

**NATIONAL PREVENTION
RESEARCH INITIATIVE
(NPRI)**

**REPORT OF THE NPRI
SCIENTIFIC REVIEW GROUP**

ANNEXES

September 2015

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Annex 1

The NPRI evaluation: Data sources and methodology

This annex outlines the data sources and the analyses that were undertaken for presentation to the SRG. It also explains some of the limitations of the data.

A2.1. DATA SOURCES

The NPRI portfolio

The portfolio of project titles and abstracts was assembled and distributed to the SRG to inform all discussions. Each project was designated a number (see Annex 4) which appear in square brackets in the report.

Researchfish

This was the source of raw data used for most of the analyses.

Researchfish is an online, self-reported repository of a range of outputs including: publications and dissemination, collaborations, instances of further funding, impacts on policy and practice; research materials and intellectual property materials generated, products and spin out companies; and awards or significant knowledge generated by the research. Researchers can enter free text on all of the outputs they submit in Researchfish. All researchers holding grants awarded by the NPRI are required to update Researchfish annually, for up to five years after their award has finished.

The NPRI Researchfish dataset included the seventy-four NPRI research studies and encompassed an accumulation of data collected from the inception of Researchfish (formerly e-val) in 2006 to the last data collection before the review in October 2013. Four of the 71 researchers did not submit data in 2013 but had returned data in previous years.

Key publication outputs

Fifty five of the 74 PIs had reported publications to date.

A2.2. METHODOLOGY

The data taken from Researchfish was reported in October 2013. Data were cleaned to remove duplication and in various parts of the analysis verified or updated as described in the text under the following subheadings.

Number of publications

All publications reported in Researchfish by the awardees were manually checked to see that they acknowledged the NPRI funding and that the publication date did not precede the grant start date. Publications which were not outputs (eg trial protocols) were not counted in this analysis nor were the small number of conference proceedings. In all, 16 publications were excluded. In a few cases, the publication appeared soon after the NPRI award was made, which might bring into question whether the paper was a genuine output of the award. However, if the investigator confirmed that the NPRI funding contributed to the publication, it was included.

In addition to publications in Researchfish, 17 publications that were not in the database were identified by the NPRI-funded investigators; these were also included in the assessment. No more data were added to datasets after 13 August 2014, although we were aware of several manuscripts submitted and being prepared and some were published during the drafting of this report. Around one third of the papers had been published between October 2012 and October 2013 and as PIs told us of only 17 new publications arising since the Researchfish data had been obtained, the number quoted in this report is likely to be an under-estimation of the number of publications arising since October 2013.

The SRG noted that a small number of PIs reported a much higher number of publications than the average publication output per NPRI-funded project. These 'outliers' were included in part of the analysis and included in the total of 318 by the SRG, since the published papers acknowledged the NPRI grant reference number. However, the SRG took the view that this confounded the analysis and therefore the outcomes were also shown with the outliers removed from the data analysis, such as in the average number of papers per project.

In order to form a qualitative view on the published outcomes, a library of 'key publication outputs' was compiled for the SRG members. The SRG assessed 51 of the 55² projects with published outcomes. When an NPRI supported study had resulted in many publications, the PI was contacted and asked to verify which one or two papers "most comprehensively and succinctly articulated the project's major outcomes". Relevant excerpts from the interview transcripts were also made available to the SRG to further inform its discussions.

A citation analysis of an NPRI publication subset was attempted in order to compare the NPRI citation impact to international norms for the field. On expert advice this has not been included in the review because there had not been sufficient time for enough citations to have accumulated for a meaningful evaluation. In addition, finding a suitable comparator from a different branch of science was going to be difficult. It was noted however that some papers had already been highly cited and reference was made to this in the SRG's evaluation.

Semi-structured qualitative interviews

All the NPRI award holders were invited to participate in semi-structured qualitative interviews. The interviews were intended to provide additional information to that provided by Researchfish data. Fifty seven award holders were available for interview, representing 69 of the 74 funded projects³. Volunteers from the BHF, ESRC, BBSRC, Wellcome Trust and the MRC undertook the interviews after a brief training workshop. Each grant holder was questioned on three areas:

- Enablement - what had the NPRI enabled in terms of science, capacity, policy and practice and communications?
- What are the future challenges and opportunities in public health prevention research?
- How can research funders meet the needs of future challenges and accelerate innovation in prevention research?

