting of 3 and 4 party proximal humerus fractures. A prospective randomised controlled trial	Per-Henrik Randsborg	Orthopaedic Clinic	150 000
The HiPWizArD trial: Hip fracture secondary Prophylaxis With either Zoledronate or Denosumab	Asbjørn Årøen	Orthopaedic Clinic	150 000
		Orthopaedic Clinic	400 000

13. Outstanding Research Award

Each year, prizes for outstanding research are awarded to three articles with the first author from Ahus. An important purpose of this is to highlight the qualitatively good research produced and published by the hospital's employees. The prize is recommended by a joint research committee based on publication points/impact factor of published works in the previous year. The laureates receive flowers, a diploma and NOK 10,000 that can be used for conference participation or similar. Award winners in 2017 were Aida Kapic Lunder (Division of Diagnostics and Technology), Odd Langbach (Division of Surgery) and Peter Mæhre Lauritzen (Health Services Research Unit, HØKH).



Doctor Aida K. Lunder, former Deputy CEO of Ahus Tone Ikdahl and Senior Consultant Petter M. Lauritzen. Odd Langbach was not present at the award ceremony.

Aida Kapic Lunder, Hov, Johannes Espolin Roksund; Borthne, Arne Sigmund; Gleditsch, Jostein; Johannesen, Glenn; Tveit, Knut; Viktil, Ellen; Henriksen, Magne; Hovde, Øistein; Huppertz-Hauss, Gert; Høie, Ole Ingebret; Høivik, Marte; Kempski-Monstad, Iril Lovise; Solberg, Inger Camilla; Jahnsen, Jørgen; Karlsen, Tom Hemming; Moum, Bjørn; Vatn, Morten H; Negård, Anne.

Prevalence of Sclerosing Cholangitis Detected by Magnetic Resonance Cholangiography in Patients With Long-term Inflammatory Bowel Disease.

Gastroenterology 2016; Volum 151.(4) s.660-669.

Primary sclerosing cholangitis (PSC) is a chronic inflammation of the bile ducts, closely associated with inflammatory bowel disease (IBD). The incidence of PSC in IBD is still uncertain. This is crucial knowledge for better understanding the connection between PSC and IBD, but also for early diagnosis of the serious complications PSC in IBD can have: cancer of the bile ducts and colon. Our study is based on a population-based study in South-Eastern Norway (the IBSEN study), in which newly diagnosed IBD patients were included in the period 1990-93 and systematically followed up until today. After 20 years of IBD, patients were invited to a check-up with bl. a magnetic resonance imaging of the bile ducts (MRC), to assess the presence of and prognostic markers for the development of PSC.

322 IBD patients were screened with MRC. The PSC incidence was 8.1%, which was almost four times more frequent than was already clinically recognized. The radiological findings were mild, but progressive at follow-up. Our findings indicate that a subgroup of IBD patients have mild, slowly progressive subclinical PSC. The long-term prognosis and risk of cancer development in this group is uncertain, and whether MRC screening of IBD patients should be recommended on the basis of our findings is still too early to say.

The IBSEN 20 year study, the MRC project, is a collaboration between AHUS, the PSC Institute at Oslo University Hospital and the hospitals in Østfold, Telemark and in Arendal. The study was published in *Gastroenterology*, the world's leading journal in gastroenterology, featured in an editorial under the title *Shifting Paradigms: What Is the True Prevalence and Clinical Course of Primary Sclerosing Cholangitis?* (PMID: 27590692) and in *Nature Reviews* (PMID: 27507103) under the title *IBD: A timely diagnosis of primary sclerosing cholangitis in IBD*.

Odd Langbach, Bukholm, Ida Rashida Khan; Saltyte Benth, Jurate; Røkke, Ola.
Long-term quality of life and functionality after ventral hernia mesh repair.
Surgical Endoscopy 2016.

