Inclusive Evaluation of Public Health Interventions

Project summary

Public health interventions (PHIs) are critical for meeting many of Norway's and the world's greatest challenges. Sedentary lifestyles, overweight, and non-communicable diseases are among them. Rigorous evaluation of PHIs is indispensable for ensuring that these interventions are properly prioritised.

Yet, previous evaluations of PHIs have often been narrow: omitting costs, benefits beyond health, and impact on inequalities. Interventions promoting physical activity are among the PHIs for which we need more evidence. Moreover, today's process for evaluation tends to be fragmented and poorly linked to the policy-making process, thereby jeopardizing the implementation of even favourably-evaluated PHIs.

The objective of this project is to generate new tools and evidence to promote PHIs that are cost-effective, that generate both health and non-health benefits, and that reduce inequalities. Specifically, we will: I) further develop newly proposed methods for inclusive evaluation of PHIs, i.e. economic evaluation that incorporates non-health benefits and distributional concerns; II) evaluate three clusters of PHIs promoting a) walking and cycling, b) lifestyle services for overweight or obese children, adolescents, and adults, and c) physical activity among socioeconomically disadvantaged women using the new methods; and III) identify and assess new ways to bridge the evaluation and implementation of PHIs.

We will employ both quantitative and qualitative methods, including method development (subproject I), cost-effectiveness analysis (subproject II), and comparative policy analysis and interviews (subproject III). We will utilise data from multiple sources, including health surveys and the national burden of disease project.

1. Relevance relative to the call for proposals

This project seeks to improve the evaluation and implementation of public health interventions (PHIs). It will provide tools and evidence to promote PHIs that are cost-effective, that reduce inequalities, and that generate both health improvements and non-health benefits—with emphasis on interventions encouraging physical activity. PHIs in general and these interventions in particular are essential for increasing longevity, improving quality of life, and reducing social inequalities in health.

All parts of the project speak to the strengthening of intervention research: its conduct, its availability, and its use. The project will develop new methods for inclusive evaluation of PHIs; evaluate three clusters of PHIs promoting physical activity using the new methods; and examine new and better ways to bridge the evaluation and implementation of PHIs in order to advance the implementation of favourably-evaluated interventions. The utility of the project thus goes beyond the specific interventions being evaluated. By developing new methods and strengthening the link between evaluation and implementation, the project will also increase the value of evaluations conducted elsewhere.

The project will emphasise economic analysis of PHIs while going beyond traditional cost-effectiveness analysis (CEA). The new methods developed in the first phase of the project will be applied to interventions promoting physical activity, which is a key determinant for both physical and mental health. All interventions seek to influence behaviour and prevent

non-communicable diseases (NCDs), including diabetes and cardiovascular disease, and the interaction between the individual and the environment are central to these interventions. One of the clusters of interventions targets disadvantaged women. For the two other clusters, targeting of children, adolescents, and the elderly will be examined. Municipalities are normally responsible for implementing the interventions in question, but the evaluations will also be highly relevant to national authorities.

The project will employ both quantitative and qualitative techniques, and will utilise data from several health registries as well as from the national burden of disease project. The work will be interdisciplinary, and cross-sectoral collaboration is also a central topic of the project itself. Extensive academic cooperation is at the very heart of the project, with committed key participants coming from multiple institutions in Norway and abroad. Similarly, interaction among researchers and end users of the findings is built into all stages of the project, thereby improving the prospects of positive real-world impact.

2. Aspects relating to the research project

Background and status of knowledge

PHIs are critical for many of the greatest challenges ahead: an aging population,[1] rising levels of chronic disease,[2] and increasing social inequalities in health.[3] PHIs have been identified as key for achieving the 25x25 target calling for a 25% reduction in premature mortality from NCDs by 2025, and Norway's strategy for reaching this target emphasises population-based interventions on tobacco, alcohol, nutrition, and physical activity.[4] Physical inactivity has been labelled a pandemic and ranked as the fourth leading cause of death worldwide.[5] It is also a leading risk factor for death and disability in Norway.[6] Beyond the impact of PHIs on average population health, PHIs are also pivotal for tackling social inequalities in health.[3]

Yet, today's knowledge about PHIs does not match this crucial role. There are important gaps in methods for evaluating PHIs, in the evidence base about PHIs, and in the process of linking evaluation with implementation.

