

Action plan for quality in research

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Introduction and suggested measures

It is crucial that the Norwegian Institute of Public Health (NIPH) has strong research groups and performs research of high quality in solving our social mission in a good way. For example, the advice we give must be based on solid research. Strong professional communities are also a prerequisite for achieving success in the competition for external research funding. A good professional reputation makes us an attractive workplace for the best qualified scientists in the field and an attractive partner for cooperation for other strong professional groups.

In order to maintain and promote high quality of NIPH's research, the Research and Innovation Committee set up a working group to propose measures to strengthen quality. In the spring of 2019, the working group delivered the note [Action plan for quality in research](#). The note points at 12 measures for strengthening the quality of the Institute's research and can be considered as a toolbox. The present action plan for quality in research is based on the measures proposed in the note from 2019.

In the present action plan, we focus on the research activity at NIPH. There is no sharp distinction between research and other knowledge production, and several of the measures will also be relevant to strengthen the other forms of knowledge production at the Institute.

Measures in 2021/22

On the background of discussions of the 12 the measures proposed in the note from 2019 it was proposed to set up three working groups. The timeline and allocation of resources for the work is discussed in more detail under the section Process in the Development Plan for research and innovation.

Create a researcher school at NIPH

All researchers at NIPH must have basic knowledge of how to be a scientist at the Institute and knowledge of the systems we use, e.g. knowledge of starting, carrying out and ending research projects in compliance with the requirements of legislation, the funding sources' requirements and internal guidelines, the necessity of obtaining external funds, policy for open publication, literature search and summary of existing knowledge, research communication, the Institute's strategy and role, etc. To ensure high quality in research, strong support is also needed around the researchers, e.g. research administrative support, the Institute's staff and Division's staffs. Here, however, we only look at the need for training of the researchers.

The training is thought as a part of skills development and career development for researchers in a broad sense and not only aimed at new employees or researchers who are early in their careers.

We have established a working group that will create suggestions for an internal *research school* with various modules. There already is some training at the Institute that fits in in such a concept. The Department for research administration support (FAS) implements mandatory courses for project managers (courses that are recommended for all researchers) in cooperation with Legal Services. The focus of the proposed *research school* must be on specific needs at NIPH and not overlap with established, more general research training offered by others.

We suggest that the working group consider the following modules:

- The existing course's role in the proposed *research school*
- Literature search and knowledge summaries (cf. measures 2 in the action plan from 2019)
- Open research (measures proposed in action plan for open research (a work in progress))
- To be a researcher at NIPH. Themes in a module like this can be linked to themes such as the most significant public health challenges nationally and globally, NIPH's social mission, priorities in the Institute's strategy and development plans, the role as scientist at an Institute in the central health administration, research communication etc.

Proposed composition of the working group: Department for Research Administration, legal services, Department for HR, the library, senior research advisers, representative(s) for researchers, etc. Further down the line, it may be appropriate to work in several subgroups. This is assessed on an ongoing basis.

Strengthen the systems and support for project management

In the action plan from 2019 several measures are pointed out to strengthen both the project portfolio for the Institute and execution of individual projects. On a project level, measures for strengthened project management and systems for project management through all the project phase from startup to end – including securing privacy and financial monitoring – are suggested. By systems, it is referred to both joint project methodology and tools.

It is suggested to start the work at the project level, and establish a working group that will look into:

- (1) which systems and support we have for managing research projects today, and consider

what works well, what is perceived as particularly difficult and where there is a need for strengthening and harmonization across the Divisions.

- (2) need for training attached to the management of research projects and how this can be part of a *research school*.

It is important to collect experiences from project managers with varying degrees of project management experience and research administrative support from different parts of the Institute. The working group must become familiar with the work of mapping the processes within the area of research activity under the auspices of the Department for corporate governance and obtain experience from various project methodologies from the Divisions. Potential needs for digital tools are seen in the context of the internal project on digital workplaces.

Proposed composition of the working group: Department of research administration (FAS), local support staff, representative(s) for project managers, department staff, etc. Throughout the process it might be appropriate to work in several subgroups. This is assessed on an ongoing basis.