Following the interview the interviewer drafted a summary transcript which was approved by the grant holder and then submitted to the NPRI secretariat for analysis. Each section of the transcripts was reviewed for common themes identified and used to build the first level of the analysis framework. The report of this analysis is appendix 1 of this annex.

As part of the evaluation the views of the funders were also sought to understand the value of the NPRI to each organisation and to expand opinion about how best to support public health prevention research in the future. Excerpts from the interviews were incorporated into the narrative on the NPRI outcomes.

Policy and practice outputs

Policy and practice outputs from each of the NPRI awards were compiled from the PI's Researchfish data and the interviews (46 out of 66 PIs included). The outputs were circulated to a policy sub-group of the SRG which met to verify the impacts and comment on the relative importance of reported policy and practice impacts.

Annex 1:

Appendix 1

The NPRI grant-holders – analysis of transcripts of qualitative interviews

1. METHODOLOGY

Fifty seven interview transcripts, relating to 69 awards, were included in the analysis. The transcripts were reviewed and analysed for common themes. The transcripts were divided into the three areas the interviews focused on with an additional section for other general comments on the scheme.

Each section of the transcripts was reviewed and common themes identified. The common themes were used to build the first level of the analysis framework. The themes were then further subdivided and these categories were used to code the interviews and to produce qualitative data for the analysis.

2. ANALYSIS

2.1. Enablement

The interview section on enablement was divided into three themes: Capacity, Policy and Practice, and Communication. The data presented is taken from interviews relating to 69 awards. Each award holder may report in more than one category and more than one instance within each category.

2.1.1. The role of the NPRI in the enabling of capacity

Within capacity there were three key areas reported by the grant-holders: personal development, human capacity and skills, and new collaborations (Figure 1). Each of these areas was sub-divided by the particular ways the NPRI grant has supported this area (Figures 2 to 4).

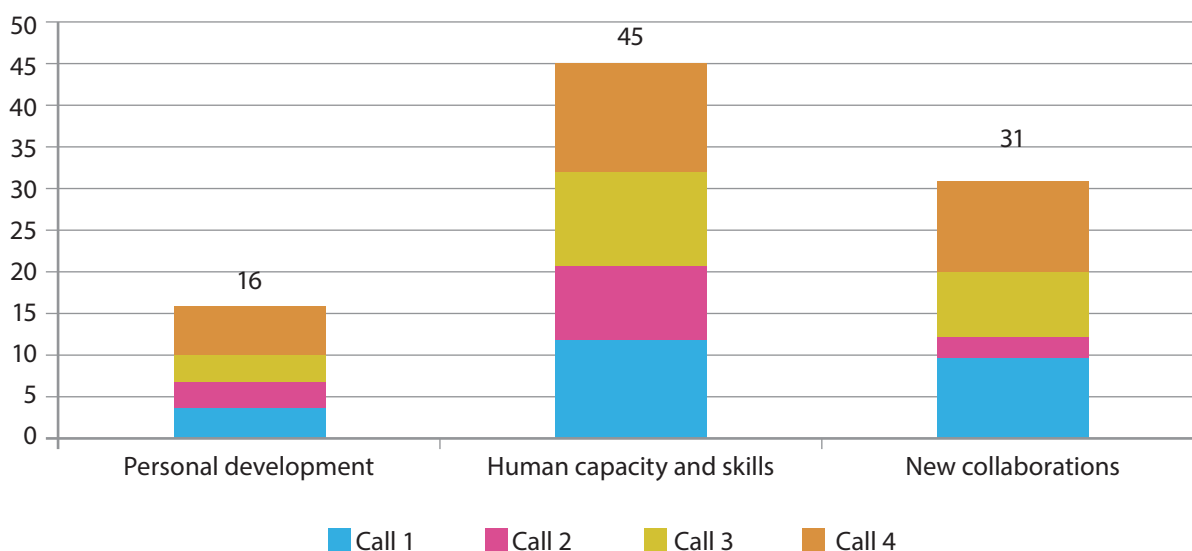


Figure 1. Number of awards reporting enablement of capacity by the NPRI Call

Figure 1 shows aspects of capacity building by NPRI call. Of the 69 awards included in this analysis 57 (83 percent) reported some form of capacity building. Overall capacity building has been supported evenly across all stages of the NPRI with new collaborations in Call 2 being the only exception, which is to be expected as many of these studies involved secondary data analysis.