A hernia or ballooning in the anterior abdominal wall may occur spontaneously or be a consequence of surgery in the abdominal cavity. It is rare that the hernia is caused by blunt trauma. Treatment of hernia occurs either with laparoscopic or open surgery and, as a rule, with the use of mesh reinforcement (VHR = ventral hernia mesh repair). The treatment goal is to restore the abdominal wall to good functionality and ensure a good quality of life without pain and discomfort.

We examined 153 patients after having had VHR and 112 patients referred with first hernia of the anterior abdominal wall. A thorough clinical examination was undertaken with pain registration and localization of the pain. Furthermore, the patient was presented with quality of life questionnaire (Sf-36), activity form (activities assessment score) and an optimism/pessimism score. Both surgical techniques reduce chronic pain and improves both functional ability and quality of life. Recurrence of hernia (recurrence) and persistent pain reduces the effectiveness of VHR. An optimistic patient, however, will experience a better overall result than the corresponding pessimistic patient.

Petter Mæhre Lauritzen, Andersen, Jack Gunnar; Stokke, Mali Victoria; Tennstrand, Anne Lise; Aamodt, Rolf; Heggelund, Thomas; Dahl, Fredrik Andreas; Sandbæk, Gunnar; Hurlen, Petter; Gulbrandsen, Pål.

Radiologist-initiated double reading of abdominal CT: Retrospective analysis of the clinical importance of changes to radiology reports.

BMJ Quality and Safety 2016; *Volum* 25.(8) s.595-603.

Response reports from diagnostic imaging surveys provide important diagnostic information in the assessment and follow-up of patients in most medical fields. In Norwegian hospitals, considerable resources are devoted to quality assurance of radiology results in a double examination, which involves an imaging examination interpreted by two different radiologists.

We compared 1071 pairs of preliminary and final response reports from double-examined CT abdomen examinations of surgical patients in five Norwegian hospitals. Experienced gastric surgeons graded the significance of all changes in the response reports.

We found clinically significant changes in 146 of 1071 reports (14%). Three reports contained changes of critical importance (requiring immediate action). In 35 reports (3%) there were significant changes (requiring changes in treatment). In 108 reports (10 %), changes of medium significance had been made (with a need for changed follow-up/assessment).

The changes resulted in an increase in the severity of radiological findings in 118 (81%) of the radiology results. Changes of clinical significance were made more frequently in urgent examinations and when specialised abdominal radiologists performed the double examination. Fewer changes were made when abdominal radiologists interpreted first.

The findings show a need for quality assurance of radiological interpretation, and that more interpretation abnormalities can be detected through the use of specialised radiologists and a focus on urgent examinations.

14. Dissertations of the Year

In 2017, 16 employees at Akershus University Hospital defended their PhD degree. Table 6 shows the distribution of doctoral degrees by division. Below is an overview of the doctoral candidates' work:



Anne Marthe Boldingh

Cand.med. Anne Marthe Boldingh at the Division of Paediatric and Adolescent Medicine defended her thesis in the field of neonatal medicine on 16 January over the thesis: "**Quality of Neonatal cardiopulmonary resuscitation: Mechanical and practical aspects (Manikin studies)**"

(The trial lecture was held on the given topic: «*Clinical outcomes after neonatal resuscitation; short- and long-term consequences*»)

Supervisor: Professor Britt Nakstad



Egil Rørvik Røsjø

Cand.med. Egil Rørvik Røsjø at the Division of Medicine defended his thesis in the field of Neurology on 17 February over the thesis: "**Vitamin A, D and E and inflammation in multiple sclerosis**"

(The trial lecture was held on the given topic: "*Autoimmune encephalitis - clinical spectrum, mechanisms, and investigations*")

Supervisor: Professor Trygve Holmøy



Ragnhild Røysland

Cand.med. Ragnhild Røysland at the Division of Medicine defended her thesis in the field of Cardiology on 30 March over the thesis: "**Circulating osteoprotegerin as a biomarker in coronary heart disease and heart failure**"

(The trial lecture was held on the given topic: "*Cardiac biomarkers in congenital cardiology: Present applications and future possibilities*")

Supervisor: Professor Torbjørn Omland



Anett Hellebø Ottesen

M.Sc. Anett Hellebø Ottesen at the Division of Medicine defended her thesis on 31 March over the thesis: "**Functional aspects of granin proteins in cardiac disease**".

