

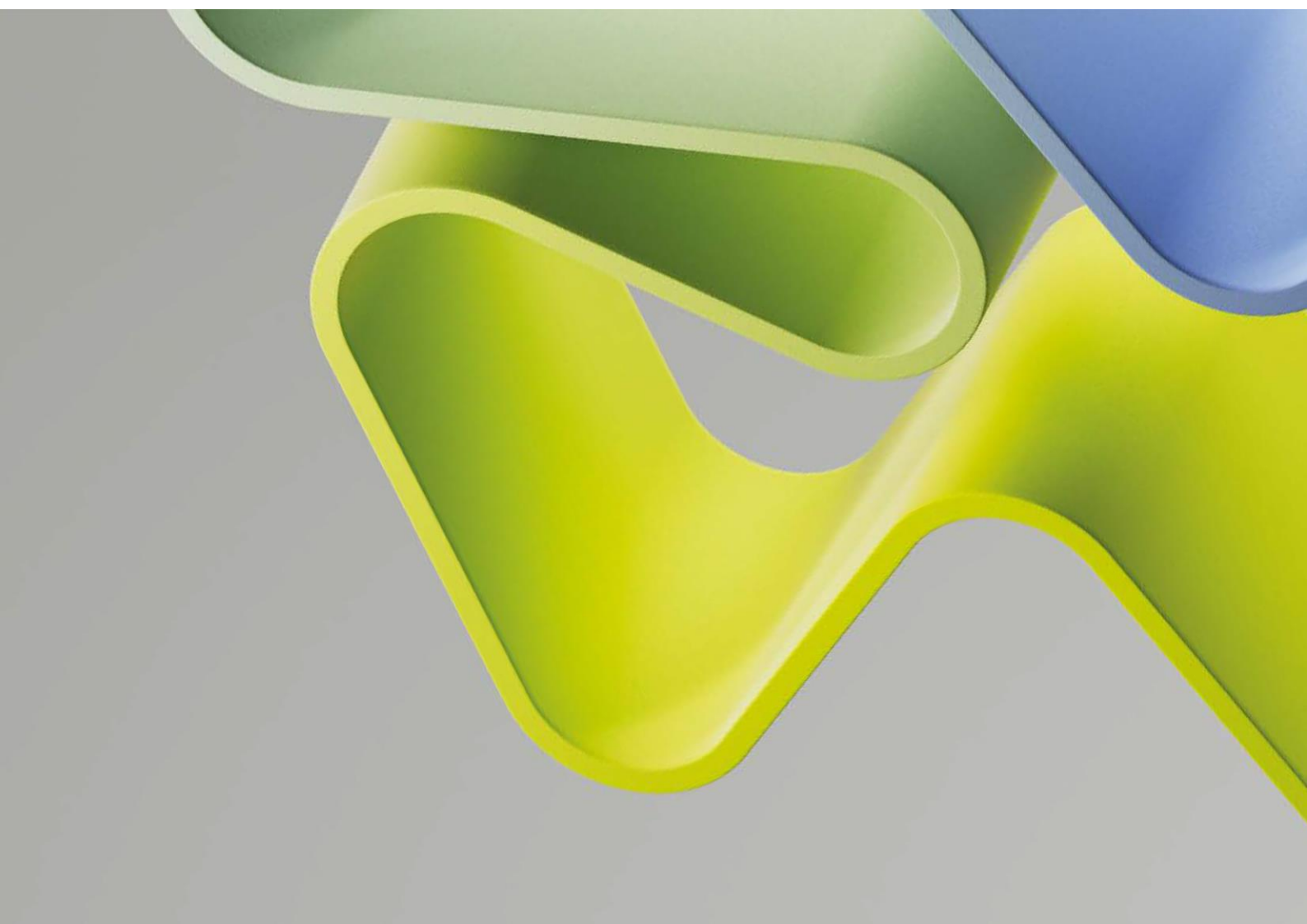
Evaluation of Medicine and Health 2023-2024

Evaluation report – Panel 4b

Research Group: Department of Infection Control (SMLV)

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 research group, the Department of Virology, was formed about 5 years ago with the objective to bring together all NIPH laboratory research on viruses in one department. There are 3 scientific sections, each covering a specific set of viruses, and a technical support section. Core funded activities focus on surveillance, characterisation of (novel viruses) and preparedness; external funding is used for research, in particular molecular characterisation, pathogen evolution, population immunity in the Norwegian population. The stated long term objectives relate to fundamental research, and short term objectives related to supporting the institute in preparedness activities. Ambitions are to be a leading expertise centre, nationally and internationally, and the group is well recognised as such.

