

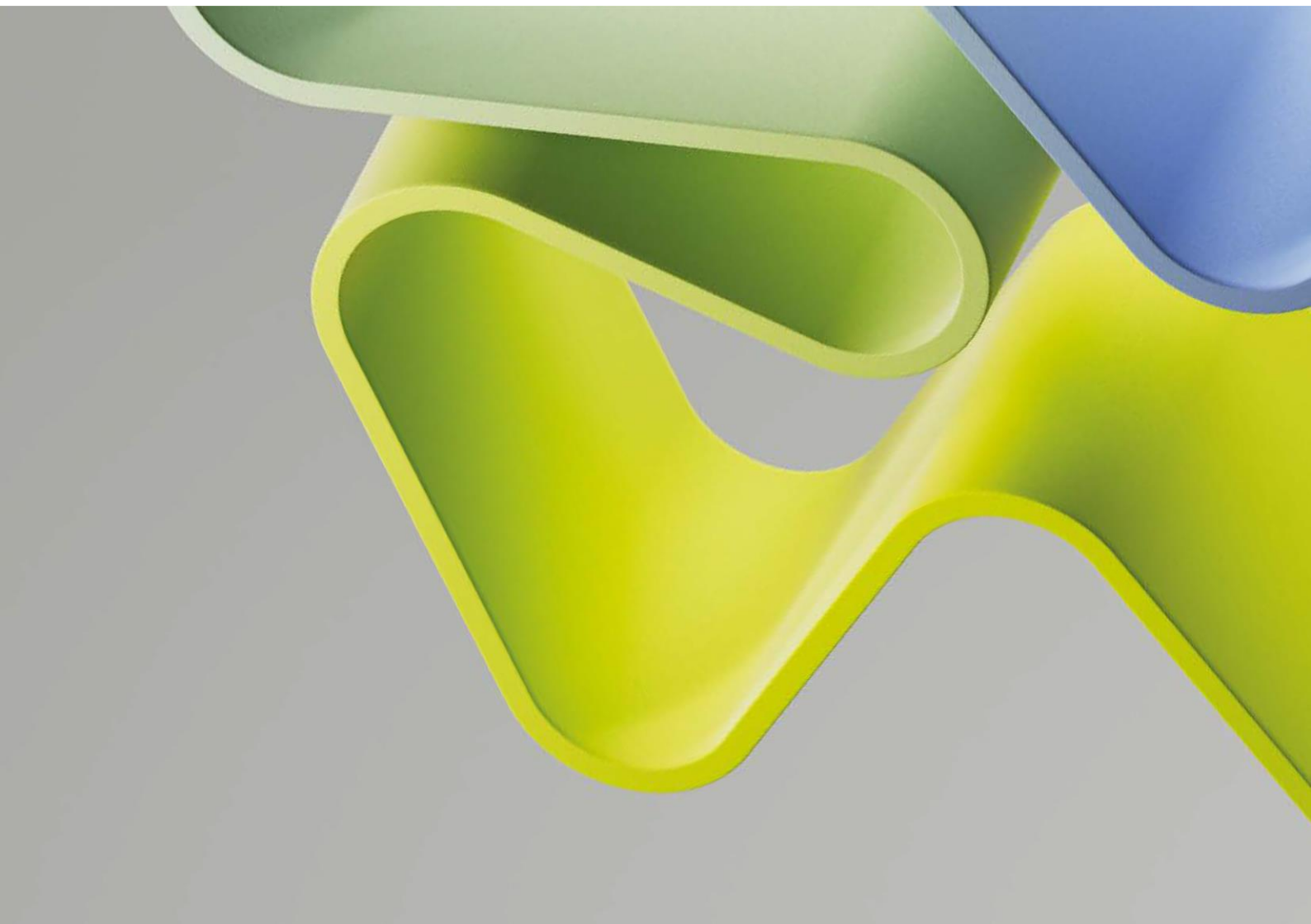
Evaluation of Medicine and Health 2023-2024

Evaluation report – Panel 4b

Research Group: Department of Infection Control and Vaccines
(SMSV)

