Forskningsrådet

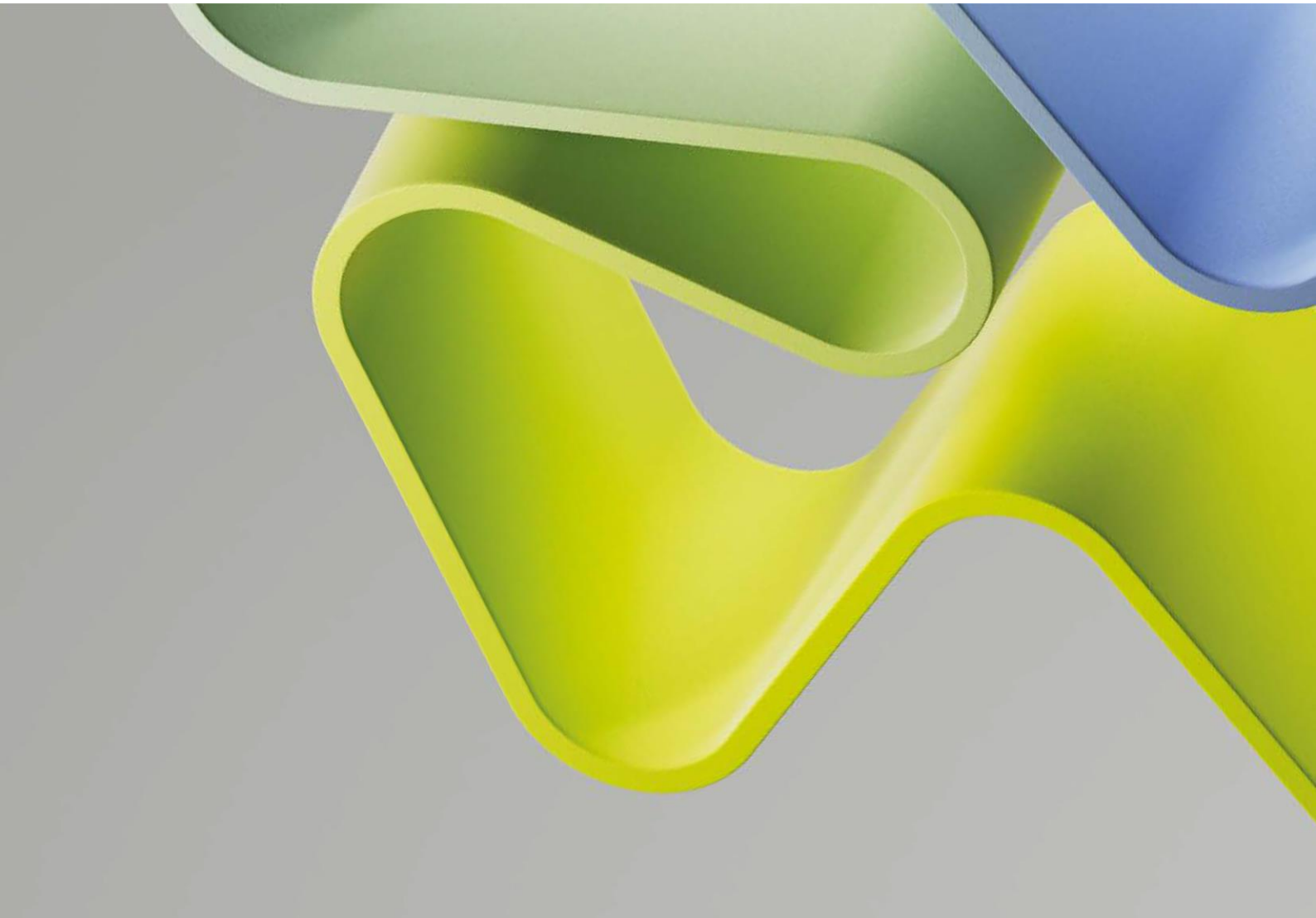
Evaluation of Life Sciences 2022-2024

Evaluation of medicine and health 2023-2024

Evaluation report

ADMIN UNIT: Division of Infection Control
INSTITUTION: Norwegian Institute of Public Health

December 2024



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Statement from the Evaluation Committee for the Institute Sector

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

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

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

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

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

Professor emerita Ingalill Rahm Hallberg (chair)
Lund University

Associate Professor Joachim Boldt
Albert Ludwig University of Freiburg

Professor Walter Bruchhausen
Bonn University

Professor Sarah Purdy
Bristol Medical School

Bregtje Kamphuis, Technopolis Group, was the committee secretary.

Oslo, December 2024

Profile of the administrative unit

The Division of Infection Control at the Norwegian Institute of Public Health (NIPH) is organised into thematic departments with research projects and collaborations spanning across departments and institutes. Division management sets research directions and strategic decisions based on government guidelines and the annual budget, including division plans and internal funding. Departments oversee research management and task distribution within their units. The Division's research personnel consist of 160 employees, with 96% in permanent positions and an even gender balance of 50% women. Key roles include senior advisors, senior medical doctors, and senior researchers, with 27, 19, and 31 individuals in each group, respectively.

The Division of Infection Control is comprised of six research groups: Department of Bacteriology (SMLB), Department of Infection Control and Vaccines (SMSV), Department of Infection control and Preparedness (SMSO), Department of Virology (SMLV), Department of Methods Development and Analytics (SMHB), and Centre for Antimicrobial Resistance (AMR centre).

