Forskningsrådet

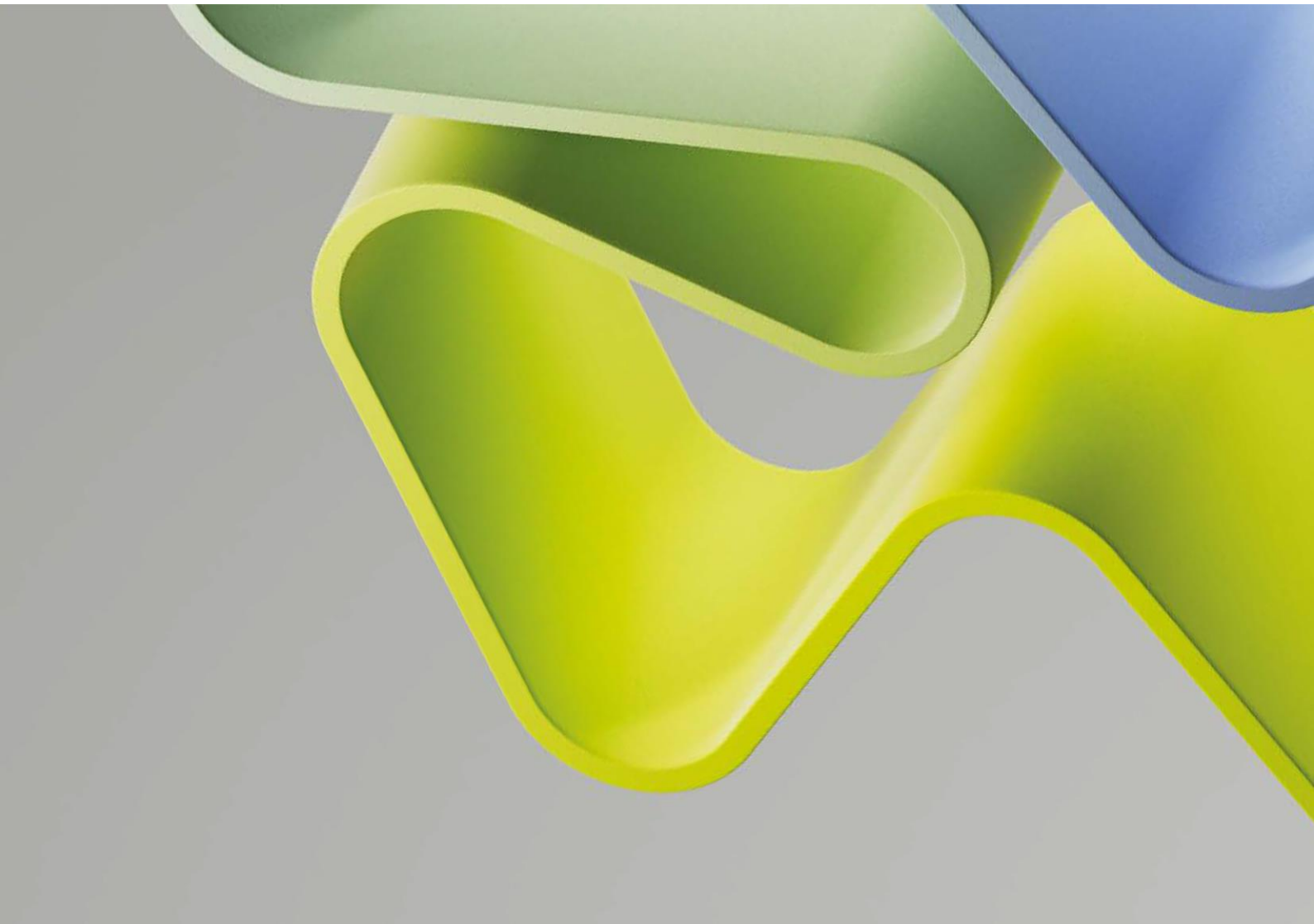
Evaluation of Life Sciences 2022-2024

Evaluation of medicine and health 2023-2024

Evaluation report

ADMIN UNIT: Centre for Fertility and Health
INSTITUTION: Norwegian Institute of Public Health

December 2024



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Statement from the Evaluation Committee for the Institute Sector

This report is from the Evaluation Committee for the Institute Sector which evaluated the following administrative units in the Evaluation of Medicine and Health 2023 - 2024:

- Centre for Fertility and Health, Norwegian Institute of Public Health
- Division of Climate and Environmental Health, Norwegian Institute of Public Health
- Division of Health Services, Norwegian Institute of Public Health
- Division of Infection Control, Norwegian Institute of Public Health
- Division of Mental and Physical Health, Norwegian institute of Public Health
- Health and Social Sciences Division, Norwegian Research Centre (NORCE)
- The National Institute of Occupational Health in Norway (STAMI)

The conclusions and recommendations in this report are based on information from the administrative units (self-assessment), digital meetings with representatives from the administrative units, bibliometric analysis and personnel statistics from the Nordic Institute for Studies of Innovation, Research, and Education (NIFU) and Statistics Norway (SSB), and selected data from Studiebarometeret (NOKUT). The digital interviews took place in Autumn 2024.

This report is the consensus view from the Evaluation Committee for the Institute Sector. All members of the committee have agreed with the assessments, conclusions and recommendations presented here.

The Evaluation Committee for the Institute Sector consisted of the following members:

Professor emerita Ingalill Rahm Hallberg (chair)
Lund University

Associate Professor Joachim Boldt
Albert Ludwig University of Freiburg

Professor Walter Bruchhausen
Bonn University

Professor Sarah Purdy
Bristol Medical School

Bregtje Kamphuis, Technopolis Group, was the committee secretary.

Oslo, December 2024

Profile of the administrative unit

The Centre for Fertility and Health (CEFH) director, deputy director, and head of administration manage daily operations, holding weekly meetings to coordinate decisions. The CEFH is comprised of 36 researcher positions, 13 PhD candidates, nine postdocs and eight administrative staff. Women represent 45 percent of research staff.

The Centre for Fertility and Health is comprised of one research group, the Centre for Fertility and Health.

According to the self-assessment, the research themes and questions which the administrative unit is involved in are of great importance to public health and therefore also in line with the institutional strategies and priorities. In relation to this, the primary scientific aim of the CEFH is to deepen the understanding of the factors influencing fertility and uncover the social and biological pathways linking fertility to health across the lifespan. They also strive to expand knowledge about the determinants and health impacts of union formation and dissolution, which are closely tied to fertility. The six current research themes of the administrative unit are: maternal and paternal age, infertility, subfertility and reproductive technologies, foetal life, adolescence and fertility outcomes, fertility, family structure and transmission of health across generations, new statistical methods for analysing family and transgenerational data and Covid, vaccination and its implications on pregnancy, young adults, education, partner formations and fertility.

Aligned with the social mission of the NIPH, the administrative unit generates research-based knowledge utilised by the government, central health authorities, health trusts, counties, specialist health services, and municipal health and care services. This knowledge supports broad public sector innovation. A central contribution to this innovation comes through advice, decision support, and evidence synthesis. Moreover, the work of the CEFH contributes to the overall sector with respect to its priority of acquiring and linking data from population surveys and health registers. In relation to their areas of contribution, the NIPH has participated in several collaborations. Among other things, they have established partnerships with over 50 research institutes globally, and the collaborations primarily focus on joint research initiatives, where both parties collaborate on specific deliverables within research projects or on specific scientific publications. The collaborations themselves actualised through various mechanisms including their annual compositum, hosting of guest researchers, the Gro Harlem Brundtland Visiting Scholarship and weekly scientific meetings.

In the future, the CEFH might take advantage of its large network and international collaborations and that it provides an active network to follow up PhD research fellows, postdocs, and early career researchers, including a mentoring programme to monitor progress and mitigate issues at hand. Moreover, based on the self-assessment, one external opportunity for the administrative unit is that the public demand for knowledge related to their research themes is high, something which might be an advantage in the future.

Overall evaluation

As a Centre of Excellence, the Centre for Fertility and Health (CEFH) clearly prioritises cutting-edge research and is organised accordingly. This difference to the other divisions in NIPH allows the centre to achieve its strategic goals without compromising with the requirements of routine operational tasks.

The Terms of Reference (ToR) for the centre requested the following points:

- "qualitative assessment of the Centre for Fertility and Health as a whole in relation to its strategic targets"
- assessment of "the strategy that the administrative unit intends to pursue in the years ahead"
- assessment of "the extent to which it will be capable of meeting its targets for research and society during this period based on available resources and competence"

According to its strategy, the Center for Fertility and Health wants to be the leading focal point for scientific questions of human fertility in Norway. The centre is impressively strong in acquiring external funding, recruiting excellent researchers, producing high ranking publications and achieving media coverage as well as political attention. Being a link between universities or academia and public interest has proven to be successful in some instances. The urgent questions of pregnancy and menstruation possibly impacted by Covid-19 infection and vaccination have proven this need for competencies on reproduction in public health.

Concerning the future and its continued existence within NIPH, the centre must direct its activities closer to operational needs of a public health institution and perhaps even becoming stricter in refusing support for excellent research ideas that are, however, outside the scope of NIPH.

Since after the steep decline of maternal mortality, reproductive health had largely disappeared from Public Health (institutes) in Western societies an administrative unit with expertise on issues of procreation would be an important asset to the NIPH. After the end of the funding for the Center of Excellence (CoE) in 2027, the future of the centre's activities is unclear though the staff on permanent positions will remain in NIPH and could continue some of this research.

Recommendations

The specific ToR for the centre requested recommendations concerning the two subjects of relation to strategic targets and of the future strategy and the chances to meeting the targets.

This request in mind, the committee recommends:

- Planning long-term funding for developing the centre into a permanent administrative unit focussing issues of reproduction and health with its individual and societal implications.
- Preserving several of the achievements of the centre in the future institutionalisation: the acquired competencies in dealing with fertility, the experiences on the way from multi- to interdisciplinarity, especially in the collaboration between biomedicine and social science, some (though certainly limited) space for curiosity-driven research and the extensive invitation of visiting scholars, including respective scholarships.
- Correcting the diversity imbalance in research positions regarding gender and ethnicity since differing perspectives are extremely important in fertility issues.
- Fostering the collaboration with normative disciplines such as social ethics or law and the integration into societal debates such as on the future of reproduction or gender roles.
- Increasing stakeholder engagement beyond dissemination, e.g. by Public and Patient Involvement and Engagement (PPIE) from the very beginning already in the decision on and the planning of projects.

1. Strategy, resources and organisation of research

1.1 Research strategy

The centre is rather an addition to the NIPH's core tasks, reacting to the public concern of declining fertility. The application for the centre with the CoE initiative was developed in an interaction between the NIPH directors and interested researchers, thus representing institutional strategies to cover fields of Public Health concern and researchers' interest in promising scientific fields.

According to the ToR, it is the centre's main claim that "a multidisciplinary approach increases the quality of our research and actively pursue studies that integrate substantive content and methodological approaches across disciplines".

The main research areas according to the self-report (p.5) and defined for the sixth year of the CoE (Annual Report p. 8) are: "Maternal and paternal age; Infertility, subfertility and reproductive technologies; Foetal life, adolescence and fertility outcomes; Fertility, family structure and transmission of health across generations; New statistical methods for analysing family and transgenerational data; Covid, vaccination and its implications on pregnancy, young adults, education, partner formations and fertility". Compared to this plan already established and especially central for the questions of fertility decline, the following have been prominent: the developmental constraints of men as necessary parts of procreation, unwanted biological effects of assisted reproduction and gestational aging in increasingly late motherhood.

Policy impact was intended from the very beginning and has been achieved in the intended revision of educational policies at several levels. The publications with broad media coverage have initiated or informed debates also in other areas.

The centre's strategies, policies and allocating decisions are regularly checked and revised, within the NIPH's general strategies as well as on lower levels in meetings.