Administrative Unit: Division of Infection Control

Institution: Norwegian institute of Public Health



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Preface

The Research Council of Norway (RCN) is given the task by the Ministry of Education and Research to perform subject-specific evaluations. The primary aim of the evaluation of medicine and health (EVALMEDHELSE) 2023-2024 is to reveal and confirm the quality and relevance of research performed at Norwegian Higher Education institutions, research institutions (the institute sector) and the health trusts, in an international perspective. Such knowledge is useful for the institutions that participate in the evaluation, for the Research Council who advise the authorities on how research should be developed further, and for the authorities, who set targets and frameworks for research and higher education. Research groups submitted by their administrative unit will be assessed by 18 expert panels organised by research subjects or themes. The expert panels will assess research groups across institutions and sectors based on research group's self-assessments and examples of scholarly output. These research reports will be part of the evaluation of their belonging administrative units.

Abstract

This is one of several departments within the Division of Infection Control, with a focus on operational infection control and vaccination activities. Limited staff time is available for research, in total less than 9 FTE among around 48 staff. Covid-19 has been the main focus of activities over the past years. As a public health institute, operational activities span a large range of infections, which makes it challenging to develop a research portfolio based on long-term proactive strategies. Benchmarks are not very specific and may not provide much guidance in prioritising. Research has national relevance in particular, and is comparable to that of other European PHI research groups.

Overall assessment

The panel considers this overall to be a strong and active research group, whereby the agenda is directly linked to its operational and surveillance tasks. This is in line with its positioning within a NIPH, which needs to be responsive to any threat to public health and society. Therefore the panel feels that the research tends to be somewhat scattered and reactive, rather than based on own strategic choices. Collaboration and/or synergy with other departments in the division doing research on similar problems and topics could have been described more clearly, in particular there appear to be several other departments working on the impact of vaccinations. The department has access to a range of high quality national databases, which could be exploited further, also for research purposes.

Grading:

Dimensions	Score
Organisational dimension (How adequate the organisational environment is in supporting the production of excellent research).	3
Quality dimension (Research and publication quality/Research group's contribution)	3/4
Societal impact dimension (Research group's societal contribution/User involvement)	3/3

Recommendations

- Clarify cohesion within the division with other departments working on related diseases with similar or complementary expertise, in particular related to impact of vaccinations
- Identify a few strategic research areas to prioritise for excellence and impact
- Clarify the extent of and support for added value research in this department, this may lead to more resources for research.

1. Strategy, resources and organisation

1.1 Research group's organisation and strategy

This is a relatively new department, established in 2019 from a merger of smaller units. The mandate of this group is to provide knowledge, preparedness and infrastructure within the field of infection control and vaccines. Its operational activities include infrastructure for vaccine distribution, 24-hour on-call service for health care professionals regarding infection control and vaccine advice, handling of emergency situations, surveillance of infectious diseases and research on infectious disease epidemiology and prevention including vaccines. The Department is divided into three sections, two focused on a selection of infectious diseases, one leading the national vaccination programme. There is excellent access to nationwide registries. Technical research support is provided at the administrative unit level. The department aims to increase method and research competence within the existing workforce and encourages staff without PhDs to attend PhD programmes within activities/projects relevant for the department. Staff in the department lecture at Master courses and mentor PhD and Master students. The benchmarks for research are generic.

The panel felt that due to competing public health priorities, only a limited group of people is able to prioritise research, and whenever there is need for operational support, staff is expected to de-prioritise research and contribute to practical infection control activities. Thus, while the organisational environment in itself is adequate to support the production of excellent research, it is not very clear to what extent the department, the division or the institute prioritises (a dedicated allocation of resources for) the development and maintenance of a strong recognised research profile, or considers this as 'nice to have' attribute only. The division into sections is not clear nor clarified, it covers only a selection of all infectious diseases, it does not clarify if/how control activities other than vaccinations relates to (research) activities, coherence with related research in other divisions in the NIPH is not clarified. Benchmarks are mainly qualitative, and do not clarify ambitions or priorities. There are a good number of (ongoing) PhDs in the department. Frequency of teaching is not stipulated.