Gaps in methods

Rigorous evaluation of PHIs is indispensable for ensuring that these interventions are properly prioritised vis-à-vis other interventions and for improving priority setting among different PHIs. Yet, the evaluation of PHIs and the methods used have repeatedly been charged for being too narrow.[7-9] One shortcoming is that many evaluations consider only effects and not costs.[10-14] Another is evaluations of PHIs often disregard non-health benefits, despite that PHIs tend to wide-ranging consequences that goes beyond health improvements.[7-9] Important non-health outcomes include impact on educational attainments, sickness leave and economic productivity, and individuals' financial situation due to payment for health services. Similarly, evaluations of PHIs do often not incorporate distributional concerns, despite that fact these interventions can have a major impact on inequalities—and typically greater than for clinical services—and that reducing inequalities often is a central objective.[7-9, 15]

Costs, non-health benefits, and distributional impact are all important aspects to consider in evaluations of interventions according to regulations and official guidance in Norway.[16-18] If these aspects are disregarded, PHIs are unlikely to get the priority they deserve—among each other and vis-à-vis clinical services.

Fortunately, progress is being made. Two new methods for a broader evaluation of health interventions have recently been developed and tested: extended cost-effectiveness analysis (ECEA)[19-23] and distributional cost-effectiveness analysis (DCEA).[24, 25] Both methods

incorporate distributional impact, and ECEA includes financial benefits for individuals alongside health benefits.

Each of these methods and their applications so far have strengths and weaknesses. One characteristic of ECEA is that impact is presented in a "dashboard" fashion with disaggregated results, while DCEA rests fundamentally on the social welfare function approach. But there is no agreement on which method is the best one or how elements of the different methods best can be combined. Key questions that remain open are what inequalities to focus on, how to incorporate the best measures of inequalities based on available country-level data, and how to combine different benefits and inequalities in a way that is meaningful to policy makers. In addition, ECEA and DCEA have been applied to only few PHIs and have not yet been applied in a Norwegian context.

Gaps in evidence

Existing evidence suggest that several interventions designed to promote physical activity can lead to increases in such activity,[11-13, 26-29] and there is also some evidence suggesting that these interventions can be cost-effective.[30-35]

Three clusters of PHIs that fall in this category are measures to promote walking and cycling (cluster A);[30, 31] lifestyle services for overweight or obese children, adolescents, and adults (cluster B);[32, 33, 35] and interventions promoting physical activity among socioeconomically disadvantaged women (cluster C).[34]

However, there is still much we do not know about these interventions. It is unclear what the most effective and cost-effective interventions for increasing physical activity are.[26] In addition, we know much less about the non-health benefits and impact on social inequalities of these interventions than their aggregate health outcomes.[8, 10] In particular, we have limited knowledge about how different ways of targeting specific groups—based on risk, social characteristics, or both—will affect the costs, benefits, and distributional consequences of these interventions. More generally, we have only limited evidence about the interventions in the three clusters in a Norwegian context, and none of the interventions are currently fully implemented in Norway. More evidence is needed to identify "best buys", to secure the right level of priority and funding for appropriate PHIs, and to choose the optimal form of targeting subgroups.

Gaps in implementation

Even the best possible evaluation is useless of if it has no bearing on implementation. PHIs are often challenging to implement—and often much more than clinical services.[9, 36-38] There are multiple reasons for this. One is that PHIs often requires collaboration among a wide range of actors and across several sectors [9, 36-38]. Another is the evaluation process itself.[9, 36-38] The evaluation of PHIs is typically not systematised and institutionalised in the way evaluation of clinical services are. The evaluation of PHIs also tends to be less well embedded in the policy-making process and have less direct links to strategic policy development.

The question is how the evaluation process best can be designed to promote implementation of favourably-evaluated interventions. A limited and scattered literature points to at least six promising options:[9, 36-39] 1) To include non-health benefits in the evaluation—including cost savings—as described above; 2) To actively engage actors from sectors other than health in the evaluation; 3) To harmonize the methods for evaluation in the health sector with those used in other sectors; 4) To have a designated national unit for evaluation of PHIs, which can help make the evaluation of PHIs less fragmented, more visible, more inclusive of a diverse set of actors, more directly linked to policy making, and more on par with the evaluation of clinical services; 5) To promote health impact assessment in sectors other than health; and 6)

more clearly integrate PHIs in a national priority-setting framework that applies to the entire health sector, including clinical services.