The main decision for the priorities of the centre was made when the application for the CoE was written and after receiving the grant the centre was started. In the 90 often collaborative applications for external funding, new priorities turned up.

The committee's evaluation

As a research unit, the centre works extremely successfully. As part of a national institute of Public Health it must confront some questions. Multidisciplinary has been certainly targeted and achieved, strategies and scientific approaches for the integration of content and the disciplines' different methods are less visible. The research of the institute is mostly relevant for public health issues in the field. In content and methods, however, they are extremely different. Some research areas are rather unusual in focussing fertility decline but highly needed for a comprehensive view. This concerns topics that are easily neglected in respective fields since it may seem to compromise their initial or main intentions, here the fields of gender studies in health and of assisted reproduction:

- The declining success of young males in both education and stable reproductive relations that was hitherto rather an issue of education research and thereby mostly excluded from the attention of gender-related health research has received an innovative, comprehensive and competent investigation by using various approaches and kinds of data.

- Unfavourable long-term effects or health outcomes of infertility treatment in both mothers and children that may come from either the treatment or the condition treated have been investigated by combining most recent methods in telomere research but also reviews of longitudinal studies.

There is a certain tension in the double task of providing 'cutting-edge'/'ground-breaking' research and public health-relevant research. This is also recognised in the self-assessment, the SWOT-analysis. Especially those researchers that are also affiliated to universities might suffer under the wide-spread perception in academia that mainly connects ground-breaking with basic research, not applied or implementation research. This bias seems to be at work in the highly successful research on the gestational age clock which provides knowledge and tools with a high degree of innovation and perhaps some practical opportunities for infertility treatment, but probably less so for public health. The centre has a scientific freedom that goes beyond what is expected in an organisation with a direct governmental funding and operational tasks. This raises questions of relations and fairness regarding other administrative units in NIPH. It did not become clear if its role within the institute meant competing and ending up in less successful applications for grants for others with resembling research topics. If one part of the NIPH could play entirely on their own premises and others could not, the one with all the freedom may starve the others. The committee has concerns whether this should be the way to go for a governmentally commissioned organisation. Governmental needs for evidence-based knowledge would have to weigh higher than a rather curiosity-driven research agenda. The centre rarely conducted interventional studies. Thus, questions how to change a discourse or even policies and regulations remain largely untouched. The research evaluation group suggested that new benchmarks establishing how the group defines success in terms of academic and non-academic (impact) output should be developed.

The committee´s recommendations

- The name of the centre is not informative, partly even misleading and should be changed in any case.
- The societal impact could be improved by more community-involvement and interventional studies. This would require steps towards more transdisciplinarity, i.e. involving non-academic stakeholders from the very beginning like in design and planning, not just in conducting interviews or disseminating results. Interventions needed partners that are responsible for policies and programmes, e.g. in the health or educational sector.
- It is for the NIPH to weigh the pros and cons with an organisational unit of this kind, i.e. how does it influence the other units? Is there room for more than one centre of this kind and how will this affect the primary task of NIPH? Does the centre agenda fit well with the NIPH overarching aims?

1.2 Organisation of research

The set-up of the Centre is conducive to the specific research projects. The internal organisation is flat and entails development, education and strategical decisions into account. There is not so much visibility of an overall coordination for a mid- and long-term planning of overarching topics since researcher- and call-driven funding seems to be dominant. Collaboration with external partners like UiO seems to be far higher than within NIPH. The flexible recruitment at the start of the centre allowed the employment of well-

suited researchers for the various projects. The chance for own grant applications attracts innovative investigators above average. Since the duration of the centre is currently limited there are no long-term career opportunities within the centre for the majority of researchers. Having participated in the high-ranking research, however, should open positions in academia, research or reproductive health. This is supported by a career review programme, a support-team for grant applications and a visiting scholarship programme. Mobility for the own staff would become an issue if the centre were continued, for external researcher's opportunities for temporary work at the centre are already given.

The committee's evaluation

It might be questioned whether it creates the best possible research environment if such different research projects are united in one centre. There have been good examples for fruitful cooperation between e.g. social science/demography and lab-based disciplines, but they appear rather as exception than rule, despite weekly meetings of all researchers. Thus, synergies between different researchers within the centre and NIPH could be strengthened. The centre's approach so far is not completely convincing in terms of Patient and Public Involvement and Engagement, i.e. in having professional stakeholders as well as those concerned involved in the entire research process from idea to planning and executing the research. In a similar way, the centre did not convince in monitoring impact. The methods applied were rather traditional research output and outcome criteria, but impact in terms of monitoring and improving public health had no specific criteria. Referring to public interest and attention from journalists cannot substitute monitoring the impact with regards to regulations, recommendations, policy document etc. which was, however, not discussed.

The committee´s recommendations

The committee comes to the following recommendations:

- Synergies between different researchers within the centre and NIPH could be strengthened, e.g. by prioritising such research projects which could not be conducted in places without so much multidisciplinary in the setting. This might deter researchers with a methodologically more focussed research agenda (who could find suitable position at other institutions), but would capitalise on the specific strength of the centre.

1. Participation of stakeholders from all levels and monitoring the impact of the research on the ones in power, e.g. regarding policies and regulations, should be especially established in those research projects with a high degree of immediate societal and individual relevance.
2. Questions of social ethics should be included in a more systematic manner since the issues of declining fertility and gender equity as well as migration belong to the most burning debates of Western societies and would profit from more academic involvement.

1.3 Research funding

Out of 90 proposals, 24 with a total funding of 400 MNOK have been granted. Since a large part of these projects is collaborative with other institutions, the precise share of the centre remains necessarily unclear and would not give relevant information. Some of externally funded projects had been applied for before the establishment of the centre by investigators becoming members of the centre and are now run under the centre's responsibility. The

administrative unit express concerns as for the financial unpredictability both regard to the basic funding and the external funding which may have repercussions on the ability to recruit and retain excellent researchers. It is unclear whether for the CoE grant, ending in 2027, an opportunity for prolongation will be given.

The committee's evaluation

The external funding (38,9 MNOK in 2022), about three to four times as much as the basic funding from ministry/NIPH (10,9 MNOK) and CoE grant (12,9 MNOK), is impressive and the centre should be commended on this success. This proves the excellent quality of several researchers and of the conditions for ground-breaking research. It demonstrates an above average proficiency in grant proposal writing and a high degree of trust from the Norwegian and international research community. The short-term budget, one year, regarding basic funding is an understandable problem since every research project/programme lasts longer than a year and thus financial planning will inherit big risk taking.

The committee´s recommendations

The committee recommends the following:

- The total amount of external funding should not see major expansion. More could even strain the resources from basic funding needed for administration, organisation, coordination, monitoring, supervision and evaluation too much.
- A slight amendment of funding towards a stronger focus on core tasks of fertility in Public Health could ease the transition into a permanent administrative unit of NIPH.
- Plans for likely scenarios dealing with the major challenge for the centre and NIPH when the term for CoE is terminated should be developed especially in terms of organisation and staff.
- Initiate a discussion with government about the financing period for basic grants with the ambition to have a financial planning period beyond a year.

1.4 Use of infrastructures

Besides sharing laboratory facilities with universities due to double affiliations of researchers, the longitudinal Norwegian mother, father and child study (MoBa) is an important shared resource. NIPH is one of 12 partners in Biobank Norway and in which several sources are integrated, like omics data, population survey data and other health and personal data. This is an important infrastructure for precision medicine. The national registries now mostly under the responsibility of NIPH a recurrently reported problem is obtaining register data in time (SWOT). They do not participate in the suggested international infrastructure apart from the IARC regarding childhood cancer. Researchers from the administrative unit are active in the European 1+ million genome initiative. The administrative unit also participate in the ESFRI infrastructure through their partnership in Biobank Norway. The centre shares resources with national and international partners, especially regarding administrative capacities, including for instance TSD, HUNT-cloud, biobanks, SAFE and they work actively to fulfil the FAIR principles.

The committee's evaluation

The difficulties in timely accessing register data do not seem to be financial like in the UK where budgets for secondary data in research project funding improved access. The problems are rather procedural and hamper the progress of research projects considerably.

The committee´s recommendations

The committee strongly recommends facilitating access to registry data since the current delays are a waste of valuable time in research projects.

1.5 Collaboration

The extremely long list of collaboration cannot be reproduced here. It includes many centres and institutes at Norwegian universities (Oslo and Bergen), clinical partners (Oslo University Hospital), institutions in Scandinavia (Karolinska, Aarhus, Copenhagen), the EU (Max-Plank), the UK (Bristol), the US (Rutgers and Duke) and Australia (Curtin). They are mostly from higher education, some pure research institutes, none from private industry – which would be difficult for Public Health anyway. The administrative unit states they are committed to pro-actively seeking and nurturing national and international collaborations and establish formal partnership agreements, mainly including researchers and research projects as well as visits at each other's research institutions.

The committee's evaluation

Not the least through the double affiliations of several researchers, national collaboration is very strong. Being part of a national institute seems to facilitate international collaboration considerably since national institutes are natural partners for comparison and synergies between countries. Especially research that aims at influencing policies relies on a comparative perspective and profits from experiences in other countries. It is the impression that national as well as international collaborations are selected, formalised, established and performed is proactive and based on that there should be additional value for the unit.

The committee´s recommendations

The committee recommends to:

- preserve and strengthen collaborations with similar institutes in other countries along the strategy already in place.
- prevent that in collaborations with other institutions for research and higher education the interest of the partners leads the centre away from its original tasks and assignment in Public Health. Top quality in research should not be the only criterion in deciding on collaborations.

1.6 Research staff

The research staff have expertise in epidemiology, genetics, psychology, demography, statistics, sociology, economics and medicine. 45% of the staff is female. 3 DBH codes 1538 Specialist Directors, 11 DBH 1183 Senior Researchers and 22 DBH 1110/1109/1108 Researchers in full or part-time positions (with additional employment for full-time at other administrative units). 4 full-time researchers from other administrative unit at NIPH are members of the centre. The administrative staff is included since they are involved in research. The administrative unit reports a well-developed plan for career development

including yearly development review, mentorship programme for PhD students, post doc and those early in their career and a network to facilitate exchange, seminars etc.

The committee's evaluation

Considering academic disciplines, the range of them is impressive in general. Although thereby interdisciplinarity is at the core of the unit's strategy it is noteworthy that no ethical or philosophical research competence is involved in the research. Research topics like declining fertility seemingly out of choice is closely connected to peoples' value system, ethically and morally.

The share of women in researcher positions is reported to be only 28% whilst in administrative positions they are 75%. This imbalance in terms of gender, fewer women in research positions is noteworthy and their dominance in administrative positions point at that gender needs to be taken more into account when recruiting. Parenthood is a matter for both men and women; however, childbearing as a matter for women making it notable that the research is dominated by men.

The committee´s recommendations

The committee recommends to:

- develop and implement a plan for gender balance in the research positions
- recruit or affiliate research competence with academic competence in social ethics or social philosophy in the development of research programmes and interpretation of findings.

1.7 Open Science

The administrative unit states that they fully support open access and embrace the three paths, golden open access, hybrid open access and green open access. For ensuring this, a statement is included in all collaboration agreements.

In their data management plan, the open research data standards and protocols follows the European policies and Open Research Europe.

The committee's evaluation

The development as reported in the NIFU report indicate a decrease in not open access from 2017 with 28,6% towards 13% in 2022. NIPH recognises that projects should be "as open as possible and as closed as necessary", and their effort is to share all data and methods developed openly. In the self-assessment relevant procedures for sharing within Norway as well as internationally is described in detail like permissions, agreements, data protection legalities.

The committee´s recommendations

The committee recommends:

- Since the centre follows all NIPH policies on Open Science and goes even beyond in its funding and data sharing the committee has no further recommendations.