(The trial lecture was held on the given topic: "*Challenges in identifying biomarkers for cardiovascular diseases*")

Supervisor: Researcher Helge Rørvik Røsjø



Trude Gøril Klevan

Trude Gøril Klevan at the Division of Mental Health defended her thesis on 24 April over the thesis: "**The importance of helpful help in mental crises. Experiences, stories and contexts - a qualitative story**".

(The trial lecture was held on the given topic: "*Professional assistance between help and control. The spread of the 'psychiatric gaze' beyond institutions, all the way into people's homes. Advantages and disadvantages*")

Supervisor: Professor Torleif Ruud



Magnus Nakrem
Lyngbakken

Cand.med. Magnus Nakrem Lyngbakken at the Division of Medicine defended his thesis on 18 May over the thesis: "**Cardiac troponin I, risk factors, and clinical outcomes in cardiovascular disease**".

(The trial lecture was held on the given topic: "*Rapid rule-in and rule out of Myocardial infarction*")

Supervisor: Professor Torbjørn Omland



Gunvor Aasbø

MA Gunvor Aasbø at the Unit for Research and Innovation defended her thesis on 30 March over the thesis: "**Affected and responsible: A qualitative study of family caregivers in interaction with chronically ill persons and health care Professionals**".

(The trial lecture was held on the given topic: "*Next of kin as a resource in cases of illness and functional failure: A historical perspective on the relationship between formal and informal care*")

Supervisor: Senior Research Scientist Anne Werner



Odd Langbach

Cand.med./Cand.odont. Odd Langbach at the Division of Surgery defended his thesis in the field of Gastroenterological Surgery on 6 June: "**The consequences of ventral hernia mesh repair. Analyses and interpretation of different aspects of outcome**".

(The trial lecture was held on the given topic: "How should surgical treatment of inguinal hernia be tailored?")

Supervisor: Professor Ola Røkke



Geir Reinvik Ulimoen

Cand.med. Geir Reinvik Ulimoen at the Division of Diagnostics and Technology defended his thesis on 7 June: "**Coronary CT Angiography – Methods and Clinical Application**".

(The trial lecture was held on the given topic: «*Cardiac CT beyond the coronary arteries - What can we expect?*»)

Supervisor: Professor Arne Borthne



Peder Langeland Myhre

Cand.med. Peder Langeland Myhre at the Division of Medicine defended his thesis on 9 June: "**Cardiovascular biomarkers in high-risk patients**".

(The trial lecture was held on the given topic: «*Risk versus benefit of using biomarkers during treatment of critically ill intensive care patients*»)

Supervisor: Researcher Helge Rørvik Røsjø



Laura Anne Wortinger
Bakke

M.Sc. Laura Anne Wortinger Bakke at the Division of Paediatric and Adolescent Medicine defended her thesis on 16 June: "**Neurocognitive correlates of adolescent chronic fatigue syndrome**"

(The trial lecture was held on the given topic: *"The effect of sleep, activity and pain on cognition and functional imaging"*)

Supervisor: Professor Vegard Bruun Bratholm Wyller



Arnhild Lauveng

Cand.psychol. Arnhild Lauveng at the Division of Mental Health defended her thesis "**Growing as a person. The possibility of personal development for adults in treatment and education**"

(The trial lecture was held on the given topic: *"Models of understanding mental illness"*)

Supervisor: Professor Torleif Ruud



Aleksander Chaibi

M.Sc. Aleksander Chaibi at the Unit for Research and Innovation defended his thesis on 29 August: "**Chiropractic spinal manipulative therapy for migraine**".