Despite occasional mentions, these options have not been examined in depth. More generally, the links between the evaluation process and implementation of PHIs have been systematically explored only to a limited extent. Decision makers in Norway thus lack important information about how the process can be improved. An improved process will make evaluations of PHIs—in this project and elsewhere—more valuable.

Objectives

The objective of this project is to generate new tools and evidence to promote public health interventions (PHIs) that are cost-effective, that generate both health and non-health benefits, and that reduce inequalities.

The primary objective will be achieved through three subprojects, linked to the following secondary objectives: I) Innovation: To further develop newly proposed methods for inclusive evaluation of PHIs, i.e. economic evaluation that incorporates non-health benefits and distributional concerns; II) Application: To evaluate three clusters of PHIs promoting a) walking and cycling, b) lifestyle services for overweight or obese children, adolescents, and adults, and c) physical activity among socioeconomically disadvantaged women using the new methods; and III) Implementation: To identify and assess new ways to bridge the evaluation and implementation of PHIs to promote the implementation of favourably-evaluated interventions.

Approaches, hypotheses and choice of method

We have established a Scientific Board with internationally renowned scholars from a wide range of disciplines. These partners will complement the core research team, which itself harbours expertise in numerous fields—including medicine, public health, epidemiology, statistics, ethics, economics, political science, and law—and has broad experience with economic evaluations of health interventions. At all stages of the project, the team will actively interact with a multisector User Forum, whose members represent potential users of the project's expected findings. The principles of user involvement are further described below. Throughout we will also draw on the recent work of the Norwegian Committee on Priority Setting in the Health Sector,[39, 40] which was chaired by the project manager and in which several partners were involved.

The primary objective will be achieved through three subprojects, each linked to a corresponding knowledge gap and a secondary objective. Eight core articles will be prepared and published, in addition to several other scientific articles, commentaries, and op-eds.

Subproject I: Innovation (Core articles 1 and 2)

In this subproject, we will develop a family of inclusive methods for evaluation that are sensitive to the special features of PHIs and tailored to the Norwegian context and the data available in Norway. These methods will incorporate non-health benefits as well as distributional impact. The point of departure will be recent developments of both ECEA and DCEA,[23, 24] as well as the literature on cost-benefit analysis (CBA) and equity-weighted CEA.[41, 42] On this basis, we will examine what benefits and what inequalities can and should be included based on available data or new data collection. We will address how to measure the relevant benefits and inequalities, and how to combine different benefits and different inequalities, respectively.

This work will require analysis of distributive theory, technical analysis, and analysis of data availability in Norway and internationally. It will also require analysis of the current legal and

normative framework in Norway. Here, we will draw Norwegian regulations,[16] official guidance,[17, 18] and recent and future developments, including the proposal made by the Norwegian Committee on Priority Setting in the Health Sector,[39] the Report to the Parliament on priority setting (expected late spring 2016), and consequent decisions made by the Parliament. The User Forum will provide input throughout.

The methods developed in this subproject will fill important shortcomings in the current toolbox for evaluating PHIs. The new methods can be used by everyone evaluating PHIs—in Norway and elsewhere—and will facilitate a broader evidence base for policy makers. The methods will also be applied in part II of this project.

Subproject II: Application (Core articles 3, 4, and 5)

In this subproject, we will do two things in parallel: demonstrate the power and usefulness of the new methods developed in subproject I and perform inclusive evaluations of three clusters of PHIs to address physical activity. These interventions have shown promising results, can generate non-health benefits and have an impact on inquality, and are not fully implemented in Norway. The three clusters are:

Cluster A: Measures to promote walking and cycling: This cluster includes community-based walks led by trained volunteers, personalized travel advice, and multi-component interventions such as cycling-demonstration towns and sustainable-travel towns.[31 30]

Cluster B: Lifestyle services for overweight or obese children, adolescents, and adults: This cluster includes different multi-component behavioral weight-management programs with components such as diet, physical activity, and behavioral therapy.[32, 35]