2. Research production, quality and integrity

The six research themes as reported in the self-assessment are: 1) Maternal and paternal age, 2) Infertility, subfertility and reproductive technologies, 3) Foetal life, adolescence and fertility outcomes, 4) Fertility, family structure and transmission of health across generations, 5) New statistical methods for analysing family and transgenerational data, and 6) Covid and its implications in young adults, education, partner formations and fertility. These themes are those expected to dominate for the years to come. It further underlines that the naming of the administrative unit is not providing accurate information regarding the type of research. The research production according to the NIFU report shows a steadily growing number of publications as well as the modified author shares. NIPH has an ethical committee advising on research ethical issues and research integrity and in addition the administrative unit participates in a joint committee on research integrity.

2.1 Research quality and integrity

This part includes one overall evaluation of each research group that the administrative unit has registered for the evaluation. The overall assessment of the research group has been written by one of the 18 expert panels that have evaluated the registered research groups in EVALMEDHELSE. The expert panels are solely behind the evaluation of the research group(s). The evaluation committee is not responsible for the assessment of the research group(s).

Centre for Fertility and Health (CEFH)

The Centre for Fertility and Health (CEFH) is a very strong research group with an excellent record in competitive research funding which has generated research outputs that are among the very best internationally in significance, rigour and originality. The growth of the size of the group in recent years has been impressive. Moreover, the group has been generating and documenting wider societal impacts from their research. The vision of the centre is very clearly specified, with additional aims on developing interdisciplinary perspectives by bringing together social scientists and biologists working on the same topic areas of fertility using different approaches.

3. Diversity and equality

The centre’s overall staff is 45% female. Non-binary persons are not mentioned. The highest share of women is in administration (75%) and PhD candidates (77%), the lowest in researcher positions (28%) and post-docs (44%). Since administration and PhDs have a higher share of full-time or higher part-time positions the share of female working time at the centre is higher that 45%. The low percentage of women in research positions needs to be addressed in a strategic plan. Nationality of staff is not documented in the self-assessment. Multi-national perspectives are secured by the many international collaborations, guest researchers and the international Gro Harlem Brundtland Visiting Scholarships. The centre’s coordination is well aware of the NIPH’s Gender Equality Action Plan and confirms its dissemination to the staff after each revision.

The committee's evaluation

To the committee, only 28% of female researcher positions seems odd, the obvious strong interest of female early career researchers given. Considering the crucial importance of gender perspectives in issues of fertility a more balance at all career levels is desirable. Since the centre’s main goal is devoted to a specifically Norwegian issue a high internationality of the staff is not to be expected, but must be sought for reasons of equity and quality. Nationality or migration history, however, are not listed.

The committee´s recommendations

The committee recommends the following steps:

- The share of female researchers should be increased in the long run when more permanent positions will be available after the expected transition from a temporary to a permanent administrative unit.
- As migrants form a considerably part of Norwegian society and reproduction, they should be adequately represented in the centre’s research staff too. If the already established Norwegian anti-discrimination regulations should not be sufficient to ensure an adequate representation of minorities affirmative action like in the British “Race Equality Charter” (though perhaps with a different terminology) should be considered.

4. Relevance to institutional and sectorial purposes

As part of a national institute with operational and research tasks the centre focuses on knowledge production in public health issues regarding fertility. In line with this public task, it does not aim at commercialisation of research results, but on innovations for public use.

The committee's evaluation

The centre certainly takes and encourages innovations in research and public policies.

Forcing work towards commercialisation, however, could seriously undermine the trust in public institutions already threatened by conspiracy theories on economic interest behind public health measures.

The committee´s recommendations

- The committee strongly advises the centre and its superior regulatory bodies, including the Norwegian government, not to expect or urge the centre, its research groups or individual researchers towards commercialisation.

4.1. Research institutes

The centre generates new knowledge on social and biological aspects of fertility decline. Understanding personal motivations, social pressure and physical conditions better is an essential contribution to explaining phenomena and inspiring eventual counteraction. The centre’s main research is in observational studies, it only recently started a joint interventional study with a Danish and a German institution. The observations made so far, however, have already been instrumental in revising policies, e.g. for services at schools.

The committee's evaluation

The centre addresses crucial questions for Western societies, since their future depends on sufficient members of next generations. It is, however, more on describing and explaining ongoing transformations than on shaping these transformations. The research in itself is mostly cutting-edge and oriented towards the challenges for societal development mentioned. There is innovative potential in several of the studies although it requires testing hypotheses in experimental research. Commercialisation was never intended. Especially the educational sector may profit from the studies on puberty although empowering boys may have an impact on fertility-related behaviour only in the long-run. The research themes are broader than the scientific disciplines represented covers. The themes cover research questions related to philosophical, ethical and political sciences. Also, the impression from the interviews and the self-assessment was that there was no KPIs for impact on practice and society at large.

The committee´s recommendations

- Involvement with stakeholders should be improved, at government as well as on population level (PPIE) to render the research closer to their needs and legitimate expectations.

- The frequent internal reflections and decisions on research priorities must be further complemented by external consultations with policy experts.

5. Relevance to society

Since the Norwegian long-term plan for research and higher education 2019-2028 does not mention issues of reproductive health among the priority challenges the centre already goes beyond the well-established health issues of climate change, infectious diseases, food and environment. The plan took the “considerable reduction in the number of births in Norway the last few years” only as a starting point for better educational opportunities with smaller cohorts, not as a challenge for research and action. Yet the centre certainly contributed to the plan’s goal to “promote gender equality and inclusion”.

Regarding challenges for society, the centre takes up fertility issues by focussing two highly different, but crucial areas:

1. “Differences in health with a particular focus on women's health through the life course”
2. “Gender differences in education and its impact on health”. For this, the centre focusses both on male and female health.

By these objectives, the Center mainly addresses challenges for the second part of SDG 3 ‘Good Health & Well-Being’ target 3.7 ‘Sexual and Reproductive Health”, i.e. ‘the integration of reproductive health into national strategies and programmes. Since in world-wide comparison, the first part of SDG 3.7, sexual rights and access to reproductive health services, is largely secured in Norway, apart from some minority groups, this focus on political integration, exemplified by the case study ‘Gender, education, and health’, is a rational decision. It also contributed to SDG ‘Gender Equality’ target 5.C ‘Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality’.

Comments on impact case 1: Gender, education, and health

This impact case focuses on changes in perception and educational policies on health risks for boys. Underpinning research includes:

- gender differences in school performance, development, and behaviour among 5-year-old children, based on the Norwegian Mother, Father, and Child Cohort Study (MoBa)
- sex differences in pubertal maturation accounting for up to half of the sex difference in academic achievement, based on British twins in the Twins Early Development Study (TEDS)
- impact of school failure on mental health diagnoses in the following year, mortality, infertility and childlessness
- positive impact of school psychology offices in Norway and negative of their abolition

The case has received broad national and international reception of findings and hypothesis (media, governments, UNESCO, OECD, and other research). Gender differences already in early school years are well known and verified in research from other countries as well. Here the findings are based on the MoBa longitudinal study and in addition used other register data as well. The impact of the findings is mainly by dissemination to ministries and health authorities, within Norway as well as to international organisations surveillant child health. No intervention studies seem to have been initiated based on the findings and no implementation studies, exploring the policy and national directives impact on school practice. Findings are published in moderate or low impact journals. The research on policies for a more maturity-sensitive and male friendly school system may be the missing link between descriptive/explorative research and evaluations indicating impact on policies as well as practice.

Comments on impact case 2: Assisted reproductive technologies and impact on women's and children's health

The impact case concerns advice for physicians and clients on risks of Assisted Reproductive Technologies (ART). Underpinning research relates to the calculation of elevated risks, based on health registries and the Norwegian Mother, Father, and Child Cohort Study (MoBa). The case study has some high-level publications, including Nat Commun (IF 16,6). Results are the collaboration with CoNARTaS (Committee of Nordic Assisted Reproductive Technology and Safety) and NOFAB (Norwegian Association of Assisted Reproduction).

This research programme explores the short- and long-term complications related to ART reports publications in high impact journals indicating excellent international dissemination mainly to the research community. This is further confirmed by the prestigious grants received. The impact on practice is mainly through information to those responsible for ART and their role as informing about risk factors for the mother as well as the child born after ART, for instance the breast cancer driven by BRCA promoter gene. The knowledge transference is through national as well as international conferences. Thus, the scientific society as well as policy makers through the NIPH is reached and so is clinicians and the target group, women using ART. There is not yet any research with the attempt to decrease the risk for complications.

Comments on impact case 3: The role of chronological and biological aging in fertility

This impact case concerns the accurate estimation of biological and gestational age by DNA methylation and telomere length. Underpinning research includes the:

- risk of miscarriage and maternal age, based on Norwegian data
- epigenetic gestational age clock, based on Illumina MethylationEPIC BeadChip (EPIC)
- Strong correlations between DNA-methylation and gestational age across seven main cell-types in cord blood
- The gestational age clock showed a similar performance when applied to samples from children born after assisted reproductive technologies and after natural conceptions. [2018- 2022]
- Telomere length is associated with 823 CpG sites using an epigenome-wide association study (2019). A paper is submitted on polygenic scores for telomere length predicting the observed telomere length equally well for newborn children and adults.
- Significant difference in epigenetic age acceleration (DunedinPoAm clock) between IVF and non-ART mothers

The research produced has an impact factor of around 5 and 6. There is close collaboration with the University of Oslo.

This mainly preclinical research has revealed original findings related to biological aging in fertility also drawing on data from the MoBa study and additional register data. So far, the impact remains mainly within the scientific community. Biological clocks will be of value first for clinical work and maybe for public information in the long run. Thus, the development and refinement of the gestational clock is closest to clinical impact. The original findings reported, however, are perhaps not yet at a stage where knowledge of how to translate them into practice is obtained

Comments on impact case 4: Understanding potential consequences of infection with and vaccination against Covid-19 during pregnancy

This impact case found no adverse effects of vaccination, but protection of young infants by the maternal vaccination. It also stated increased fatigue after infection. Underpinning research includes:

- According to Norwegian health registries, pregnant women not more infected with SARS-CoV-2, but especially if born outside of Scandinavia, more likely to be hospitalised.
- Rate of foetal death not changed after COVID-19 pandemic mitigation measures in the three Nordic countries
- No increased risk of first-trimester miscarriage after Covid-19 vaccination
- In Sweden and Norway, vaccination against SARS-CoV-2 during pregnancy not significantly associated with an increased risk of adverse birth outcomes
- In Norway, lower risk of a positive test for SARS-CoV-2 during the first 4 months of life if mothers vaccinated during pregnancy
- Based on MoBa, excess risk of 13.6% for fatigue 12 months after infection, 50% due to two underlying factors explained (brain fog, poor memory, dizziness, heart palpitations, and fatigue with high loadings on the first factor, shortness-of breath and cough on the second factor.
- No protective effect of nicotine

The research has resulted in medium to high-ranking publications (JAMA, NEJM).

This study had a real time impact on practice during the pandemic. The knowledge about the increased risk for more severe Covid-19 in pregnant women and no adverse, but protective effect of vaccination on pregnancy outcomes led to being prioritised for vaccination and stronger recommendations about vaccination for protecting mothers and newborns. This was supported by comprehensive research in international collaboration showing no increased risk of complications like miscarriage. Thus, these studies led to fast evidence-based information, guidelines and recommendations from national authorities and change of practice based on large data sources. The international collaborations informed the international research community through high impact journals as well as the public.

