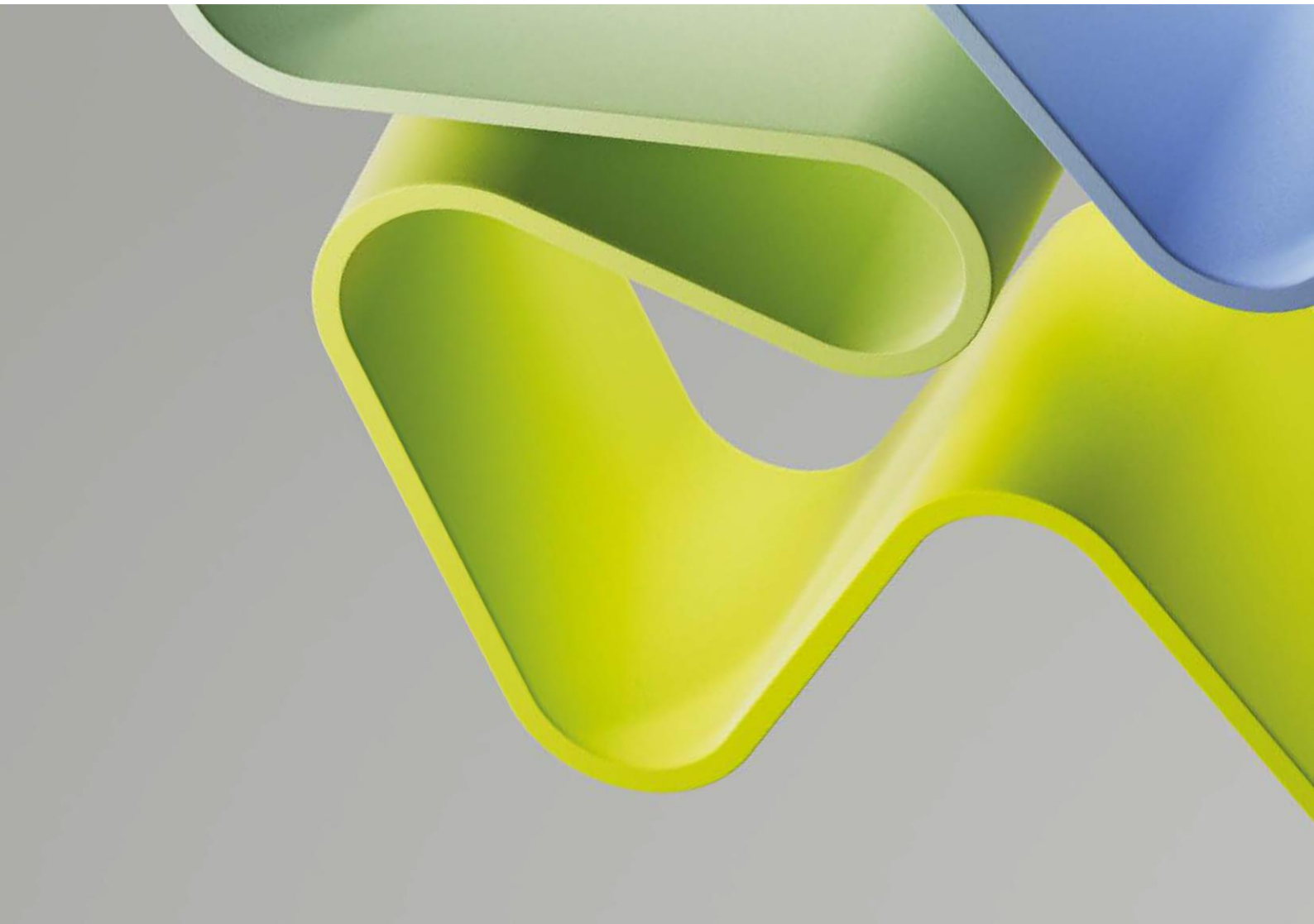
The Research Council of Norway

Evaluation of Medicine and Health 2023-2024

Evaluation report – Panel 4d
Research Group: SAFER Births - Forskningsgruppe for simulering
Administrative Unit: Stavanger University Hospital
Institution: Stavanger University Hospital



Content

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 advice 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

Safer Births-related studies began in 2009 with pilot testing of a simulation-based education programme in Tanzania. The group has now evolved to include a wide range of countries, institutions, and researchers, with a large and increasing number of interventions, innovations, and funding partners and greater impact. The main goal is to reduce stillbirths, and maternal and neonatal mortality and morbidity. The group's research explores epidemiological and clinical challenges, but also addresses issues vital to capacity building and implementation. The goal is not merely to conduct research but measure the uptake of findings to transform practice.