2.1.1.1. PERSONAL DEVELOPMENT

Sixteen of the award holders reported at least one instance of the NPRI award supporting their own personal development. Figure 2 demonstrates the types of activities that have been captured within this category. Within these subcategories the types of support or esteem the award has provided includes:

- Investigators being approached by international institutions to lead new projects
- Contributing to a successful application to obtain a more senior position
- The PI gaining experience in managing multi-centre studies, working with other disciplines and new statistical methods

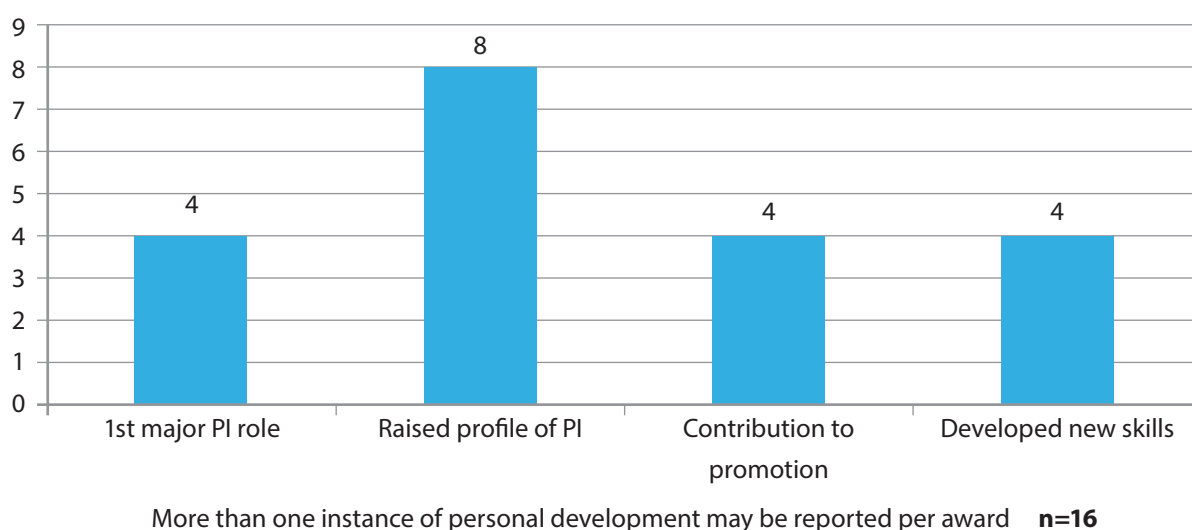
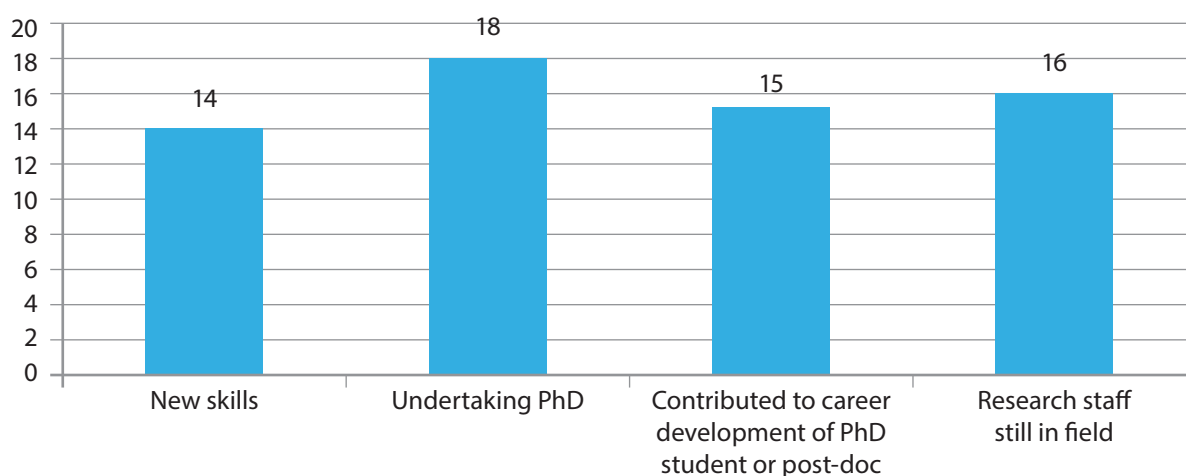