Appendices

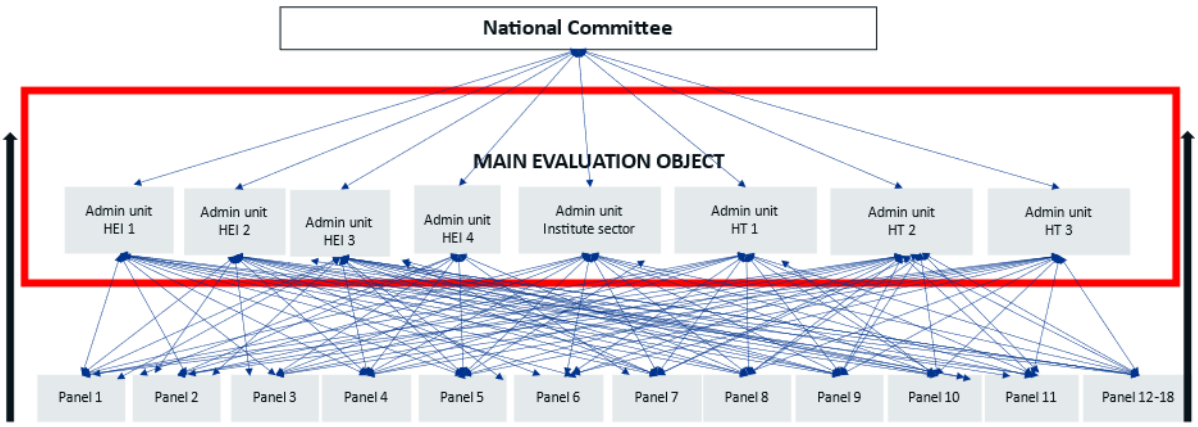
Evaluation of Medicine and health 2023-2024

By evaluating Norwegian research and higher education we aim to enhance the quality, relevance, and efficiency. In accordance with the statutes of the Research Council of Norway (RCN), the RCN evaluates Norwegian professional environments to create a solid and up-to-date knowledge base about Norwegian research and higher education in an international perspective.

The evaluation of life sciences is conducted in 2022-2024. The evaluation of medicine takes place in 2023-2024. The evaluation of biosciences was carried out in 2022-2023. The primary aim of the evaluation of life sciences is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), the institute sector and the health trusts. The evaluation shall result in recommendations to the institutions, the RCN and the ministries.

Evaluation of medicine and health (EVALMEDHELSE) 2023-2024
The evaluation of medicine and health includes sixty-eight administrative units (e.g., faculty, department, institution, center, division) which are assessed by evaluation committees according to sectorial affiliation and other relevant similarities between the units. The administrative units enrolled their research groups (315) to eighteen expert panels organised by research subjects or themes and assessed across institutions and sectors.

Organisation of evaluation of medicine and health 2023-2024



The institutions have been allowed to adapt the evaluation mandate (Terms of Reference) to their own strategic goals. This is to ensure that the results of the evaluation will be useful for the institution's own strategic development. The administrative unit together with the research group(s) selects an appropriate benchmark for each of the research group(s).

The Research Council of Norway has commissioned an external evaluation secretariat at Technopolis Group for the implementation of the evaluation process.

Each institution/administrative unit is responsible for following up the recommendations that apply to their own institution/administrative unit. The Research Council will use the results from the evaluation in the development of funding instruments and as a basis for advice to the Government.

The web page for the evaluation of medicine and health 2023-2024: [Evaluation of medicine and health sciences (forskningsradet.no)]

Forskningsrådet

Se vedlagte adresseliste

Vår saksbehandler / tlf.	Vår ref.	Deres ref.	Sted
Hilde G. Nielsen/40922260	23/3056	[Ref.]	Lysaker 28.4.2023

Invitasjon til å delta i fagevaluering av medisin og helsefag (EVALMEDHELSE) 2023-2024

Vi viser til varsel om oppstart av nye evalueringer sendt institusjonenes ledelse 9. november 2021 (vedlegg 2).

Porteføljestyret for livsvitenskap har vedtatt å gjennomføre fagevaluering av livsvitenskap 2022-2024 som to evalueringer:

- Evaluering av biovitenskap (EVALBIOVIT) (2022-2023)
- Evaluering av medisin og helsefag (EVALMEDHELSE) (2023-2024)

Hovedmålet med fagevalueringen av livsvitenskap 2022-2024 er å vurdere kvalitet og rammebetingelser for livsvitenskapelig forskning i Norge, samt forskningens relevans for sentrale samfunnsområder. Evalueringen skal resultere i anbefalinger til institusjonene, til Forskningsrådet og til departementene. Den forrige fagevalueringen av biologi, medisin og helsefag ble gjennomført i 2010/2011 (vedlegg 3).

Fagevaluering av livsvitenskap retter seg mot UH-sektor, helseforetak og instituttsektor (vedlegg 4). Forskningsrådet forventer at aktuelle forskningsmiljøer deltar i evalueringene, selv om beslutning om deltagelse gjøres ved den enkelte institusjon. Videre ber vi om at deltakende institusjoner setter av tilstrekkelig med ressurser til å delta i evalueringsprosessen, og at institusjonen oppnevner minst én representant som kontaktperson for Forskningsrådet.

Invitasjon til å delta i fagevaluering av medisin og helsefag (2023-2024)

Fagevaluering av medisin og helsefag er organisert over to nivåer (vedlegg 4, side 11). Internasjonale ekspertpaneler vil evaluere forskergrupper på tvers av fag, disiplin og forskningssektorer (UH, institutt og helseforetak) etter kriteriene beskrevet i kapittel 2 i evalueringsprotokollen (vedlegg 4).

Panelrapporten(e) for forskergruppene vil inngå i bakgrunnsdokumentasjonen til forskergruppen(e)s administrative enhet (hovedevalueringsobjektet i evaluering), og som vil bli evaluert i internasjonale

sektorspesifikke evalueringskomiteer. Evalueringskriteriene for administrative enheter er beskrevet i kapittel 2 i evalueringsprotokollen (vedlegg 4).

Innmelding av administrative enheter og forskergrupper – frist 6. juni 2023

Administrative enheter (hovedevalueringsobjektet i evalueringen) – skjema 1

Forskningsrådet inviterer institusjonene til å melde inn sine administrative enhet/er ved å fylle ut skjema 1. Definisjonen av en administrativ enhet i denne evalueringen er å finne på side 3 (kap 1.1) i evalueringsprotokollen (vedlegg 4). Ved innmelding av administrativ/e enhet/er anbefaler Forskningsrådet institusjonene til å se innmelding av administrativ enhet/er i sammenheng med tilpasning av mandat for den administrative enheten (Appendix A i evalueringsprotokollen).

Forskergrupper – skjema 2

Forskningsrådet ber de administrative enheter om å melde inn forskergrupper i tråd med forskergruppedefinisjonen (kap 1.1) og minimumskravene beskrevet i kapittel 1.2 i evalueringsprotokollen. Hver administrative enhet melder inn sin/e forskergruppe/r ved å fylle ut Skjema 2. Vi ber også om at forskergruppene innplasseres i den tentative fagpanelinndelingen for EVALMEDHELSE (vedlegg 5).

Forskningsrådet vil ferdigstille panelstruktur og avgjøre den endelige fordelingen av forskergruppene på fagpaneler *etter* at alle forskergrupper er meldt inn. Mer informasjon vil bli sendt i slutten av juni 2023.

Invitasjon til å foreslå eksperter – skjema 3

Forskningsrådet inviterer administrative enheter og forskergrupper til å spille inn forslag til eksperter som kan inngå i evalueringskomitéene og i ekspertpanelene. Hver evalueringskomité vil bestå av 7-9 komitémedlemmer, mens hvert ekspertpanel vil bestå av 5-7 eksperter.

Obs. Det er to faner i regnearket:

- FANE 1 – forslag til medlemmer til evalueringskomitéene. Medlemmene i evalueringskomitéene skal inneha bred vitenskapelig kompetanse, både faglig kompetanse og andre kvalifikasjoner som erfaring med ledelse, strategi- og evalueringsarbeid og kunnskapsutveksling.
- FANE 2 – forslag til medlemmer til ekspertpanelene. Medlemmene i ekspertpanelene skal være internasjonalt ledende eksperter innen medisin og helsefaglig forskning og innovasjon.

Utfylte skjemaer (3 stk):

- innmelding av administrative enhet/er (skjema 1)
- innmelding av forskergruppe/er (skjema 2)
- forslag til eksperter (skjema 3)

sendes på epost til evalmedhelse@forskningsradet.no **innen 6. juni 2023.**

Tilpasning av mandat – frist 30. september 2023

Forskningsrådet ber med dette administrative enheter om å tilpasse mandatet (vedlegg 4) ved å opplyse om egne strategiske mål og andre lokale forhold som er relevant for evalueringen.

Forskningsrådet

Tilpasningen gjøres ved å fylle inn de åpne punktene i malen (Appendix A). Utfylt skjema sendes på epost til evalmedhelse@forskningsradet.no innen 30. september 2023.

Digitalt informasjonsmøte 15. mai 2023, kl. 14.00-15.00.
Forskningsrådet arrangerer et digitalt informasjonsmøte for alle som ønsker å delta i EVALMEDHELSE.

Påmelding til informasjonsmøtet gjøres her: Fagevaluering av medisin og helsefag (EVALMEDHELSE) - Digitalt informasjonsmøte (pameldingssystem.no) .

Nettsider
Forskningsrådet vil opprette en nettside på www.forskningsradet.no for EVALMEDHELSE hvor informasjon vil bli publisert fortløpende. Her kan dere lese om Fagevaluering av biovitenskap (EVALBIOVIT) 2022-2023. Fagevaluering av medisin og helsefag vil bli gjennomført etter samme modell.

Spørsmål vedrørende fagevaluering av medisin og helsefag kan rettes til Hilde G. Nielsen, hgn@forskningsradet.no eller mobil 40 92 22 60.

Med vennlig hilsen
Norges forskningsråd

Ole Johan Borge	Hilde G. Nielsen
avdelingsdirektør	spesialrådgiver
Helse	Helse

Dokumentet er elektronisk godkjent og signert og har derfor ikke håndskrevne signaturer.

Kopi
Helse- og omsorgsdepartementet
Kunnskapsdepartementet

Vedlegg
1. Adresseliste
2. Nye fagevalueringer – varsel om oppstart november 2021
3. Erfaringer med oppfølging av fagevaluering av biologi, medisin og helsefag 2010/2011
4. Fagevaluering av livsvitenskap 2022-2024 – Evalueringsprotokoll
5. Tentativ panelinndeling EVALMEDHELSE mai 2023
6. Skjema 1 – Innmeldingsskjema Administrative enheter
7. Skjema 2 – Innmeldingsskjema Forskergrupper
8. Skjema 3 – Forslag til internasjonale eksperter til evalueringskomiteene og ekspertpanelene
9. Appendix A – word format

The Research Council of Norway

Evaluation of life sciences in Norway 2022-2023

LIVSEVAL protocol version 1.0

By decision of the Portfolio board for life sciences April 5., 2022

The Research Council of Norway
Visiting address: Drammensveien 288
P.O. Box 564
NO-1327 Lysaker

Telephone: +47 22 03 70 00
Telefax: +47 22 03 70 01
post@rcn.no
www.rcn.no

The report can be downloaded at
www.forskningsradet.no/publikasjoner

Oslo, 5 April 2022

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1 Introduction

Research assessments based on this protocol serve different aims and have different target groups. The primary aim of the evaluation of life sciences is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), and by the institute sector and regional health authorities and health trusts. These institutions will hereafter be collectively referred to as Research Performing Organisations (RPOs). The assessments should serve a formative purpose by contributing to the development of research quality and relevance at these institutions and at the national level.

1.1 Evaluation units

The assessment will comprise a number of *administrative units* submitted for evaluation by the host institution. By assessing these administrative units in light of the goals and strategies set for them by their host institution, it will be possible to learn more about how public funding is used at the institution(s) to facilitate high-quality research and how this research contributes to society. The administrative units will be assessed by evaluation committees according to sectoral affiliation and/or other relevant similarities between the units.

The administrative units will be invited to submit data on their *research groups* to be assessed by expert panels organised by research subject or theme. See Chapter 3 for details on organisation.