Safer Births has engaged 13 post-docs and enabled 18 PhDs in the evaluation period (2012-22) with an additional 23 candidates in the pipeline. According to the self-assessment, Safer Births is one of the largest and most comprehensive maternal and newborn research projects globally. The group's achievements have had extensive recognition by international organisations. Three levels of benchmarks are very well described, many of them highly ambitious, addressing international scientific and policy drivers, and including strong links to policy makers and, governmental authorities, as well as a healthy number of publications, with a maintained proportion of level-2 journals.

The group attracts considerable external funding, with technical, administrative, and basic research infrastructure and additional support from the Stavanger University Hospital. The group makes important contributions to education.

Overall assessment

Safer Births-related studies started in 2009 with two projects in Tanzania. The main goal of Safer Births is to reduce stillbirths, maternal and neonatal mortality and morbidity. The group's research explores epidemiological and clinical challenges, but also issues vital to capacity building and implementation. The goal is not merely to carry out research, as project success for the group is measured also on the uptake of findings to transform practice. The group attracts considerable amounts of external funding, with technical, administrative, and basic research infrastructure support from the Stavanger University Hospital (Stavanger University Hospital). According to the self-assessment, Safer Births is one of the largest and most comprehensive maternal and newborn research projects globally. Safer Births has engaged 13 post-doctoral scholars and enabled 18 PhDs in the evaluation period (2012-22) with an additional 23 candidatures in progress.

The self-assessment highlights some challenges, including inefficient data management due to outdated IT infrastructure and legal frameworks. Suboptimal communication structures hinder patient involvement. Moreover, administrative support fails to match the research group's scale, affecting research efficiency. Difficulty in engaging clinical staff also persists due to concerns about safety, legal issues, and workload. Enhancing IT infrastructure, streamlining legal frameworks, and increasing administrative support are considered essential for the ongoing success of the group. Improved communication structures and addressing staff concerns are imperative for effective project implementation. The self-assessment argues that these challenges are also common across other research groups, all of whom might benefit from stronger political, bureaucratic and hospital leadership strategies and policies.

The self-assessment also identifies opportunities for advancing the group's position. Increased collaboration with institutions and governments will expand the participant pool, contexts, and result verification, thereby enhancing global impact. Initial insights into implementation and

educational strategies, notably simulation methodology, could pave the way for broader research on effective knowledge translation, ensuring sustainability and wider influence.

The group's research covers a wide range of countries, institutions, and researchers, with a large and increasing number of interventions, innovations, and funding partners, and potentially greater impact. The ownership of the group remains somewhat unclear - the group appears to be part of many international projects, but it is not fully clear to what extent the Norwegian group heads these initiatives. Still, this is overall an impressive research group. The self-assessment is comprehensive and provides thorough and detailed information as requested in the call.

Grading:

Dimensions		**Score**
Organisational dimension	How adequate the organisational environment is in supporting the production of excellent research	5
Quality dimension	Research and publication quality	5
	Research group's contribution	4
Societal impact dimension	Research group's societal contribution	5
	User involvement	4

Recommendations

Recommendations would be to address key challenges the group has identified in the self-assessment. For example, it would seem the group, and other groups within the institution, would benefit from improvements in the technical and legal structure and management of data at an institutional level.

Although the group is aware of this, they could potentially devote more funding to increased administrative and research support in order to free up researchers' time. There is also an opportunity to develop strategies to enhance the involvement of clinical staff.

The SAFER group are generally performing at a level which is of international quality, and they should continue on this trajectory. Although user involvement in the research is articulated, this might also be enhanced.

1. Strategy, resources and organisation

1.1 Research group's organisation and strategy

The main goal of the Safer Births program is described as: "to reduce stillbirths, maternal and neonatal mortality and morbidity". The group explores epidemiological and clinical challenges, but the group also addresses issues vital to capacity building and implementation. Project success is measured also on the uptake of findings to transform practice, from donorship to ownership, across all the collaborating institutions and governmental partners. The research group relies on effective public private partnerships and a wide network of global alliances to achieve its goal.

The Safer Births group describes several benchmarks which are closely related to both the main objectives and the group's strategic principles. These relate to three levels: 1) strategic level (e.g. strong links to policy makers, governmental authorities, international scientific and policy drivers); 2) a more specific level (e.g. percentages in reduction of maternal deaths and fresh stillbirths); and 3) an institutional level (e.g. specific increase in the number of publications and maintain publishing quality with a certain percentage of level-2 journals).

Concerning the group's contribution to education, a total of 18 PhDs and 2 post-doctoral scholarships have been completed through the group's research, with an additional 23 PhDs being in "the pipeline". The project faculty contributes to Master's programmes at Haydom Lutheran Hospital, University of Stavanger and also to the education of nurse and medical students and specialist candidates (medical doctors) in anaesthesia, obstetrics and paediatrics.

The Stavanger University Hospital has taken on regional and national leadership roles in simulation uptake in healthcare delivery, driven by initiatives like Safer Births.