The research priorities of the Division are reflected in documents like the division and developmental plans, as well as through initiatives by individual researchers. Currently, they lack a dedicated research strategy plan. The Division’s 2019-2024 plan emphasises better use of data and adopting data-driven approaches. The COVID-19 pandemic spurred innovation, including creating the Beredt C19 registry, which integrates real-time data to support surveillance and research. Other advances include new cohorts, real-time modelling, genetic surveillance, single-cell technologies, and rapid dissemination of knowledge through weekly COVID-19 reports.

In relation to its sector, the Division works to prevent and control infectious diseases, enhancing health both in Norway and globally. Its core responsibilities include advising policymakers on infection prevention and control, as well as monitoring infectious diseases. With a national mandate, the Division provides evidence-based advice to local and national authorities, healthcare services, and the public on preventive and control measures. It is also responsible for national disease surveillance, monitoring trends and potential outbreaks. The timely dissemination of information, alerts, and knowledge to public health authorities and healthcare services is critical for detecting and managing outbreaks, evaluating control measures, and reducing the societal burden of communicable diseases.

According to its self-assessment, in the future, the administrative unit might take advantage of internal strengths such as its highly competent researchers with specialised knowledge in a wide range of fields and its interdisciplinary focus which includes collaboration between laboratories and researchers. However, the division has many operational tasks and as a consequence, a lack of sustained time for research which may decrease the internal strength that is its highly competent staff. They also might take advantage of external opportunities such as new technology. Specifically, AI and machine learning have great potential to improve both the operative functions (e.g. surveillance) and knowledge production. This can also contribute to make processes more effective and thereby create more time for research. Another external opportunity is that from January 2024, most of the national health registers are located at NIPH. This may lead to more effective processes and facilitate faster data linkage and access, both for internal and external researchers. Additionally, this may contribute to more rapid knowledge production for managing outbreaks and pandemics.

Overall evaluation

Since the divisions' research aims at supporting the dominating operational tasks of the unit, all its research activities are organised according to short- and long-term challenges for infection control. The organisation of the unit with laboratory-based and action-oriented departments is adequate and serves the aims and opportunities for research.
The committee acknowledged the institutional challenges mentioned in the ToR, i.e. the recurring organisational changes and its impact on publications and their metrics, the lack of a research director and the extraordinary operational burden posed upon the division by the response to the COVID-19 pandemic. The overall performance of the division in the face of these challenges is remarkably good.
The Terms of Reference (TOR) for evaluating the centre requested, besides the general structuring criteria for this evaluation report (Strategy, resources and organisation; Research production, quality and integrity; Diversity and equality; Relevance to institutional and sectoral purposes; Relevance to society) the following points:

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

According to its strategy, the division's research is clearly conducive to its aims. By following this line, it will substantiate its valuable contribution to infectious disease control in research and societal practice.

A major weakness of the division regarding research, which was identified in the self-assessment, is the extremely broad range of topics (from operational tasks) that obstructs the development of in depth-knowledge in selected areas, which is necessary for cutting-edge research.

Recommendations

The committee strongly recommends the NIPH Division of Infection Control:

- delineates (and/or adequately prioritises) the resources for research from the operational tasks (as also mentioned in the research group evaluations).
- makes even more use of the routine tasks for research that can be best or even exclusively done at NIPH compared to universities (i.e. stronger using the mutual benefits that come from the importance of operational work for research activities and vice versa as exemplified in COVID-19).
- reflects on a possible reduction of routine tasks for highly productive researchers by protecting research activities against routine tasks and acknowledging the necessary permeability between the two in both, not only one direction.
- consider further sharing of laboratory facilities (as already done with virology and bacteriology) with other divisions and institutions.
- checks and adapts the collaborations for suitability to public health tasks
- makes new efforts to recruit a research director.

1. Strategy, resources and organisation of research

1.1 Research strategy

The strategic goals of the division are closely tied to the core functions of a national institute of Public Health in the field of infection authorised by the Infection Control Act (§ 7-9) and therefore fully in line with the strategies and scientific priorities of the institute. These ties are so tight that, as the self-assessment mentions, the borders between operational and research activities are necessarily blurred or missing as clear-cut lines. Thus, there seems to be no major deviation of the research activities from actual public health needs. Beyond the focus on Norwegian Public Health priorities the international work is also directed to top health issues of the respective countries.

The special request in the ToR to consider the separation from the Division of Climate and Environmental Health is taken up in this evaluation. Research on fundamental questions of toxicology and on Planetary Health as conducted by the other division is certainly more generalisable and thus of international interest, including publications, than research mainly dealing with Norwegian epidemiology and infection control. Thus, the separation from environmental and climate issues has necessarily reduced publication opportunities considerably.

The main focus in the reported period has been Covid-19, as repeatedly emphasised. Some activities were even started in response to the pandemic. The core tasks of Public Health in infection – outbreak management, surveillance, vaccination and AMR – were heavily redirected towards SARS-CoV 2, with an urgently needed increase in human resources. Especially, the departments of SMSO, SMSV, and SMLV were affected by this extraordinary strain on resources.

Accordingly, the research in the Centre on AMR was less interrupted by the pandemic.

The decision to build up this centre was one of the most strategic decisions in the reported period. To unite forces for fighting the challenges from bacteria in the short- and long-run facilitates better use of the interdisciplinary capacities of the division and the NIPH as a whole.