Cluster C: Interventions to promote physical activity among socioeconomically disadvantaged women: This cluster includes the "mothers in motion" behavioral intervention, "mother to daughter" healthy-lifestyle intervention, behavioral contract on adherence to a walking program, and several environmental interventions.[34]

For clusters A and B, we will employ the CEA models used by the National Institute for Health and Care Excellence (NICE) in England and Wales, integrate Norwegian data, and extend the analysis to non-health benefits and impact on inequality. For cluster C, we will build on existing reviews and meta-analyses and develop our own life-table-based cost-effectiveness model. We will also examine the clusters of interventions with different forms of targeting. We will collect primary cost data for Norway and use disaggregated risk data for Norway for secondary analysis. This will tailor the analyses to the Norwegian context, which can differ from that of other countries in multiple respects, including in unit costs, physical activity levels, disease pattern, and age structure. Cost data will be collected using the ingredients approach, whereby each resource required for the intervention is identified and valued. Cost data will be collected using the ingredients approach and will include program costs, human resources, media and advocacy, rent, equipment and office supplies, operations, inpatient and outpatient treatment costs, and patient costs (when relevant). Data on risk factors (including body mass index, physical inactivity, hypertension, smoking status) disaggregated by sex, age, area of living, income, level of education, or other markers of disadvantage will be gathered from Norwegian health surveys and the Norwegian and Global Burden of Disease Studies. Effect estimates on health outcomes (including coronary heart disease, stroke, hypertension, certain cancers (breast and kidney), knee osteoarthritis, and type II diabetes) will be extracted from published systematic reviews. If subgroup analyses for effectiveness are available, we will use outcomes by sex, age, area of living, income, level of education, and other markers of disadvantage. If not, constant risk reduction effects and various possible distributions will be assumed and modelled. Effect estimates of non-health outcomes

(including sick-leave days, unemployment status, productivity loss, educational attainments) will be identified, if available, from intervention studies and systematic reviews.

The findings from this subproject will be relevant for Norwegian decision makers in two ways. It will demonstrate how the methods developed in subproject I can be applied and provide new evidence on a range of PHIs to promote physical activity, including evidence on cost-effectiveness, non-health benefits, and impact on inequality. The findings will also be relevant of decision makers outside Norway, but will require certain adaptations to be applied in other settings.

Subproject III: Bridge to implementation (Core articles 6, 7, and 8)

In this subproject, we will identify and assess new ways to bridge the evaluation and implementation of PHIs in order to promote the implementation of favourably-evaluated interventions. This subproject will benefit from the two other subprojects and vice versa. One reason is that many of the factors improving the quality of the evaluation itself are likely to also promote inter-sectoral collaboration and implementation. Another reason is that the technical methods of evaluation is a central part of the evaluative process.

We will first examine the current process of evaluation of PHIs in Norway and several other countries. These will include Canada, the UK, and a purposive sample of European countries. Canada and the UK are relevantly similar to Norway and have recently explored new ways to improve the prioritisation of PHIs. We will also examine recent changes to the process of evaluation in the same countries and the impact of these changes, especially with regard to inter-sectoral collaboration and implementation. To do this, we will conduct a cross-national comparative study, utilising policy-document analysis, semi-structured key-informant interviews, and established frameworks for policy-making analysis.[36, 43] We will examine the six options described above in particular depth, to determine the extent of current implementation and in-principle feasibility and attractiveness. The User Forum will be central in the design of the study, provide direct insights and views about the current process in Norway, and help tailor general findings on options to the Norwegian context.

A final part of subproject III will examine how a designated national body for evaluation of PHIs best can be designed. This part will integrate findings from other parts of the subproject with insights from a parallel project, entitled "Optimizing the Institutional Design of Scientific Advisory Committees for Quality, Salience, and Legitimacy," in which several of the participants of this project take part. The project on SACs will provide a unique and comprehensive framework to address the specific challenge of how to best evaluate PHIs.

The findings from this subproject will help authorities and stakeholders in Norway to improve the process of evaluation in a way that promotes implementation of favourably-evaluated PHIs. Among other things, the findings can inform current efforts to establish a competence centre for evaluation of PHIs at NIPH.[44] Together with a more inclusive method of evaluation, an improved process will strengthen the evaluation, prioritisation, and implementation of PHIs in Norway. Most of the findings will also be relevant for other countries, especially those that will be part of the comparative study.