Recommendations:

- Clarify within the Division the importance and priority awarded to research for the organisation, to ensure allocated resources will match this
- Define more SMART benchmarks to help guide and prioritise staff and resources
- Clarify rationale for selection of infectious diseases included in section 1 and 2, and how control of other infectious diseases (e.g. vector borne, gastrointestinal) is supported
- Clarify synergy with other departments in the division working on related research areas

1.2 Research group's resources

In the self assessment, the research group indicates that there are 48 people working in the department in total, with several people dedicating part of their time to research, therefore the research resources in total are just under 9 FTE. Academic qualifications are however not specified (e.g. professor, post-doc). Commissioned research, RCN, other national funding and international funding provides 20-30% of income; while core funding doubled since 2020. Covid-19 has heavily influenced the research activity since 2020, and being part of the department that leads the Covid-19 surveillance and coordinates vaccination against Covid-19, has put the research group in the centre of Covid-19 research in Norway. Examples of externally funded research programmes include effect of infection control measures and vaccine effect (hepatitis E vaccine trial among pregnant women in Bangladesh (also mentioned by the SMSV Department); Nordic and European collaboration on the effect of the Covid-19 vaccine; effect of TB screening among new arrivals to Norway). The research group is also leading a large and EU-financed coordination mechanism working for better coordination of clinical trials in the field of infectious diseases.

Much of the work of the department is interdisciplinary, in collaboration with other groups within the NIPH. The host institution provides essential support to research groups, including financial R&I support, legal support, IT support, comms support, knowledge exchange support and library services.

The panel considers is positive that external funding has been stable over the years, coming from multiple national and international sources, which is seen as a strength. The department does not receive funding through the pharmaceutical industry, which the panel feels is important to maintain, to avoid even a perception of a conflict of interest. A significant proportion of the department's research activity has been linked to obtaining real-time health data as a basis for infection control measures and preparedness and planning for new demands and crisis management, which the panel feels could be exploited further. The panel noted the department is leading an EU-financed coordination mechanism for clinical trial coordination, but it is not clear to what extent this entails leading clinical research. A concern for the panel was that, if research goals are formulated primarily in support of operational tasks (described as 'research for action'), this can lead to a somewhat scattered reactive research portfolio, rather than one based on strategic choices and comparative advantages.

Based on the information above, the expert panel considers the resources adequate for supporting the production of excellent research, but that more clarity is needed on concrete prioritisation, support and facilitation for research on the public health challenges addressed in the different Departments.

Recommendation:

- Explore a more pro-active approach in seeking external funding to develop and lead research in specific areas of expertise and interest.

1.3 Relevance to the institution

The department is an operational unit organized to meet NIPHS core tasks: knowledge, preparedness and infrastructure within the field of infection control and vaccines. Thereby there is a clear mandate to have a strong profile on the core tasks of surveillance and advice, for which expertise will be supported and underpinned by original research. Throughout the evaluation period, and especially in more recent years, a large proportion of the department's research activity has been linked to obtaining real-time health data as a basis for Covid-19 infection control measures and preparedness as well as planning for new demands and crisis management.

The panel considers that the research output of the Department is more than sufficient. It includes scientific publications with original data analysis, and regular surveillance reports on a range of infectious diseases including Covid –19. This the panel feels reflects that the department has been supporting the core tasks of the NIPH and Division very well, including in the creation of knowledge on prevalence and risks of infectious disease, and preparedness by awareness of surveillance trends. With increasing vaccine hesitancy globally following Covid-19 controversies, it will of great added value to have a department which is both on top of detailed surveillance trends, and able to advice on and evaluate interventions where needed, especially if good and productive collaboration with other Departments working on vaccines or vaccination is achieved. The quality of the strong databases and their infrastructures is supported by regular use, which is ensured by this Department.

Recommendations:

- Reflect on opportunities (and risks) of AI to optimize use of unexplored data in the many nation-wide registries.
- Explore collaborations with academic university groups to establish a long-term research agenda that also focusses on research innovation.

2. Research quality

2.1 Research group's scientific quality

The profile of the researchers in the Department is rather diverse, including medical, pharmacology, biology, nursing, vets, social science, expertise. This supports interdisciplinary work, but might also raise concerns on sufficient critical mass for each expertise. They present 10 research projects, 8 of which led by the department, about half funded internally; as well as 5 publications, 2 of which relate to Covid-19, which has been the focus of the department over the past years. The research of the department is based on its epidemiological expertise related to the selected infectious diseases, including surveillance and registry-based analysis; and on multidisciplinary vaccine and vaccination research (including immunology, pharmacovigilance, social science as well as epidemiology). Most publications relate to surveillance and registry-based research. Funded research projects are mostly focused on Norway, but there are also some international collaborations (e.g. with RIVM) and one international project in Bangladesh.