(The trial lecture was held on the given topic: *"Migraine vs. other types of headaches- a review of theories of causes and treatment approaches over time"*)

Supervisor: Professor Michael Bjørn Russell



Hanne Kristin Clausen

MD Hanne Kristin Clausen at the Division of Mental Health defended her thesis on 6 September: "**Patients in Norwegian Assertive Community Treatment teams: subjective quality of life and inpatient service use**".

(The trial lecture was held on the given topic: «*Psychological treatment in schizophrenia*»)

Supervisor: Professor Torleif Ruud



Christian Owesen

Cand.med. Christian Owesen at Orthopaedic Clinic defended his thesis on 21 September: «**Symptoms, Diagnosis and Outcomes in PCL Injuries**».

(The trial lecture was held on the given topic: «*Anterior cruciate ligament injury, epidemiology, treatment and results – what have we learned from the Scandinavian registries?*»)

Supervisor: Professor Asbjørn Årøen



Sebastian Meltzer

Cand.med. Sebastian Meltzer at the Division of Medicine defended his thesis on 14 December: "**Circulating Markers of Immunogenicity and Metastasis in Combined-Modality Treatment of Rectal Cancer**".

(The trial lecture was held on the given topic: «*From the immunoscore to immunotherapy of colorectal cancer*»)

Supervisor: Researcher Kathrine Røe Redalen

15. Research support at Akershus University Hospital

Research administration

The Department of Research Support handles personnel administration and financial follow-up in the research projects. Within the personnel area, the department attended to approximately 475 people (including employees and remuneration persons) in 2017. During the year there were 60 new hires in addition to remuneration employees.

Financial follow-up for a total of 342 projects, of which 49 are new. The department also handles reporting and general operations for all research activity at the hospital. The department is administratively responsible for meetings of joint research committees, chair meetings for research, thematic meetings for research, and announcement and allocation of internal strategic research funding (55 applications for 2017).

Research advisor

The main area of responsibility is internal control of research and quality projects to ensure that these are carried out in accordance with legislation, preparation of general routines and procedures, and providing advice related to issues of privacy and biobanking. This includes teaching and lectures, as well as guidance in routines and regulations, assessment of consent and project design, advice on sampling/processing and storage of biological material. An important task is to represent Ahus in regional and national forums, as well as participation in NorCRIN and Biobank Norway.

Medical Library

Medisinsk bibliotek organiserer og tilrettelegger tilgang til kvalitetssikrede kunnskapskilder (databaser, bøker og tidsskrifter) for sykehusets ansatte. Kunnskapskildene tilbys i elektronisk eller trykt form, og ansatte har direkte tilgang til de elektroniske ressursene i Ahus' nettverk, samt mulighet for tilgang hjemmefra via en påloggingstjeneste. Biblioteket er betjent mandag kl. 9-12 og tirsdag-fredag kl. 9-15, men ansatte har tilgang til lokalet døgnet rundt med ID-kort og kode. Ansatte må registrere seg for å låne og bestille artikler og bøker. Biblioteket tilbyr kurs og veiledning i litteratursøk og EndNote (referansehandling), og utfører søk i forbindelse med forskningsprosjekter, artikkel- og bokskriving, prosedyrer, faglig oppdatering osv.

Revision of Research

In 2016, a revision of the research processes at Ahus was conducted to ensure that research was planned, conducted, and possibly concluded in accordance with the Health Research Act. Seven REK-mandatory projects were selected to assess whether project managers, line managers, and Ahus as the responsible research institution met the requirements of laws and regulations. Nineteen deviations and 44 comments were identified. This led to each division/clinic developing an action plan with proposed measures to address the deviations. Additionally, the research support department was tasked with creating an overarching action plan for Ahus as the responsible research institution.