The decisions to slow down pure research in favour of operational activities were made in response to the challenges of the pandemic.

There is a strategic development plan in place for the Division of Infection Control, Environment and Health. The plan describes the division's goals and initiatives from 2019 - 2024.

The committee's evaluation

Beyond fulfilling its assigned routine tasks, the division has set the right thematic priorities: first on AMR and then on questions related to the viral pandemic.

Specific decisions on research activities are more difficult to evaluate since the necessary distribution of capacities between operational tasks and research cannot sufficiently be quantified, neither by the administrative unit itself nor by the committee.

There are no areas that could be given up or reduced since all are essential for monitoring/surveillance, prevention and preparedness, including related research for their improvement.

The committee´s recommendations

Considering the results of the evaluation above, the committee recommends the following:

- New instruments for separating operational tasks from research should be introduced in planning and practice. This should, however, not lead to an additional administrative burden to the researchers, e.g. by counting and reporting working hours for different purposes. It would be more ideal to set fixed days or half-days or even longer periods for research – which, of course, could be changed in the case of outbreaks or other urgent tasks.
- For small countries, the opportunities of going beyond the nation state even in national public tasks could be considered. Having 19 national reference laboratories for specific pathogens could offer chances for reduction by sharing capacities between Scandinavian countries or even at the European level. Even in the case of major differences in Public Health policies, as were visible in the responses to Covid-19 between e.g. Norway and Sweden, joint laboratories could increase quality and standardisation. Such concentration could set free resources for research on the remaining pathogens.
- The division should consider developing a strategic plan in line with the new NIPH strategy which is in development. Such a plan should include key performance indicators (KPI) including impact to be monitored and used to shape future operating plans. Prioritising research as mentioned above also in this strategy will increase the profile of research and support it by showing the importance of evidence and methodological advances for better policies.
- A new strategic plan for the division should be on the way or soon envisaged.

1.2 Organisation of research

The Division for Infection Control in the Norwegian Institute of Public Health (NIPH) comprises the classical tasks of infection control in public health, i.e. departments on the pathogens and on the measures against them. The two departments on pathogens, virology and bacteriology, share laboratory facilities and include national reference laboratories. The two departments of infection control focus either on preparedness or on vaccines. A special department is the one on methods development and analytics which unites experts for modelling and immunology, offering expertise to the other departments. The only centre hosted by the division is on anti-microbial resistance (AMR) which necessarily combines research on pathogens and countermeasures. Apart from the two latter, the divisions clearly have far more operational tasks than capacity for research. Varying to a degree, of course, between them and over the course of time. The division experienced a doubling of its funding during the Covid-19 pandemic which has now been cut-back to nearly the previous state.

The sub-organisation and staffing of the departments demonstrate broad differences:

- **Center for AMR**

  Staff: 20 staff to the Centre, among them 6 medical officers and 12 scientists (6 PhD supervised)
- **Department of Methods Development and Analytics (SMHB)**

  Staff: 43, among them 26 researchers, 1 post-doc, 7 engineers, 7 advisors, 3 management staff, 6 with external academic positions (6 PhD supervised)
- **Department of Virology (SMLV)**

Sections: 3 scientific sections for specific sets of viruses and 1 technical support section

- **Department of Infection Control and Vaccines (SMSV)**

  Staff: 48, less than 9 FTE for research

  Sections: 2 for infectious diseases, 1 for national vaccination programme

- **Department of Infection control and Preparedness (SMSO)**

  Staff: 40, 12 are in research (6 senior researchers, 5 senior advisors, 1 special advisor, 8 also with other departments)

- **Department of Bacteriology**

  Staff: 47 permanent employees (6 researchers including 3 professors, 3 senior medical doctors, 35 technicians)

The committee's evaluation

All departments work towards the objectives of a national public health institute and base their research on the respective tasks. Belonging also to the research institutes sector poses challenges accordingly.

Research and innovation are largely organised along the well-established lines of Public Health functions, with a centre for AMR bundling resources for this more recent challenge.

There is an extremely high synergy between the different purposes since expertise that has e.g. developed in modelling influenza or AMR/MRSA epidemiology could be immediately redirected to model the urgently needed predictions for hospital admissions during the Covid-19 pandemic.

The departments within the division collaborate together but there is limited working with other divisions within NIPH e.g. CEIR in Division for Health Services.

The committee sees potential for even more opportunities to build cutting-edge research on routine tasks of the departments.

The committee´s recommendations

The committee comes to the following recommendation:

- The Division would benefit from closer working and collaboration with other parts of NIPH.

1.3. Research funding

The average annual budget for research in the reporting period has been 53 MNOK, compared to an overall annual basic funding for 2018 of 304 MNOK, for 2019 of 333 MNOK, for 2020 of 325 MNOK, for 2021 of 721 MNOK and for 2022 of 450 MNOK.

The specific extra basic funding for the pandemic amounted to 393 MNOK in 2021 and 206 MNOK in 2022 (including Outbreak Response and National Contact Tracing Team).

The external funding in the reporting period came from national research grants (7 424 353 NOK), EU (8 595 266 NOK) and other international grants 351 221 (NOK).

The committee's evaluation

Acquiring additional funding for research related to the crucial routine activities is becoming increasingly difficult since calls tend to be more thematically focussed than previously.

The international grants are slightly higher than the national. Compared to the basic grant for research (53 MNOK), both taken together (16 MNOK) are rather modest, mirroring the rather operational focus of the division.