Administrative unit	An administrative unit is any part of an RPO that is recognised as a formal (administrative) unit of that RPO, with a designated budget, strategic goals and dedicated management. It may, for instance, be a university faculty or department, a department of an independent research institute or a hospital.
Research group	Designates groups of researchers within the administrative units that fulfil the minimum requirements set out in section 1.2. Research groups are identified and submitted for evaluation by the administrative unit, which may decide to consider itself a single research group.

1.2 Minimum requirements for research groups

1) The research group must be sufficiently large in size, i.e. at least five persons in full-time positions with research obligations. This merely indicates the minimum number, and larger units are preferable. In exceptional cases, the minimum number may include PhD students, postdoctoral fellows and/or non-tenured researchers. *In all cases, a research group must include at least three full-time tenured staff*. Adjunct professors, technical staff and other relevant personnel may be listed as group members but may not be included in the minimum number.

2) The research group subject to assessment must have been established for at least three years. Groups of more recent date may be accepted if they have come into existence as a consequence of major organisational changes within their host institution.
3) The research group should be known as such both within and outside the institution (e.g. have a separate website). It should be able to document common activities and results in the form of co-publications, research databases and infrastructure, software, or shared responsibilities for delivering education, health services or research-based solutions to designated markets.
4) In its self-assessment, the administrative unit should propose a suitable benchmark for the research group. The benchmark will be considered by the expert panels as a reference in their assessment of the performance of the group. The benchmark can be grounded in both academic and extra-academic standards and targets, depending on the purpose of the group and its host institution.

1.3 The evaluation in a nutshell

The assessment concerns:

- research that the administrative unit and its research groups have conducted in the previous 10 years
- the research strategy that the administrative units under evaluation intend to pursue going forward
- the capacity and quality of research in life sciences at the national level

The Research Council of Norway (RCN) will:

- provide a template for the Terms of Reference[1] for the assessment of RPOs and a national-level assessment in life sciences
- appoint members to evaluation committees and expert panels
- provide secretarial services
- commission reports on research personnel and publications based on data in national registries
- take responsibility for following up assessments and recommendations at the national level.

RPOs conducting research in life sciences are expected to take part in the evaluation. The board of each RPO under evaluation is responsible for tailoring the assessment to its own strategies and specific needs and for following them up within their own institution. Each participating RPO will carry out the following steps:

1) Identify the administrative unit(s) to be included as the main unit(s) of assessment
2) Specify the Terms of Reference by including information on specific tasks and/or strategic goals of relevance to the administrative unit(s)

[1] The terms of reference (ToR) document defines all aspects of how the evaluation committees and expert panels will conduct the [research area] evaluation. It defines the objectives and the scope of the evaluation, outlines the responsibilities of the involved parties, and provides a description of the resources available to carry out the evaluation.

3) The administrative unit will, in turn, be invited to register a set of research groups that fulfil the minimum criteria specified above (see section 1.2). The administrative unit may decide to consider itself a single research group.
4) For each research group, the administrative unit should select an appropriate benchmark in consultation with the group in question. This benchmark can be a reference to an academic level of performance or to the group's contributions to other institutional or sectoral purposes (see section 2.4). The benchmark will be used as a reference in the assessment of the unit by the expert panel.
5) The administrative units subject to assessment must provide information about each of their research groups, and about the administrative unit as a whole, by preparing self-assessments and by providing additional documentation in support of the self-assessment.

1.4 Target groups

- Administrative units represented by institutional management and boards
- Research groups represented by researchers and research group leaders
- Research funders
- Government

The evaluation will result in recommendations to the institutions, the RCN and the ministries. The results of the evaluation will also be disseminated for the benefit of potential students, users of research and society at large.

This protocol is intended for all participants in the evaluation. It provides the information required to organise and carry out the research assessments. Questions about the interpretation or implementation of the protocol should be addressed to the RCN.

2 Assessment criteria

The administrative units are to be assessed on the basis of five assessment criteria. The five criteria are applied in accordance with international standards. Finally, the evaluation committee passes judgement on the administrative units as a whole in qualitative terms. In this overall assessment, the committee should relate the assessment of the specific tasks to the strategic goals that the administrative unit has set for itself in the Terms of Reference.

When assessing administrative units, the committees will build on a separate assessment by expert panels of the research groups within the administrative units. See Chapter 3 'Evaluation process and organisation' for a description of the division of tasks.

2.1 Strategy, resources and organisation

The evaluation committee assesses the framework conditions for research in terms of funding, personnel, recruitment and research infrastructure in relation to the strategic aims set for the administrative unit. The administrative unit should address at least the following five specific aspects in its self-assessment: 1) funding sources, 2) national and international cooperation, 3) cross-sector and interdisciplinary cooperation, 4) research careers and mobility, and 5) Open Science. These five aspects relate to how the unit organises and actually performs its research, its composition in terms of leadership and personnel, and how the unit is run on a day-to-day basis.

To contribute to understanding what the administrative unit can or should change to improve its ability to perform, the evaluation committee is invited to focus on factors that may affect performance.

Further, the evaluation committee assesses the extent to which the administrative unit's goals for the future remain scientifically and societally relevant. It is also assessed whether its aims and strategy, as well as the foresight of its leadership and its overall management, are optimal in relation to attaining these goals. Finally, it is assessed whether the plans and resources are adequate to implement this strategy.

2.2 Research production, quality and integrity

The evaluation committee assesses the profile and quality of the administrative unit's research and the contribution the research makes to the body of scholarly knowledge and the knowledge base for other relevant sectors of society. The committee also assesses the scale of the unit's research results (scholarly publications, research infrastructure developed by the unit, and other contributions to the field) and its contribution to Open Science (early knowledge and sharing of data and other relevant digital objects, as well as science communication and collaboration with societal partners, where appropriate).

The evaluation committee considers the administrative unit's policy for research integrity and how violations of such integrity are prevented. It is interested in how the unit deals with research data, data management, confidentiality (GDPR) and integrity, and the extent to which independent and critical pursuit of research is made possible within the unit. Research integrity relates to both the scientific integrity of conducted research and the professional integrity of researchers.

2.3 Diversity and equality

The evaluation committee considers the diversity of the administrative unit, including gender equality. The presence of differences can be a powerful incentive for creativity and talent development in a diverse administrative unit. Diversity is not an end in itself in that regard, but a tool for bringing together different perspectives and opinions.

The evaluation committee considers the strategy and practices of the administrative unit to prevent discrimination on the grounds of gender, age, disability, ethnicity, religion, sexual orientation or other personal characteristics.

2.4 Relevance to institutional and sectoral purposes

The evaluation committee compares the relevance of the administrative unit's activities and results to the specific aspects detailed in the Terms of Reference for each institution and to the relevant sectoral goals (see below).

Higher Education Institutions

There are 36 Higher Education Institutions in Norway that receive public funding from the Ministry for Education and Research. Twenty-one of the 36 institutions are owned by the ministry, whereas the last 15 are privately owned. The HEIs are regulated under the Act relating to universities and university colleges of 1 August 2005.

The purposes of Norwegian HEIs are defined as follows in the Act relating to universities and university colleges[2]

- provide higher education at a high international level;
- conduct research and academic and artistic development work at a high international level;
- disseminate knowledge of the institution's activities and promote an understanding of the principle of academic freedom and application of scientific and artistic methods and results in the teaching of students, in the institution's own general activity as well as in public administration, in cultural life and in business and industry.

In line with these purposes, the Ministry for Research and Education has defined four overall goals for HEIs that receive public funding. These goals have been applied since 2015:

1) High quality in research and education
2) Research and education for welfare, value creation and innovation
3) Access to education (esp. capacity in health and teacher education)
4) Efficiency, diversity and solidity of the higher education sector and research system

The committee is invited to assess to what extent the research activities and results of each administrative unit have contributed to sectoral purposes as defined above. In particular, the committee is invited to take the share of resources spent on education at the administrative units into account and to assess the relevance and contributions of research to education, focusing on the master's and PhD levels. This assessment should be distinguished from an

[2] https://lovdata.no/dokument/NLE/lov/2005-04-01-15?q=universities

assessment of the quality of education in itself, and it is limited to the role of research in fostering high-quality education.

Research institutes (the institute sector)

Norway's large institute sector reflects a practical orientation of state R&D funding that has long historical roots. The Government's strategy for the institute sector[3] applies to the 33 independent research institutes that receive public basic funding through the RCN, in addition to 12 institutes outside the public basic funding system.

The institute sector plays an important and specific role in attaining the overall goal of the national research system, i.e. to increase competitiveness and innovation power to address major societal challenges. The research institutes' contributions to achieving these objectives should therefore form the basis for the evaluation. The main purpose of the sector is to conduct independent applied research for present and future use in the private and public sector. However, some institutes primarily focus on developing a research platform for public policy decisions, others on fulfilling their public responsibilities.

The institutes should:

- maintain a sound academic level, documented through scientific publications in recognised journals
- obtain competitive national and/or international research funding grants
- conduct contract research for private and/or public clients
- demonstrate robustness by having a reasonable number of researchers allocated to each research field

The committee is invited to assess the extent to which the research activities and results of each administrative unit contribute to sectoral purposes and overall goals as defined above. In particular, the committee is invited to assess the level of collaboration between the administrative unit(s) and partners in their own or other sectors.

The hospital sector

There are four regional health authorities (RHFs) in Norway. They are responsible for the specialist health service in their respective regions. The RHFs are regulated through the Health Enterprises Act of 15 June 2001 and are bound by requirements that apply to specialist and other health services, the Health Personnel Act and the Patient Rights Act. Under each of the regional health authorities, there are several health trusts (HFs), which can consist of one or more hospitals. A health trust (HF) is wholly owned by an RHF.

Research is one of the four main tasks of hospital trusts.[4] The three other mains tasks are to ensure good treatment, education and training of patients and relatives. Research is important if the health service is to keep abreast of stay up-to-date with medical developments and carry out critical assessments of established and new diagnostic methods,

[3] Strategy for a holistic institute policy (Kunnskapsdepartementet 2020)

[4] Cf. the Specialist Health Services Act § 3-8 and the Health Enterprises Act §§ 1 and 2

treatment options and technology, and work on quality development and patient safety while caring for and guiding patients.

The committee is invited to assess the extent to which the research activities and results of each administrative unit have contributed to sectoral purposes as described above. The assessment does not include an evaluation of the health services performed by the services.

2.5 Relevance to society

The committee assesses the quality, scale and relevance of contributions targeting specific economic, social or cultural target groups, of advisory reports on policy, of contributions to public debates, and so on. The documentation provided as the basis for the assessment of societal relevance should make it possible to assess relevance to various sectors of society (i.e. business, the public sector, non-governmental organisations and civil society).

When relevant, the administrative units will be asked to link their contributions to national and international goals set for research, including the Norwegian Long-term Plan for Research and Higher Education and the UN Sustainable Development Goals. Sector-specific objectives, e.g. those described in the Development Agreements for the HEIs and other national guidelines for the different sectors, will be assessed as part of criterion 2.4.

The committee is also invited to assess the societal impact of research based on case studies submitted by the administrative units and/or other relevant data presented to the committee. Academic impact will be assessed as part of criterion 2.2.

3 Evaluation process and organisation

The RCN will organise the assessment process as follows:

- Commission a professional secretariat to support the assessment process in the committees and panels, as well as the production of self-assessments within each RPO
- Commission reports on research personnel and publications within life sciences based on data in national registries
- Appoint one or more evaluation committees for the assessment of administrative units.
- Divide the administrative units between the appointed evaluation committees according to sectoral affiliation and/or other relevant similarities between the units.
- Appoint a number of expert panels for the assessment of research groups submitted by the administrative units.
- Divide research groups between expert panels according to similarity of research subjects or themes.
- Task the chairs of the evaluation committees with producing a national-level report building on the assessments of administrative units and a national-level assessments produced by the expert panels.

Committee members and members of the expert panels will be international, have sufficient competence and be able, as a body, to pass judgement based on all relevant assessment criteria. The RCN will facilitate the connection between the assessment levels of panels and committees by appointing committee members as panel chairs.