Recommended overarching measures from the audit team:

- Clarify responsibilities and tasks related to research responsibility.
- Enhance management follow-up of research projects.

- Develop a better overview of laws/regulations and requirements in internal procedures.
- Establish and maintain necessary guidelines and procedures.
- Strengthen training and competence.
- Enhance compliance with requirements for research protocols.
- Strengthen handling of patient information and consent.
- Strengthen management of biobanks.
- Ensure compliance with monitoring requirements of GCP studies.
- Enhance data management and storage of research data.
- Ensure compliance with archiving requirements in the P360 case archive system.
- Ensure compliance with archiving requirements for paper-based research documents.
- Strengthen deviation management in research activities.
- Ensure systematic monitoring of internal control for research activities.

Research Clinics

Statistical Research Clinic

Every Tuesday from 13:30 to 15:00, a statistical research clinic is held at the hospital. The clinic is located on the 5th floor of Nye Nord and is open to all employees at Akershus University Hospital and UiO, Campus Akershus University Hospital. The clinic operates on a drop-in basis, meaning those who approach are assisted upon arrival. The Statistical Research Clinic offers advice on analysis and the use of statistical methods.

Health Science Research Clinic

The Health Science Research Clinic is a low-threshold service offering advice on health science research questions. The clinic can provide:

- Assistance in identifying and specifying possible issues in the early idea phase.
- Guidance on the applicability of various research methods concerning relevant issues and projects.
- Advice on preparations for a research project.
- Guidance on applying for research funding.

Health Economics Research Clinic

The Health Economics Research Clinic is a low-threshold service for employees at Akershus University Hospital and UiO interested in health economic issues in a clinical setting. The clinic can offer:

- Discussion on how health economic issues can fit into clinical projects.
- Cost-effectiveness and cost-benefit analyses.
- Selection of outcome measures: health-related quality of life (HRQoL) measured, for example, by EQ-5D, 15D, SF-6D.
- Advice on relevant cost components.
- Guidance on data collection.
- Advice on methods and analyses.
- Other health economic issues (financing, cost analyses, choice models, etc.).
- Guidance on preparations for a research project.
- Advice on grant writing.

Data Capture Group

The Data Capture Group is a service organization for researchers at Ahus and Campus Ahus, UiO. The group assists with data collection, data extraction, and secure storage of research data. If you need assistance, the project must have the [necessary applications and approvals in order](#).

More information about the reserach clinics at Ahus - see <https://www.ahus.no/fag-og-forskning/forskning-og-innovasjon/forskningsstotte>

16. Public and Research Day for the Population

On Tuesday, 25th April, Akershus University Hospital hosted the "Public and Research Day" for the eighth time. The purpose is to acquaint residents and employees with the academic and research activities at Ahus, highlighting the hospital's high professional ambition and skilled professionals. The lectures are brief, with ample opportunity for questions afterward. Speakers provide short summaries of their presentations, which we distribute along with contact information, allowing those interested to reach out for further details.

More than 100 individuals attended the auditorium on this Tuesday evening, where they heard presentations on topics such as repair of an enlarged aorta, myths and realities about nutrition, and heart failure. The audience demonstrated significant engagement, leading to constructive dialogue between the audience and the individual speakers.

AKERSHUS UNIVERSITETSSYKEHUS



VELKOMMEN

Akershus universitetssykehus inviterer lokalbefolkningen til spennende foredrag med fokus på fag og forskning ved sykehuset.

For de som ønsker å være med på en omvisning i sykehuset før foredragene er det oppmøte rett innenfor hovedinngang kl. 17:00.