The committee´s recommendations

The committee recommends:

- increasing applications for external funding if national and international research funding opportunities allow it since they force the applicants to get more acquainted with recent standards of research. Otherwise, basic research funding should be increased with other measures of quality control.
- checking whether collaborating with universities could assist with increased opportunities for and success in bids for external research funding.

1.4. Use of infrastructures

The Division is responsible for several national infrastructures. These infrastructures not only support the institute's overarching national responsibilities in infection control, disease surveillance and vaccines but also function as core data sources for knowledge production and research.

These infrastructures include infectious disease and vaccine registries and also reference laboratories.

The committee's evaluation

Putting national registries under the responsibility of NIPH is a reasonable decision and should facility their availability for research purposes as the already intensive use proves. The use of registries is extensive though often hindered and delayed by bureaucratic obstacles.

The shared use of laboratory facilities by virology and bacteriology is a move in the right direction.

The engagement and achievements in bar-coding, namely the active participation and responsibility in iBOL, BOLD and NorBol, are especially remarkable.

The committee´s recommendations

The committee recommends:

- checking further opportunities of sharing especially cost-intensive facilities for concentrating equipment and methodological expertise.
- continuing and increasing the engagement with public data bases, including their de-bureaucratisation.

1.5. Collaboration

The division and all its departments are strongly connected to national and international partners and networks.

National collaborations comprise:

- BigInsight, centre for research-based innovation (SFI) (2015-2024)

- Evaluation of SARS-CoV-2 vaccination of immunosuppressed and transplanted patients and revised vaccine guidelines for poor responders (CEPI funded, 2021-2023)
- Disentangling penicillin resistance and compensatory adaption in pneumococci by combining genomics and molecular microbiology (NRC FRIPRO 2021-2025)
- Influenza and pandemic preparedness

International collaborations include:

- Collaboration on IPC within ECDC
- Transatlantic Taskforce on Antimicrobial Resistance (TATFAR) with more than 30 partners
- EU-JAMRAI (EU Joint Action on Antimicrobial Resistance and Healthcare Associated Infections), with finally more than 100 partners
- ONEHEALTH EJP, a Horizon 2020 programme (2018-2023) with 44 partners
- WHO CC for Reference and Research on Meningococci
- Pathogen genomics for infectious disease epidemiology with UCL
- SeroSelectTB: Evaluation of the feasibility, accuracy, and effect of a rapid point-of-care serological triage test for active TB (SeroSelectTB) in high burden, HIV-endemic Africa
- Collaboration on IPC within WHO regionally and globally
- CoMIX -Social contact patterns in Europe during the COVID-19 pandemic, with LSTMH and UiBergen, 20 countries
- An effectiveness trial to evaluate protection of pregnant women by a HEV vaccine in Bangladesh and risk factors for severe HEV infection, with Icddr,b

The committee's evaluation

Considering national collaborations, the joint supervision of PhD and Master students offers unique opportunities for all sides. For the students, it allows them to combine the acquisition of rigorous methodology and the acquaintance with practical challenges. For the division and its researchers, it tightens the ties to university research which enables the division to identify suitable advances in methods, topics and persons for the advancement of the institute’s tasks.

The integration into the international networks on general IPC and AMR as well as on specific bacterial and viral pathogens is impressive and of the highest importance also for research. It can be regarded as an effective contribution to align Norway with international standards and mitigate risks from infection worldwide.

The proposed strategy to intensify and increase collaboration with universities instead of recruiting additional own staff seems promising, not only for saving resources, but also to include competencies that are not permanently needed and/or are difficult to find.

The committee´s recommendations

- Maintains and increases participation in international networks. This will not only strengthen collaboration but also increase the research profile of the division.

1.6. Research staff

The division has 160 employees, most of them with only a minor share of their work allocated to research. Staff consist of 27 senior advisors, 19 senior medical doctors, 12 senior researchers 1110, 19 senior researchers 1183, 14 researchers 1109, the rest being leading positions and technicians. More than 90% are permanently employed, about 50% are female, to be found at all career levels in roughly equal proportions.

The committee's evaluation

The low share of innovative research might be demonstrated by the existence of just one post-doc on a temporary position since post-docs usually are the backbone of thriving research.

For recruiting qualified junior researchers, the options mentioned in the interview seem promising: employing PhD candidates using internal funds as part of a framework of career development and securing external funding for other PhD students.

The committee´s recommendations

The committee recommends:

- Increasing research opportunities, the number of temporarily employed researchers without tasks in routine operations should be increased.
- Expanding the skill set of the Division in the area of social science in order to understand key issues such as vaccine behaviours. Alternatively, this could be achieved through collaboration with other divisions or universities.

1.7. Open Science

The division follows the NIPH's policies and approaches on publishing by supporting gold open access and green open access as well as discouraging hybrid open access. Pre-print is used for urgently needed information.

Data and codes are regularly published on GitHub, respecting the restriction by GDPR.

Concerning open source, the working group on Open and reproducible science plans to start a 'coding café' for exchange on scripts or codes. It is also developing training and guidelines on open science.

The committee's evaluation

The open science policies of the division are well reflected and in line with government regulations and NIPH policies. Beyond Gold, Hybrid and Green Open Access the division excels by its various activities in sharing data, codes and scripts (GitHub, Coding Café). Thus it actively contributes to the various open science areas.

Regulations regarding the ownership, management and confidentiality of data are strictly adhered to.