Overall assessment

The panels considers that overall, this department presents as a coherent research group, with a clear position and strategy, solid (international) networks, and a steady research output. While a broad, albeit not exhaustive, range of viruses is covered, divided into scientific sections, the research output shows the main focus to be on tick-borne viruses (but also Lyme is mentioned, which is caused by a parasite, not a virus) and hepatitis viruses. Being part of a national public health institute is linked to some tension between the short-term need to support operational (routine) tasks, and the longer-term need and opportunities to develop innovative research. As for other research departments in this Division, it would be helpful to have a clearer understanding on how departments, and centres, collaborate, as there appears some overlap in expertises and research areas, e.g. in the field of vaccination and AMR. Also, some virus lab research seems still to occur outside this department (e.g. immunology in SMHB and SMSV).

Grading:

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

Recommendations

- Clarify collaborations or back-up arrangements by the Department in case of a need for expertise on (endemic) viruses currently not covered by the department to ensure preparedness and early warning, if and when relevant.
- Clarify coherence within Division regarding viral laboratory activities in some other Departments. To what extent is there coordination, collaboration, synergy; how is this managed and supported?

1. Strategy, resources and organisation

1.1 Research group's organisation and strategy

This is a relatively new department, established in 2019, bringing together all laboratory research on viruses, with as one of the objectives to build a strong research field in this highly competitive area. Long term research objectives relate to molecular characterisation, pathogen evolution and population immunity of endemic and vaccine-preventable viruses, while short-term objectives focus on characterising and risk assessments of emerging viruses. There are three scientific sections each focusing on a different group of viruses. The group appears well embedded in European infrastructure. Benchmarks are comprehensive, although mainly qualitative and somewhat generic. They have supported 12 (partly international) PhD students, Norwegian and international, and 20 MSc students over the evaluation period, as well as provided training to students at many external institutes. The laboratory infrastructure is comprehensive, with 9 national reference laboratories, sequencing facility, and biobanks, including annual collection of sera to assess immunity against influenza and sars-CoV2, while there is admin support for critical functions.

The panel considers that the short and long term strategy are clearly formulated, and support the added value of a united virology research department in a public health institute. Some other departments in the same Division however also report to have an active role in immunology of viral infections, whereby it is not clear to the panel if this is still going to be merged with this department, and if not, what the rationale is. The available infrastructure is considered as highly supportive for the research ambitions, and overall, the panel considers the organisational environment as very strong for supporting the production of excellent research. The background and rationale for the selection of viruses covered in the three sections could be more clear, as there appears to be some overlap (e.g. measles is respiratory transmitted, but MMR preventable), nor are all viruses which could be a potential threat to the Norwegian population covered (e.g. vector-borne diseases not resulting in neurological symptoms could be quite relevant for preparedness too), while a section combining (all?) viruses transmissible via blood, sex, food and water is rather uncommon, as transmission via blood/sex does not have so much in common with transmission via food/water.

Recommendations:

- Resolve stated tensions between resources needed for routine surveillance and for creative research.
- Formulate more smart benchmarks, taking into account what is done by other virology research laboratories nationally and internationally.
- Clarify rationale for current 3 sections, and how this relates to activities in other departments.
- Explore options to use annual sera collection for other viral immunity assessments also. This could be efficient and provide cross-fertilization of methods and ideas.

1.2 Research group's resources

There are 28 staff members listed, 14 of them technicians. The workforce is described as highly skilled, with extensive virological expertise, and stable. All but one staff member has a senior position. Academic positions are not clarified, PhDs which were mentioned in the document seem not to be included in the table. Most research is core funded as research is closely linked with core tasks related to virus surveillance and characterisations. However, in 2022, a very large European grant was received in the context of European preparedness to strengthen laboratory infrastructure. Otherwise there is modest external funding, mostly obtained from national funding sources, although this is used for international research activities also.

The panel felt that the amount of external funding was modest prior to 2022, until in that year a large European initiative to strengthen laboratory preparedness in member states was awarded. It is not clear to the panel to what extent this EU funding can and will be used to strengthen research capacity and output, or whether it will be mainly used towards strengthening preparedness, as it is mentioned this is primarily awarded for digitalisation and capacity building by expanding the scope of pathogens covered, rather than innovations. External funding in general is used in line with stated long-term and short-term research objectives, with a focus on tick-borne viruses (in Norway and other northern European countries) and hepatitis (including participation in a trial in Bangladesh).