Tid
Tirsdag 25. april 2017 kl. 18:00 - 20:30

Sted
Akershus universitetssykehus
Auditoriet, inngang 1.

www.ahus.no/apen-dag



PROGRAM

18:00 - 18:05
Velkommen til Akershus universitetssykehus
Tone Ikdahl, viseadministrerende direktør

18:10 - 18:25
Reparasjon av utvidet hovedpulsåre - hva kan gjøres gjennom et lite hull?
Dan Levi Hykkerud

18:30 - 18:45
Ernæring - myter og realiteter
Christine Gørbitz

18:50 - 19:05
Vanskelege avgjersler? Brukermedverknad i beslutningar om behandling av pasientar med alvorleg kreftsjukdom
Ellen Kristvik

19:10 - 19:25
Hvorfor ungdomsråd?
Ungdomsrådet

19:30 - 19:45
Hjertesvikt - en ny markør i blodet kan identifisere pasientene med dårligst prognose
Peder Myhre

19:50 - 20:05
Eldreomsorg - kirurgisk behandling av eldre med lårhalsbrudd i god stilling: Er skruer eller protese best?
Filip Dolatowski

20:10 - 20:25
Når pensjonisttilværelsen ikke ble som du trodde - en beretning om hva man gjør når psyken vender seg mot deg i godt voksen alder
Ørjan Rasmussen

Menneskelig nær - faglig sterk

UiO : Universitetet i Oslo

17. Attachment 1: Research Groups

The following research groups were active as of May 2018. (Research group leader in parentheses).

- **Division of Surgery. Research Manager Juha Tapio Silvola**
 - ENT research group (Magnus von Unge)
 - Urology research group (Stig Müller)
 - Gastrosurgical research group including maternal/endocrine, anaesthesia, vascular / thorax (Ola Røkke)
 - Vascular/Thoracic Research Group (Jarlis Wesche)
- **Orthopaedic Clinic/research group. Research Manager Asbjørn Årøen.**
 - Orthopaedic research group (Asbjørn Aarøen)
- **Division of Gynaecology and Obstetrics. Research Manager Anne Eskild.**
 - Department of Obstetrics and Gynecology (Anne Eskild)
- **Division of Mental Health/ R&D department. Research Manager Ketil Hanssen-Bauer**
 - Children & adolescents mental health (Marianne Villabø)
 - Mental Health, Treatment, and Implementation (Kristin S. Heiervang)
 - Substance Use and Addiction (Lars Tanum)
- **Research and Innovation. Research Manager Tormod Fladby**
 - HØKH (Health Services Research Unit, Ahus) (Hilde Lurås)
 - Clinical Communication, Ahus (Pål Gulbrandsen)
 - Head and neck research group (Michael Russel)
- **Division of Medicine. Research Manager Gunnar Einvik**
 - Oncogenomics (Vessela Kristensen)
 - Cardiothoracic Research Group (Torbjørn Omland)
 - Clinical Neuroscience Group (Tormod Fladby)
 - Gastrointestinal surgery research group (Jørgen Jahnsen)
 - Center for Haematological Research at Ahus (Anders Dahm)
 - DNA-Repair (Hilde Nilsen)
 - Kidney Research Group (My Svensson)
 - Clinical and Molecular Oncology in ColoRectal Cancer (CMOR) (Anne Hansen Ree)
 - Breast Cancer Group Ahus (Jürgen Geisler)
- **Division of Paediatric and Adolescent Medicine. Research Manager Britt Nakstad**
 - PedRes (Britt Nakstad)
 - PAEDIA (Vegard Bruun Wyller)
- **Division of Diagnostics and Technology. Research Manager Petter Hurlen**
 - Infectious Diseases and Microbiology (Truls Leegaard). Collaboration with the Department of Infectious Diseases in the Division of Medicine. Deputy Head Olav Dalgard.

- Medical Biochemistry. Interdisciplinary Laboratory Medicine and Technology (Gunnhild Kravdal)
- IMTRA research group (Seyed Ali Mousavi)
- Clinical Radiology (Jonh Terje Geitung)
- Pathology (Ulla Randen)