3. The project plan, project management, organisation and cooperation

Leadership

The project will be led by the University of Bergen in collaboration with a network of partners in Norway and abroad. Ole Frithjof Norheim (MD, PhD) will be the principal investigator and project manager. Norheim is Professor of Medical Ethics at the Department

of Global Public Health and Primary Care, University of Bergen, and Adjunct Professor at the Harvard T.H. Chan School of Public Health. Trygve Ottersen (MD, PhD) will be co-principal investigator. Ottersen is an Associate Professor at the University of Oslo (UiO) and research fellow at the University of Bergen and the Norwegian Institute of Public Health (NIPH). Profs. Norheim and Ottersen's profiles are described below and in the CV's attached.

Core team

The project's core team will be affiliated with the Global Health Priorities Research Group at the Department of Global Public Health and Primary Health Care, University of Bergen. The group will provide an ideal setting for the project and its core team, given the group's mix of expertise, strong track-record of conducting high-quality research on priority setting and economic evaluations, and extensive network of collaborators. It is led by Prof. Norheim and currently has six persons in senior positions and 18 PhD students. Norheim chaired the 2009 revision of Norwegian Guidelines for Primary Prevention of Cardiovascular Disease, is a member of the Lancet Commission on NCDs and Injuries, and is increasingly focusing his work on PHIs. His work has appeared in a wide range of journals, including The Lancet, Science, the British Medical Journal, and Social Science & Medicine.

Prof. Norheim recently chaired the Norwegian Committee on Priority Setting in the Health Sector,[39] where Prof. Ottersen was member of the Secretariat. Similarly, Prof. Norheim recently chaired the WHO Consultative Group on Equity and Universal Health Coverage and was, together with Prof. Ottersen, lead author of the group's final report.45 Norheim also directs the project Priority Setting across Clinical Specialities, funded by Helse Vest.

Prof. Kjell Arne Johansson is another key participant who is also part of the Global Health Priorities Research Group. He has conducted multiple economic evaluations of health interventions, including ECEAs.[46, 47]

The group's Norwegian partners include the University of Oslo, NIPH (including the former Norwegian Knowledge Centre for the Health Services), the Norwegian Directorate of Health, Chr. Michelsens Institute, Helse Bergen, and Helse Vest. International partners include the World Health Organization (WHO), the US National Institutes of Health (NIH), Institute of Health Metrics and Evaluation (IHME), the University of Pennsylvania, the University of Ottawa, and Harvard University.

Scientific Board

We have established a multidisciplinary Scientific Board with Norwegian and international partners. Each brings to the project leading expertise on topics at the heart of the project: Prof. Theo Vos (IHME) is central in the Global Burden of Disease Study and has led a large project evaluating the cost-effectiveness of 150 preventive health interventions in Australia. Profs. Daniel Wikler (Harvard) and Harald Schmidt (University of Pennsylvania) are leading experts on the ethical aspects of health policy. Prof. Steven Hoffman (University of Ottawa) is an expert on health law, and he and Prof. Patrick Fafard (University of Ottawa) are both experts on institutions and the political aspects of health policy. Prof. Richard Cookson (University of York) is an expert on the economics of priority setting and central in the development of DCEA; and few, if any, have more expertise on economic evaluation of health interventions than Prof. Dean Jamison (University of California, San Francisco). He and Prof. Stéphane Verguet (Harvard) are currently leading the international development and implementation of ECEA. Prof. Ezekiel Emanuel's (University of Pennsylvania) work focuses on bioethics, and he also has wide-ranging practical experience, most recently as a top advisor to US President Barack Obama.