Recommendations:

- Include SMART ambitions re external research funding in benchmarks. This will allow monitoring and, if indicated, readjustment of priorities or resources.
- Explore possibilities to use reference laboratory access to initiate and lead virology research

1.3 Relevance to the institution

The research group aims to unite all laboratory research on viruses, and such would provide support and have clear synergy with e.g. epidemiology or social science groups working on similar diseases and threats. Management of national reference laboratories is a clear asset for a national Public Health institute, relating to all of its core tasks (knowledge on characteristics of circulating viruses; preparedness in case of (re)emergence of a virus and or waning immunity, in particular in case of vaccine preventable viral disease; and infrastructure).

The panel considered that uniting all laboratory research on viruses in one department seems logical and efficient. However, the panel also noted that some other departments in this Division mention lab activities also (e.g. the immunology group in the dept of method development and analytics (SMHB); or the vaccine section in the department of infection control and vaccines (SMSV)), which makes the rationale for each department less clear. Clear information on how productive collaboration within the Division is organized would have been useful to understand the specific added value of this Department for the institute. The panel felt that close interaction between core public health tasks and research can be highly productive, both scientifically and societal and supports institutional objectives.

Recommendations:

- Clarify how laboratory activities on viruses in other departments relate to activities in department of virology.
- Ensure collaborations or back-up mechanisms for reference tasks to be able to provide the requested support for viruses not covered by the current reference laboratories.

2. Research quality

2.1 Research group's scientific quality

There are three scientific sections in the department, in which expertise on specific viruses is brought together. One section is for influenza and other respiratory viruses (in particular sars-CoV-2 in recent years), one section is for viruses transmissible via blood, sex, food and water, and one section for MMR and (other) virus infections in the nervous system. The output presented from the section on MMR and neurological diseases is mainly related to tickborne viruses; for blood-sex-food-water transmission the emphasis is on hepatitis. As part of its long-term research strategy, the department has a focus on genomic methodology, such as WGS development and analysis, and pathogen specific immunity. It has access to a range of high quality laboratory facilities and platforms. The department is very well connected nationally and internationally. The number of publications is large, around 30 per year, although the selected 15 publications do not cover all the viruses mentioned. Most but not all of the selected publications have a first and/or last author from the department. Most research and publications relate to the Norwegian context, but there are a few publications with international partners also.

The panel considers the quality of the selected publications as very good, and internationally excellent in terms of originality, significance and rigor, although most appear more descriptive and analytic, rather than testing novel hypothesis and may therefore not meet the highest standards of excellence yet. State of the art facilities and high quality research are key requirements to maintain reference laboratories, which are therefore considered an asset. The rationale to combine in one section viruses transmitted via sex/blood with viruses transmitted via water/food is unclear and somewhat confusing to the panel. It could be made more explicit what population immunity is monitored over time. The self-assessment mentions as part of the long-term research annual sample collection for influenza (and sars-CoV-2) and for HPV surveillance; but it would be expected this also includes immunity against MMR viruses (and preferably more viruses included in the (future) vaccination programme)? The panel would have appreciated a clear rationale on prioritisations. Based on the publications cited, researchers from the Department had a considerable role in defining the overarching research objectives, implementation and publications.

Recommendations:

- Utilise excellent infrastructure and embedding in networks to take the lead in research collaborations.
- Clarify surveillance and research strategy towards understanding population immunity.

2.2 Research group's societal contribution

In line with the mandate of the NIPH, the focus of the department is on the Norwegian context. A significant amount of time is spent on regular surveillance reports on viral transmission and risks, which has significant societal value. Genetic data are also shared with WHO. The surveillance and characterization of tick-borne pathogens in relation to climate change is highly relevant for public health. There is collaboration with the Norwegian Lyme-borreliosis Society, which will provide valuable stakeholder input in the tick-borne pathogen research line. The department also contributes to capacity strengthening in low resource settings, whereby a clinical trial on HEV in pregnant women in Bangladesh is mentioned, which aims to prevent transmission and adverse outcomes among women and offspring, although the specific contribution of the virology department could be explained more.

The panel considers that the close interaction of public health tasks, including surveillance and outbreak research, and virological research can ensure high societal value for Norway and is in line with what is expected from similar groups in the same research fields. Societal partners had considerable involvement in the research process, in particular related to Lyme research. The panel would however have appreciated more information and concrete examples to be provided on stakeholder involvement in other projects than Lyme, in particular also in agenda setting re prioritization of viruses to be selected and included. The societal contributions listed in table 7 appear to be all publications on the NIPH website, which may not be sufficient to reach and involve all relevant stakeholders.

Recommendations:

- Liaise with communication experts on opportunities for disseminating surveillance and research findings also in the lay press and/or via social media.
- Clarify the specific focus on Lyme disease, which is not caused by a virus.

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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