The panel considers that the Department presents good quality publications, with first and/or last authors from the department. Relevance is shown mostly on the national level, but in the past years (especially since Covid-19), the panel appreciates that the Department has expanded their collaborative research and research activity outside of Norway, especially regarding registry-based research. The Department also collaborates with non-governmental institutions and civil society organizations, mainly patient organizations and other organizations representing special interests or population groups. Although not explicitly stated in the self-assessment, the panel assumed this is probably mostly from an operational perspective. Nevertheless, such interactions can broaden the scope and provide societal input in the research questions to be prioritised. The databases within the Department are considered unique internationally, given their high quality health registers. Hence this provides a great platform for high quality registry-based research, but it is not clear to what extent that is actually happening. There could have been more documentation in the self-assessment to clarify the leading national role on research relating to vaccines and vaccination. Given the limited number of FTE available for research, the output regarding projects and publications is to be commended.

Recommendations

- Avoid that surveillance and registry-based research inhibits innovate and interdisciplinary research. Such research could advance the state-of-the-art of this research area, and push knowledge boundaries nationally and internationally.
- Develop a strategic plan to utilise the envisioned possibilities for new and ground breaking research based on world leading registry-based surveillance and databases
- Prioritise resources to organise an increase in calls for applications and funded collaborations to develop a targeted research profile
- Develop a proactive research agenda to ensure uptake of vaccinations in Norway is sufficient for population immunity

2.2 Research group's societal contribution

Societal impact is directly linked to the mandate of the department and the institute, primarily for the Norwegian context, whereby research is seen as research for action. The Department also contributes to capacity building in low resource settings (examples Nepal and Ethiopia are mentioned), through training and joint conducting of research. Research thus provides a highly relevant contribution to surveillance, which is essential input for public health preparedness, guidelines and policy making. By its nature, the research performed by the group should be contributing to the delivery of effective infection control and adequate uptake of important vaccines, in order to reduce the burden of infectious diseases, directly affecting economical and other societal aspects of life. This impact could be evaluated specifically. During the pandemic, most of the research that was performed was actively and timely used for managing the Covid-19 pandemic. Equity in access to control interventions, in particular vaccinations, is mentioned as a focus. Specific research contributions are mentioned with regards to Covid-19 surveillance and vaccination uptake.

The panel considers the departments 'societal contribution as on par with what is expected from groups in the same research field. While broad societal impact is indicated, specific examples are missing. E.g. it would have been informative to know if/to what extent their research actually changed procedures, management of vaccination programmes, policies etc. Being part of the NIPH, the analysis and dissemination of surveillance data on the trends and transmission of infectious diseases will benefit national and international public health, and contribute to pandemic preparedness. Collaboration with WHO and international partners is important, and in line with what is expected from a public health institute. There is a stated focus on producing new knowledge, but it is not clear to what extent which stakeholders, including NGOs, are pro-actively involved in setting research priorities or interpretation of surveillance trends.

With regard to user involvement, the panel considers there to be considerable involvement in the research process, as the activities of the department are directly related to societal challenges.

Recommendations:

- Explore how collaborations with non-governmental institutions and civil society organizations can inform new areas of research

Appendices

Evaluation of Life Sciences in Norway 2022-2024

Evaluation of Medicine and Health 2023-2024

Mandate Expert panels

The Research Council of Norway (RCN) is given the task by the Ministry of Education and Research to perform subject-specific evaluations. The Portfolio board for Life Sciences in the Research Council of Norway has decided to carry out an evaluation of medicine and health in 2023-2024 as the second of two evaluations within Life Sciences. The evaluation of biosciences takes place in 2022-2023.

1. The objective of the evaluation

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), by the institute sector and by health trusts.

The results of the evaluation will be used as recommendations to the institutions, the Research Council, and the ministries.