Figure 2. Number of instances of personal development reported

2.1.1.2. HUMAN CAPACITY AND SKILLS

Award holders reported NPRI-funding contributing towards the development of human capacity or new skills in 45 of the projects. This included a range of different activities as demonstrated in Figure 3.



More than one instance of capacity building may be reported per award **n=45**

Figure 3. Number of instances of human capacity and skills reported

Fourteen award-holders reported the development of new skills during the course of the award including:

- Learning about conducting research in medical settings
- Building expertise in electronic health records research, statistical methods and health economics
- Those with clinical experience or background gaining research skills
- Developing cross-disciplinary skills across behavioural research and clinical trials

Eighteen award-holders reported the NPRI award either enabled the leveraging of funding for a PhD student or influencing a member of research staff to undertake a PhD within the same area, in some cases using data generated from the NPRI award. Fifteen award-holders stated that the NPRI award had directly contributed towards the career development of a PhD student or post-doc involved in the research project. This included the award of fellowships, appointment to faculty positions and becoming the principal investigator on projects within the field.

Sixteen of the NPRI award-holders have reported that staff employed on the grant have stayed within the field in a research capacity. This has included administrators being appointed as trial managers, dieticians employed as research assistants on subsequent grants and the appointment of staff to a relevant health policy position.

2.1.1.3. COLLABORATIONS

As shown in Figure 4, during the interviews, award holders reported new collaborations arising out of 31 projects. Nineteen of these collaborations involved a new, different discipline. PIs reported how the NPRI projects catalysed collaborations among different disciplines that would not traditionally have contributed to prevention research.

The numbers of collaborations reported is lower than in Researchfish. This disparity is not unexpected because in the interviews, PIs were asked about enablement and the incidences of collaborations when mentioned (because it was an important aspect of the enablement of the work) were counted. In Researchfish, PIs are simply asked to record as a numerical value the collaborations associated with the study.