The committee´s recommendations

The committee comes to the following recommendations:

- Currently, there is no further action needed for publishing.
- Intensify the ongoing endeavours for making the data of national registries where NIPH is the main responsible body better accessible.

2. Research production, quality and integrity

The Division contributes high quality research in the fields of infections control measures, both detection and response, and anti-microbial resistance.

Research integrity is secured by the institute's membership in the Committee on Research Integrity, its revised Ethics committee, dissemination and regular discussion of ethical guidelines, declaration of financial interests by researchers and its independence in research issues.

2.1. Research quality and integrity

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

Centre for Antimicrobial Resistance (AMR Centre)

The panel considers the increasing global threat of AMR, and the complex biological, environmental, behavioural and social dynamics driving transmission and control, as clear justification for strong public health prioritisation. In Norway, clinical AMR prevalence is still relatively low, which can provide opportunities to test specific hypothesis and interventions. The independent set up of this Centre, with its excellent access to national registries and laboratories, has great potential to develop innovative research, although the recent downsizing of staff, the matrix structure with all staff also belonging to another formal Department, and the current lack of external funding are somewhat of a concern. As this is a young Centre, it may still be a bit early to evaluate output, as acquisition of competitive funding and leading high-impact publications can be expected from a dedicated research centre. There are many strong collaborations, in particular with institutes, agencies and authorities involved in all kinds of policies related to AMR control, and good connections with international networks.

Department of Bacteriology

A large fraction of the group works in diagnostics, so it is difficult to assess this group as a research group. The scientific resources and contributions of the group compared to similar national and international research groups are modest. The research scientific quality in terms of grants and publications is good, but for a large group like this, the quantity is low. Out of the 5 highlighted papers, 3 are from the same author, and in one, the last author is not from this research group. The main strength is the size of the group, which generates opportunities to develop substantial projects. The main weakness is that research is not the focus of the group, which is mainly focused on diagnostics.

Department of Infection Control and Preparedness (SMSO)

The panel considers this Department is overall conducting good quality research, of significant societal relevance. It is an active albeit somewhat overstretched group, with many (inter)national collaborations and interdisciplinarity. The Department went through

several reorganisations over the period under evaluation, which may have had an impact on research focus and resources. Surveillance expertise includes diseases arising from food, water and animals, and there is the ambition to broaden this expertise further with data from new sources like wastewater and climate. Several researchers also belong to the cross departmental AMR centre within the overarching Division, which is a focus also reflected in the scientific and societal output from this Department. To strengthen and maintain a competitive research profile, the department may have to invest in developing a distinct research agenda on preparedness, in particular once the focus and funding for Covid-19 wanes in the coming years.

Department of Infection Control and Vaccines (SMSV)

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.

Department of Methods Development and Analytics (SMHB)

Overall, the panel considers this to be a well-established strong research group with an impressive record of publications and good funding, with a clear track record, and providing significant value for Norway and the institute. Being embedded in a PHI has significant advantages, such as early access to specific information and data, but implies longer-term research investments need to be balanced with short term operational needs. As for other research departments in this Division, it would be helpful to have a clearer understanding on how departments, and centres, collaborate, in view of overlap in research areas, in particular in the field of vaccination and AMR; and in expertise, as the SMLB was specifically created to bring all laboratory research related to viruses together, including immunology, which seems to overlap with the mandate of this department.

Department of Virology (SMLV)

The panel 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 [Remark from the committee: Borrelia is a bacterium]) 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 expertise 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).

3. Diversity and equality

The selection processes and human resources management strictly follow anti-discriminatory rules as laid down by government and NIPH, especially in the Gender Equality Action Plan and the Whistle blower routine. As in NIPH in general, a zero-tolerance policy for bullying and harassment applies to all activities, not only for the own staff, but also national and international partners and individuals with other affiliations to the institute. The Management Group of NIPH reviews the action plan biannually which is then communicated to employees and managers each time.

The committee's evaluation

In the recruiting process, there is no deviation from general rules visible.

Employment of migrants and international recruitment, however, is hampered by the condition that for communication with ministries, local bodies and the public, i.e. outside research, communication in Norwegian is obligatory. More staff of this kind would not only broaden the perspectives by e.g. insights into infection-related behaviour of certain minorities or other world regions, but in the case of temporary positions would also allow capacity-building in a well-functioning national health institute for later impact-full work after an eventual return into home countries or in international organisations.

The committee´s recommendations

The committee recommends:

- Ensuring greater separation between operational and research tasks, to help facilitate the employment of researchers with a different background than Norwegian. Much research could be done mostly in English or with moderate knowledge of Norwegian only.
- Tackling the obstacles for recruiting MSc and PhD students that are mentioned in the self-report by more information, visibility and presence in their courses since this could direct the attention of students with migrant history or other nationality to the employment opportunities in the division.

4. Relevance to institutional and sectorial purposes

All activities of the division clearly aim at the objectives of a public health institute and broadening the necessary knowledge which is at the same time an invaluable contribution to the general knowledge in infection and its control.

By its regular meetings and decisions on research (especially the thematic research forums and the development plans mentioned in the self-assessment) and its close collaboration with universities and international partners the division is in touch with and inspired by innovations in science and practice. Some of the results of this, e.g. in modelling, have been clearly seen during the COVID-19 pandemic. The division is, however, rightfully not involved in commercialisation.

The successful involvement in different kinds of successful research demonstrates the high motivation of a considerably number of staff for innovative issues.