2. Tasks of the expert panels

The panels are requested to:

- evaluate the strategy, resources and organisation of/for the research groups.
- evaluate research production and quality of the research groups.
- grade and write a short evaluation text to the evaluated research groups.

Each of the expert panels will write a brief report with evaluations of the different research groups as well as specific recommendations.

3. Time schedule

Digital panel meetings will take place in the period March 15. - June 15. 2024.

Deadline for submitting panel report to the Research Council: June 15. 2024.

4. Miscellaneous

Other important aspects of Norwegian life sciences research that ought to be given consideration.

EVALMEDHELSE 2023-2024 – Panel group description – January 2024

Panel group	Description	Panel no.
Group 1 PHYSIOLOGY Physiology-related disciplines (human physiology), including corresponding translational research	Anatomy, physiology, embryology, nutritional physiology, pathology, basic odontological research, exercise physiology, neurobiology, toxicology, pharmacology, medicinal chemistry, chemistry, biology, pathology.	Panel 1a Panel 1b
Group 2 MOLECULAR BIOLOGY Molecular Biology, including corresponding translational research	Microbiology, bacteriology, inflammation and infection disease research, forensic medicine, genetics, immunology, vaccine development, microbiological diagnostics, pharmaceutical microbiology, cell biology, molecular medicine and -biophysics, medical biochemistry, omics, organoids, imaging, toxicology, pathology, drug development, cancer research, translational research, systems biology, personalized medicine, biomarkers, oncology, genetics, genomics, epigenetics, proteomics, bioinformatics-/statistics, computational science, AI, biology, virology, radiology, ionisation, molecular biology, microbiology, pharmacology, pharmacogenomics, regenerative medicine and related subjects.	Panel 2a Panel 2b Panel 2c
Group 3a CLINICAL RESEARCH	Clinical Research, including surgery and translational research within: paediatrics, women's health, gynaecology, otorhinolaryngology, head and neck surgery, oncology, haematology, radiology and medical imaging.	Panel 3a_1 Panel 3b_2
Group 3b CLINICAL RESEARCH	Clinical Research, including surgery and translational research within: general medicine, emergency medicine, anaesthesiology, neurology, geriatric medicine, rehabilitation medicine, cardiology, nephrology/urology, endocrinology, pulmonary medicine, orthopaedics, rheumatology, Infection, gastroenterology.	Panel 3b_1 Panel 3b_2 Panel 3b_3
Group 4 PUBLIC HEALTH Public Health and Health-related Research	Public health, community research, epidemiology, preventive medicine, mental health, behavioural research and ethics, medical statistics, environment, nutrition, preventive medicine, physiotherapy, sports medicine, implementation research, public health, health care services research, global health, nursing	Panel 4a Panel 4b Panel 4c

	sciences, rehabilitation sciences, public health systems, digital health care services, ICT, HTA, health competence, genetic and epigenetic epidemiology, non-communicable diseases, pharmacology, nursing research, professional research, occupational medicine.	Panel 4d Panel 4e Panel 4f
Group 5 PSYCHOLOGY Psychology and Psychiatry	Clinical psychology, personality psychology, developmental psychology, cognitive psychology, biological psychology and forensic psychology, psychiatry, including geriatric psychiatry, child and adolescent psychiatry and biological psychiatry, social-, community- and workplace psychology, organizational psychology, developmental psychology, behavioural and health psychology, health promotion and well-being.	Panel 5a Panel 5b

Panel group 4 PUBLIC HEALTH

Expert panel 4b

Name	Title	Institution
Marianne van der Sande (chair)	Professor	Institute of Tropical Medicine Antwerp
Baukje de Roos	Professor	University of Aberdeen
Lars Rylander	Professor	Lund University
Anders Stålmán	Docent	Karolinska Institutet

Baukje de Roos had a conflict of interest with the evaluation of the Department of Nutritional epidemiology at the University of Oslo (report 13) and Lars Rylander had a conflict of interest with the Department of Food Safety (KMMT) at the Norwegian Institute of Public Health (report 1). This meant that for those evaluations they did not have access to the self assessments or survey data and they did not participate in the discussion of the research group, nor did they participate in the preparation and completion of the evaluation report.