3.1 Division of tasks between the committee and panel levels

The expert panels will assess research groups across institutions and sectors, focusing on the first two criteria specified in Chapter 2: 'Strategy, resources and organisation' and 'Research production and quality' The assessments from the expert panels will also be used as part of the evidence base for a report on Norwegian research within life sciences (see section 3.3).

The evaluation committees will assess the administrative units based on all the criteria specified in Chapter 2. The assessment of research groups delivered by the expert panels will be a part of the evidence base for the committees' assessments of administrative units. See figure 1 below.

The evaluation committee has sole responsibility for the assessments and any recommendations in the report. The evaluation committee reaches a judgement on the research based on the administrative units and research groups' self-assessments provided by the RPOs, any additional documents provided by the RCN, and interviews with representatives of the administrative units. The additional documents will include a standardised analysis of research personnel and publications provided by the RCN.

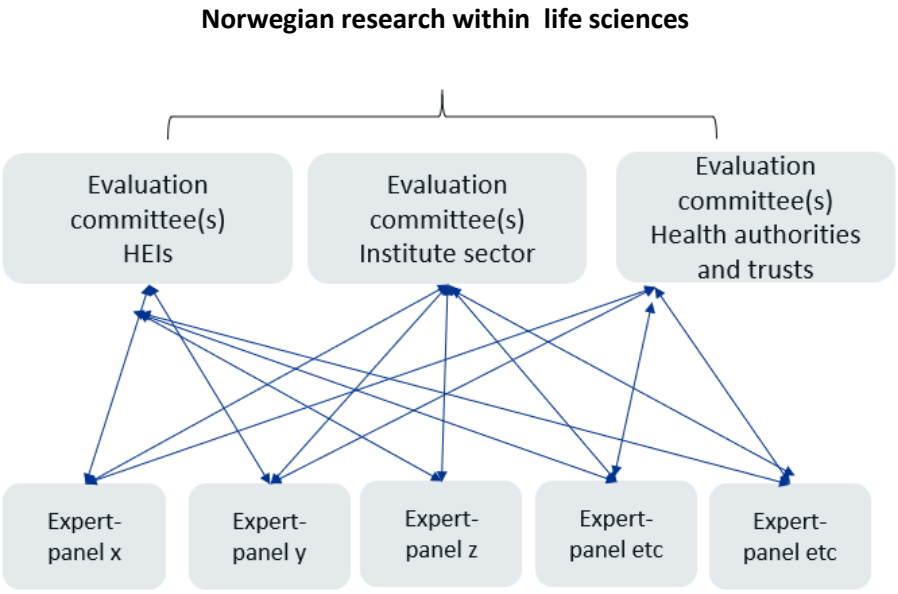

Figure 1. Evaluation committees and expert panels

The evaluation committee takes international trends and developments in science and society into account when forming its judgement. When judging the quality and relevance of the research, the committees shall bear in mind the specific tasks and/or strategic goals that the administrative unit has set for itself including sectoral purposes (see section 2.4 above).

3.2 Accuracy of factual information

The administrative unit under evaluation should be consulted to check the factual information before the final report is delivered to the RCN and the board of the institution hosting the administrative unit.

3.3 National level report

Finally, the RCN will ask the chairs of the evaluation committees to produce a national-level report that builds on the assessments of administrative units and the national-level assessments produced by the expert panels. The committee chairs will present their assessment of Norwegian research in life sciences at the national level in a separate report that pays specific attention to:

- Strengths and weaknesses of the research area in the international context
- The general resource situation regarding funding, personnel and infrastructure
- PhD training, recruitment, mobility and diversity
- Research cooperation nationally and internationally
- Societal impact and the role of research in society, including Open Science

This national-level assessment should be presented to the RCN.

Appendix A: Terms of References (ToR)

[Text in red to be filled in by the Research-performing organisations (RPOs)]

The board of [RPO] mandates the evaluation committee appointed by the Research Council of Norway (RCN) to assess [administrative unit] based on the following Terms of Reference.

Assessment
You are asked to assess the organisation, quality and diversity of research conducted by [administrative unit] as well as its relevance to institutional and sectoral purposes, and to society at large. You should do so by judging the unit's performance based on the following five assessment criteria (a. to e.). Be sure to take current international trends and developments in science and society into account in your analysis.

a) Strategy, resources and organisation
b) Research production, quality and integrity
c) Diversity and equality
d) Relevance to institutional and sectoral purposes
e) Relevance to society

For a description of these criteria, see Chapter 2 of the life sciences evaluation protocol. Please provide a written assessment for each of the five criteria. Please also provide recommendations for improvement. We ask you to pay special attention to the following [n] aspects in your assessment:

1. …
2. …
3. …
4. …

…

[To be completed by the board: specific aspects that the evaluation committee should focus on – they may be related to a) strategic issues, or b) an administrative unit's specific tasks.]

In addition, we would like your report to provide a qualitative assessment of [administrative unit] as a whole in relation to its strategic targets. The committee assesses the strategy that the administrative unit intends to pursue in the years ahead and the extent to which it will be capable of meeting its targets for research and society during this period based on available resources and competence. The committee is also invited to make recommendations concerning these two subjects.

Documentation
The necessary documentation will be made available by the life sciences secretariat at Technopolis Group.

The documents will include the following:

- a report on research personnel and publications within life sciences commissioned by RCN
- a self-assessment based on a template provided by the life sciences secretariat
- [to be completed by the board]

Interviews with representatives from the evaluated units
Interviews with the [administrative unit] will be organised by the evaluation secretariat. Such interviews can be organised as a site visit, in another specified location in Norway or as a video conference.

Statement on impartiality and confidence
The assessment should be carried out in accordance with the *Regulations on Impartiality and Confidence in the Research Council of Norway*. A statement on the impartiality of the committee members has been recorded by the RCN as a part of the appointment process. The impartiality and confidence of committee and panel members should be confirmed when evaluation data from [the administrative unit] are made available to the committee and the panels, and before any assessments are made based on these data. The RCN should be notified if questions concerning impartiality and confidence are raised by committee members during the evaluation process.

Assessment report
We ask you to report your findings in an assessment report drawn up in accordance with a format specified by the life sciences secretariat. The committee may suggest adjustments to this format at its first meeting. A draft report should be sent to the [administrative unit] and RCN by [date]. The [administrative unit] should be allowed to check the report for factual inaccuracies; if such inaccuracies are found, they should be reported to the life sciences secretariat no later than two weeks after receipt of the draft report. After the committee has made the amendments judged necessary, a corrected version of the assessment report should be sent to the board of [the RPO] and the RCN no later than two weeks after all feedback on inaccuracies has been received from [administrative unit].

Appendix B: Data sources

The lists below shows the most relevant data providers and types of data to be included in the evaluation. Data are categorised in two broad categories according to the data source: National registers and self-assessments prepared by the RFOs. The RCN will commission an analysis of data in national registers (R&D-expenditure, personnel, publications etc.) to be used as support for the committees' assessment of administrative units. The analysis will include a set of indicators related to research personnel and publications.

- **National directorates and data providers**
- Norwegian Directorate for Higher Education and Skills (HK-dir)
- Norwegian Agency for Quality Assurance in Education (NOKUT)
- Norwegian Agency for Shared Services in Education and Research (SIKT)
- Research Council of Norway (RCN)
- Statistics Norway (SSB)

National registers

1) R&D-expenditure
    a. SSB: R&D statistics
    b. SSB: Key figures for research institutes
    c. HK-dir: Database for Statistics on Higher Education (DBH)
    d. RCN: Project funding database (DVH)
    e. EU-funding: eCorda
2) Research personnel
    a. SSB: The Register of Research personnel
    b. SSB: The Doctoral Degree Register
    c. RCN: Key figures for research institutes
    d. HK-dir: Database for Statistics on Higher Education (DBH)
3) Research publications
    a. SIKT: Cristin - Current research information system in Norway
    b. SIKT: Norwegian Infrastructure for Bibliometrics
    (full bibliometric data incl. citations and co-authors)
4) Education
    a. HK-dir/DBH: Students and study points
    b. NOKUT: Study barometer
    c. NOKUT: National Teacher Survey
5) Sector-oriented research
    a. RCN: Key figures for research institutes
6) Patient treatments and health care services
    a. Research & Innovation expenditure in the health trusts
    b. Measurement of research and innovation activity in the health trusts
    c. Collaboration between health trusts and HEIs
    d. Funding of research and innovation in the health trusts
    e. Classification of medical and health research using HRCS (HO21 monitor)

Self-assessments

1) Administrative units
    a. *Self-assessment covering all assessment criteria*
    b. Administrative data on funding sources
    c. Administrative data on personnel
    d. Administrative data on the division of staff resources between research and other activities (teaching, dissemination etc.)
    e. Administrative data on research infrastructure and other support structures
    f. SWOT analysis
    g. Any supplementary data needed to assess performance related to the strategic goals and specific tasks of the unit

2) Research groups
    a. *Self-assessment covering the first two assessment criteria (see Table 1)*
    b. Administrative data on funding sources
    c. Administrative data on personnel
    d. Administrative data on contribution to sectoral purposes: teaching, commissioned work, clinical work [will be assessed at committee level]
    e. Publication profiles
    f. Example publications and other research results (databases, software etc.) The examples should be accompanied by an explanation of the groups' specific contributions to the result
    g. Any supplementary data needed to assess performance related to the benchmark defined by the administrative unit

The table below shows how different types of evaluation data may be relevant to different evaluation criteria. Please note that the self-assessment produced by the administrative units in the form of a written account of management, activities, results etc. should cover all criteria. A template for the self-assessment of research groups and administrative units will be commissioned by the RCN from the life sciences secretariat for the evaluation.

Table 1. Types of evaluation data per criterion

Evaluation units / Criteria	Research groups	Administrative units
Strategy, resources and organisation	Self-assessment Administrative data	Self-assessment National registers Administrative data SWOT analysis
Research production and quality	Self-assessment Example publications (and other research results)	Self-assessment National registers
Diversity, equality and integrity		Self-assessment National registers Administrative data
Relevance to institutional and sectoral purposes		Self-assessment Administrative data
Relevance to society		Self-assessment National registers Impact cases
Overall assessment	*Data related to:* *Benchmark defined by administrative unit*	*Data related to:* *Strategic goals and specific tasks of the admin. unit*

Evaluation of Medicine and Health (EVALMEDHELSE) 2023-2024

Self- assessment for administrative units

Date of dispatch: **15 September 2023**
Deadline for submission: **31 January 2024**

Institution (name and short name):_____
Administrative unit (name and short name): _____
Date:_____
Contact person:_____
Contact details (email):_____

Content

Introduction

The primary aim of the evaluation is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), the institute sector and the health trusts. These institutions will henceforth be collectively referred to as research performing organisations (RPOs). The evaluation report(s) will provide a set of recommendations to the RPOs, the Research Council of Norway (RCN) and the responsible and concerned ministries. The results of the evaluation will also be disseminated for the benefit of potential students, users of research and society at large.

You have been invited to complete this self-assessment as an administrative unit. The self-assessment contains questions regarding the unit's research- and innovation related activities and developments over years 2012-2022. All submitted data will be evaluated by international evaluation committees. The administrative unit´s research groups will be assessed by international expert panels who report their assessment to the relevant evaluation committee.

Deadline for submitting self- assessments to the Research Council of Norway – 31 January 2024
As an administrative unit you are responsible for collecting completed self-assessments for each of the research groups that belong to the administrative unit. The research groups need to submit their completed self-assessment to the administrative unit no later than 26 January 2024. The administrative unit will submit the research groups' completed self-assessments and the administrative unit's own completed self-assessment to the Research Council within 31 January 2024.

Please use the following format when naming your document: name of the institution and short name of the administrative unit, e.g. *NTNU_FacMedHealthSci* and send it to evalmedhelse@forskningsradet.no within 31 January 2024.

For questions concerning the self-assessment or EVALMEDHELSE in general, please contact RCN at evalmedhelse@forskningsradet.no.