Motivation for commercialisation should not be encouraged.

By enabling adequate research, the division already supports innovation for infection control in the best possible way.

The division does not support commercialisation which would anyway not be in line with its public responsibility.

The committee's evaluation

Incentives and motivations for innovations in research and public health practice seem to work. The opportunities to do research for improving practice are given, and they especially provide research by those staff members that are interested to do research instead of mere routine tasks. The measures generally recommended by the committee to delineate and intensify research would also benefit the desired innovations.
A commercialisation of results, however, would be contrary to the tasks of a public institution as it could further increase mistrust in certain circles of the populations that already have the suspicion of mostly economic interest behind infection control.

The committee´s recommendations

The committee recommends:

- Not to go into any direction of commercialisation.
- Encouraging the self-understanding of not only contributing to public health nationally and internationally, but also to being part of urgently needed innovative research on infection control.

4.1. Research institutes

Overall, NIPH’s obligatory prioritisation of operational tasks as distinct from research is followed by the division in all departments although the border between the two is certainly mostly blurred. The share between operational and research purposes is, however, highly different between the departments and periods, with a higher share of operations e.g. in the 19 reference laboratories of bacteriology, and – outside the pandemic – a lower share e.g. in analytics.

Innovation is mainly focussing the optimisation of procedures and inclusion of new methodologies. Commercialisation does not belong to the task of a public institute and may even jeopardise the necessary trust in its independence.

For data collection, especially the national registries, the division closely collaborates with health authorities. Borders between routine and research data cannot be drawn since the use is for both overlapping purposes. Similarly, advisory functions towards the national government and regional authorities are based both on research findings and surveillance/monitoring.

The central importance in societal transformation became especially visible during the pandemic.

- The Department of Infection Control and Preparedness had to contribute to many urgent questions and to the learning from the pandemic.
- The Department of Infection Control and Vaccination was crucial in running the SARS-CoV-2 vaccination programme and directed its research accordingly, with mainly national scope like most NIPHs.
- The Department of Virology used a major part of its equipment and staff for supporting tasks around SARS-CoV-2.
- The Department of Methods Development and Analytics could apply its expertise gained from other pathogens to modelling the pandemic in Norway, not the least with regard to the need for intensive care.
- Even the Department of Bacteriology, which focuses on other pathogens, could contribute by monitoring AMR e.g. in superinfection, together with the Centre on AMR. Also, by its experience with young people in meningococci vaccination where misinformation was a central issue and insights from this project could now be used in the infodemics of Covid-19.

The committee's evaluation

The division comprehensively and visibly fulfils the core tasks of a national public health institute.

The involvement in the scientific community and national as well as international cooperations keeps the topics and approaches up to date.

Since the division deals with burning issues of societal development with regard to health, especially concerning global warming, globalisation and increasing resistances, its impact on policies and transformation is enormous. Its findings support the transition to green economy, thus further motivating mitigation of climate change. In warning against the spread of Lyme’s diseases or food-borne diseases it is also a major voice in adaptation to climate change, emphasising the need for more prevention and surveillance in these areas.

The various operational tasks and research projects during the Covid-19 pandemic proved how important the development and maintenance of a sufficiently skilled workforce for infection control is.

The committee´s recommendations

The committee recommends:

- Ensuring the division is more adequately staffed for the increasingly important task of coordinating and leading the long-time neglected research on infection at national level. The committee shares the division’s view addressed in the interview that for a

country of the size of Norway an additional national centre, like DZIF in Germany, is not justified and needed.

- The division or another administrative format should get an official mandate and sufficient resources for coordinating and initiating nation-wide research in such areas as pandemic preparedness, infectious-disease threats from climate change and AMR.

5. Relevance to society

Pandemic response and preparedness have been strengthened nationally and internationally. SDG Target 3.3 on infectious disease control is supported by adequate modelling.

Comments on impact case 1: COVID-19 vaccines and menstrual disturbances

The impact of the study cannot be assessed as vaccination hesitancy has many reasons and the specific behaviour changes of women were not evaluated. Underpinning research concerns:

1. association between covid-19 vaccination and menstrual disturbances in 18- to 30-year-old women, using population-based questionnaire data (YoungAdult cohort).
2. association between vaccination and menstrual disturbances girls aged 12-15 years using maternal questionnaire responses in a large population-based cohort (MoBa).
3. risk of unexpected vaginal bleeding in women who were not menstruating due to hormone use or menopause through electronic questionnaires (cohort of Seniors and MoBa).

The research was published in Vaccine, with an impact factor of 5.5. The research is important for EMA and the general public. The study is about retrospectively self-reported irregularities, not measured changes in bleeding or other objective observations or from a prospective cohort study since the biweekly questionnaires started only after the launch of the vaccination campaign and the rumours accompanying it.

Comments on impact case 2: Impact of vaccination on meningococcal disease

This impact case focuses on proof of effective reduction in carriage and outbreaks for Africa and Norway. Underpinning research included:

1. Studies on herd immunity and carriage after MenAfriVac against MenA in Africa (NIPH as WHO Collaborating Centre for Meningococci and CDC)
2. Genomsequencing on carriage
3. Developing an assay for Men A, C, W and Y
4. Studies on carriage in Norway

The research resulted in international publications with medium impact. The impact of the research included:

- No Meningitis A in the African meningitis belt after introduction of MenAfriVac.
- Recommendation of serogroup ACWY polysaccharide conjugate vaccine for teenagers in Norway since 2011.