The administrative unit at the hospital provides comprehensive support to research groups, handling research administration for external and specialized funding, and managing international projects and EU financing. The hospital offers both external and internal approval processes and assists in contract negotiations for research projects. Moreover, the hospital's biostatistics section aids in statistical analysis and data management, while the biobanking unit supports biobanking activities. Substantial assistance is available from the hospital's analytics department to support data collection activities, and the IT department facilitates automated data extractions from electronic medical journal systems.

The self-assessment provides a detailed description and comprehensive timeline of the group's projects and its development. According to the self-assessment, Safer Births is today one of the largest and most comprehensive maternal and newborn research projects globally. The achievements of the group have received extensive recognition by international organizations. The benchmarks are very well described, and many of them are highly ambitious. The group makes important contributions to education.

The group has formulated very clear goals and has clearly defined how success is measured. Although the goals are relatively "practice-oriented", i.e. to improve practice, the self-assessment also states that the group explores epidemiological and clinical challenges, thus conveying important scientific ambitions alongside the ambitions to improve practice.

The self-assessment identifies many impressive strengths of the group's research programme. The group has strong links to policymakers and governmental authorities, and to

international scientific and policy drivers, with numerous public and private partnerships. Another impressive aspect is the fact that the research covers both low- and high-resource contexts. Furthermore, the group has a focus on implementing findings, not merely conducting research and assuming that findings will diffuse by themselves and become utilised. The group also addresses dissemination and implementation of their research findings, potentially making a positive impact on maternal and neonatal mortality.

The group started as a result of studies that were part of two projects in Tanzania. However, it is not fully clear from the self-assessment how the group today is linked to Tanzania and specifically how the Norwegian group sits within this structure. The self-assessment seems to describe more of a network rather than a tight group.

Recommendations to the research group

The group might benefit from improving the technical and legal structure and management of data at an institutional level. It could potentially devote more funding to increased administrative and research support to free up researchers' time. There is also an opportunity to develop strategies to achieve increased involvement of clinical staff. Finally, there is a need to articulate explicitly the role of the group within its international network.

1.2 Research group’s resources

Safer Births has supported 13 post-doctoral scholarships and facilitated 18 PhDs from 2012 to 2022, with an additional 23 in progress, emphasising the use of local PhDs for global capacity building. The group, led by two full-time professors at Stavanger University Hospital in collaboration with local PIs, has pioneered training methods, interventions, and patents. Their research dissemination efforts include conferences, guidelines sessions, and advocacy activities.

With an overall budget of approximately 212 MNOK and over 200 researchers and staff, the group represents an impressive multidisciplinary effort spanning neonatology, obstetrics, nursing, psychology, and engineering. The project, supported by various funding agencies, manages national and international research infrastructures, including Safer Births Stavanger, aimed at improving maternal and neonatal health globally. They're also spearheading a multihospital implementation project in Tanzania, partnering with the SAFER simulation centre in Stavanger.

The Safer Births group engages a large number of researchers and has an impressively large budget, at more than 200 million NOK. Funding has increased over the 2018-2022 period. According to the self-assessment, the group is the largest research consortium on newborn resuscitation in the world today. The group and its associated network are highly multidisciplinary, encompassing many disciplines and professions. The group oversees an impressive multi-country and multi-site programme of research, involving institutions in Tanzania, Ethiopia, Uganda, India, Nigeria, Malawi, Ghana, Nepal, Congo, Sweden, USA and Norway. The institutions contribute with basic resources to support research infrastructure and management, recruitment processes, mobility, training, advocacy and networking. It should be noted that the self-assessment does not address the leadership of the research group, e.g., if it is centralised or distributed.

Recommendations to the research group

There are few recommendations for improvements regarding the group’s resources are proposed. The group is well-funded, and the key recommendation would be to continue.

1.3 Relevance to the institution

The SAFER research group is administratively organised under the Clinic for Emergency Care and the Obstetric and Child Health Department. Research coordination is supervised through the research department of the Stavanger University Hospital. The project is linked to the overall Global Health strategy of the hospital. Administrative routines guiding health and safety of the Stavanger University Hospital staff engaged in international collaboration has been developed through internal processes at the hospital.

The group contributes to capacity building, particularly through its expertise and development of simulation theory and practice, for the improvement of research, educational and research competence and implementation. The group also integrates its research into several departments and sections of the hospital and across disciplines, contributing to cross-sectional collaboration and knowledge transfer. This enables scientific competence and up-to-date relevance to clinical practice. Finally, the group contributes to securing additional funding to support infrastructure and functions for research and increased international research collaboration.

The research group appears to be well-integrated into the administrative unit and is an integral component of the wider organisation. The group integrates its research into several departments and sections of the organisation and across disciplines, thus contributing to cross-sectional collaboration and transfer of knowledge and research to practice.