Thank you!

Guidelines for completing the self-assessment

- Please read the entire self-assessment document before answering.
- The evaluation language is English.
- Please be sure that all documents which are linked to in the self- assessment are in English and are accessible.
- The page format must be A4 with 2 cm margins, single spacing and Calibri and 11-point font.
- The self-assessment follows the same structure as the evaluation protocol. In order to be evaluated on all criteria, the administrative unit must answer all questions.
- Information should be provided by link to webpages i.e. strategy and other planning documents.
  - Provide information – provide documents and other relevant data or figures about the administrative unit, for example strategy and other planning documents.
  - Describe – explain and present using contextual information about the administrative unit and inform the reader about the administrative unit.
  - Reflect – comment in a reflective and evaluative manner how the administrative unit operates.
- Data on personnel should refer to reporting to DBH on 1 October 2022 for HEIs and to the yearly reporting for 2022 for the institute sector and the health trusts. Other data should refer to 31 December 2022, if not specified otherwise.
- Questions in 4.3c should **ONLY** be answered by administrative units responsible for the Cand.med. degree programme, cf. Evaluation of the Professional programme in Medicine (NOKUT).
- It is possible to extend the textboxes when filling in the from. **NB!** A completed self- assessment cannot exceed 50 pages (pdf file) excluding question 4.3.c. The evaluation committees are not requested to read more than the maximum of 50 pages. Pages exceeding maximum limit of 50 pages **might not** be evaluated.
- Submit the self- assessment as a pdf (max 50 pages). Before submission, please be sure that all text are readable after the conversion of the document to pdf. The administrative unit is responsible for submitting the self-assessment of the administrative unit together with the self-assessments of the belonging research group(s) to evalmedhelse@forskningsradet.no within **31 January 2024.**

Please note that information you write in the self- assessment and the links to documents/webpages in the self- assessment are the only available information (data material) for the evaluation committee.

In exceptional cases, documents/publications that are not openly available must be submitted as attachment(s) to the self- assessment (pdf file(s)).

1.Strategy, resources and organisation

1.1 Research strategy

Describe the main strategic goals for research and innovation of the administrative unit. You may include the following:

- How are these goals related to institutional strategies and scientific priorities?
- Describe how the administrative unit's strategies and scientific priorities are related to the "specific aspects that the evaluation committee should focus on" indicated in your Terms of Reference (ToR)
- Describe the main fields and focus of research and innovation in the administrative unit
- Describe the planned research-field impact; planned policy impact and planned societal impact
- Describe how the strategy is followed-up in the allocation of resources and other measures
- Describe the most important occasions where priorities are made (i.e., announcement of new positions, applying for external funding, following up on evaluations)
- If there is no research strategy – please explain why

Table 1. Administrative unit`s strategies

For each category present up to 5 documents which are most relevant for the administrative unit. Please delete lines which are not in use.

Research strategy		
No.	**Title**	**Link**
1		
2		
3		
4		
5		
Outreach strategies		
No.	**Title**	**Link**
1		
2		
3		
4		
5		
Open science policy		
No.	**Title**	**Link**
1		
2		
3		
4		
5		

1.2 Organisation of research

a) Describe the organisation of research and innovation activities/projects at the administrative unit, including how responsibilities for research and other purposes (education, knowledge exchange, patient treatment, researcher training, outreach activities etc.) are distributed and delegated.

b) Describe how you work to maximise synergies between the different purposes of the administrative unit (education, knowledge exchange, patient treatment, researcher training, outreach activities etc.).

1.3 Research staff

Describe the profile of research personnel at the administrative unit in terms of position and gender. Institutions in the higher education sector should use the categories used in DBH, https://dbh.hkdir.no/datainnhold/kodeverk/stillingskoder.

RCN has commissioned reports from Statistics Norway (SSB) on personnel for the administrative units included in the evaluation. These reports will be made available to the units early November 2023.

Only a subset of the administrative units submitted to the evaluation is directly identifiable in the national statistics. Therefore, we ask all administrative units to provide data on their R&D personnel. Institutions that are directly identifiable in the national statistics (mainly higher education) are invited to use the figures provided in the report delivered by Statistics Norway. Please delete lines which are not in use.

Table 2. Research staff

	Position by category	**No. of researcher per category**	**Share of women per category (%)**	**No. of researchers who are part of multiple (other) research groups at the admin unit**	**No. of temporary positions**
No. of Personell by position	Position A (Fill in)				
	Position B (Fill in)				
	Position C (Fill in)				
	Position D (Fill in)				

1.4 Researcher careers opportunities

a) Describe the structures and practices to support researcher careers and help early-career researchers to make their way into the profession.

b) Describe how research time is distributed among staff including criteria for research leave/sabbaticals (forskningstermin/undervisningsfri).

c) Describe research mobility options.

1.5 Research funding

a) Describe the funding sources of the administrative unit. Indicate the administrative unit´s total yearly budget and the share of the unit's budget dedicated to research.

b) Give an overview of the administrative unit's competitive national and/or international grants last five years (2018-2022).

Table 3. R&D funding sources
Please indicate R&D funding sources for the administrative unit for the period 2018-2022 (average NOK per year, last five years).

For Higher Education Institutions: Share of basic grant (grunnbevilgning) used for R&D[1] **For Research Institutes and Health Trusts: Direct R&D funding from Ministries (per ministry)**	
Name of ministry	NOK

National grants (bidragsinntekter) (NOK)	
From the ministries and underlying directorates	
From industry	
From public sector	
Other national grants	
Total National grants	
National contract research (oppdragsinntekter)[2] (NOK)	
From the ministries and underlying directorates	
From industry	

[1] Shares may be calculated based on full time equivalents (FTE) allocated to research compared to total FTE in administrative unit

[2] For research institutes only research activities should be included from section 1.3 in the yearly reporting

From public sector	
Other national contract research	
Total contract research	
International grants (NOK)	
From the European Union	
From industry	
Other international grants	
Total international grants	
Funding related to public management (forvaltningsoppgaver) or (if applicable) funding related to special hospital tasks, if any	
Total funding related to public management/special hospital tasks	
Total all R&D budget items (except basic grant)	

1.6 Collaboration

Describe the administrative unit's policy towards national and international collaboration partners, the type of the collaborations the administrative unit have with the partners, how the collaboration is put to practice as well as cross-sectorial and interdisciplinary collaborations.

- Reflect of how successful the administrative unit has been in meeting its aspirations for collaborations
- Reflect on the importance of different types of collaboration for the administrative unit: National and international collaborations. Collaborations with different sectors, including public, private and third sector
- Reflect on the added value of these collaborations to the administrative unit and Norwegian research system

Table 4a. The main national collaborative constellations with the administrative unit
Please categorise the collaboration according to the most important national partner(s): 5-10 institutions in the period 2012-2022. Please delete lines which are not in use.

National collaborations

Collaboration with national institutions – 1 -10	
Name of main collaboration or collaborative project with the admin unit	
Name of partner institution(s)	
Sector of partner/institution(s)/sectors involved	
Impacts and relevance of the collaboration	

Table 4b. The main international collaborative constellations with the administrative unit
Please categorise the collaboration according to the most important international partner(s): 5-10 international institutions in the period 2012-2022. Please delete lines which are not in use.

International collaborations

Collaboration with international institutions – 1-10	
Name of main collaboration or collaborative project with the admin unit	
Name of partner institution(s)	
Sector of partner/institution(s)/sectors involved	

Impacts and relevance of the collaboration	

1.7 Open science policies

a) Describe the institutional policies, approaches, and activities to the Open Science areas which may include the following:

- Open access to publications
- Open access to research data and implementation of FAIR data principles
- Open-source software/tools
- Open access to educational resources
- Open peer review
- Citizen science and/or involvement of stakeholders / user groups
- Skills and training for Open Science

b) Describe the most important contributions and impact of the administrative unit's researchers towards the different Open Science areas cf. 1.7a above.

c) Describe the institutional policy regarding ownership of research data, data management, and confidentiality. Is the use of data management plans implemented at the administrative unit?

1.8 SWOT analysis for administrative units

Instructions: Please complete a SWOT analysis for your administrative unit. Reflect on what are the major internal Strengths and Weaknesses as well as external Threats and Opportunities for your research and innovation activities/projects and research environment. Assess what the present Strengths enable in the future and what kinds of Threats are related to the Weaknesses. Consider your scientific expertise and achievements, funding, facilities, organisation and management.

Internal	**Strengths**	**Weaknesses**
External	**Opportunities**	**Threats**

2. Research production, quality and integrity

2.1 Research quality and integrity

Please see the bibliometric analysis for the administrative unit developed by NIFU (available by the end of October, 2023).

a) Describe the scientific focus areas of the research conducted at the administrative unit, including the unit's contribution to these areas.

b) Describe the administrative unit's policy for research integrity, including preventative measures when integrity is at risk, or violated.

2.2 Research infrastructures

a) Participation in national infrastructure

Describe the most important participation in the national infrastructures listed in the Norwegian roadmap for research infrastructures (Norsk veikart for forskningsinfrastruktur) including as host institution(s).

Table 5. Participation in national infrastructure

Please present up to 5 participations in the national infrastructures listed in the Norwegian roadmap for research infrastructures (Norsk veikart for forskningsinfrastruktur) for each area that were the most important to your administrative unit.

Areas in roadmap	Name of research infrastructure	Period (from year to year)	Description	Link to website

b) Participation in international infrastructures

Describe the most important participation in the international infrastructures funded by the ministries (Norsk deltakelse i internasjonale forskningsorganisasjoner finansiert av departementene).

Table 6. Participation in international infrastructure

Please describe up to 5 participations in international infrastructures for each area that have been most important to your administrative unit.

Project	Name	Period (from year to year)	Description	Link to infrastructure

c) Participation in European (ESFRI) infrastructures

Describe the most important participation in European (ESFRI) infrastructures (Norske medlemskap i infrastrukturer i ESFRI roadmap) including as host institution(s).

Table 7. Participation in infrastructures on the ESFRI Roadmap
Please give a description of up to 5 participations that have been most important to your administrative unit.

Social sciences and the humanities				
Name	**ESFRI-project**	**Summary of participation**	**Period (from year to year)**	**Link**

d) Access to research infrastructures
Describe access to relevant national and/or international research infrastructures for your researchers. Considering both physical and digital infrastructure.

e) FAIR- principles
Describe what is done at the unit to fulfil the FAIR-principles.

3. Diversity and equality

Describe the policy and practices to protect against any form of discrimination and to promote diversity in the administrative unit.

Table 8. Administrative unit policy against discrimination
Give a description of up to 5 documents that are the most relevant. If the administrative unit uses the strategies, policies, etc. of a larger institution, then these documents should be referred to.
Please delete lines which are not in use.

No.	**Name**	**Valid period**	**Link**
1			

4. Relevance to institutional and sectorial purposes

4.1 Sector specific impact

Describe whether the administrative unit has activities aimed at achieving sector-specific objectives or focusing on contributing to the knowledge base in general. Describe activities connected to sector-specific objectives, the rationale for participation and achieved and/or expected impacts. Please refer to chapter 2.4 in the evaluation protocol.

- Alternatively, describe whether the activities of the administrative unit are aimed at contribution to the knowledge base in general. Describe the rationale for this approach and the impacts of the unit's work to the knowledge base.

4.2 Research innovation and commercialisation

a) Describe the administrative unit's practices for innovation and commercialisation.

b) Describe the motivation among the research staff in doing innovation and commercialisation activities.

c) Describe how innovation and commercialisation is supported at the administrative unit.

Table 9. Policies for innovation including IP policies, new patents, licenses, start-up/spin-off guidelines
Describe up to 5 documents of the administrative unit's policies for innovation, including IP policies, new patents, licenses, start-up/spin-off guidelines, etc., that are the most relevant. If the administrative unit uses the strategies, policies, etc. of a larger institution, then present these documents. Please delete lines which are not in use.