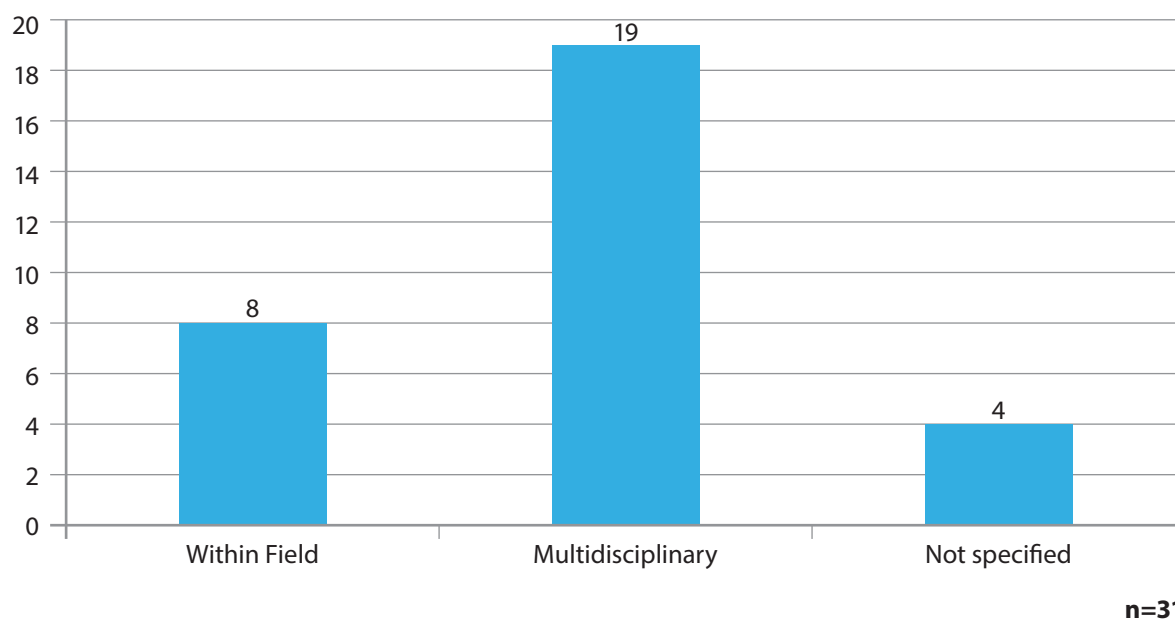


Figure 4: New collaborations reported

Note on Figure 4: Multidisciplinary was not defined in the interviews but from the texts of the interviews it seems clear that PIs were referring in this respect to collaborations with people from other disciplines and also those they had not considered by way of background and expertise to be of value to their research prior to embarking on the NPRI project.

The credibility of researchers funded through the NPRI was a reported factor in establishing collaborations and there was a theme throughout of ‘profile boost’ which helped pull in further expertise, sometimes from abroad but also for networking at a more applied level with practitioners and policy makers. In one case, a government agency randomised the implementation of the intervention and allowed educational and health data records to be linked to trial data.

2.1.2. Policy and practice

Forty three award-holders reported having interactions with an individual working in policy or practice, through a number of activities (Figure 5). Thirty five of the award-holders reported having some engagement with research users and a further breakdown of this can be seen in Figure 6. The highest proportion of these grants was in Call 1. Nine award outcomes have been cited in policy document, and a breakdown of the type of documents can be seen in Figure 7.

Fifteen of the award holders reported a firm impact on policy or practice in Researchfish and thirteen of these were verified by the SRG. Eleven projects have laid the foundations for potential future impacts. This includes providing a gateway to future studies and trials which have had an impact or have the potential to have future impact.