Strengthen the recruitment process for researchers

One of the most important measures to ensure strong professional environments and high quality of the Institute's research and other knowledge production, is to employ the best qualified and most promising researchers in the field. To succeed, the Institute must both present itself as an attractive workplace and carry out good recruitment processes. It is therefore proposed to establish a third working group that looks into recruitment processes for researchers, including criteria for assessing competence and requirements for permanent employment as a scientist by the Institute. This should be considered in light of analyses of what research competence the Institute will need in the coming years, including methodological competence. Furthermore, it is important to identify how we can keep researchers with particularly critical expertise. Offering good opportunities for professional development and career development is one of several measures, cf. the measure establishing an internal *research school*.

Suggested composition of working group: HR Department, specialist director(s) for research, department director(s), center manager(s), representative(s) for project managers, etc.

Measures on a longer term

In addition to identifying measures to strengthen the implementation of individual projects, the action plan from 2019 also points to measures to strengthen the Institute's project portfolio. Later in the planning period, there are ambitions to also look at this type of measure. Then it will be appropriate to look into:

- Common systems for startup and follow up of internally financed research projects.

In connection with presentations/discussions of the draft development plan for research and innovation and action plan for quality in research in the areas in spring 2021, many emphasized that this is important and should also be prioritized. The ambition is to establish a working group in 2022/23.

Background: Review of 12 measures proposed by a working group in 2019

In this section we discuss which measures in the note from 2019 that should be implemented on a short and long term, as well as which are to be followed up in other processes. For a justification for the proposed measures in the original toolbox, reference is made to the note [Action plan for quality in research, 2019](#).

In the note from 2019 we suggest measures within following main categories:

- Measures for better prioritized and better formulated research questions
- Measures for better design, methods and analyses
- Measures for better management of project portfolio and projects and implementation of projects

Measures for better prioritized and better formulated research questions

The Institute's prioritized research questions as expressed in the current strategy and other governing documents, must always be guidelines, and governing the applications for external funding of projects and internally funded research activity. As described in the note [Action plan for quality in research, 2019](#) other factors must also be taken into account when the Institute prioritizes research questions. In the memo from 2019, three concrete measures are proposed (these are reproduced verbatim here and are marked in italics):

1. *Measure: "Each Division must, with support from the Department for research administration, carry out an open prioritization of specific research questions with established tool each third year. The priorities shall involve the Division's own employees, external colleagues, and user groups of the Division's research. The priorities must be made public."*

The measure is not a priority now. As described in [the development plan for research and innovation](#), the Institute's strategy for 2019-2024 gives clear guidelines for the institute's knowledge production - both in terms of prioritized themes, data basis and methodological approaches. We have in addition development plans for research in selected fields. These documents, together with new, large assignments from the Ministry of Health and Care, e.g. following the Covid-19 pandemic, be guiding the Institutes prioritization of internally funded research and applications for externally funded research.

2. *Measure: "The Institute must regularly offer internal training in systematic searches, literature and knowledge synthesis (systematic reviews) for researchers, and the library's capacity to assist research groups with searches must be secured. The library must maintain a database for established searches for various subject areas, and catalogs of variants of these. Before a new research question is prioritised, it must be based on systematic and sufficiently comprehensive literature searches, and/or identify and assess the quality of existing systematic literature reviews and summaries of knowledge, and/or, if necessary, carry out new or supplementary ones in line with internationally recognized methodology. "*

The measure is prioritized. To present overviews of existing literature and knowledge gaps are important in succeeding in the competition for external research funding. Corresponding requirements must be made at the start of internally funded research. We suggest that training in search and knowledge synthesis (systematic reviews) is seen in relation to other activities of training of the Institute's researchers and should be added to the proposed *research school*. A separate module on literature search and systematic reviews is proposed, for which the library will be responsible. The work must be seen in context with the work as is done in made as shall prepare a method book for summarized research at NIPH. The library is already involved in this work.

3. *Measure: "The Institute's guidelines for user participation in all stages of research is further developed as part of the implementation of the Research Action Plan. When initiating a research project, one must identify which kind of user participation (industry, patients, health personnel, authorities, etc.) is to be planned in all stages of the research project."*

The measure is taken care of through other channels. A separate team has been set up for user participation at the Institute, and the follow up on user participation in research is seen as part of this team's mandate. The Department for Research Administration also provides, as part of their support to writing application, guidance in how demands for user participation is taken care of in the calls for funding where this is required. From the Norwegian Research Council's side, there have through several calls been a turn towards demands for various types of impact, relevance for programs, etc. The efforts to comply with such requirements is also supported by The Department for Research Administration. User participation will also be affected in the action plan for open research.