Outbreaks in the meningitis belt of Africa belong to the most common emergencies affecting the younger part of the population with lethal and debilitating consequences. Thus, the research on the epidemiological impact of a new vaccine must be regarded as an important contribution to disease control and elimination.

Comments on impact case 3: Stimulating innovation of and access to new antibiotics – DRIVE-AB

The study was an important contribution to understanding the obstacles and opportunities for urgently needed breakthroughs in AMR. The underpinning research includes:

1. New economic models for research and development (R&D) investments (pull incentives)
2. New economic models as potential sizeable public investments including considerations on the development of resistance+
3. Accessibility of innovative antibiotics
4. Other technologies (peptides, bacteriophages, etc.) cannot displace the need for new antibiotics in the short and medium terms

The research resulted in international publications with mostly medium IF (4,2), but also The Lancet Infectious Diseases and Nature Comm. The impact includes reception of recommendations at G7 and G20, and several national policies.

Considering the urgency of developing new anti-infective substances this impact case addresses one of the major challenges for highly innovative R&D. Since the major capacities for drug development are in private industry and Norway does not have a significant part of this such research must be highly international, probably more than so far.

Comments on impact case 4: COVID-19 modelling

This impact case is a collaboration with UiO, the Norwegian Computing Center and Telenor for models on:

(i) estimating effective reproduction numbers to assess the current situation

(ii) generating short-term projections to estimate hospital and ICU bed requirements, and

(iii) conducting scenario analyses for policy decisions related to vaccine deployment, infection control, risk assessments, and long-term strategies

The underpinning research includes:

1. Based on previous PhD projects modelling influenza and MRSA
2. Rapid development of the necessary models

The research includes international publications, including Nature Comm.

Decisive influence on governmental decision-making at all levels can be assumed. It might be, however, difficult to separate the contribution of research results from those of routine activities since modelling for prediction is increasingly becoming part of regular public health tasks.

Refining such models for prediction of epidemics remains one of the most important tasks in Public Health. The approach in interdisciplinary collaboration taken here has been successful and is also promising for the future.

Appendices

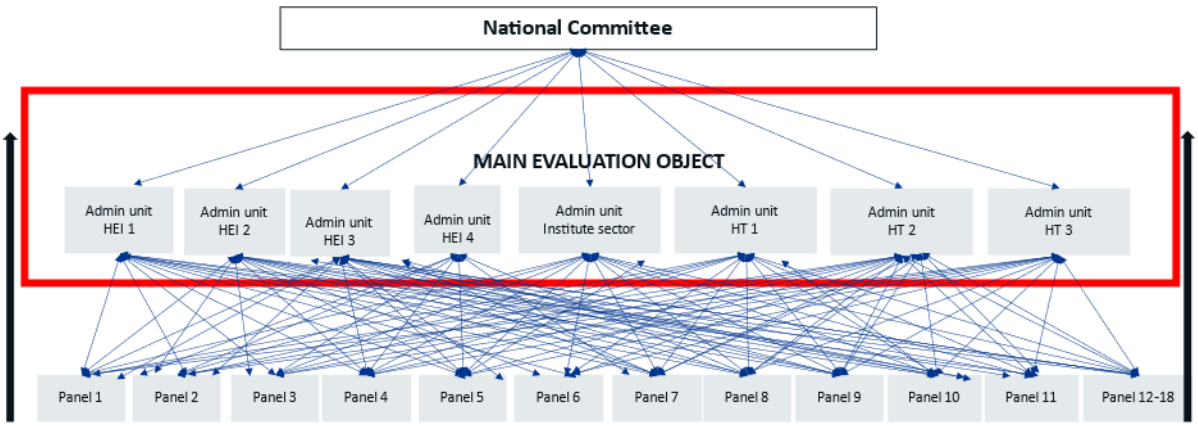
Evaluation of Medicine and health 2023-2024

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

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

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

Organisation of evaluation of medicine and health 2023-2024



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

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

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

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

Forskningsrådet

Se vedlagte adresseliste

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

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

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

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

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

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

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

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

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

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

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

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

Administrative enheter (hovedevalueringsobjektet i evalueringen) – skjema 1

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

Forskergrupper – skjema 2

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

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

Invitasjon til å foreslå eksperter – skjema 3

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

Obs. Det er to faner i regnearket:

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

Utfylte skjemaer (3 stk):

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

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

Tilpasning av mandat – frist 30. september 2023

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

Forskningsrådet

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

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

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

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

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

Med vennlig hilsen
Norges forskningsråd

Ole Johan Borge	Hilde G. Nielsen
avdelingsdirektør	spesialrådgiver
Helse	Helse

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

Kopi
Helse- og omsorgsdepartementet
Kunnskapsdepartementet

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

The Research Council of Norway

Evaluation of life sciences in Norway 2022-2023

LIVSEVAL protocol version 1.0

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

The Research Council of Norway
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Oslo, 5 April 2022

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1 Introduction

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

1.1 Evaluation units

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

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

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

1.2 Minimum requirements for research groups

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

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

1.3 The evaluation in a nutshell

The assessment concerns:

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

The Research Council of Norway (RCN) will:

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

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

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

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

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

1.4 Target groups

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

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

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

2 Assessment criteria

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

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

2.1 Strategy, resources and organisation

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

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

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

2.2 Research production, quality and integrity

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

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

2.3 Diversity and equality

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

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

2.4 Relevance to institutional and sectoral purposes

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

Higher Education Institutions

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

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

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

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

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

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

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

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

Research institutes (the institute sector)