Evaluation of Medicine and Health (EVALMEDHELSE) 2023-2024

Self-assessment for research groups

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

Updated: **13. October 2023**

Institution (name and short name): _____

Administrative unit (name and short name): _____

Research group (name and short name): _____

Date: _____

Contact person: _____

Contact details (email): _____

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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 a research group. The self-assessment contains questions regarding the group's research- and innovation related activities and developments over the years 2012-2022. All submitted data will be evaluated by expert panels.

Deadline for submitting the self- assessment to your administrative unit – 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 submit completed self- assessment to the administrative unit no later than 26 January 2024.

Please use the following format when naming your document: [short name of the institution]_[short name of the administrative unit]_[short name of the research group], e.g. *UiT_DepPsy_Short name of the research group*.

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 link to websites/documents in the self-assessment where relevant.
- Please be sure that all documents linked to in the self- assessment are written 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 the two evaluation criteria described in the evaluation protocol, the research group must answer all questions.
 - ⇒ Provide information – provide documents and other relevant data or figures about the research group, for example strategy and other planning documents, as well as data on R&D expenditure, sources of income and results and outcomes of research
 - ⇒ Describe – explain and present using contextual information about the research group and inform the reader about the research group.
 - ⇒ Reflect – comment in a reflective and evaluative manner how the research group operates.
- Data on personnel should refer to data reported to DBH on 1 October 2022 for HEIs and to the yearly reporting for 2022 for the institute sector and the health authorities. Other data should refer to 31 December 2022 if not specified otherwise.
- It is possible to extend the textboxes when filling in the form. **NB!** A completed self- assessment form cannot exceed 25 pages (pdf file). Expert panels are not requested to read more than the maximum of 25 pages. Pages exceeding maximum limit of 25 pages **might not** be evaluated.
- Submit the self- assessment as a pdf (max 25 pages) to the administrative unit within **26 January 2024**. Before submission, please be sure that all text are readable after the conversion of the document to pdf. The self- assessment should be sent from the administrative unit to evalmedhelse@forskningsradet.no within **31 January 2024**.

Please note that information you write in the self assessment and the links to documents/websites in the self-assessment are the only available information for the expert panel.

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

1. Organisation and strategy

1.1 Research group's organisation

Describe the establishment and the development of the research group, including its leadership (e.g. centralised or distributed etc.), researcher roles (e.g. technical staff, PhD, post docs, junior positions, senior positions or other researcher positions), the group's role in researcher training, mobility and how research is organised (e.g. core funding organisation versus project based organisation etc.).

Table 1. List of number of personnel by categories

Instructions: Please provide number of your personnel by categories.

For institutions in the higher education sector, please use the categories used in DBH, <https://dbh.hkdir.no/datainnhold/kodeverk/stillingskoder>. Please add new lines or delete lines which are not in use.

	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 Personnel by position	Position A (Fill in)				
	Position B (Fill in)				
	Position C (Fill in)				
	Position D (Fill in)				

1.2 Research group's strategy

a) Describe the research group's main goals, objectives and strategies to obtain these (e.g. funding, plans for recruitment, internationalization etc.) within the period 2012-2022.

b) Please describe the benchmark of the research group. The benchmark for the research group should be written by the administrative unit in collaboration with the research group. The benchmark can be a reference to an academic level of performance (national or international) or to the group's contributions to other institutional or sectoral purposes.

Example: A benchmark for a research group is related to the research groups' aim which again is included in the strategy for the administrative unit. A guidance for the administrative unit to set a benchmark for the research group(s) can e.g. be: What do the administrative unit expect from the research group(s)?

c) Describe the research group's contribution to education (master's degree and/or PhD).

d) Describe the support the host institution provides to the research group (i.e., research infrastructure, access to databases, administrative support etc.).

1.3 Relevance to the institutions

Describe the role of the research group within the administrative unit. Consider the research group's contribution towards the institutional strategies and objectives, and relate the research group's benchmark to these.

1.4 Research group's resources

Describe the funding portfolio of the research group for the last five years (2018-2022).

Table 2. Describe the sources of R&D funding for the research group in the period 2018-2022.