Measures for better design, methods and analyses

As detailed in the background document [Action plan for quality in research, 2019](#), the value of research depends on whether the answers you get, and the conclusions you draw from them, provide correct knowledge. "Correct" in this context means that the results which will be published provides a complete and a balanced picture of how certain or uncertain one is about the answers given the scientific methods and materials used. The Institute's research encompasses a very wide range of research methods and approaches that have different methods for planning, prevention of bias, implementation and publication. Different possibilities for strengthening the research and reduce bias must therefore be selected by and adapted to each professional environment, but in general and for all, the participation and insight of external colleagues with methodological expertise, and openness about research questions, methods, analyzes and results, helps to reduce bias. Based on this, measures 4 - 10 below were proposed in the action plan from 2019:

4. *Measure: "For most research methods, the Institute should develop and publish research protocols, and the absence of public available protocols should have professional justification. For most professional environments, detailed protocols are developed anyway for ethical assessment, and in some professional environments also as peer reviewed publications. The protocols must be publicly available before data collection/extraction/analysis, and should follow recognized templates for publishing background knowledge, specified research questions, materials, methods and analyzes for various research designs (SPIRIT, CONSORT, STROBE, PRISMA, etc.), including the mentioning of adequate measures against bias. »*

The measure is taken care of through other channels. The publication of research protocols is included as a measure in the action plan for open research. The discussion of when this is particularly important and how the measure is best designed is discussed there.

5. *Measure: "In addition to identifying the project's academic manager, projects at the Institute should also identify from the start / in the research protocol which statistician and/or method expert is responsible for statistics and design for answering the research questions and for preventing bias. In some cases, the project manager will have the most up-to-date professional knowledge both within the project's academic theme, and within methodological knowledge and statistics, and in these cases can occupy both positions.*

The measure is not a priority now. Ensuring that a project has the expertise necessary for proper implementation, including sufficient methodological expertise, is up to the project manager and the

relevant line of command, whether the project is in a Department, Section or a Centre. On a more general level, it is important to ensure that the Institute have employees with necessary methodological knowledge (cf. proposed working group on recruitment) and that the most central method environments are preserved and strengthened.

6. *Measure: "The Institute should use existing mappings of our international research partners and work for strategic collaboration agreements with leading institutions where the Institute has a large network of contacts and can contribute to developing new collaboration networks for researchers who need new international partners."*

The measure is not prioritized now. International collaboration is crucial to make sure that our research is at the forefront both nationally and internationally. NIPH has entered into cooperation agreements with the largest universities in Norway. The Institute's research spans over a very wide range of topics and methodology. The establishment of collaboration with the leading professional communities internationally, in various fields, is best accomplished through the individual professional communities themselves, for example through common research projects and applications for external financing.

7. *Measure: "The Institute should arrange for periodic peer monitoring of: the largest research projects in the Institute's centers; purely internal research projects without cooperation with external scientific expertise; and internally financed projects."*

The measure is prioritized (in adjusted form). Our externally funded research projects generally have been subject to assessment by external peers and has succeeded in strong competition with other professional groups nationally and internationally, both in terms of research quality (excellence), impacts and effects and implementation. Further, it is reported regularly on progress to various funding agencies. In the future, we must ensure that internally funded research projects also go through strict quality assurance at the start, regardless of whether they are located in a Center or a Department/Section. We must assess whether it is appropriate to use external parties to secure quality in this process. Equivalently, progress must be followed up in phases of the project period. There must be an assessment to consider how this is to be handled for ongoing internally financed projects. As of today, the Institute does not have common quality assurance routines for publications published by the Institute, e.g. the practice of using external colleagues varies. The need for common routines should be assessed.