Recommendations to the research group

No specific recommendations are proposed concerning the group’s relevance to the institution.

2. Research quality

2.1 Research group's scientific quality

The SAFER group has published over 130 papers in peer-reviewed international journals of which 33 are in level-2 journals, including some very high-profile journals such as the *New England Journal of Medicine*. The group has developed clinical and training tools, combined with new strategies for Continuous Quality Improvement (CQI) efforts. These have been co-produced with healthcare workers in Tanzania to improve quality of labour and newborn care. Key components of the CQI efforts are regular on-the-job Low-Dose High-Frequency training, utilising local data and feedback loops to visualise gaps in clinical care and guide ongoing training needs. Adequate training of local champions who can facilitate CQI and simulation training is considered essential for these processes to happen, and to stimulate a gradual and sustainable culture change.

In 2019, Safer Births Bundle of Care (SBBC) won a World Bank Global Financing Facility innovation-to-scale award to test implementation of the package in 30 healthcare facilities in five regions in mainland Tanzania. The roll-out was led by Haydom Lutheran Hospital in close collaboration with the Ministry of Health and UNICEF in Tanzania. Increased maternal and newborn survival worldwide should be possible with a combination of Helping Babies Breathe, Helping Mothers Survive and available Safer Births innovations for clinical practice, and training, supported by new published knowledge and updated international guidelines as a basis for local, national, and regional health services implementation.

The self-assessment provides a list of 10 research projects, either led by Stavanger University Hospital or by other institutions such as Karolinska Institute, Haydom Lutheran Hospital or University of Bergen. It also lists 15 publications involving researchers from the group, including several Level-2 publications, i.e. being published in internationally prestigious journals.

The group has produced an impressive number of outputs that contribute to the group's high research quality and reputation. Many of the projects are appropriately well-funded and international in scope. The group has many Level-2 publications which is impressive. It is highly noteworthy that the group does not only focus on "producing" high-quality research but also on co-developing solutions to actually improve the quality of labour and newborn care.

The quality of the group's research must be considered world-leading in terms of quality. It is comparable to the best work internationally in the same area of research. Several publications listed in the self-assessment provide evidence that the work of the group meets high international standards.

Recommendations to the research group

No specific recommendations are proposed concerning the research quality of the group. It should continue its current trajectory

2.2 Research group's societal contribution

Worldwide, there are over three million stillbirths and around 3 million newborn children die every year, most of them in low-resource settings. Many of these deaths are due to lack of oxygen during childbirth. Safer Births has a strong desire to make births safer for children and mothers in low-resource settings, to which it has contributed with knowledge on capacity development and simulation that will impact how medical personnel are trained in the future.

The group has demonstrated considerable impact on maternal and neonatal mortality and morbidity and therefore also on the household economy of the affected women. In addition to improving every individual's health, the results of the research group's project therefore have a larger effect on the empowerment of women and financial sustainability of households. Results have influenced international guidelines for the resuscitation of newborns and contributed to the development of better equipment for training and treatment that can be scaled up globally. The self-assessment describes 7 user-oriented projects, including several products such as the Neonatal Handbook and monitors of heart rate and resuscitation which have been CE-marked (as part of EU's harmonization legislation).

The research group has conducted research that has made important societal contributions. Moreover, they have gone beyond research to develop solutions for implementation in clinical practice. The group is highly user oriented. Societal partner involvement is very good, with partners having an important role in the research process. However, explicit details of user participation could be better described in the self-assessment.

Recommendations to the research group

The group emphasises the application and use, both nationally and internationally, of the knowledge they produce, which is highly commendable. The group proposes further investigation into the implementation of its research, since this is a rapidly growing research field, i.e. implementation science, with ambitions to develop knowledge for improved implementation and scale-up of effective interventions. This would appear to be a fruitful area to pursue since they recognise that insights gained could "pave the way for broader research on effective knowledge translation" (knowledge translation essentially consists of the same type of research as implementation science).

Appendices

(to be added by RCN / Panel Secretary)

- Mandate for expert panels
- Expert panel description and list of experts
- Template research group self-assessment
- Scales for research group's assessment

The Research Council of Norway

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 4d

Name	Title	Institution
Nick Hardiker (chair)	Professor	University of Huddersfield
Nawi Ng	Professor	Gøteborg university
Marja Kaunonen	Professor	Tampere University
Avril Dummond	Professor	University of Nottingham
Per Nilsen	Professor	Linkøpig university

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): _____

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 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 your 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.

a) Describe which national infrastructures the research group manages or co-manages.

b) 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
Transdisciplinary (including non academic stakeholders) *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.*	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:

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: *Project title/Project period (year from – year to)*	**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: *Project title/Journal/Year/DOI/URL*	**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.

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.

The Research Council of Norway

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