	2018 (NOK)	2019 (NOK)	2020 (NOK)	2021 (NOK)	2022 (NOK)
Basic funding					
Funding from industry and other private sector sources					
Commissioned research for public sector					
Research Council of Norway					
Grant funding from other national sources					
International funding e.g. NIH, NSF, EU framework programmes					
Other					

1.5 Research group's infrastructures

Research infrastructures are facilities that provide resources and services for the research communities to conduct research and foster innovation in their fields. [These](#) include major equipment or sets of instruments, knowledge-related facilities such as collections, archives or scientific data infrastructures, computing systems communication networks. Include both internal and external infrastructures.

- Describe which national infrastructures the research group manages or co-manages.
- Describe the most important research infrastructures used by the research group.

1.6 Research group's cooperations

Table 3. Reflect on the current interactions of the research group with other disciplines, non-academic stakeholders and the potential importance of these for the research (e.g. informing research questions, access to competence, data and infrastructure, broadening the perspectives, short/long-term relations).

Interdisciplinary (within and beyond the group)	About 1/3 page
Collaboration with other research sectors e.g. higher education, research institutes, health trusts and industry.	About 1/3 page
<u>Transdisciplinary</u> (including non academic stakeholders) <i>Transdisciplinary research involves the integration of knowledge from different science disciplines and (non-academic) stakeholder communities with the aim to help address complex societal challenges.</i>	About 1/3 page

2. Research quality

2.1 Research group's scientific quality

Describe the research profile of the research group and the activities that contribute to the research group's scientific quality. Consider how the research group's work contributes to the wider research within the research group's field nationally and internationally.

Please add a link to the research group's website:

Short version

Table 4. List of projects

Instructions: Please select 5-10 projects you consider to be representative/the best of the work in the period 1 January 2012 – 31 December 2022. The list may include projects lead by other institutions nationally or internationally. Please delete tables that are not used.

Project 1 -10: <i>Project title/Project period (year from – year to)</i>	Project owner(s) (project leaders organisation)	
	Total budget and share allocated to research group	
	Objectives and outcomes (planned or actual) and link to website	

Table 5. Research group's contribution to publications

Instructions: Please select 5-15 publications from the last 5 years (2018-2022) with emphasis on recent publications where group members have a significant role. **If the publication is not openly available, it should be submitted as a pdf file attached to the self-assessment.** We invite you to refer to the Contributor Roles Taxonomy in your description: <https://credit.niso.org/>.

Cf. Table 1. List of personell by categories: Research groups up to 15 group members: 5 publications. Research groups up to 30 group members: 10 publications. Research groups above 30 group members: 15 publications.

Please delete tables that are not used.

Publication 1 -15: <i>Project title/Journal/Year/DOI/URL</i>	Authors (Please highlight group members)	
	Short description	
	Research group's contribution	

Table 6. Please add a list with the research group's monographs/scientific books.

Please delete lines which are not used.

1	Title - Authors (Please highlight group members)- link to webpage (if possible)
2	

2.2 Research group's societal contribution

Describe the societal impact of the research group's research. Consider contribution to education, economic, societal and cultural development in Norway and internationally.

Table 7. The research group's societal contribution, including user-oriented publications, products (including patents, software or process innovations

Instructions: Please select 5–10 of your most important user-oriented publications or other products from the last 5–10 years with emphasis on recent publications/products. For each item, please use the following formatting. Please delete lines which are not used.

3. Challenges and opportunities

Information about the strengths and weaknesses of the research group is obtained through the questions above. In this chapter, please reflect on what might be the challenges and opportunities for developing and strengthening the research and the position of the research group.

Short version

Scales for research group assessment

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

Score	Research and publication quality	Score	Research group's contribution Groups were invited to refer to the Contributor Roles Taxonomy in their description https://credit.niso.org/
5	Quality that is outstanding in terms of originality, significance and rigour.	5	The group has played an outstanding role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
4	Quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence.	4	The group has played a very considerable role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
3	Quality that is recognised internationally in terms of originality, significance and rigour.	3	The group has a considerable role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
2	Quality that meets the published definition of research for the purposes of this assessment.	2	The group has modest contributions to the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
1	Quality that falls below the published definition of research for the purposes of this assessment.	1	The group or a group member is credited in the publication, but there is little or no evidence of contributions to the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.

Societal impact dimension

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.

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