No.	Name	Valid period	Link
1			

Table 10. Administrative description of successful innovation and commercialisation results
Please describe up to 10 successful innovation and commercialisation results at your administrative unit in the period 2012-2022. Please delete lines which are not in use.

No.	Name of innovation and commercial results	Link	Description of successful innovation and commercialisation result.
1			

4.3 Higher education institutions

a) Reflect how research at the administrative unit contributes towards master and PhD-level education provision, at your institutions and beyond.

b) Describe the opportunities for master students to become involved in research activities at the administrative unit.

c) **ONLY** for administrative units responsible for the Cand.med. degree programme, cf. Evaluation of the Professional programme in Medicine (NOKUT).

- Reflect on how research at the administrative unit contributes towards the quality of the Cand.med. degree programme at your institutions and beyond.
- Describe the different opportunities for students on the Cand.med. degree programme to become involved in research activities at the administrative unit, and the extent to which students use those opportunities.

4.4 Research institutes

a) Describe how the research and innovation activities/projects at the administrative unit contribute to the knowledge base for policy development, sustainable development, and societal and industrial transformations more generally.

b) Describe the most important research activities with partners outside of research organisations.

4.5 Health trusts

a) Reflect on how the administrative unit's clinical research, innovation and commercialisation contribute towards development, assessment and implementation of new diagnostic methods, treatment, and healthcare technologies.

b) Reflect on how research at the unit contributes towards the quality of relevant education programme at your institutions or beyond.

c) Describe the different opportunities for students on relevant educational programmes to become involved in research activities at the administrative unit, and the extent to which students use those opportunities.

5. Relevance to society

Reflect on the administrative unit's contribution towards the Norwegian Long-term plan for research and higher education, societal challenges more widely, and the UN Sustainable Development Goals.

5.1 Impact cases

Please use the attached template for impact cases. Each impact case should be submitted as an attachment (pdf) to the self-assessment.

Impact case guidelines

Each case study should include sufficiently clear and detailed information to enable the evaluation committee to make judgements based on the information it contains, without making inferences, gathering additional material, following up references or relying on members' prior knowledge. References to other sources of information will be used for verification purposes only, not as a means for the evaluation committee to gather further information to inform judgements.

In this evaluation, impact is defined as an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia.

Timeframes

- The impact must have occurred between 2012 and 2022
- Some of the underpinning research should have been published in 2012 or later
- The administrative units are encouraged to prioritise recent cases

Page limit

Each completed case study template will be limited to **five pages** in length. Within the annotated template below, indicative guidance is provided about the expected maximum length limit of each section, but institutions will have flexibility to exceed these so long as the case study as a whole remains no longer than **five pages** (font Calibri, font size 11). Please write the text into the framed template under the sections 1–5 below. The guiding text that stands there now, can be deleted.

Maximum number of cases permitted per administrative unit

For up to 10 researchers: one case; for 10 to 30 researchers: two cases; for 30-50 researchers: three cases; for 50-100 researchers: four cases, and up to five cases for units exceeding 100 researchers.

Naming and numbering of cases

Please use the standardised short name for the administrative unit, and the case number for the unit (1,2,3, etc) in the headline of the case. Each case should be stored as a separate PDF-document with the file name: [Name of the institution and name of the administrative unit] [case number]

Publication of cases

RCN plans to publish all impact cases in a separate evaluation report. By submitting the case the head of the administrative units consents to the publication of the case. Please indicate below if a case may not be made public for reasons of confidentiality.

If relevant, describe any reason to keep this case confidential:

Please write the text here

[Name of the institution and name of the administrative unit] [case number]

Institution:
Administrative unit:
Title of case study:
Period when the underpinning research was undertaken:
Period when staff involved in the underpinning research were employed by the submitting institution:
Period when the impact occurred:

1. Summary of the impact (indicative maximum 100 words)
This section should briefly state what specific impact is being described in the case study.

2. Underpinning research (indicative maximum 500 words)
This section should outline the key research insights or findings that underpinned the impact, and provide details of what research was undertaken, when, and by whom. This research may be a body of work produced over a number of years or may be the output(s) of a particular project. References to specific research outputs that embody the research described in this section, and evidence of its quality, should be provided in the next section. Details of the following should be provided in this section:

- The nature of the research insights or findings which relate to the impact claimed in the case study.
- An outline of what the underpinning research produced by the submitted unit was (this may relate to one or more research outputs, projects or programmes).
- Dates of when it was carried out.
- Names of the key researchers and what positions they held at the administrative unit at the time of the research (where researchers joined or left the administrative unit during this time, these dates must also be stated).
- Any relevant key contextual information about this area of research.

3. References to the research (indicative maximum of six references)
This section should provide references to key outputs from the research described in the previous section, and evidence about the quality of the research. All forms of output cited as underpinning research will be considered equitably, with no distinction being made between the types of output referenced. Include the following details for each cited output:
- Author(s)
- Title
- Year of publication
- Type of output and other relevant details required to identify the output (for example, DOI, journal title and issue)
- Details to enable the panel to gain access to the output, if required (for example, a DOI or URL).

All outputs cited in this section must be capable of being made available to panels. If they are not available in the public domain, the administrative unit must be able to provide them if requested by RCN or the evaluation secretariate.

4. Details of the impact (indicative maximum 750 words)
This section should provide a narrative, with supporting evidence, to explain:

- How the research underpinned (made a distinct and material contribution to) the impact;
- The nature and extent of the impact.

The following should be provided:
- A clear explanation of the process or means through which the research led to, underpinned or made a contribution to the impact (for example, how it was disseminated, how it came to influence users or beneficiaries, or how it came to be exploited, taken up or applied).

- Where the submitted administrative unit's research was part of a wider body of research that contributed to the impact (for example, where there has been research collaboration with other institutions), the case study should specify the particular contribution of the submitted administrative unit's research and acknowledge other key research contributions.
- Details of the beneficiaries – who or what community, constituency or organisation has benefitted, been affected or impacted on.
- Details of the nature of the impact – how they have benefitted, been affected or impacted on.
- Evidence or indicators of the extent of the impact described, as appropriate to the case being made.
- Dates of when these impacts occurred.

5. Sources to corroborate the impact (indicative maximum of ten references)

Institution	Administrative unit	Name of research group	Expert panel
FHI	Centre for Fertility and Health	Centre for Fertility and Health	Panel 4e

Scales for research group assessment

Use whole integers only – no fractions!

Organisational dimension

Score	Organisational environment
5	An organisational environment that is outstanding for supporting the production of excellent research.
4	An organisational environment that is very strong for supporting the production of excellent research.
3	An organisational environment that is adequate for supporting the production of excellent research.
2	An organisational environment that is modest for supporting the production of excellent research.
1	An organisational environment that is not supportive for the production of excellent research.

Quality dimension

The quality dimension consists of two judgements: 1) Research and publication quality, and 2) Research group's contribution. The first judgement is defined as follows:

Score	Research and publication quality	Supporting explanation
5	Quality that is outstanding in terms of originality, significance, and rigour.	**The quality of the research is world leadin**g in terms of quality, and is comparable to the best work internationally in the same area of research. The publications submitted provide evidence that the work of the group meets the highest international standards in terms of originality, significance, and rigour. Work at this level should be a key international reference in its area.
4	Quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence.	**The quality of the research is internationally excellent**. The research is clearly of an international standard, with a very good level of quality in terms of originality, significance, and rigour. Work at this level can arouse significant interest in the international academic community, and international journals with the most rigorous standards of publication (irrespective of the place or language of publication) could publish work of this level.
3	Quality that is recognised internationally in terms of originality, significance and rigour.	**The quality of the research is sufficient to achieve some international recognition.** It would be perceived nationally as strong and may occasionally reach an internationally recognised level in terms of originality, significance and rigour. Internationally recognised journals could publish some work of this level.
2	Quality that meets the published definition of research for the purposes of this assessment.	The international academic community would deem the research to be nationally acceptable, but below world standards. Legitimate nationally recognised peer-reviewed journals could publish work of this level.
1	Quality that falls below the published definition of research for the purposes of this assessment[1].	**The quality of the research** is well below international level, and is unpublishable in legitimate peer-reviewed research journals.

[1] A publication has to meet all of the criteria below:

Societal impact dimension

The societal impact dimension is also composed of two judgements, defined as presented in the table below.

Score	Research group's societal contribution, taking into consideration the resources available to the group	Score	User involvement
5	The group has contributed extensively to economic, societal and/or cultural development in Norway and/or internationally.	5	Societal partner involvement is outstanding – partners have had an important role in all parts of the research process, from problem formulation to the publication and/or process or product innovation.
4	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is very considerable given what is expected from groups in the same research field.	4	Societal partners have very considerable involvement in all parts of the research process, from problem formulation to the publication and/or process or product innovation.
3	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is on par with what is expected from groups in the same research field.	3	Societal partners have considerable involvement in the research process, from problem formulation to the publication and/or process or product innovation.
2	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is modest given what is expected from groups in the same research field.	2	Societal partners have a modest part in the research process, from problem formulation to the publication and/or process or product innovation.
1	There is little documentation of contributions from the group to economic, societal and/or cultural development in Norway and/or internationally.	1	There is little documentation of societal partners' participation in the research process, from problem formulation to the publication and/or process or product innovation.

Methods and limitations

Methods

The evaluation is based on documentary evidence and online interviews with the representatives of Administrative Unit.

The documentary inputs to the evaluation were:

- Evaluation Protocol Evaluation of life sciences in Norway 2022-2023
- Administrative Unit´s Terms of Reference
- Administrative Unit's self-assessment report
- Administrative Unit's impact cases
- Administrative Unit's research groups evaluation reports
- Panel reports from the Expert panels
- Bibliometric data (*NIFU Nordic Institute for Studies of innovation, research and education*)
- Personnel data (*Statistics Norway (SSB)*)
- Funding data – The Research Council´s contribution to biosciences research (*RCN*)
- Extract from the Survey for academic staff and the Student Survey (*Norwegian Agency for Quality Assurance in Education (NOKUT)*)

After the documentary review, the Committee held a meeting and discussed an initial assessment against the assessment criteria and defined questions for the interview with the Administrative Unit. The Committee shared the interview questions with the Administrative Unit two weeks before the interview.

Following the documentary review, the Committee interviewed the Administrative Unit in an hour-long virtual meeting to fact-check the Committee's understanding and refine perceptions. The Administrative Unit presented answers to the Committee's questions and addressed other follow-up questions.

After the online interview, the Committee attended the final meeting to review the initial assessment in light of the interview and make any final adjustments.

A one-page summary of the Administrative Unit was developed based on the information from the self-assessment, the research group assessment, and the interview. The Administrative Unit had the opportunity to fact-check this summary. The Administrative Unit approved the summary without adjustments. ***(Adjust the text if the AU asked for corrections. Include the AU request and explain what adjustments were made).***

Limitations

(Choose one of the three options below and delete the others. Feel free to elaborate slightly if necessary. For example, if you choose option 3, explain the missing information. Note that the Committee can provide detailed feedback and suggestions on improving the evaluation in the Memorandum to the RCN. This section has to remain concise and only summarise whether the information was or was not sufficient.)

(1) The Committee judged the information received through documentary inputs and the interview with the Administrative Unit sufficient to complete the evaluation.

(2) The Committee judged that the Administrative Unit self-assessment report was insufficient to assess all evaluation criteria fully. However, the interview with the Administrative Unit filled gaps in the Committee's understanding, and the information was sufficient to complete the evaluation.
(3) The Committee judged that the Administrative Unit’s self-assessment report was insufficient to assess all evaluation criteria fully, and some information gaps remained after the interview with the Administrative Unit.

Norges forskningsråd
Besøksadresse: Drammensveien 288
Postboks 564
1327 Lysaker

Telefon: 22 03 70 00
Telefaks: 22 03 70 01

post@forskningsradet.no
www.forskningsradet.no

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