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

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

The institutes should:

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

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

The hospital sector

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

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

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

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

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

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

2.5 Relevance to society

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

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

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

3 Evaluation process and organisation

The RCN will organise the assessment process as follows:

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

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

3.1 Division of tasks between the committee and panel levels

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

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

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

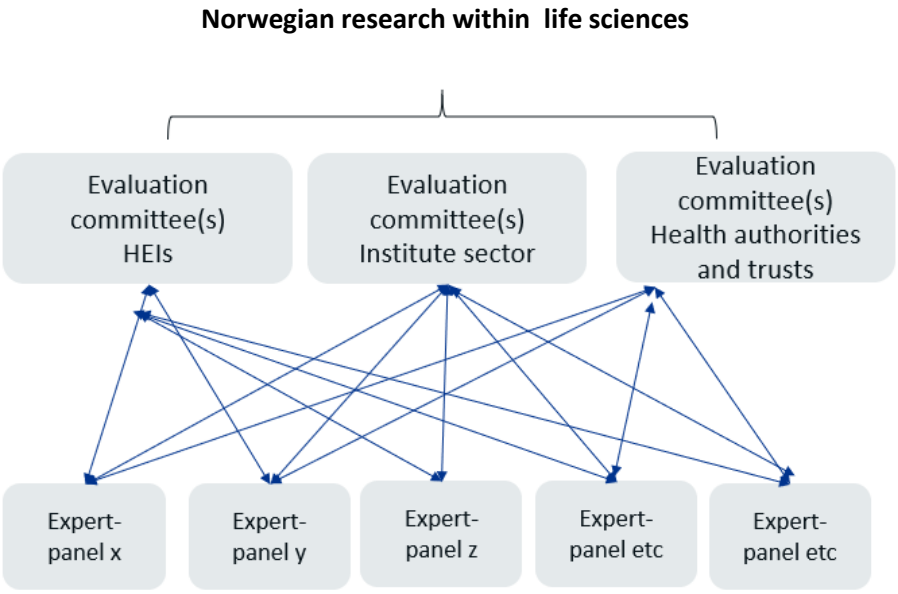

Figure 1. Evaluation committees and expert panels

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

3.2 Accuracy of factual information

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

3.3 National level report

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

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

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

Appendix A: Terms of References (ToR)

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

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

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

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

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

1. …
2. …
3. …
4. …

…

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

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

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

The documents will include the following:

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

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

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

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

Appendix B: Data sources

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

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

National registers

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

Self-assessments

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

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

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

Table 1. Types of evaluation data per criterion

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

Evaluation of Medicine and Health (EVALMEDHELSE) 2023-2024

Self- assessment for administrative units

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

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

Content

Introduction

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

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

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

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

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

Thank you!

Guidelines for completing the self-assessment

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

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

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

1.Strategy, resources and organisation

1.1 Research strategy

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

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

Table 1. Administrative unit`s strategies

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

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

1.2 Organisation of research

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

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

1.3 Research staff

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

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

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

Table 2. Research staff

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

1.4 Researcher careers opportunities

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

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

c) Describe research mobility options.

1.5 Research funding

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

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

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

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

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

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

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

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

1.6 Collaboration

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

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

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

National collaborations

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

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

International collaborations

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

Impacts and relevance of the collaboration	

1.7 Open science policies

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

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

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

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

1.8 SWOT analysis for administrative units

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

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

2. Research production, quality and integrity

2.1 Research quality and integrity

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

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

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

2.2 Research infrastructures

a) Participation in national infrastructure

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

Table 5. Participation in national infrastructure

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

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

b) Participation in international infrastructures

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

Table 6. Participation in international infrastructure

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

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

c) Participation in European (ESFRI) infrastructures

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

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

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

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

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

3. Diversity and equality

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

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

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

4. Relevance to institutional and sectorial purposes

4.1 Sector specific impact

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

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

4.2 Research innovation and commercialisation

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

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

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

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

No.	Name	Valid period	Link
1			

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

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

4.3 Higher education institutions

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

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

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

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

4.4 Research institutes

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

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

4.5 Health trusts

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

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

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

5. Relevance to society

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

5.1 Impact cases

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

Impact case guidelines

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

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

Timeframes

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

Page limit

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

Maximum number of cases permitted per administrative unit

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

Naming and numbering of cases

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

Publication of cases

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

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

Please write the text here

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

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

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

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

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

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

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

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

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

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

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

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

Institution	Administrative unit	Name of research group	Expert panel
FHI	Division of Infection Control	Centre for Antimicrobial Resistance (AMR centre)	Panel 4b
FHI	Division of Infection Control	Department of Bacteriology	Panel 2a
FHI	Division of Infection Control	Department of Infection Control and Preparedness (SMSO)	
FHI	Division of Infection Control	Department of Infection Control and Vaccines (SMSV)	Panel 4b
FHI	Division of Infection Control	Department of Methods Development and Analytics (SMHB)	Panel 4b
FHI	Division of Infection Control	Department of Virology (SMLV)	Panel 4b

Scales for research group assessment

Use whole integers only – no fractions!

Organisational dimension

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

Quality dimension

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

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

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

Societal impact dimension

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

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

Methods and limitations

Methods

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

The documentary inputs to the evaluation were:

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

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

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

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

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

Limitations

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

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

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

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