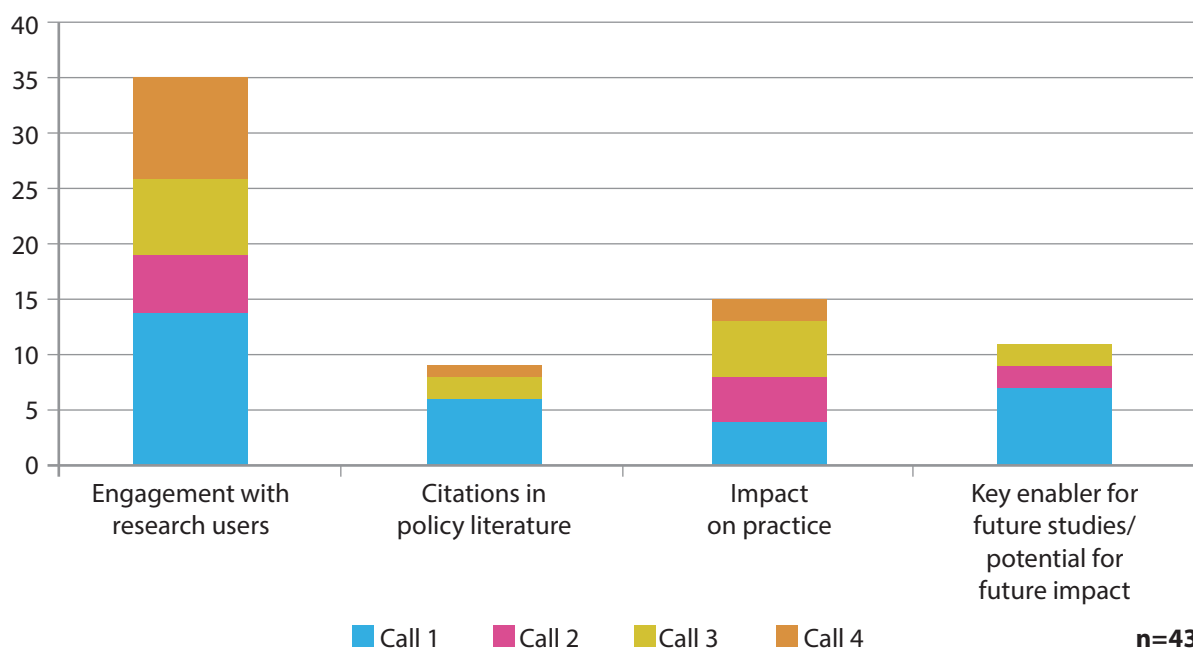


Figure 5. Number of awards reporting some impact on policy and practice by NPRI Call.

Figure 6 shows the types of research users the grant-holders have engaged with. The most commonly reported sector was local or national government with 25 grant-holders reporting engagement with this sector. This engagement included:

- Presentations to regional directors in public health departments
- Meetings with regulators
- Gaining attention and holding discussions with PHE
- Discussions with *Sustrans*⁴

Although this engagement has not always led to a direct impact on policy or practice, many grant-holders have reported that this has led to further discussions regarding other research and has built relationships and a profile that may be useful for future translation and impact.

Grant-holders reported nine instances of citations in policy literature including from the Association of Medical Royal Colleges, the Health and Safety Executive, a report by the Chief Medical Officer and a House of Commons Health Select Committee Report. This is shown in Figures 7.