8. *Measure: "The Institute should establish a unit for research data, data processing and statistics with responsibility for automating and curating a library of standardized routine methods / routine statistics and health analysis / routine classifications and statistics syntax for the Institute's largest data collections."*

The measure is not a priority now. As of today, no resources have been set aside for such a unit and the measure is not considered realistic in the short term. The need for such a unit must also be assessed against the establishment of the Health Analysis Platform and Health Data Service. How we best manage and share data will be included in the action plan for open research. The committee supports the intention with transparency and sharing of routine methods and syntax but considers that the goal can be achieved through other processes that are discussed in this note. Finally, we want to point out that there are big benefits in placing the analysis work close to and integrated in the research groups at the Institute, as is practiced in e.g. Center for the Burden of Disease.

9. *Action: "The Institute should create an advanced education program for researchers in the most important methods, statistics and design in public health and health services research, and see this in connection with a continuation and further development of the guidance*

program for supervisors."

The measure is not a priority now. An extensive range of courses exist today, both through the universities and other actors - nationally and internationally. The need for professional replenishment will be ongoing and often very specialized. It is therefore encouraged to facilitate the use of existing courses, instead to establish own courses in methodology by the Institute. That said, it is very positive that researchers and the professional communities themselves take initiative to establish their own method forums/networks within their fields. Furthermore, as part of the establishment of the proposed *research school*, a separate module dealing with being a researcher at NIPH should be considered.

10. *"Measure: The Institute should incentivize outstanding research through support for researchers applying for ERC, SFF and the like; support for establishing external and international cooperation; support for excellent method use for the prevention of bias through special support for publication/disclosure of research protocols; support to external peers review of protocols; and support for external peer monitoring. A starting point is proposals for criteria for career assessment ([open science career assessment matrix](#))."*

The measure is prioritized (in adjusted form). One important measure to ensure outstanding research by the Institute is to be able to hire the best qualified and most promising researchers in the field. To succeed, the Institute must both present itself as an attractive workplace and carry out good recruitment processes. It is proposed to follow up with measures relating to recruitment processes in this action plan, including criteria for assessing competence. Furthermore, we must facilitate continuous learning for employees in research positions. In addition, more systematic work must be done to build ground-breaking and outstanding research in selected fields. The Department for Research Administration currently provides support for applications for ERC and the Department in collaboration with Center for Fertility and Health organizes internal seminars to build up researchers who wish to apply for ERC. STIM-EU and PES2020 are other key instruments to facilitate outstanding research, e.g. through the generation of necessary data to succeed with future applications for funding. Arrangements are also being made to provide support for new applications for SFF and the Institute should have the ambition to apply for a Center for research-driven innovation (SFI). These measures are explained in more detail in the action plan for external financing.

Measures for better management of project portfolio and projects and implementation of projects

As described in [the Action plan for quality in research, 2019](#), project managers have a critical role in start-up and execution of research projects. Ours researchers have extensive education within their subject areas and research, but more varying formal and practical competence in project management, portfolio management and budgeting of research projects. The last two measures in the plan from 2019 therefore addressed that the Institute should strengthen the project management role and offer good project management tools to maintain good project management and implementation. These are reproduced here as measures 11 and 12:

11. *Measure: "The digitization plan for the National Institute of Public Health states that "We will offer an outstanding digital platform for researchers at the Institute". It must be ensured that these tools are based on the researchers' and research management's actual needs in everyday life. This should be done through a thorough mapping of the data and information flow that is necessary for good portfolio and project management, administration and implementation of research projects, and that the users (researchers, research administration employees, and*

(research) managers) participate actively in designed throughout the process. The platform should focus on a high degree of reuse of own data/documentation and data from existing (internal and external) databases; to give both project managers, management and administration a better and unified overview of their own projects including approvals, progress, milestones and deadlines, reporting requirements, staffing and finances; and automation of registration, reporting, archiving and other routine administrative tasks.

The measure is prioritized. We suggest establishing a broadly composed working group to look at which systems, methodology and support we have established for project management today and consider the need for strengthening and harmonization across the Divisions.

12. *Measure: "The Institute should reintroduce and strength internal project management training for researchers with focus on knowledge, skills and tools for effective planning, management, monitoring and implementation of research projects. In line with the Digitization Plan, this should include giving our project managers a high level of digital competence within the necessary tools.*

The measure is prioritized. We propose that the working group that will address systems, methodology and support for project management, also looks at needs for training directed specifically towards project managers. This must be seen in connection with the proposed *research school*.