Among the Norwegian partners, there is a similarly wide range of expertise: Prof. Stein Emil Vollset (University of Bergen and NIPH) is directing the Norwegian Burden of Disease Study. Dr. Berit Bringedal (The Institute for Studies of the Medical Profession) and Prof. Eli Feiring (UiO) are experts on the sociological and political aspects of priority setting in health. Prof. Jon Magnussen (NTNU) is an expert on health financing and comparative health policy, while Prof. Eline Aas (UiO) is an expert on economic evaluation and social inequalities in health. Prof. Atle Fretheim (NIPH) and Frode Forland (NIPH) are both experts on assessing the evidence for health interventions and actively involved in the Cochrane Collaboration. Prof. John-Arne Røttingen is Executive Director at the NIPH with wide-ranging academic and practical expertise on population-targeted interventions and evidence-based policy. Prof. Knut-Ingen Klepp is also Executive Director at the NIPH and is in charge of the current efforts to establish a competence centre for evaluation of PHIs at NIPH.

This Board will facilitate international cooperation and national network-building, assist in providing overall guidance to the project, and will be involved when specific challenges arise. Several Board members will also co-lead on parts of the project, co-author articles, or both. The Board will have at least one annual meeting, two of which will be in-person meetings. These meetings will be part of larger workshops, where plans, work in progress, and results will be presented and discussed.

The core team and the Board will work together with a User Forum that we have established and that is described below.

4. Key perspectives and compliance with strategic documents

Relevance and benefit to society: The findings is expected to facilitate better evaluation, prioritisation, and implementation of PHIs, and of PHIs promoting physical activity in particular. This is likely to result in net health benefits for the population and reduction of social inequalities in health. The project can thus help Norway better address many of the greatest challenges ahead and more effectively pursue the adopted NCD-strategy[4] and national goals for health.[48] While the research will focus on Norway, many findings will be relevant also for other countries.

Environmental impact: The main expected negative impact from implementation of the project is pollution from air travel. We will therefore seek to minimise such travel and to use online tools and teleconferencing whenever possible. The utilisation of project results is not expected to have any significant environmental impacts, except that it may improve the evaluation and implementation of PHIs with a positive impact on the environment.

Ethical perspectives: We will seek approval from the Regional Ethics Committee.

Gender issues: We will seek gender balance in the recruitment of students for fellowships and in the appointment of other researchers. One cluster of interventions to be evaluated specifically targets disadvantaged women.

5. Dissemination and communication of results

Dissemination plan: Details about deliverables and our broad dissemination plan are provided in the grant application form.

Communication with users: Communication with users will be ensured throughout the project through interaction with the User Forum, as further described below. In addition, we will request input from a broader set of users on our website and in our newsletters and policy briefs. As the project unfolds, we will develop a more extensive network of actors interested

or involved in the evaluation, prioritisation, and implementation of PHIs. We will also invite a broad range of users to our workshops and to the end-of-project conference with a stakeholder dialog meeting.

Dissemination of project results

Dissemination for real-world impact will be emphasised throughout the project. Results will be disseminated to an academic audience through articles in international peer-reviewed journals. Target journals include Journal of Health Economics; Health Economics; Health Economics, Policy and Law; Social Science & Medicine; Health Policy; American Journal of Preventive Medicine; American Journal of Public Health; and Journal of Physical Activity and Health. In addition, we will seek to publish commentaries in general medical journals, including The British Medical Journal and The Lancet. We will also seek to publish selected work in The Journal of the Norwegian Medical Association and to publish op-eds in the national newspapers and Dagens Medisin (where Prof. Norheim has a regular column) to reach a wider audience, including the general public.

Throughout the project, we will seek to present our findings at multiple conferences each year. In addition, we will organise two conferences linked to the project. Here we will include several key researchers and users external to the project. In both conferences, we will have sessions dedicated to the practical use of our findings, where members of our User Forum will play a key role and wider dissemination of project results will be a central topic.

Dissemination of results will be sought through linking the project with multiple projects in which members of the core team and the Scientific Board are involved. We will also seek to integrate key insights from the project into our teaching. For medical students in particular, the balance and interaction between public health interventions and clinical services is a crucial topic that should be regularly discussed throughout medical school.

We will establish a website for the project. We will ask members of our Scientific Board and User Forum to help circulate information about this website, as well as to include a link on the website of their own institution.

We will produce an annual newsletter on the project that will be circulated widely, including through members of our Board and Forum. The Global Health Priorities Research Group also has a quarterly newsletter and an active Twitter account where information will be further disseminated. For certain articles or set of articles, we will prepare policy briefs targeted at specific users. A number of policy briefs will also be produced and disseminated at the end of the project.