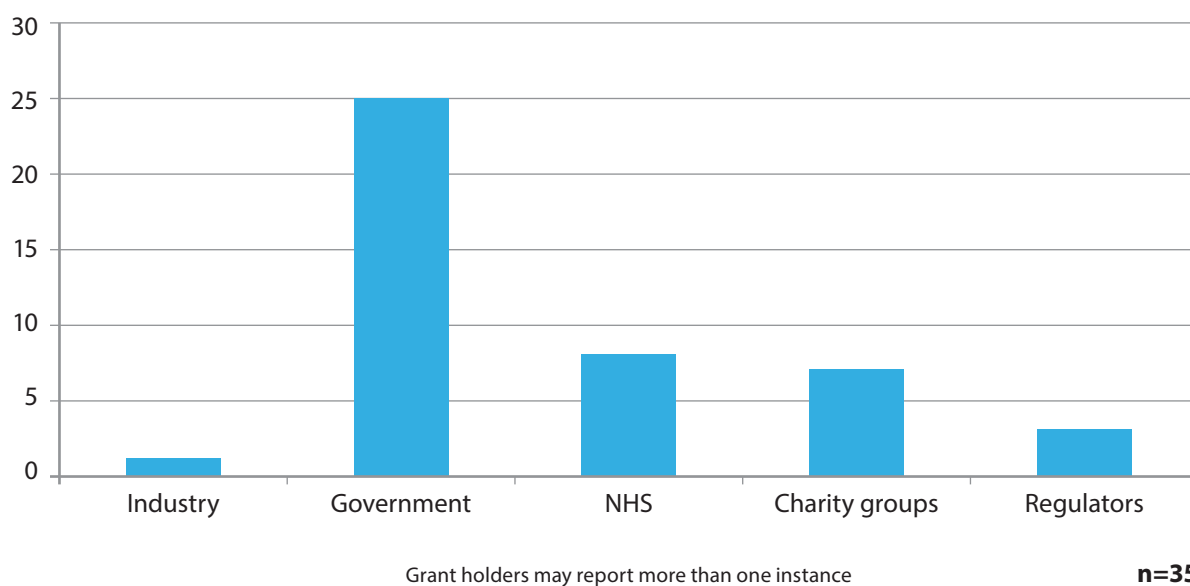


Figure 6. Number reporting engagement with research users by sector

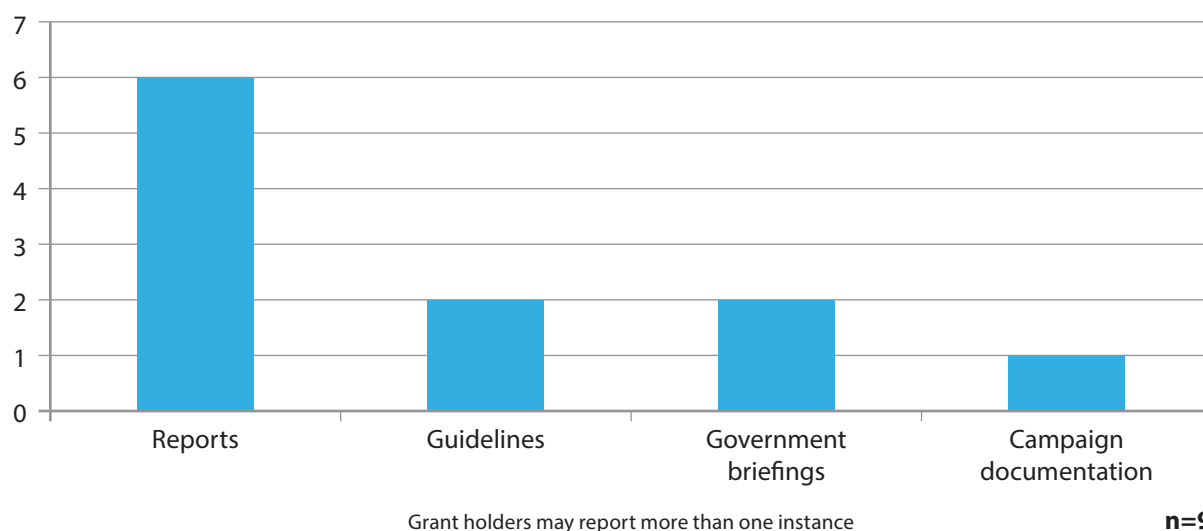


Figure 7. Number of instances of citations in policy literature

In addition six of the projects also reported the NPRI project as being included in a REF impact statement.

2.1.3. Communication

The NPRI grant-holders reported 15 instances of projects being reported or included in national press coverage.

2.2. Future challenges and opportunities in prevention research

The grant-holders reported a wide range of future challenges and opportunities in prevention research, which is to be expected given the broad remit covered by the NPRI grants. The types of challenges and opportunities presented by the grant-holders can be grouped into different categories: targeted health behaviour/outcome, intervention type/approach and underpinning factors. The grant-holders suggested fourteen target health behaviours or outcomes that are challenges for the future; Table 1 presents the most common suggestions.

TARGETED HEALTH BEHAVIOUR/OUTCOME	NUMBER OF GRANT-HOLDERS
Alcohol consumption	7
Diet/obesity	12
Inequalities	5
Physical inactivity	4
Tobacco and e-cigarettes	8

Table 1: Targeted health behaviour/outcome

The grant-holders suggest a range of intervention type and approaches as a future priority. The most frequently cited intervention type or approach was policy change as seen in Table 2.

INTERVENTION TYPE/APPROACH	NUMBER OF GRANT-HOLDERS
Behaviour change (incl. understanding and maintenance of)	8
Policy change	11
Population/environment change	8
Whole systems approach	3

Table 2. Intervention type/approach

There were several underpinning factors the grant holder highlighted as being important for the future of prevention research. The most common challenge was for innovative study design and new methods (n=17). Other frequent suggestions included linking with innovative technologies (n=8) and translation into practice (n=3).

2.3. Meeting the needs of future challenges

The grant-holders were questioned on two aspects of how the future challenges in prevention research can be supported, the most appropriate type of funding and supporting research outputs into translation.

2.3.1. Funding mechanisms

The grant-holders suggested various ways funders can support future challenges in prevention research. The most common suggested funding models suggested by the grant-holders are shown in Table 3.

FUNDING MODEL	NUMBER OF GRANT-HOLDERS
NPRI 5/ dedicated prevention scheme	21
Programme grants	5
Project grants	8
Centre of Excellence	4
Mixed models - combo of centres and project grants	5
Feasibility/preparatory work	17
Individual networking	6
Capacity building/training/early career	13
Long-term funding	3

Table 3. Activities and funding models to support prevention research

Across the different types of funding model the most frequent suggestion was for a dedicated funding scheme for prevention research such as the NPRI. Grant-holders also frequently highlighted the importance of funding feasibility and preparatory studies. The MRC Public Health Intervention Development Scheme (PHIND) was mentioned as a positive addition to the funding landscape but it was felt that more funding in this area would be beneficial.

Grant-holders also raised several underpinning concepts that would be important to support the challenges of prevention research in the future. A key factor for any future funding highlighted was multidisciplinary (n=19). The importance of prevention as a multi-funder and multi-discipline issue was repeatedly raised as a way to meet future challenges. Grant-holders also suggested that greater and closer interactions between funders and researchers would be beneficial (n=3).

2.3.2. Supporting research outputs and translation

As shown in Figure 8, many grant-holders felt that funders should do more to support the translation of research outputs into policy and practice. Fifteen grant-holders commented that targeted specific funding at the end of the award to support translation activities would be beneficial. Some of the grant-holders had established good relationships with policy makers but the difficulty of engaging with the right people was raised as a concern. Grant-holders commented that funders were better placed to facilitate this engagement.

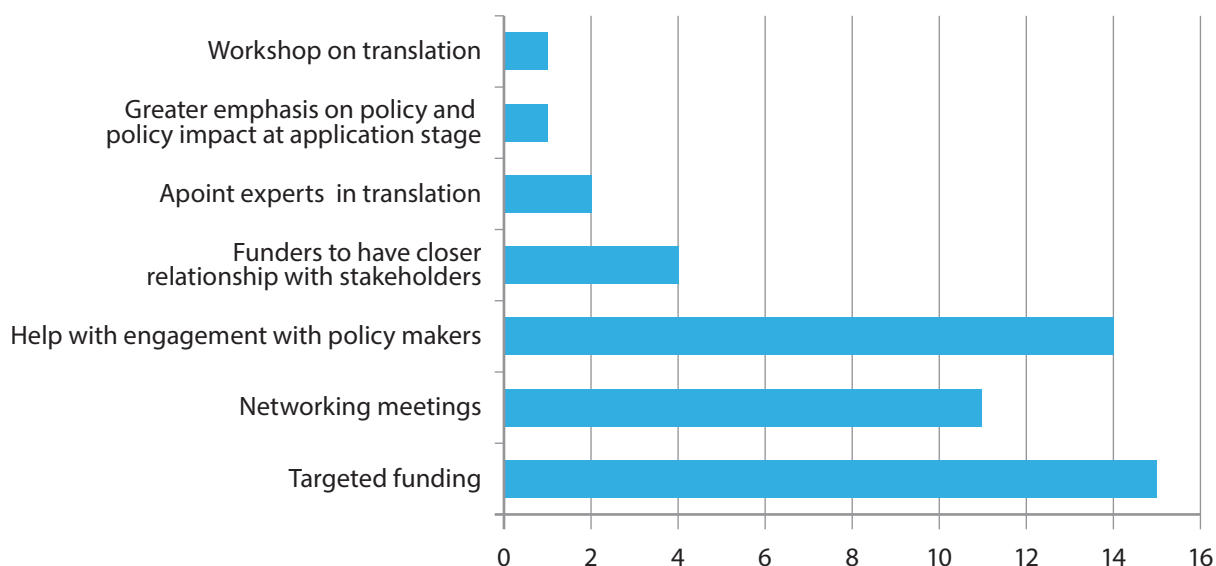


Figure 8. Funding and activities to support research outputs

Note on Figure 8: The term ‘appoint’ in respect of experts in translation was not defined but was generally taken to mean that funders would provide support for such a post and that the post-holder would work with policy makers and practitioners to ensure translation potential was fully optimised.

The overall benefits of the NPRI

The grant-holders were not specifically questioned on the overall benefits of the NPRI but across the interviews some common themes regarding the key benefits of the scheme as a whole emerged. Sixteen grant-holders commented that funding for their study would not have been possible without the NPRI and the scheme had filled a gap in the landscape. Nine grant-holders commented that the scheme had raised the profile or improved the quality of prevention research. Ten grant-holders highlighted the annual NPRI meeting at the UK Society for Behavioural Medicine conference as being very beneficial. The meeting allows networking and new collaborations to be formed and the suggestion was made to make this meeting even broader to include policy makers.