Close to the end of the project period, we will arrange a conference with a stakeholder dialogue meeting specifically focused on dissemination and use of results. For this meeting, we will invite a broad range of potential users of our findings, also going beyond the users in our User Forum.

6. Additional information specifically requested in the call for proposals

User involvement

Multiple groups will use and benefit from the findings of this project. Researchers and institutions charged with evaluation of PHIs, including the NIPH, can directly use the new methods developed in subproject I. Norwegian municipalities can directly use the findings of subproject II. Findings from subprojects II and III can be directly relevant for national authorities, as well as the wide array of actors that seek to promote public health and physical

activity in particular. This includes civil society organizations such as the Norwegian Diabetes Association and the Norwegian Trekking Association.

We have established a User Forum with multiple potential users of the project's expected findings. The members of the Forum represent a wide range of institutions and sectors involved in the evaluation, prioritisation, and implementation of PHIs. Members include: Bjørnar Allgot (Secretary General, The Norwegian Diabetes Association), Benedikte Alveberg (Senior Advisor, NIPH), Meetali Kakad (Director of eHealth, South-Eastern Norway Regional Health Authority), Lars Hansson (Senior Advisor, Norwegian Ministry of Finance), Kari Sletnes (Head of Department/Chief Medical Officer, Municipality of Oslo), Dr. Geir Stene-Larsen (Director General, Ministry of Health and Care Services), Dr. Kjartan Sælensminde (Senior Advisor, Norwegian Directorate of Health), and Nils Øveraas (Secretary General, The Norwegian Trekking Association).

The Forum will be involved in line with the principles of integrated knowledge translation and "strategic science".[49] Accordingly, the Forum will provide input and guidance in all phases of the project. There will be at least one in-person meeting in Oslo annually, and in between these meetings the Forum will be called upon to comment on plans, results, and interpretations. Members of the Forum will also be invited to the workshops and conferences arranged by the project. The first in-person meeting will take place in less than two months after project initiation to ensure that the user perspective is guiding the project from the start.[49] Specifically, we will seek the Forum's guidance on how the project can be most relevant for their institutions and other potential users. The User Forum will be critical in guiding the strategy for dissemination, in carrying out this strategy, and in facilitating policy dialogue in the lather phases of the project and beyond.[50] Collaborating with users in these ways will help maximise the practical impact of project for all users of evaluation tools and evidence on PHIs and for those involved in advancing and implementing PHIs. This will in turn affect the health and well-being of the populations targeted by these actors. Over the course of the project, we will also build a larger network of institutions and other stakeholders involved in the evaluation, prioritisation, and implementation of PHIs.

Anticipated benefits

The research is needed now to facilitate a prompt response to the emerging challenge of inactivity in Norway and to strengthen the prioritisation of PHIs. The new methods for evaluation (subproject I) can be used directly by multiple actors, as described above. These methods are expected to lead to better evaluations and particularly evaluations that are more sensitive to non-health benefits and distributional impact. More inclusive tools for evaluation and a broader evidence base for PHIs are anticipated to lead to more informed policy choices and higher priority for interventions that generate such benefits and have a favourable impact on inequalities. When the new methods are used and their results acted upon, this will benefit the respective target populations. The new methods could also result in higher priority to PHIs more generally, including vis-à-vis clinical services. Given the importance of PHIs, better methods for evaluation should therefore benefit the Norwegian population as a whole. The research has recently been made possible by initial steps in methodological innovation.

The new evidence on PHIs promoting physical activity (subproject II) can also be used directly by several users, as described above. It will inform key actors in their efforts to address challenges related to sedentary lifestyle, overweight, obesity, and NCDs. If the information is acted upon, it is likely to benefit groups at risk of conditions associated with physical inactivity. As the new evidence will demonstrate the impact on inequality, this information can particularly benefit disadvantaged groups.

The new knowledge on how the evaluation process can facilitate the implementation of PHIs (subproject III) can be used by national authorities and a wide range of other stakeholders, as described above. A better process in this respect is anticipated to benefit most or all people that gain from PHIs. The research is needed now because the implementation of PHIs currently faces multiple obstacles, and several of these arise from a sub-optimal evaluation process.

Overall, the findings from this project will help Norway meet emerging challenges, improve health, and reduce inequality.

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